A SURVEY OF INSTITUTIONAL DEVELOPMENT ACTIVITIES AND NEEDS IN NORTH AFRICA AND THE MIDDLE EAST

COUNTRY REPORTS

THE POPULATION COUNCIL

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SURVEY OF INSTITUTIONAL DEVELOPMENT

ACTIVITIES AND NEEDS

The Near East and North Africa

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AFGHANISTAN

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Richard Moore

1. COUNTRY SETTING

The republic of Afghanistan occupies an area of 652,225 square kilometers. Although no census has ever been taken, rough estimates place the population at about 18.4 million as of 1978. This provides an overall population density of about 28 persons per square kilometer. At this writing, a National Demographic and Family Guidance sample survey is being carried out, which will provide more accurate estimates of demographic data for the country. Of the total population, some 46 percent are below 15 years of age. Kabul Province, the smallest of the 27 provinces in physical area, has the largest population (about 1.33 million). Kabul, the capital, has a population of about 500,000 to 700,000. The urban population is approximately 15.8 percent of the total and 13.3 percent of the total are nomads. The country has about 16,000 villages.

Although there is no vital registration system, United Nations estimates for 1975 place the birth rate at 51 and the death rate at 27. The average annual rate of population increase is thus about 2.4 percent which provides a population doubling time of about 29 years. Based on two village surveys, rural infant mortality is estimated at about 200 per thousand although rates of 300 or more per thousand have been measured elsewhere.

A WHO report indicates that in the provinces, almost all deliveries are conducted at home by unskilled village dais (traditional midwives) or by relatives. Maternal mortality is thought to be very high,

with one 1971 UN report placing it as high as 30 to 50 per thousand in the cities and 60 to 80 per thousand in rural areas.

Afghanistan is basically a rural, agricultural -- pastoral economy -- perhaps one of the poorest countries in the developing world. Annual per capita income is estimated at U.S.$50 to $70. More than 75 percent of the labor force works in the agricultural sector, which accounts for approximately 50 percent of the gross domestic product. Wheat is grown on about 65 percent of all cultivated land, which is only 5 percent of the total land area in any one year. Manufacturing accounts for less than 2 percent of gross national product. Principal exports are (1) dried fruits and nuts, (2) fresh fruits, vegetables, and cotton, (3) karakul wool and meat, (4) natural gas (to the USSR), and (5) carpets. Debt service, especially to the USSR, uses up a large proportion of the country's small supply of hard currency.

The gross national product has been increasing at about 3 percent annually for several years. Only 30 percent of government expenditures are financed from internal sources.

Transportation is almost entirely by road is this landlocked country, although there is an aviation network. Afghanistan has no railways.

There are about 650,000 students enrolled in the nation's 3,600 schools, only a fraction of whom are girls. Overall enrollment at the first level of education is about 20 percent of those eligible. There are two universities in the country, one in Kabul (with 7,000 students) and one near the Pakistan border. The overall literacy rate is extremely low, possibly only 5 percent of the total population.

II. HEALTH POLICIES AND PROGRAMS

The Ministry of Public Health (Kabul) is the largest employer of health personnel and the largest single supplier of health services in the country.

In addition to its 50 larger curative units, the ministry operates about 100 basic health centers (BHC's) in rural areas of the country. The principal services of the BHC's are preventive. Each health center is intended eventually to provide the following services: family health (MCH and family planning), communicable disease control (vaccination, passive case detection primarily of malaria, smallpox and TB), environmental health (health education, safe water, waste disposal), and curative medicine. [illegible] statistics on [illegible] of 811,000. In [illegible] the BHCs [illegible] children and more than 1?,000 women.

By the [illegible] each health center has, or plans to have, a physician, nurse, assistant nurse-midwife, and about six other staff. WHO, UNICEF, the World Food Program and USAID are providing substantial support to the BHC system by means of commodities, equipment, transport and technical assistance (in nursing and management).

At this writing, the family health program consists mainly of World Food Program supplies, along with some vitamin and mineral supplements. No contraceptive or family planning information is currently delivered by the BHC's, but this situation should change by mid-1975. Almost the entire output of the new auxiliary nurse-midwife school will be posted to these health centers.

The Ministry of Public Health posts new physician graduates to the health centers for two-year assignments. This policy requires a

large percentage of Afghanistan's annual physician output. The greatest personnel shortage is for female staff, especially nurse-midwives and public health nurses. The goal is to establish functioning health centers (some with satellite subcenters) in each of the country's 178 woles walis (counties) by 1976.

The health center system is under the direction of a Department of Preventive Medicine in Kabul. This department is made up of bureaus representing each type of medical service delivered through the BHC system. At present, the Bureau of Family Health is new, very small, and not fully effective.

The country has about 1,200 physicians, approximately 500 of whom are in Kabul. The 540 pharmacies in Afghanistan are distributed as follows: 125 in Kabul and the other 315 mainly in provincial capitals.

III. POPULATION POLICY AND PROGRAMS

The government of Afghanistan has not taken any strong position on population or family planning policy. In Afghanistan, the term family planning is always disguised by some euphemism, either family guidance or family health. The latter term includes both family planning and MCH activities. The government accepts family limitation activities as a means of improving the health of a mother and her family. Any other family planning rationale is currently unacceptable to the leadership of the health ministry.

The government of Afghanistan does not now and never has promised family planning directly or provided services and supplies through its health delivery outlets. The government has, however, more than tolerated a quasi-government (although nominally voluntary) agency -- the Afghan

Family Guidance Association (AFGA) -- which is the pioneer family planning agency in the country. AFGA, with support from the IPPF and USAID, currently operates [illegible] clinics in Kabul and the main provincial towns. The staff consists of [illegible], [illegible] nurse-midwives, and [illegible] to [illegible] family guidance [illegible].

[illegible] per month, [illegible] about [illegible] the [illegible] percent [illegible] about [illegible] percent of [illegible].

[illegible] management of the [illegible] population growth rates.

[illegible] the assistance of USAID [illegible] the Afghan demographic survey [illegible] will help the government determine the [illegible] growth rate of the population. In addition a WHO/UNFPA-assisted project is underway to assess infant and early childhood mortality. Other USAID projects currently underway, which are focused on population and family planning, include: (1) general assistance to the Kabul auxiliary nurse-midwife training school (with family planning included in the curriculum), (2) provision of three management specialists to the Ministry of Public Health to assist with the basic health service system, with emphasis on the family health component (USAID has also provided contraceptives to the Ministry of Public Health, but these have so far remained in the warehouse), and (3) assistance to the Ministry of Public Health

Statistics and Manpower Division to carry out population/family planning-related background and operations research. Another key feature of the project is training of staff in the population/family planning area and in processing and analyzing data.

In addition, UNICEF provides vehicles, drugs, and equipment to the MCH component of the Basic Health Services Program.

IV. UNIVERSITY AND INSTITUTIONAL DATA

Kabul University

The university was founded in 1932 with the establishment of a Faculty of Medicine. The Faculty of Letters was established in 1944 and the Faculty of Economics in 1957. Women were first admitted in 1960. As of 1972, there were nearly 7 000 students enrolled. The two universities in the country (Kabul University and Nangarhar University) operate under the supervision of the Ministry of Education.

Leadership of Kabul University consists of a president, three vice-presidents (Academic Affairs, Student Affairs, and Business Affairs), and a dean in charge of each faculty. The academic base of Kabul University consists of ten faculties: Agriculture, Economics, Education, Engineering, Islamic Law, Law and Political Science, Letters, Medicine, Pharmacy, and Science. In addition, the university has an Institute of Education a Polytechnic Institute, a Health Institute (attached to the university hospital), and a Research Center. All of the above are located in Kabul.

The university library has about 120,000 volumes, classified according to the US Library of Congress system. The library maintains a collection of about 500 professional journals and other periodicals. It is a central library, used by all sections of the university.

Instruction is in Persian, although affiliations with various foreign assistance agencies and faculty preferences sometimes result in the use of other languages. The university offers the Bachelor of Arts, Bachelor of Science, and Doctor of Medicine degrees.

[illegible] explicitly mention population questions:

. [illegible] economics courses for history and geography majors. [illegible] demographic characteristics to the population sector are treated briefly.

. [illegible] critical [illegible] population as a [illegible] the national state [illegible].

. [illegible] groups [illegible] population growth and control, [illegible], religious, and language [illegible].

[illegible] assess the [illegible] at an equivalent degree.

The top [illegible] of the six [illegible], as in many other Afghan institutions, is in flux. The leaders changed with the revolution of 17 July 1973 and may be in office on a contractual basis. This is not clear. Some observers feel that the university and the Afghan government share an interest in placing greater emphasis on the practical problems of the country: health, food, and economic growth. This is a time of change.

The principle supporter of faculty research is the Center for Research and Consultation, operated through an academic director and a board of directors. Research funds are provided by the university, USAID, the Fulbright Commission, and the Asia Foundation. The center provides small research grants (averaging about $200 each) to individual faculty. Research subjects are quite diverse, with a number of disciplines represented. Perhaps the work closest to the population-family planning area is an

Afghan Gazetteer, now being prepared by several faculty. In addition, there are a number of research projects covering aspects of village--rural sociology or anthropology.

Several faculty on the pharmacy staff are interested in folk medicine and herbs, although not with specific regard to their contraceptive properties. There is, however, little active research in this area.

Faculty of Medicine

The Faculty of Medicine was established in 1932 by royal decree. The faculty receives technical assistance from the School of Medicine of Lyons, France. There is little faculty research.

The MD program requires a total of seven years. The one-year freshman course in basic sciences is followed by a medical curriculum of five years, and a year of internship following graduation. The 18 departments that make up the faculty include departments of obstetrics and gynecology and preventive and social medicine. Every student is required to take 130 lecture hours of preventive and social medicine. These courses include clinical and general epidemiology, biostatistics, environmental health, hygiene, public health administration, social medicine, and occupational health. Students are also required to take one course each in gynecology and obstetrics. None of the above courses contains current information specific to family planning or contraception.

Medical school graduates are required to repay the Afghan government for their education with up to ten years of governement service.

The present curriculum in the Faculty of Medicine is almost entirely curative and hospital oriented. Graduates are not exposed to questions of rural health delivery or preventive medicine. This traditional

orientation has created morale and effectiveness problems for the nascent rural basic health services program of the Ministry of Public Health.

Nursing Schools

There are two schools of nursing, one for women nurse-midwives and the other for men, both administratively connected with the Faculty of Medicine. Entering students must have completed the ninth grade. The curriculum covers three years of theoretical and practical training, the latter in the University Health Institute-affiliated hospital. The nurse-midwife training school in Jalalabad has a class of only 12 students. Two key instructors, both female graduates, have recently left the country, with no plans to return.

Nangarhar Faculty of Medicine, Jalalabad

This faculty, the only faculty to date at Nangarhar University, was established in [illegible]. The university has in the past received assistance from a number of American agencies, including CARE MEDICO, Indiana University, and Loma Linda University. The faculty operates its own training hospital and two libraries. The libraries contain nearly 4,500 books in Western languages and an equal number in the local Pashto language. The physical plant is continuing to expand. The school has about 400 students.

The twenty departments of the faculty include social and preventive medicine and gynecology and obstetrics. Course content is similar to that of Kabul University. Some departments (for example, OB-G/N) have only one or two faculty members.

Auxiliary Nurse-Midwife School

The first class of 60 young women recruited from the provinces began in late 1971. The school is still in its original temporary quarters in Kabul, although the Ministry of Public Health has begun construction of a permanent facility. Despite a general lack of experience, especially the lack of experienced trainers plus inadequate facilities, the school graduated its first class of 45 in fall, 1973. The system is to be expanded to provide an annual output of 125 auxiliary nurse-midwives each year by 1976. The school is assisted by USAID and other donor agencies.

Public Health Institute (PHI)

The institute, founded in 1964, is a technical and advisory body of the Ministry of Public Health. Its specific functions are: (1) applied research in public health problems, (2) training various categories of public health personnel, such as sanitarians and laboratory technicians, (3) administrative and technical supervision of all government health laboratories and provincial blood banks, and (4) reference center services.

The principle contributions to the basic health center system are training and laboratory supervision. The principle piece of current research is a United Nations-founded study of child mortality. At this writing, the PHI provides no training in the family health area, nor are there any plans for such training. The PHI receives WHO and UNICEF assistance.

The PHI provides a training-orientation program in public health to some new physicians recruited by the ministry, which offers an opportunity to include population and family planning in the training of these key personnel.

V. CONCLUSIONS

There might be a number of opportunities to stimulate the latent interest in population/family planning-related teaching, research, and delivery. It would appear that the best teaching and research opportunities lie with Kabul University, especially the Research Center and the Pharmacy and Medical Faculties. The already heavy foreign agency involvement in the Ministry of Public Health makes that a less attractive area for new initiatives.

In view of the lack of clear policy favoring work in the population/family planning areas, however, plus the continuing evolution of the new political and social order, this does not seem the best time to attempt new initiatives.

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ANNEXES

ALGERIA

Jean Lecomte

I. COUNTRY SETTING

Algeria, a French colony since 1830, obtained its independence in 1962. During the long period of French rule, Algeria was deeply influenced by French culture. French language, political and social institutions, legislation, education, and administration were deeply rooted in all areas of daily life, and the country still bears the strong imprint of its colonial past. Since independence, the political line followed by the government is above all Arabo-Islamic and nationalist, with a definite socialist accent. Thus, quite a number of technical advisers from Eastern European countries are working in the economic and social sectors of the country.

In 1856 Algeria had a population of 2.4 million. Forty years later the population had nearly doubled, reaching 4.7 million. In another fifty years it doubled again to 9.4 million in 1954 (of which about one million were foreigners). Between 1954 and 1973 the population increased by nearly 6 million people to an estimated 15.5 million in 1973 (in spite of the fact that 900,000 foreigners had departed and more than a million Algerians were killed in the fight for independence). Just before independence, the highest concentration of the French overseas population, about one million, was found in Algeria. After independence, due to a massive exodus, there remained only about 80,000 foreigners. Thus, except for this minority, the Algerian popu-

lation is practically 100 percent Muslim. In size Algeria is the second largest country in Africa. Its surface is 2,381,743 square kilometers and the average density is six inhabitants per square kilometer. The majority of the population (95 percent) lives in the northern part of the country (12 percent of the total surface), where the principal urban centers are located (31 percent of the population lives in the urban zone).

The Algerian population is young. In 1973 it was estimated that 47 percent were under 15, and less than 5 percent above 64 years of age. The crude birth rate is 50 and crude death rate is 17, a natural growth rate of 3.3 percent. Demographic estimates indicate that the population figure in 1985 will be 23.9 million.

II. HEALTH POLICY AND PROGRAMS

With regard to its public health organization, the country is divided into 160 health sectors. Each sector possesses a base hospital and takes care of approximately 100,000 persons. The infrastructure is curative, and preventive medicine includes. health centers, dispensaries, MCH centers, and so on. The activities of the health sectors are supervised by a regional director for public health in each region or willaya, of which there are presently thirty-one. All services of the Ministry of Public Health are free.

There are 462 Algerian and 1,200 foreign doctors. The ratio is one doctor for 9,000 people, one nurse for 3,000 people, and one midwife for 26,000 people. There are about thirty schools that train paramedical personnel at three levels:

	Level	Prerequisite	Duration
1.	Nurses aides	Completion of primary school	1 year
2.	Nurses and technicians (laboratory, X-ray, etc.)	Completion of 3 years of secondary school	2 years
3.	Medical assistants (adjoints médicaux de santé publique) and midwives who are trained in Health Technological Institutes of Algiers, Constantine, and Oran.	Bachelor's degree or equivalent level of education	3 years

In 1971 there were trained: 15 nurses aides, including 4 women; 105 specialized paramedical agents, including 76 women; 303 paramedical agents, including 106 women; and 816 paramedical assistants, including 459 women.

III. POPULATION POLICY AND PROGRAMS

In June 1969, President Boumedienne stated: "...I take this occasion to say -- concerning what is called the population explosion -- that we are not in favor of false solutions such as birth control. We consider that this is simply a way of suppressing difficulties instead of searching for positive solutions. On the contrary we are in favor of positive and efficient solutions, such as the creation of jobs for adults, of schools for children and of better social amenities for all." This statement defined clearly and unequivocally Algeria's official position. This does not imply that the entire idea of family planning was rejected. On the contrary, the words used to define family planning lend themselves to the necessary adjustments that will ultimately satisfy the philosophical, moral, religious, political, or semantic requirements of its most intractable opponents. Rationalized under the protective

umbrella of the promotion of family health, family planning -- in Algeria called birth spacing or birth regulation -- has continued to develop.

A ministerial circular clearly outlines the government's position, and the request that Algeria has addressed to UNFPA for assistance in family planning emphasizes the medical benefits of such a program for mother and child health. The request in no way alludes to the high rate of population growth and its consequences, and no reference of a demographic nature is made. However, it is specified that birth spacing is designed basically for the purpose of promoting maternal health. Long-term objectives are to reduce maternal and infant mortality and morbidity, to improve maternal health, and to enhance the quality of family life.

The director of "Action Sanitaire" at the INSP emphasizes that the official Algerian position is opposed to the type of family planning practiced elsewhere in North Africa: family planning programs with a demographic objective, which are designed by rich and imperialistic nations wanting to perpetuate their privileged status vis-a-vis the Third World; the "shameful" experiments of mass sterilization in India, the "suspicious" insistence with which certain international organizations ask to sponsor or assist such programs; and similar themes. Happily the medico-social theme of a couple's right to contraceptive information and services escape such sharp criticism.

In practice Algeria has had a birth spacing program since May 1967, when the first birth control center was opened in Algiers and a group of doctors was sent abroad to familiarize themselves with family planning techniques. The program, which was initially very limited (two centers were opened in Oran and Constantine in 1969), has continued to develop. This is reflected in the efforts to train paramedical family planning personnel both

abroad and in-country as well as in the stepped-up integration of family planning into MCH activities. From 1970 to 1973 there were only four birth control centers (Algiers, Constantine, Oran, Settif). Today, contraceptive services are available in twenty-eight centers of nine willayas (eighteen of which are attached to an MCH), and it is planned to extend them to several hundred others.

Elements of family planning are included in the curriculum for medical students; an intensive course, both classroom and on-the-job training, is conducted for midwife trainees; update courses are conducted periodically for midwives in Algiers, on completion of which they are officially and legally authorized to perform IUD insertions. It is possible that in the not-too-distant future, female AMSP's, nurses, rural midwives will participate at various levels in carrying out the program.

All birth control programs are under the authority of the Ministry of Public Health and Population. They are administered by the Central Bureau of the MCH of the Direction de l'Action Sanitaire. Their activities are coordinated with the services involved in paramedical training, health statistics, medical education, and so on, as well as with other ministries, organizations, and institutions dealing with the spacing of birth.

A request for assistance in spacing of births has been submitted to UNFPA. The total amount requested for the period 1974-77 was $879,820, and an additional request to UNFPA for assistance beyond 1977 in equipping approximately 1,000 MCH birth spacing centers by 1980 is under consideration.

Short-term objectives of the request are:

1. Development of instructional programs fitted to each category of medical and paramedical personnel,

2. Inclusion of these programs in the curriculum of medical and paramedical students,

3. Integration of the spacing of births in medical services other than gyneco-obstetrics or MCH, such as preventive medicine and social medicine.

More specifically, the assistance requested bears on the provision of:

1. Assignment of international staff, a midwife nurse and consultants, by WHO,

2. Payment of salary and allowances of local personnel engaged in administrative functions,

3. Payment of fees of teachers conducting refresher training seminars,

4. Grants for study abroad and refresher training within the country,

5. Nine three-month grants for the organization and administration of MCH-family planning services,

6. Nine three-month grants for health education,

7. Six three-month grants for health statistics, and

8. Eighty-six one-month grants for refresher training in birth spacing for paramedical personnel countrywide.

As far as family planning is concerned, Algeria has taken a different route from Tunisia and Morocco. We do not have statistics of acceptors, which, in any case, are unimportant at this stage of the program. Nonetheless, the private sector sales of pills in Algeria are far from trivial. In a few years, Algeria may not be far behind its two neighbors.

IV. UNIVERSITY AND INSTITUTIONAL DATA

Algeria is breaking away from a colonial past in which its educational system was characterized by the typical French curriculum. The country is making a tremendous effort in the field of education. Approximately one-fourth of the government's operating budget is devoted to education, as is more than 10 percent of the general investment budget. In 1970 it was estimated that there was a total of 1.8 million students in primary schools, 300,000 in secondary schools, and 13,000 in higher educational institutions.

School attendance rates for ages eight to nine are as follows:

	Urban	Rural	Total
Boys	96%	46%	74%
Girls	95%	13%	50%

Algeria has three universities, located in Algiers, Constantine, and Oran. A fourth is under construction in Blida, south of Algiers, and its completion is scheduled for 1975. It will comprise thirteen institutes and enable 9,000 students to follow courses in higher education.

From 1963 to 1969, the overall number of students has increased sixfold, that is, seventeen students for each 100,000 people or 2.2 percent of the nineteen to twenty-four age group. Female students during the same period increased by 20 to 25 percent.

Student Enrollment by University

	Algiers	Oran	Constantine
1967	6,467	292	499
1972	13,493	3,594	4,119

During the 1973-74 school year, approximately 30,000 students

attended the three universities, including over 5,000 medical students.

Students Enrolled in Post-Secondary Education at Level VI

(Trained by the Ministry of Higher Education and Scientific Research throughout Algeria, all nationalities, male and female)

Degrees	1963 -64	1964 -65	1965 -66	1966 -67	1967 -68	1968 -69	1969 -70	1970 -71	1971 -72
Fac.Sc.	561	1,163	1,535	1,579	1,578	1,662	1,919	2,619	3,332
F.D.S.I.	811	655	1,300	1,591	1,699	1,798	2,273	4,459	5,661
F.D.L.H.	1,071	1,305	1,670	2,057	1,854	2,125	2,520	5,264	6,499
Medicine	841	1,299	1,715	2,021	2,359	2,679	3,806	5,050	5,826
TT FACS	3,284	4,422	6,220	7,248	7,490	8,264	10,518	17,392	21,206

In 1971, under the authority of the Ministry of Higher Education and Scientific Research, higher education was completely changed in concept and organization, "in order to modify the entire potential of the university as agent for the education of men who will be useful in the development process." Principles that guided this reform were intended to provide personnel who, in addition to their scientific training, would be conscious of the concerns, problems, options, and realities of the country. Therefore, the objective of restructuring the university system was to train the type of staff the country needs:

1. Cadres involved in the socialist development of the country;

2. Cadres imbued with the Algerian personality and national socio-economic realities;

3. Cadres whose training would enable them to face the specific problems of the country adequately, and

4. Cadres whose level of scientific training would guarantee constant improvement of knowledge.

To achieve these objectives, a series of actions has been taken

within the framework of university reforms:

1. The preparatory year was eliminated in all fields of study.

2. The academic year was extended two months.

3. The annual curriculum system was eliminated, and a new time unit was instituted (the quarter or the semester) with corresponding credits.

4. The flexibility of the restructured curriculum was further enhanced by the subdivision of quarter or semester units into modules, or comprehensive units of teaching. For each track, there are mandatory and elective modules. There are also prerequesite modules. The prerequisite formula is intended to provide a safeguard against too much laxity in the system, though an excessive number of prerequisites may interfere with flexibility. Proponents and antagonists of prerequisites have apparently not yet agreed on a satisfactory compromise.

5. The annual examinations were eliminated and replaced with quarter or semester exams, in addition to an evaluation of acquired knowledge after completion of each module. If a student does not pass a module, he may still move on to the next provided he later passes the test.

6. An integrated form of education was instituted, which consists of communicating to the student comprehensive and significant knowledge centered around a specific field of study. A field of study comprises a group of subjects that apply to various disciplines and converge toward a central theme in a specific area. The pedagogic reform was expanded through the module system. Each module is directed by an inter-regional academic board, in which students as well as faculty are represented.

7. Formal classroom instruction was reduced considerably and theoretical lectures balanced with applied training, supervised exercises, and seminars.

8. Finally, intensive classes in the national language were introduced, and instruction in a foreign language for certain degrees was eliminated.

PUBLIC HEALTH AND FAMILY PLANNING

The University of Algiers

The University of Algiers includes five institutes (former faculties): Institute of Medical Science, Institute of Letters with two departments (Social Science and Letters), Institute of Law, Institute of Economics, and Institute of Exact Science (mathematics, physics, biology, geoscience).

Institute of Medical Science

In accordance with the principles of modernization just described, the Medical Faculty was renamed the Institute of Medical Science. It is an integral part of the university and comes under the authority of the Ministry of Higher Education and Scientific Research. The Institute of Medical Science is open to candidates holding a Bachelor of Science degree. The entire instructional program is spread over twelve semesters (six years) and consists of:

1. Preclinical Training: This instruction is conducted over four semesters (first and second years). The first two semesters are devoted to basic science subjects, while the subsequent two are devoted to human biology (the constitution of the human body and its normal functioning). Each apparatus, function, or system is covered in a separate course of study, representing one or more modules. Nine of these apparatus and functions are covered in twelve modules. During this period, it is planned to introduce the students to certain areas of social science (demography, sociology, economics, ecology,

and so on). The dean of the Institute of Medical Science is particularly eager to provide an adequate social science program, but lack of qualified teachers has apparently hindered progress.

2. Clinical Training: This instruction is conducted over a period of six semesters (third, fourth and fifth years). Medical instruction proper starts with the third year. It is conducted in the university's medical services center, where studies in successive modules (cardiovascular, gyneco-obstetrics) combine both classroom and practical instruction.

Pulpit teaching has been abandoned and replaced by departmental instruction. The program for each module is designed, established, and supervised by an interdepartmental pedagogic committee composed of representatives of all disciplines covered in the module. Students are also represented on this committee.

Starting with the tenth semester, students take a nine-week module in social medicine: three weeks of classroom instruction followed by six weeks of on-the-job training in a sanitary sector, a health center, a rural hospital, a dispensary, or an MCH center. The major difficulty in carrying out this on-the-job training program is the lack of instructors.

In addition to social medicine subjects taught in this module (such as labor medicine, legal medicine, public health, epidemics control, demography, country-wide sanitation), emphasis is given in the preceeding semester to the preventive, prophylactic, and epidemiologic aspects of the diseases under study. Hygiene, preventive medicine, and public health are therefore integrated throughout the three years of clinical training. Furthermore, these subjects are systematically reviewed and combined in a special nine-week module.

On completion of the practical training part of the module, students must turn in a report of activities. The social medicine module is conducted four times per year. To this date, about 1,200 students have received this instruction.

3. Internship: This training is extended over a period of two semesters (sixth year). After completing the social medicine module, students are given an examination called an "Overall Knowledge Control Test." They are then assigned to a sanitary sector and to the hospital for their internship.

In 1974, 280 students graduated, an increase over the former average of 100 to 150 each year. It is anticipated that 400 will graduate in 1975 and 1,000 in 1976 (this exceptionally high figure is due to a transition phenomenon brought about by the university reforms). Beyond 1976, an average of 300 students a year is anticipated.

Practically no fundamental research work is done by the National Institute for Public Health (INSP) or the Institute of Medical Science. On-the-job surveys are markedly operational and intended for the preparation of health plans. Medical publications are edited by various scientific societies, organized under a union, "l'Union Medicale."

After graduation, young doctors are required to serve two years in the military. They are given six months of military instruction before being assigned to a hospital (civilian or military). Following their military service, they must serve five years as public civil servants attached to the Ministry of Public Health. These requirements constitute a first step in the nationalization of medicine.

A university career provides the following advancement pattern:

1. Doctor in Medicine.

2. Postgraduate (after three to five years a diploma of special medical studies is awarded).

3. Master's Assistant (a master's assistant participates in teaching and research work. He may prepare a thesis for a state doctorate in medical sciences which leads to the title of):

4. Master's Assistant in Charge of Class.

5. Docent (seniority, accomplishments, fame, and availability lead finally to the title of):

6. Professor.

Department of Social Medicine

The Department of Social Medicine is attached to the National Institute for Public Health (INSP). This institute is the designer of the ministry's public health programs and comes under the Directorate for Sanitary Action of the Ministry of Public Health. Because of its relationship to the university, on the one hand, and to the INSP, on the other, the department assures liaison between the university and the Ministry of Public Health. Since INSP exercises authority over the departments of the Ministry of Public Health, university students have free access to the sanitary sectors, where they familiarize themselves with the working conditions, pathology, preventive medicine activities, and public health activities of the ministry.

The faculty board of the department consists of about eighteen persons (one professor, nearly ten assistant professors, contract assistants, and residents participating in the teaching process). Instruction given by the department occurs at three levels:

1. Hygiene and preventive medicine, included in various modules during clinical training, that is, during the study of contagious diseases;

2. Specific instruction given under the social medicine module in the tenth semester of medical school; and

3. Postgraduate instruction of public health specialists.

Obstetrics and Gynecology

This instruction is combined in a nine-week module and is conducted in four university hospitals for groups of forty to sixty students. In this course, which consists of both classroom and on-the-job training, students are taught birth control techniques and are exposed to birth control activities during on-the-job training at the MCH center. However, very little practical training in family planning technology is formally included in the program, and IUD insertion is not taught.

In the gyneco-obstetrics department of the Mustapha Hospital of the university, where 5,000 to 6,000 deliveries are performed each year, there is no postpartum program. Women in childbed stay an average of forty-eight hours in the maternity ward.

The department has undertaken and endeavors to develop research in four areas: trophoblastic disease, genetics, cancer diagnosis, and obstetrics pathology (particularly osteomalacy).

The faculty includes one professor and six assistants. The other three departments of gyneo-obstetrics have nearly the same teaching staff.

University of Constantine

The Technological Institute of Health

This program is relatively new (three years). It is conducted under

the supervision of the National Institute of Public Health with the collaboration of WHO (for technical and financial assistance). Its objective is to train adjoints médicaux de santé publique and midwives.

The WHO team, headed by Dr. Goriup, includes: one surgeon specializing in basic public health care, one doctor specializing in hygiene problems (environment, sanitation, epidemic control, and dermatology), one gynecologist, one pediatrician, one general practitioner, one public health specialist, one audiovisual specialist, three midwives, and one laboratory technician.

Three categories of trainees may be admitted in the institute:

1. Students holding a bachelor level of education but no degree are admitted upon passing an entrance examination.

2. Students with a bachelor level of education but no degree are admitted upon passing an entrance examination.

3. Nurses with a minimum of five years of practical experience are admitted directly into the second year. They are first assigned to a special class for three months for intensive retraining before joining other students and pursuing their education.

AMSP's are advanced technicians who work under the immediate supervision of a doctor, either at an isolated post or within a medical group. They assume various responsibilities in the areas of health promotion, protection, and restoration including administrative, diagnostic, and treatment functions.

The course lasts three years and is conducted primarily by audiovisual means. The first year is devoted to classroom instruction and visits to hospitals. During the second year students are given on-the-job training (itinerant), and during the third year they are assigned to dispensaries

for seven to eight months as resident trainees.

Miss El Saadi, a midwife, is in charge of midwives' instruction and teaching family planning. She is very active and shows much interest in this field. She has attended classes in sociology and public health (including family planning) at the universities of Louvain and Brussels in Belgium. Her contract with WHO expires at the end of this year, and she plans to return to Syria, her native country. An Algerian counterpart will replace her as a teacher. At present, midwife trainees receive complete classroom and practical training in family planning, which includes prescribing the pill and IUD insertion. The latter apparently is not formally included in the program, but thanks to the good relations between Miss El Saadi and Dr. Sahairi (who is chief of the gyneco-obstetrics department and attended a WHO course in family planning in Paris and Brussels in 1973), trainees are permitted to study IUD insertion at the hospital's birth control center.

With regard to family planning, midwife trainees are required to attend a special one-month course in Algiers. Upon completion trainees receive a certificate authorizing them to perform IUD insertions. Two students who recently completed their training have just returned to Constantine. They will each head a birth control center, one in Settif, the other in Constantine.

With regard to contraceptive methods, AMSP's training is only theoretical. According to Miss El Saadi, it is planned to train women AMSP's in IUD insertion, to train regular nurses to inform and educate women in family planning, and to authorize rural midwives to prescribe the pill.

The Technologic Institute of Health had its first graduating class this year: fifty-five AMSP's and twenty-eight midwives. In the academic year 1974-75, there are thirty-five AMSP's and forty midwives enrolled in final year and sixteen midwives enrolled in the second year.

The Institute of Medical Sciences

Before independence, there was an embryo medical school in Constantine. Students attended their first two years of medical school there and subsequently transferred to Algiers. With the reform of higher education, this school became the Institute of Medical Sciences, and in 1969-70, the third and fourth years of the medicine instructional program were added. In 1972-73, the complete cycle was achieved with the addition of the fifth and sixth years of the program. In June 1973, the first group of fourteen doctors graduated. In 1974 there were thirty, and it is anticipated that the average number to graduate each year will be about forty. The instructional program is similar to the one already described under the University of Algiers. It should be noted, however, that this institute has no department of social medicine.

State Hospital

In 1973, 8,400 deliveries were performed in the maternity ward of the State Hospital of Constantine. The number of obstetrics cases increases 10 to 15 percent each year.

A postpartum, postabortum program exists in the sense that midwife trainees from the Institute of Technology visit the maternity ward and keep new mothers informed on family planning. Those interested are referred to the center for birth control. No insertion is performed for early postpartum or immediate postabortum.

Family planning activities of the birth control center attached to the hospital were conducted until recently by a Polish doctor. He has just left Algeria, however, and these functions are temporarily assumed by the

doctors of the maternity ward. Dr. Sehairi is waiting to assign a new doctor full time to this center to start with the new academic year.

There are also two other centers attached to polyclinics. Family planning activities in these centers are conducted by certified midwives who have completed the required one-month course in family planning in Algiers. The willaya of Constantine has five such midwives available.

Two hours of theoretical training in contraceptive methods are included in the gynecology-obstetrics module for medical students, but practical training in family planning technology is limited to demonstration.

The University of Oran

The Institute of Medical Sciences

Before independence there already existed a school of medicine in Oran. After independence it became a faculty, and later it was changed to an Institute of Medical Sciences as part of the reforms instituted in 1973.

The University of Oran graduated its first class in 1968-69. There were seventy-four graduates in 1974 (who studied under the old program), and there will be forty-two graduates in 1975 (the last group to study under both the old and the new programs). In the future it is expected that 150 will graduate each year.

A new university, scheduled to open in two or three years, and a new 1,000-bed university medical center (CHU), to be inaugurated in four to five years, are under construction.

The University of Oran uses a modular system of instruction basically similar to the one in use at the University of Algiers, with slight differences.

In Algiers nearly 100 percent of the faculty members are Algerian nationals; Oran suffers from a shortage in this area. About 80 percent of

the teachers are foreigners whose education and knowledge (including their proficiency in French) are rather heterogenous. Nearly 40 percent of the students are females.

A department of social medicine will be implemented with the start of the new academic year 1974-75, headed by Dr. Mokhtari. It will be the first department of this type to be officially established. According to Dr. Mokhtari, although social medicine is taught in Algiers, a department as such has not yet been officially established. Because of lack of supervisory personnel, the teaching of social medicine will be somewhat different from that in Algiers. In the morning students will visit dispensaries and other public health facilities (water plant, for example). In the afternoon, they will attend theoretical courses. On-the-job intern training will last ten to fifteen days. Several teams of students will be sent to various departments throughout the country. Each team will conduct, under the supervision of an assistant, an epidemiologic survey.

During their MCH training, students will participate in family planning activities. There are at present two centers of family planning, one attached to the hospital and one attached to an MCH center and headed by a midwife. Two other MCH centers are for the time conducting only MCH activities. Dr. Mokhtari, however, is considering adding family planning activities (IUD and the pill) very shortly.

Finally, there are about fifteen other centers carrying out the functions of dispensaries and MCH but no family planning activities. Dr. Mokhtari hopes to introduce oral contraceptive services in these centers at some later date.

State Hospital

The gyneco-obstetrics department of the State Hospital of Oran is headed by Professor Iles, who in 1967 attended a WHO course in family planning in London and Brussels. A birth control center is attached to the hospital. It was officially inaugurated a year ago by the Minister of Public Health, though it had actually been operating for several years. It is headed by Dr. Dahaoul and visited by some ten to fifteen women daily (new clients or check-up). A midwife qualified in IUD insertion is available around the clock.

Instruction in gyneco-obstetrics for medical students lasts approximately two months. A few hours of this instruction are devoted to a course in contraceptive methods, and students are taught how to prescribe oral contraceptives.

About 6,000 deliveries are performed each year by the maternity ward of the hospital. There is no systematic postpartum program. In some special cases, a few insertions are performed either in early postpartum or immediate postabortum. Tubal ligations are apparently quite easily done, and there is a significant demand for them.

The gyneco-obstetrics teaching staff includes three professors (two are Czechoslovaks) and two assistants, each teaching for an average of two hours a week.

Oran also has an Institute of Technology. Because the director, Miss Benhaji, was leaving for Algiers and the remainder of the staff (Canadian) were on leave at the time the Council carried out its site visit, we were unable to obtain any specific information.

DEMOGRAPHY AND RELATED SOCIAL SCIENCES

The government of Algeria is committed to a dynamic program of social change intended to move Algeria from its colonial past to a modern, partially-industrialized state within the shortest possible time. Demography is relevant to these concerns to the extent that demographic data and analysis are needed for development planning.

A recent mission, sponsored by the Ford Foundation and the Population Council, noted that the government's "dynamic, driving, and determined" policies frequently led to demographic projects "unusually ambitious both in scale and in the demands for early results." Trained personnel are scarce, with the inevitable result that limited personnel are thinly spread throughout a variety of government agencies and tend to supervise large programs with large numbers of unskilled personnel. At the same time, the heavy workload and relatively short deadlines make it difficult to release partially trained staff for advanced demographic training abroad. Fellowships offered by the Population Council, Ford Foundation, and others have gone unused for these reasons. Also owing to the limited availability of trained personnel, there has been a considerable shifting of personnel among projects on a "crisis" basis, with adverse consequences for continuity of leadership and on-the-job training of junior staff.

Consultants have been provided to various Algerian projects (for example, a national KAP study, the national demographic survey, a report on the economic consequences of population growth projects) by the Ford Foundation, Population Council, and a variety of French agencies, but their impact in terms of training counterpart staff has been limited. The Algerian government has a strong desire especially in view of the fact that project costs are

borne overwhelmingly by the Algerians themselves). Consequently, expatriate advisors have been used in primarily technical capacities, with little or no influence over the relationship among projects. Staff working on various projects usually have little contact with each other, and the fairly tight timetables have meant inadequate time or opportunity to train counterpart staff. Although a senior demographic consultant, able by virtue of his experience and abilities to provide general advice among several projects might be desirable in principle, the Algerians have at no time requested such assistance and are unlikely to do so.

University-Related DARSS

Demography courses are available at both the University of Algiers and the University of Oran. Both programs have been in various stages of reorganization for the past few years.

Algiers

Until 1972-73, sociology students could earn a certificate in demography as part of their license in sociology by completing one year of courses. The C.E.S. (certificat d'enseignement supérieur) consisted of courses in demographic analysis, general demography, survey techniques, and mathematics offered by regular department staff or French coopérants, and short-term courses in mortality, nuptiality, fecundity, demographic structure and projections offered by INED staff on short visits from Paris. In 1972-73, approximately 100 students chose the C.E.S. in demography.

Beginning with the academic year 1973-74, a license in demography has been established, consisting of two years of a general program in sociology followed by two years of specialization in demography. Fifteen students enrolled in the license program in 1973-74, and twenty or thirty are anticipated

in 1974-75. Full-time faculty currently consist of the following: Mohamed Mehani (Algerian), an economist-demographer currently preparing a doctorate through IDUP; M. Lambert (French), a mathematician also preparing his doctorate; M. Jemaiel (Lebanese), an economist/demographer with a license and training in demography at IDUP; and Mr. Fernandez (Spanish), also an economist/demographer with a doctorate in economics and training in demography at IDUP.

No research is currently underway.

University of Oran

The Department of Social Science at the University of Oran also offers a C.E.S. in demography similar in content to that offered at Algiers. Twenty students were enrolled in 1973-74. Plans exist to establish a license program in 1974-75 similar to that in Algiers, and five coopérants are being recruited from France as full-time staff. In addition, courses will be offered on a part-time basis by staff of the census based in Oran (CNRES).

The presence in Oran of the census organization and the demographic section of the Department of Statistics (part of the Secretariat of State for Planning) supports the idea of a specialization in demography at the University of Oran. There has also been discussion of a university center for research in social sciences based on demography. However, such discussions are still very preliminary.

Other

In addition to the programs at the University of Algiers and Oran, single courses in demography are also taught at the following institutions:

- Institute of Geography, Algiers (course taught by M. Jamaiel)

- Institute of Applied Psychology and Professional Orientation, Algiers (course taught one hour per week for two years by M. Mehani)

- Faculty of Economic Science, Algiers (one-year course taught by M. Mokaddem)

- Institute of Public Health, Algiers (course and practicum taught by Mm. Hadjsadok and Dupas)

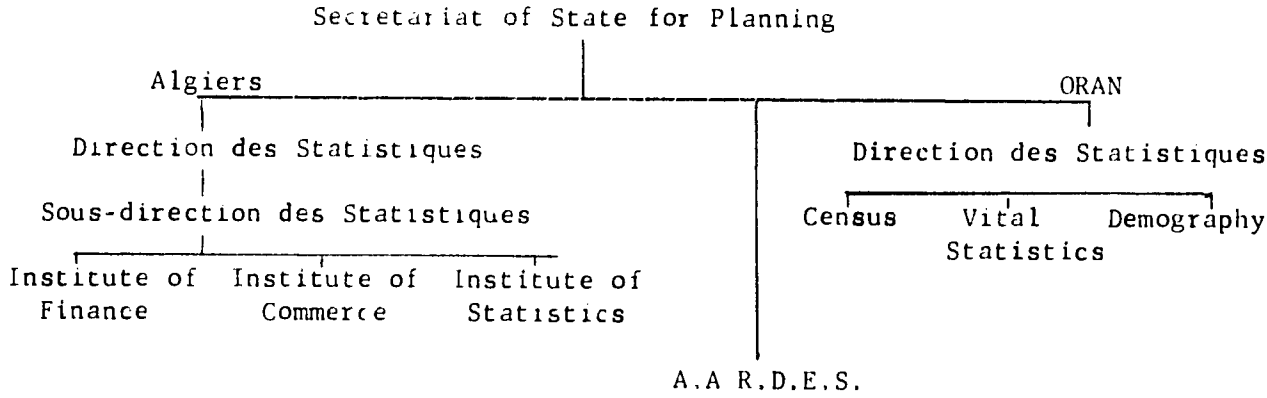
- Institute of City Planning, Algiers

- Technological Planning Institute, Algiers

- National School of Administration, Algiers

Non University DARSS

Most demographic work in Algeria is carried out under the general auspices of the Secretariat of State for Planning. Schematically, the organizational arrangement is as follows:



In 1970, the Secretariat of State for Planning established three institutes to train staff for governmental agencies concerned with finance, commerce, and statistics. The three institutes have a total capacity of 650 students. Candidates must have completed a baccalaureate (high school) before enrolling in the three-year institute program. Some demography is taught in the Institute of Statistics, headed by Ahmed Bahri. The institute is intended to

meet the government's need for junior and middle-level staff, but advanced training in demography must still be obtained abroad.

The Association Algérienne pour la Recherche Démographique, Economique, et Sociale (AARDES) is a private association with no governmental ties, except that its statutes stipulate that its president must be the Secretary of State for the plan. Twenty researchers are employed full-time by the association. When necessary, AARDES hires outside experts. In 1967-68 AARDES carried out a national KAP study, the results of which have since been published in eight mimeographed volumes. However, the actual research and analysis was done by a Swiss husband and wife team who have since left Algeria, and a third expatriate worked on the project's field phase. Although the quality of the work is of good quality, no Algerian staff were trained as a result of the project. AARDES is currently undertaking a survey of rural exodus utilizing a sample of approximately 3,000 households. Following the advice of a Population Council mission on migration research in Algeria, some of the questions will be used to pre-test items on migration for possible inclusion in the 1976 census.

The Algerian Demographic Survey was undertaken by the Direction des Statistiques partly as a substitute for a 1971 census and partly as a means of obtaining regional data for planning purposes. The sample consisted of approximately 60,000 households. With the exception of some expatriate consultation from abroad (PC/FF, INSEE, INED), all expenses of field data collection processing and analyses have been borne by the Algerian government at a cost of over $1.5 million. The survey was an ambitious undertaking of great potential value. However, the analysis is still underway and faces several serious problems resulting from inadequately supervised data collection, significant sampling errors, and subsequent cleaning and "correction" of the

data in a manner that led inadvertently to the introduction of additional errors. Several Algerian staff have received training as a result of the survey, but much of the actual work in designing the sample, preparing questionnaires, and subsequent analysis has been done directly by short-term expatriate consultants.

In 1967 the Director of Statistics of the Secretariat for Planning requested the Population Council and the Ford Foundation to provide an economist/demographer to prepare a report on the economic consequences of demographic trends in Algeria for use in regional planning. Between January 1969 and mid-1971, various consultants were provided. A very detailed set of projections was prepared for the country as a whole and for four regions, and an equally detailed report on their possible economic consequences was completed. However, the report may very well have been too detailed and the absence of a cogent, easily-understood summary may have lessened its potential impact for planning on instructional purposes. Moreover, the projections and report were prepared by an expatriate consultant, with little apparent training of Algerian staff.

V. CONCLUSIONS

Algeria is an important, dynamic, influential country. Working with the Algerian government is possible, and some organizations such as the Population Council and the Ford Foundation have done so quite successfully for years. Potential for development exists at all of Algeria's universities, most particularly at the Institute of Medical Sciences in Algiers. The opportunities for collaboration, development, and research should be pursued tactfully and only at the request of the Algerians.

A Population Council mission to Algeria in early 1973, although

dealing specifically with urbanization and migration, made several recommendations relating to interagency coordination, the greater use of on-the-job training, and the need for advanced training abroad for higher-level staff. Noting that numerous governmental agencies in Algeria were engaged in demographic research, the mission urged the government to improve communications among staff working in separate agencies. Mechanisms to improve such communication could include a series of regular seminars in which staff could discuss their respective activities, compare experiences, and plan cooperative undertakings. Other mechanisms would be publication of a professional journal, and a less formal intra-agency newsletter to inform interested parties of ongoing and planned projects of mutual concern.

In terms of training, the mission recommended more determined efforts to use future research projects to train Algerian staff in survey research methods and techniques of demographic analysis. At a somewhat higher level, short-term training of three to nine months duration should be encouraged through United Nations regional training centers or through universities or government agencies abroad. For individuals with university qualifications and in key positions concerned with demographic research, it might be desirable to undertake more extensive programs leading to masters' degrees with specializations in demography. Generally speaking, such training should be done at French-speaking institutions, but in a limited number of cases it would be desirable to have the candidate learn English so as to be able to undertake training in the anglophone demographic tradition.

For the long run, the mission suggested that a demographic training program be established in Algeria so as to relieve Algeria of reliance on foreign institutions for training. More importantly, such a program would

eventually be taught by individuals whose intimate familiarity with Algeria would permit them to use local materials and local problems, thereby making the training program a much more meaningful and practical one.

SOURCES OF INFORMATION

A complete list of sources will be found in "Demographie Algerienne, Bibliographie Analytique," Institut National d'Etudes Demographiques, Paris.

Site visit, Jean Lecomte.

September 1974

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BAHRAIN

BAHRAIN

Joel Montague

I. COUNTRY SETTING

The country of Bahrain covers some 622 square kilometers, including Hawar Island. (Complete social and economic information on Bahrain, which achieved full independence in 1971, is provided by a United Nations publication.) The population in 1973 was estimated to be 200,000 with a net annual increase of 3.1 percent. Forty four and three-tenths percent of the population are below fifteen years of age, and 100 percent of those of primary school age are in schools. The overall population density in 1972 was about 354 per square kilometer with some 78.1 percent of the population in urban areas. Ninety-two and eight-tenths percent of the dwellings had piped water.

II. HEALTH POLICIES AND PROGRAMS

The crude birth rate in 1973 was estimated at 50 and the crude death rate 19. Registered infant mortality is 35.5 per thousand live births and neonatal mortality, 22.7. In 1969 there were 116 physicians in Bahrain (5.5 per 10,000 population) of whom 109 were in government service. There were four dentists, all in government service, giving a ratio of one per 55,000 population, and the figures for pharmacists were the same. There were no schools of pharmacy or dentistry in Bahrain. There were 488 nurse-midwives in 1971, along with 273 assistant nurses and assistant midwives. All auxiliary medical personnel are in the service of the government.

Medical facilities consist of ten medical establishments with a total of 907 hospital beds. There are 238 beds in general hospitals used for maternity and pediatric services, and some thirty beds in a maternity and pediatric hospital belong to the government.

There has been considerable progress in the general health system in Bahrain in the last thirty years, and the government's long-term health program is a comprehensive one, emphasizing both preventive and curative health. There are, however, certain problems. For example, in 1969 only 7.3 percent of the doctors and 3 percent of the nurses were nationals. The UNESOB report mentioned previously recommended that the Gulf Technical College should broaden its specialization to include training technicians in various medical technical fields.

III. POPULATION POLICY AND PROGRAMS

Bahrain is in many ways one of the most progressive of the Persian Gulf areas. Nonetheless, the birth rate will at some point begin to undermine the economic development objectives of the government, and it is already affecting certain cultural patterns, such as the age of marriage and the status of women. The circumstances in Bahrain are in many ways conducive to a family planning program based on the postpartum pattern. Over 75 percent of all births, for example, take place in hospitals. At the first regional population conference held in Beirut, Lebanon, in February 1974, Dr. I.M Yacoub, Director of Curative Medicine of the Ministry of Health, read a paper entitled "Family Planning in Bahrain." Dr. Yacoub suggested that with a relatively small investment in a nationwide family planning program, Bahrain could probably achieve a dramatically lower birth rate within a few years if it wished to. It appears that the

Ministry of Health is convinced of the need to study family planning and will start with one family planning clinic for training, experimentation, and evaluation.

IV. UNIVERSITY DATA

There are no universities in Bahrain. Bahrain has one school for the training of nurses (three-year course) and of auxiliary nurses (eighteen-month course). A two-year course is organized for the training of assistant pharmacists.

SOURCES OF INFORMATION

1. United Nations Inter-Disciplinary Reconnaissance Mission, Vol. Bahrain. July 1972. UNESOB.

2 Family Planning in Bahrain, paper presented at First Regional Population Conference, Beirut, Lebanon, 18 February - 1 March 1974, by Dr. I.M. Yacoub.

3. "Basic Country Information," WHO, Alexandria, Mimeo, June 1974.

June 1974

CONTENTS

ARAB REPUBLIC OF EGYPT

ARAB REPUBLIC OF EGYPT

K. Laurence and J. Montague

I. COUNTRY SETTING

The Arab Republic of Egypt covers approximately 1,001,449 square kilometers. The total population in 1973 was 36.9 million, and the net increase per year was 2.1 percent. The crude birth rate based on figures from 1973 was 37, and the crude death rate was 16.

In 1966, 51.7 percent of the males and 78.9 percent of the females over 10 years of age were estimated to be illiterate. However, 70 percent of those eligible for primary school are enrolled in primary schools (based on figures from 1969). There are 132 radios and 16 television sets per 1,000 population, and the total number of daily newspapers is 14.

The overall population density is 35 per square kilometer, but there is an extremely high density (992) per square kilometer of arable land. In 1973, it was estimated that 42.6 percent of the population of Egypt qualified as urban and in 1971 the capital city, Cairo, had an estimated total population of 5 million.

II. HEALTH POLICIES AND PROGRAMS

Infant mortality rate registered in 1973 was 118. The neonatal mortality rate (based on 1970 figures) was 19.4, and the death rate for children between one and four years of age was 27.1. Life expectancy at birth was 53 (1973 figures), and the perinatal mortality rate in 1970 was 15.3. The maternal mortality rate was .9 in 1970 and the per capita calorie supply

based on 1968-69 figures was 2,770, of which 7 percent was animal protein.

Egypt's overall medical manpower situation is good. There were in 1971 a total of 18,802 registered physicians in Egypt, of whom 9,182 were in government service. The number of dentists was 2,511. The number of pharmacists was 6,665, with 821 graduating each year. The number of veterinarians registered by the government in 1971 was 2,620, and the number of nurses, midwives, and nurse-midwives was 7,528. There were 31,200 assistant nurses and assistant midwives registered by the government, and thus the number of nursing and midwifery personnel per population is estimated at 1 to 1,340. There were 1,710 sanitarian and sanitarian inspectors in 1971.

There are nine schools of medicine in Egypt, three schools of dentistry, and five schools of pharmacy. The total number of medical establishments with beds is 1,418, of which 1,246 are in government service. The total number of hospital beds is 75,634, of which 65,873 are in government service. There is one bed per 467 population based on 1973 figures.

III. POPULATION POLICIES AND PROGRAMS

Egypt has one of the oldest and best-developed family planning efforts in the Near East.

IV. UNIVERSITY AND INSTITUTIONAL DATA

Early in the secondary school education of an Egyptian student, he or she decides what branch of education to pursue. Students with high marks who wish to pursue a career in medicine or science begin concentrated course work in all the scientific disciplines. If a student's marks are below the standard for the science curriculum, he is required to take the curriculum in art

and literature.

In the final year of secondary school, the science student completes a data processing card indicating ten choices of faculty and university. The Ministry of Education computerizes three factors in student placement: (1) grade point average, (2) available space in faculty of choice, and (3) geographical distribution.

The students in Cairo with the highest grade point averages are selected for the Faculty of Medicine at the University of Cairo. The students with lesser grade points are assigned to Ain Shams or Al Azhar, depending on their location. The top students in Upper Egypt, however, must go to Assiut, and the top students in the delta region must go to Alexandria or Mansoura.

The grade point average is important for a career in medicine. If a student does not qualify for the Faculty of Medicine, he may select the Faculty of Science or Engineering; again, assignment will depend on geographical location within Egypt.

The universities in Egypt are operated by the government. All universities come under the jurisdiction of the Ministry of Higher Education, except Al Azhar University, which is under the jurisdiction of the Ministry of Wakfs and Al Azhar Affairs.

Students pay only minimal fees, on the average a total of LE4.000 (approximately US$9.20) per year, which entitles them to health services at the universities. Most students ignore the fee requirement.

The government of Egypt pays the salaries of all teaching and support staff at the universities. At present rates, which have recently been increased, a demonstrator makes about LE30.000 (about $70) per month, and a full professor about LE125.000 ($290). The professional staff supplement

their salaries by private practice, textbook writing, tutoring, or private clinic laboratory analyses.

University of Cairo

The University of Cairo was founded in 1908, primarily as a Faculty of Literature, and it was not until late 1923 that the incorporation of other schools into a university system was accomplished. By 1925 the university consisted of the Faculties of Arts, Science, Medicine, and Law. In 1953 the Higher Schools of Engineering, Commerce, Agriculture, and Veterinary Medicine were incorporated. Today there are seventeen faculties and campuses, including extensions at Mansoura (three faculties) and at Khartoum in the Sudan.

It is estimated that there are more than 55,000 students enrolled in the various faculties. Law, Commerce, Engineering, and Medicine are by far the largest faculties.

In 1970, 3,811 foreigners attended the university. They came from thirty-one Asian countries (2,597 males and 471 female students) twenty-six African countries (648 males and 67 females), and seven countries of Europe and North America (27 males and 6 females). A total of 769 male and 111 female students were enrolled in the Faculty of Medicine.

The university library consists of the main library, along with the libraries of the faculties, departments, and institutes. The collection has 107,500 titles in Arabic and other Oriental languages, 349,000 titles in foreign languages, and a total of 700,500 volumes. The library subscribes to more than 1,650 periodicals in the general library on linguistics, philosophical, artistic, and historical studies.

Faculty of Medicine

The Faculty of Medicine has approximately 1,200 students in each

class, with about 30 to 35 percent women. The teaching staff consists of 36 chair professors, about 60 professors, 120 assistant professors, 150 lecturers, and 180 demonstrators. Bachelor of Medicine and Surgery (M.B.B.C.H.) degrees are awarded in twenty-two departments and the Master of Surgery (M.C.H.) in six fields. Students must spend six years in the Faculty of Medicine as students and one additional year as house officers (interns).

There are four teaching hospitals at Cairo University: Manial University Hospital, Kasr El Aini Hospital, the Hospital of Internal Diseases, and the University Child Hospital. Together they have approximately 4,000 beds.

The government of Egypt completely finances the in-patient and out-patient facilities as well as the salaries of the professional and support staff. All patient care is free.

Department of Obstetrics and Gynecology

Family planning is a major activity in the Department of Obstetrics and Gynecology. The in-patient division of the department has a 400-bed hospital (Manial). The out-patient division sees 300 to 400 patients daily, of whom fifty to seventy come for family planning. The department has six independent units, each headed by a professor of gynecology. The chairman of the department, and head of one unit, is Prof. Abd Fatteh Youssef. Other unit heads and leaders are Professors Ibrahim Kamal, Mohamed Sadek, Ali Ibrahim, Osman Wahby, and Youssef Naguib. Each unit handles the out-patient clinic once a week and operates once a week. The teaching schedule involves the entire staff. Lectures on contraception, family planning, and reproductive biology are given by the staff to the undergraduate and postgraduate students.

The teaching schedule is coordinated with the teaching responsibilities of the Department of Public Health. Less than four hours of lectures on population problems are given to undergraduates.

Planned research in reproductive biology and family planning is carried out by only three units within the department. The most active unit is that of Professor Ibrahim Kamal, who is the recipient of two grants from WHO and one grant from the IDRC. WHO supports his unit in the following studies: (1) clinical and experimental study of prostaglandius on the human and animal uterus ($10,000 not yet received) and (2) relationship of carbohydrate metabolism and oral contraceptives (about $10,000).

A study of the incidence of criminal abortion in the Egyptian villages is supported by IDRC (about $10,000 for three years).

Professor Kamal's unit is active in clinical studies of the copper IUD's (T and 7). In addition, he serves as a medical advisor to the Cairo Family Planning Association, along with Dr. Khalil Mazhar.

Dr. Mohamed Abdallah, a former Population Council Biomedical Fellow, has received support ($14,000, two years, Population Council) for a study on the relationship of oral contraceptives to bilharzial liver diseases. His laboratory is functioning, after only one year of securing instruments, chemicals, and consumables. In addition, the university has supplied Dr. Abdallah with an excellent fume hood for his operation. The new facilities, combined with the laboratory of endocrinology, first established through the support of the Ford Foundation, should make it possible to develop a substantial program of applied research in reproductive biology and family planning.

The department has finally recognized the need for a full-time laboratory scientist to work within this clinical department. Two positions

for biochemists were opened (for the first time in Egypt) which will permit a basic scientist to work through the professional ranks in OB-GYN. One position has now been filled: Dr. Mohamed Sharawy has been appointed as a demonstrator. Dr. Sharawy recently received his Ph.D. from the Faculty of Science, Cairo University.

The laboratory received $115,000 in initial support from the Ford Foundation during 1966. This amount included items for fellowships ($38,500), transportation and equipment ($6,000), library material ($4,000), and laboratory equipment ($56,000). The laboratory's most recent support has been from Ford ($3,000 for chemicals and supplies).

The department now hopes to utilize the facilities of the laboratory on a broader scale, involving all interested personnel. With the newly hired biochemist to run the laboratory, the chances are good that progress will be made. Interest in seeking outside support has grown in recent months, and WHO has tentatively approved a grant of $12,000 for a medical and biochemical appraisal of tubal sterilization and its effect on ovarian function.

Former Population Council fellows are anxious to participate in the research efforts of the laboratory:

Dr. Nabil Hakim Darwish (FF), (Dean Mayer, UCLA, 1966-67);

Dr. Ala Shafeek (FF), (Robert Greenolatt, Augusta, Ga., 1966-67);

Dr. Mahmoud Talaat PC (WHO), (K. Laurence, Population Council);

Dr. Mohamed Ghoneim PC (WHO), (A. Sobrero, Margaret Sanger);

Dr. Salah Karim Adel PC, (A. Sobrero, Margaret Sanger).

All have received either basic or clinical training in contraceptive technology and will utilize their special techniques in the programs.

These programs have not been a success as yet, but the potential for

contributions to research is substantial. The patient material is outstanding, and if work is channeled properly, much progress can be made.

To complete the laboratory set-up, probably not more than 30,000 to $35,000 would be needed. The major item of equipment required is a scintillation counter. At present, the group utilizes isotope counting devices at Ain Shams University, nearly an hour's drive away. Fellowship funds should be made available in the future, but not until promising young laboratory-oriented individuals are recognized and the program shows signs of success. Fellows can then be selected to upgrade the program to higher levels of technique and practical application in Egypt.

Department of Public Health

At the time of the initial Ford Foundation support of the programs of reproductive biology and family planning, the Department of Public Health was the recipient of a grant of $69,500, including $40,500 for fellowships, transportation equipment ($12,000), library materials, teaching aids and field equipment ($11,000), and funds for local consultants ($5,000).

In 1966 the department was headed by Prof. M. Barakat, who has since left the university to join forces with the United Nations program in Pakistan. The department is now headed by Prof. Fardos Labib.

Population problems of Egypt, covering social, economic, and health implications of population, are discussed in four-hour lectures, combined with field trips. In addition, there are discussions in a ten-hour program designed by the Department of Gynecology, in which students receive information on all contraceptives and the physiology of reproduction.

During the early years of the grant, coordination of effort between this department and the Department of Gynecology was virtually nonexistent.

The Public Health Department intended to provide and analyze the impact of family planning advice in several villages, and the gynecologists were to provide the necessary medical information. Because of personality conflicts, each department worked independently. The gynecologists later teamed up with the Social Research Center of the American University of Cairo on a limited basis. These studies were conducted by the unit headed by Prof. Ibrahim Kamal, and involved Drs. Ghoneim, Talaat, and Abdallah.

From 1967 to 1973, work at the village level was minimal. The department is now prepared, however, to initiate new programs in the industrial cities, particularly at specific factories in Cairo and in nearby areas such as Helwan. Plans are being formed, and Dr. Labib will soon be seeking support from Ford or other agencies for this program. It should be coordinated with the national program.

The students in the department participate in field trip programs, discussing improved public health measures and family planning with villagers, house by house. The impact the program has made has not been substantial, and from current data it is difficult to analyze. It is not likely that this department will make a significant contribution in the near future.

Department of Biochemistry

This department has been involved in reproductive biology programs on a limited basis since 1966, when the Ford program was initiated in the Department of Obstetrics and Gynecology. The two departments were never combined for a variety of reasons. The head of the department at that time was more interested in nutrition factors than in the reproductive processes. The senior staff had only minimal knowledge of the intricacies of reproductive biochemistry, and the department was poorly equipped. Almost all equipment

was in need of repair, and almost all instrumentation was from the Eastern bloc countries. Research time was severely limited because of the large number of students, divided classes, and the necessity for the teaching staff to work at other jobs to boost their income.

There have been considerable changes in the last few years, all since the change in the chairman of the department. Prof. Mohammed Abd El Kadar was appointed chairman in late 1966. Since that time, the plans to build entirely new quarters for the department have been successfully completed, and these quarters have been occupied since September 1972. The laboratories are spacious and clean. The staff members are much more enthusiastic about research than they were just a few years ago. The department received support for equipment, spare parts, chemicals, and fellowships from the Ford Foundation in 1972.

From 1967 to 1971 several junior staff members applied for and received fellowship support from the Training Program in Reproductive Biology at the Worcester Foundation in Shrewsbury, Massachusetts. Dr. Talaat Abdel Azziz and Dr. A. A. Hafiez both completed successful programs at that center.

The training was helpful in developing an applied research effort between the Department of OB-GYN at Al Azhar and the unit of Dr. Ibrahim Kamal at Cairo, and cooperation between the two is continuing. Studies on the effect of oral contraception on lactation in the human were completed and published in the American Journal of Obstetrics and Gynecology.

Dr. Rasheed Baghat was appointed in October 1973 as a fellow (Ford Foundation grant) in the laboratories at the Population Council, New York City, for one year.

Dr. A. A. Hafiez has recently been appointed to the Department of

Biochemistry at the new Faculty of Medicine in Benghazi, Libya, where he hopes to be instrumental in instituting programs in reproductive biochemistry. It has been suggested by President Moammer Quaddafi that there be a "Scientific City" established in Libya. If this is accomplished, reproductive studies may be initiated there by the continued contacts between Cairo University and the new Faculty of Medicine. There is limited course work on reproductive biochemistry, but the staff continues to develop lectures on this subject each year.

Department of Clinical Pathology

This department has just begun studies on reproductive biology. There is one candidate for a Ph.D. degree, who will do her thesis work on the effects of immunologic impairment of testosterone action and the subsequent effects on libido, spermatogenesis, and the physiology of the adnexal glands. Cooperation on the project with the Department of Skin and Venereal Diseases has been secured. The department has established a small animal house for rabbits and guinea pigs which is a strong step forward. There is potential for the future, but financial assistance for supplies and equipment is essential.

Department of Male Sterility, Sexology, and Venereology

This department, headed by Dr. Anwar Etriby, has been active in the field of male sterility research for a number of years. It is surprising that the department has been able to do any research studies at all because of the lack of instruments, animal facilities, and support from any outside agency. A microtome, a few microscopes, and microscope slides are the only items of equipment available for research. But the department has interest, drive, and most importantly a tremendous number of patients. Dr. Saad M. Girgis, for

example, has examined, analyzed, and biopsied more than 700 patients with infertility problems caused by congenital absence of the vas deferens, epididymal blockage, and aspermatogenesis due to bilharzial infection of the testes. To compensate for the lack of equipment necessary to bring the studies up from pure morphological analysis of tissues and almost pure clinical research, a modest amount of funds will be required for a cryostat, spectrophotometers, centrifuge, and accessory but standard laboratory supplies. The potential of this department surpasses any other department in the university, and in all medical faculties in Egypt.

Vasectomies are performed on only a limited basis, but interest is growing. Studies have been designed to follow up the medical sequelae of this operation in a vertical study, and to take advantage of the wealth of patient material available from the congenital absence of the vas as part of a horizontal study. This work should be rewarding in the near future, since these questions need answers immediately. Plans for evaluation of endocrine function in the patients, pre- and post-operatively, biopsies, and immunologic analysis of the patient are being formulated.

The leaders in this field include: Prof. Anwar Etriby, chairman, Prof. Saad M. Girgis, Prof. Mohammed Abdallah, and Dr. Kamel Zaki.

Several MCH degree programs have been initiated on subjects related to immunologic neutralization of luteinizing hormone in guinea pigs, and similarly neutralization of FSH and its effect in male guinea pigs.

Social Research Centers

In 1968 the Ford Foundation made a grant of $236,000 to the Social Research Center of the American University in Cairo to initiate a program

of social research and training in the population field as well as scientific research on significant aspects of the population programs in Egypt. In theory, the program includes studies of the cultural and social contacts within which family planning programs operate, investigation of factors that may influence the dynamics of population and change, and demographic analysis to determine population trends and the effects of family planning programs on fertility patterns. The United States National Center for Health Statistics also made a grant to the program. For a variety of reasons the center has been unable to carry out the program originally envisioned. Although the potential exists, there has been some difficulty in retraining senior staff, and other problems have beset the program.

Mansoura University

This young university is still under the direction of Cairo University, and the senior staff of Cairo now supervises all of its departments. There are three faculties in this complex, the Faculties of Medicine and Science and the Teachers College. In 1969, at the Faculty of Medicine, there were a total of 1,616 students, 296 of whom were women, at the Faculty of Science, 447 students, of whom 69 were women, and at the Teachers College a total of 198 students, of whom 36 were women. In 1974 there were 2,380 students, with 381 in the fourth year and 287 in the fifth year.

The Faculty of Medicine

The local teaching staff has been growing since 1962, from 28 in that year to about 130 in 1973. Weekly supervision by Cairo University, particularly in the clinical departments, has continued however, and the transfer of full authority to the local staff will probably not be completed

until 1980.

The Department of Obstetrics and Gynecology has as its local chairman, Assistant Prof. E. Uthman, formerly a lecturer at the Department of OB-GYN at Cairo University. Dr. Nabil Darwish and Prof. Abd Fatteh Youssef of Cairo are also members of the supervising staff.

There is a little research work being carried out at Mansoura. Only clinical and surgical procedures are being evaluated. Most of the OB-GYN group concentrates its efforts on surgical procedures for sterilization, and these operations are done in small numbers.

Family planning, population problems, and contraceptive technology are presented to the students on a limited basis by the Departments of Public Health, Gynecology, and Male Sterility and Venereology. The latter department gives ten lectures on contraception and sterility problems.

Perhaps the most significant activity of Mansoura is a program of family planning evaluation in the industrialized city of Mehalla-Kubra. This program, at the Misr Spinning and Weaving Company's hospital, is under the actual direction of Dr. Sayed Ftman, chief gynecologist and head of the Family Planning Research Center. The program was started in 1962 with the idea of increasing production by controlling the birth rate in the Mehalla-Kubra.

In 1962-63, two centers were instituted, one at Misr Spinning and Weaving Company hospital, which serves 30,000 workers, and the other in the workers' community of 150,000 persons. An advertising campaign was initiated in 1962 and continues to the present. All birth control methods were made available, and medical services were made available to all.

For evaluation of the campaign, 4,411 families were interviewed and followed up over a three-year period. This number represented 25 percent of

all the married workers in the company. Of the women involved, about 60 percent were below thirty-five years of age, and 40 percent above.

Seventy-eight percent of the women were fertile and 22 percent infertile or not candidates for pregnancy because they were divorced, widowed, beyond the fertile age group, or medically infertile. Thirty-six percent of the fertile women practiced family planning, with a large majority (83 percent) using pills, 5 percent IUD's, and 2 percent surgical sterilization. The remainder used or applied condoms, foam, dutch caps, coitus interruptus, and surprisingly, the rhythm system. Sixty-four percent did not practice birth control because they were pregnant and lactating, newly married, had not achieved the desired family size, or wanted to have a male offspring.

The program now has been evaluating the cause of drop-outs and has been supported by WHO since 1972, for a total of approximately $10,000. Whether the program has affected work production or not has yet to be seen.

Assiut University

The University of Assiut is the only institute of higher learning in Upper Egypt. The city of Assiut, with a population of more than 130,000, dates back to almost 4000 B.C. The university was established in 1949 by a governmental decree, but its first academic year was October 1957. The university has grown to fifteen faculties, with eight in Assiut and extensions of the university in Mina, Kena, Sohag, and Aswan.

In 1973, 8,043 new students were enrolled, bringing the total to 22,500 students in the various faculties. More than 1,300 professional staff serve these students.

The Faculty of Medicine

The Faculty of Medicine was established in 1960. At that time,

there were 146 medical students. The latest class has 526 members, 119 of them women. About 175 professionals and 128 auxiliary personnel comprise the teaching and administrative staff.

Population problems are presented to the students in the departments of Obstetrics and Gynecology, Public Health, and Venereal Disease. Population problems have recently been introduced into the curriculum of the Faculty of Literary Sciences by the Dean of the Faculty and Professor of Sociology, A. Shawky. The other departments are seeking his advice, help, and organizing skills to build up their own programs.

The leaders in the field of family planning and reproductive biology are: Prof. A. A. Hamouda, chairman, OB-GYN; Prof. M. F. Fathalla, OB-GYN; Dr. H. M. Hamman, chairman, Public Health; and Prof. A. Shawky, chairman, Sociology.

Department of Obstetrics and Gynecology

Until five years ago, this department was supervised by Prof. Ali Ibrahim of Cairo University, and until recently nearly all the staff have commuted from Cairo since housing facilities for the staff were inadequate. Contact with the students was minimal, for the staff spent as little time as possible in this city. Prof. Hammouda was recruited to return to Egypt to take over the department about five years ago, after spending more than ten years in Saudi Arabia. Prof. Hammouda lived in Assiut and encouraged his staff to do so. Prof. Fathalla followed suit, and the others did the same when housing on the campus became available. Now all members of the department live and work in the city full time. Dr. Hammouda is preparing Prof. Fathalla to assume the leadership of the department upon Hammouda's approaching retirement.

The department has been the recipient of a grant of $32,500 from Ford, which includes $18,000 for fellowships, $8,000 for instruments, and $3,000 for supplies and library facilities. Over the years the Biochemical Division of the Population Council has awarded several grants of $1,000 each to the department for subscriptions to scientific journals. It is inadequate support, and much effort should be made to increase the departmental library facilities for its young and enthusiastic staff.

The laboratory program has just begun with the establishment of a small endocrine research unit headed by Dr. M. Shaaban, who trained for one year with Arnold Klopper in Aberdeen. A small cytogenetics laboratory has also been initiated by Dr. Morad. Results cannot be expected for some time, since the equipment has only arrived within the past nine months, and the intervening hostilities prevented much activity of this nature.

In spite of the conservatism of the area (Upper Egypt), Prof. Fathalla successfully, and without publicity, inaugurated a sterilization program for women seeking a permanent answer to their fertility regulation problem. All operations have been performed by laparoscopy within a well-equipped endoscopy unit at the university hospital. Laparoscopes have been provided through a grant from WHO and the Ford Foundation. Since 1971, this department has performed more than 3,000 laparoscopic procedures, including more than 315 sterilizations, and the numbers are increasing rapidly. Their intention is to initiate a training program for laparoscopic sterilization for gynecologists in the area who are engaged in family planning at the various government and private hospitals. A grant of $18,000 for continuation of the sterilization research program has been approved for 1973 from WHO.

In February 1973, the first meeting in Egypt on surgical methods in fertility control was hosted by Assiut University. The meeting brought together about thirty-five Egyptian gynecologists who have performed sterilization operations to discuss the procedures, the results, the sequelae, and the possibility of including sterilization in the methodology of family planning for the national program.

Sterilization is not yet recognized as a tool by the program at the national level, primarily because the irreversibility of the operation is not accepted on religious grounds. While the meeting did not choose to direct the national program to adopt the procedure, all the participants felt encouraged to continue to expand their individual programs, and to meet within one year to make future decisions. The Society of Fertility Control, formed at this meeting, will be the sounding board for the gynecologists who support the addition of sterilization to the methods already available on a national basis. Prof. S. Foda was elected president, Prof. H. Toppozada, vice-president, and Prof. M. Fathalla, secretary of the society.

In addition to the training program at Assiut, research toward evaluating the psychological and possible medical sequelae of sterilization is being undertaken. By chance, a person who had been sterilized some months earlier returned to the hospital for other operative procedures. At that time a section of the Fallopian tube that had been cauterized was examined microscopically, and histologically revealed a severe incidence of eosinophilia in the tissue, raising the question of immunologic involvement as a possible side effect of sterilization. Studies will be continued.

Recently, after the success of the meeting on sterilization, the departments of OB-GYN, Public Health, Venereology, Sociology, and the Faculty

Veterinary Medicine are considering the establishment of a Center for Population Studies for Upper Egypt in Assiut. These departments have approached the administration for permission. Prof. M. H. El Nashar, president, and Prof. A. H. Kamal, vice-president, have both approved the center and have designated a large villa near the campus to be used as headquarters.

Plans are now being formulated to approach a number of agencies to support particular components of the center. This will be a major step forward for the university, for Assiut and for Upper Egypt, where conservatism about family planning is slowly but steadily being overcome by the university. There is steady leadership under Dr. M. Fatallah along with Prof. M. Shawky and Vice-President Kamel. The university should be an outstanding institution in the future, interacting with the local community and all of Upper Egypt.

Ain Shams University

This university was founded in 1950. Today there are twelve faculties of the university in Cairo and four regional faculties including the new Medical Faculty in Zagazig. In 1972 the total enrollment was 13,546 students (8,050 men and 5,496 women). The teaching staff includes 40 professors, 50 assistant professors, 115 lecturers, and 175 demonstrators.

Faculty of Medicine

In this faculty, there are 6,021 medical students enrolled in all six years, of whom 4,489 are males and 1,532 are females. In 1973, 641 students were graduated (462 males and 179 females) and 174 received diplomas in one of the medical specialities.

Department of Obstetrics and Gynecology

Obstetrics and Gynecology is a large department, with twenty-eight on the teaching staff. This includes the professor and chairman, Aly Maurie Maklouf, eight additional professors, eight assistant professors, eleven lecturers and demonstrators, twenty registrars, and forty-eight interns.

Problems of population growth are taught in thirteen hours of lectures. This lecture series covers six hours of population dynamics, three hours on problems of sterility and fertility control, two hours on abortion and its techniques, and two hours on the endocrinology of reproduction. The postgraduates, working toward their D.G.O. and M.C.H. degrees, take a similar but more detailed program and are required to participate in the operation of the university's family planning clinic for a minimum of two weeks. All M.C.H. degree candidates are now required to develop their research work on some aspect of family planning and contraception.

The leaders in the department are: Prof. Aly Maurice Maklour, chairman, Prof. Ismail Ragab, Prof. Mohammed B. Sammour, Prof. Mahar Hohran, Prof. Ikrom Shukrey, and Prof. Amin Zinniney. Prof. Shukrey has recently given up his private practice to devote full time to teaching, to direct the clinical training of the postgraduate students, and to assume full responsibility for the postpartum program of the family planning unit. He offers a steadying hand to the young people, and is developing within the students a sense of discipline and responsibility that had not existed before.

The Ford Foundation granted the department $60,000 in December 1971 to initiate a training and research program in the physiology of reproduction. The budget was for laboratory equipment and supplies. The university furnished a laboratory in the out-patient division of the department, which was com-

pleted in July 1973. The equipment was received between June and August 1973, and has all been installed. A training program for those who will be involved in the laboratory research has been initiated, and some work has already been started. Prof. Maklouf is cooperating with Dr. Mohammed Abdallah of Cairo in a study on ovarian function and bilharziasis, by permitting the Cairo group to utilize the department's isotope counting instrumentation. In turn, the Cairo group is training the Ain Shams group in the use of the instrument. The laboratory is not yet fully equipped, but plans to complete the facilities have been formulated.

In addition to the general support from Ford, WHO has also granted the department approximately $53,000 for two projects since 1971 (neither funds nor equipment are fully received as yet). The two projects include studies on enzymes in cervical mucus in relationship to oral contraception and the occurrence of mammary tumors following the use of oral contraceptives. For this latter project, WHO has granted the department a $22,000 mammography unit (approved but not ordered or purchased).

A major program in abortion has recently begun at the Ain Shams University Hospital, under the direction of Prof. Ismail Ragab. Dr. Ragab has made modifications of the suction curretage apparatus, and his findings have been published in Contraception in 1970-71. His modified apparatus is now being manufactured in Sweden for worldwide distribution. Dr. Ragab performs the abortions free of charge, and tries particularly to evacuate any patient in whom the IUD has failed. The clinic was established with his personal funds. His research program on abortafaciens through the WHO was approved in 1971, but no equipment or supplies have arrived.

Al Azhar University

Al Azhar is the oldest university in the world, dating back more than 1,000 years. As such, it is the most prestigious of all Islamic schools of higher education. The university was founded in 972 as a single faculty. Today there are ten faculties, seven secular and three theological. There are a total of 30,000 students, with sixty-seven nationalities represented. Out of this total, there are 4,000 females enrolled in the various divisions of the Girls College. In the Division of Medicine, there are 500 women, and 3,100 males in the Faculty of Medicine.

The teaching staff consists of 20 professors, 45 assistant professors, 100 lecturers, and 200 assistant lecturers.

The Faculty of Medicine

This was the last of the faculties to be established, and the first class of medical students was not enrolled until 1964. The training hospital of the university was not in operation until 1968. The early classes were small, but recently they have included as many as 650 students in the first year.

Department of Obstetrics and Gynecology

Of all the departments within the Faculty of Medicine, and perhaps within the entire Egyptian university system, this department is the most active and perhaps the most sophisticated in terms of laboratory technology and applied research in family planning. Starting in 1970, a laboratory program for training and research in family planning and reproductive biology was initiated with the financial assistance of the Ford Foundation ($73,000). Fellowship funds ($27,500), laboratory equipment ($35,500), library ($2,000) were used to establish a new unit for the study of human reproduction.

Prof. Fouad Hefnawi, chairman of the department, utilized his funds with care. He convinced his young staff that in order to have everyone trained, there were two alternatives: to use the $37,500 to send all the staff, or to send only three people whom the funds could really accommodate, and leave the remaining staff to take their chances later. In order to send all the staff on the funds, each individual would pay for his own travel and accept a reduction in the monthly stipend. If they chose the second alternative, it might be some years before they all went abroad for their specialized needs and training.

The staff chose the first alternative. All fellows were gone for only one year, returned, and established the techniques for which they were trained.

In addition to the staff members of his own department, who were encouraged to participate in the applied research program, Prof. Hefnawi encouraged interested personnel from other disciplines to participate in programs related to reproduction. As a result, individuals from such diverse disciplines as skin and venereal diseases, biochemistry, and histology and physiology from the National Research Center all took advantage of the department's instrumentation, knowledge, and skills.

At least eleven M.C.H. theses were completed within the department's human reproduction research unit. A growing number of well-accepted papers are being published in American journals as a result of this work.

Prof. Hefnawi has cooperated with other academic institutions as well as with other departments within his own university. Before and during the establishment of his laboratory, he cooperated with Prof. Abd El Kadar, chairman, Department of Biochemistry, Cairo University, and the cooperation

continues. He has secured the services of Prof. Kamel Zaki, a biochemist from the University of Alexandria Medical Research Center, to work with him on a part-time basis. Dr. Zaki is presently a recipient of a Population Council Fellowship, working under the direction of Dr. Sheldon Segal at the Biomedical Divisions' laboratory at Rockefeller University.

In addition to the Ford-supported laboratory program, funds have been secured for several different research programs. Since 1971, WHO has approved three programs on blood loss and IUD contraception, prostaglandins and uterine activity, and relationship of antibodies to the status of fertility in the male and femlae. Though these programs have been approved, funding has been slow.

More recently, the department has been instrumental in forming the Al Azhar Population Center, an interregional Islamic center. It will be an autonomous body within the university but will involve different departments and different faculties, including Health, Human Reproduction and Physiology, Sociology, Economics, Communication, Population Dynamics, Translation, and Theology in relation to family planning and population problems. Prof. Hefnawi was appointed director of this embryonic center in September 1973. Dr. Wajih El Din Ahmed, a Pakistani, was appointed an advisor to the center for a six-month period to help in the early stages of organization, but has not yet arrived. The program is supported by UNFPA, which approved the preliminary phase. After six months, the final phase of support will be considered. The expected aid will amount to $1.5 million, for equipment, fellowships, consultants, and salary support.

Shortly after Prof. Hefnawi was appointed director, a disaster struck the laboratory. A fire completely destroyed all the facilities of the human

reproduction research unit. Nonetheless, Prof. Hefnawi has acquired some temporary working space, arranged for research efforts to be made in other institutions, and secured a new building from the university, which should be completed within five to six months. The government has given the department £E20,000 ($43,000) for construction, and a local pharmaceutical house has given £E10,000 ($23,000) for laboratory benches, files, desks, and so on. It is anticipated that an estimated $10,000 remaining in the Ford grant will be used to replace a few instruments, and that an additional $25,000 will be requested from Ford for new instruments and replacement of destroyed instruments. The new building, built entirely of concrete, will have three floors and more space than the older facilities.

The department has a teaching staff of eighteen, with Dr. Hefnawi as professor and chairman, three assistant professors, seven lecturers, and seven assistant lecturers (demonstrators).

Population dynamics and contraceptive technology are presented to the students in five hours of lectures, but in addition each student receives two hours a week of practical training during the course of their semester in OB-GYN. The postgraduate students in OB-GYN receive more advanced theoretical lectures on family planning and contraception and a heavier work load in the practical application of family planning techniques as they work toward their diplomas in Obstetrics and Gynecology. Those working toward their doctoral degree (M.C.H.) are required to complete studies in family planning and reproductive biology.

The leaders in the field of family planning and reproductive biology at Al Azhar include: Prof. Fouad Hefnawi; Assistant Prof. Omar Kandel (former PC fellow, 1968-69 at Michigan University); Assistant Prof. Hatem Askalani

(Ford Foundation program in Brussels); Assistant Prof. Samir Younis (Ford Foundation in the United Kingdom).

The staff is young and enthusiastic. Prof. Hefnawi is respected and followed by his group. There is great disappointment about the destruction of the facilities, and there is a loss of research energy because of the lack of appropriate laboratories. This should be quickly overcome when the new facilities are available.

Because of the need for a full-time researcher in the laboratory, Prof. Hefnawi has opened the way for a young Ph.D. (Washington State, Pullman) to become a lecturer in his department. Dr. Amin El Banna has recently arrived. This is the second laboratory to hire a Ph.D. to run and organize the laboratory programs (Cairo was the first).

Other Departments

Other departments within the faculty are not too involved in matters of population. The Department of Public Health does present a few lecturers, and the Department of Biochemistry participates in some research, but it is not applicable to the problems of reproduction. With the formation of the new Islamic Population Center, these groups will be involved. The Minister of Azhar Affairs and Wakfs supports the formation of the center and will be instrumental in securing the participation of all necessary departments within the university to make the center a success. This is important, for the success of the program will be instrumental in implementing family planning services and birth control practices in all the Muslim world. If there are ethical religious questions pertaining to acceptability of new birth control procedures, physiological or surgical, the answers will come from the Azhar.

The University of Alexandria

This university, located in the city of the same name, was founded in 1942. There are twelve faculties with 41,077 students in all, 10,619 of whom are women, and the teaching staff numbers 886. Alexandria is the second most prestigious institution of higher education in Egypt.

The Faculty of Medicine

The Faculty of Medicine at Alexandria was founded in 1942, and the teaching hospital for obstetrics and gynecology (Shatby Hospital) in 1954. There are 3,887 students in the faculty, 854 of whom are women.

Department of Obstetrics and Gynecology

This department is the most active of all the OB-GYN departments in family planning (clinical) research. There is a teaching staff of five professors, five assistant professors, six lecturers, and six assistant lecturers. Teaching of family planning involves both the Department of Obstetrics and Gynecology and the Department of Public Health.

Lectures in contraception, family planning, and problems of population growth are covered in eight hours of presentations by the staff in an OB-GYN course of ninety hours.

In addition to the undergraduate medical students, family planning and contraceptive technology is offered to postgraduate students who are candidates for the D.G.O. and M.C.H. degrees, postgraduates of the High Institute of Public Health (M.C.H. degree candidates), postgraduates of the High Institute of Nursing, and students of the School of Nursing and school of assistant nurses.

Since September 1973, the chairman of the department has been Prof. Mourad El Abd. The former chairman, Prof. Emeritus Hussein Toppazoda, also

remains active in both teaching and clinical research at the Shatby Hospital headquarters of the department. The leaders of the field at Alexandria are: Prof. Ahmed Gaafar, Prof. Mohammed Rizk, Assistant Prof. Mohammed Khowessah, and Assistant Prof. Ibrahim Loutfi.

The Ford Foundation initiated support of a program in family planning and research in reproductive biology with a grant of $39,000 for fellowships, library materials, and some equipment. This was followed by a much larger grant of $151,000 for an initial period of three years beginning in February 1969. The budget included $90,000 for fellowships, $15,000 for training programs, $32,000 for laboratory equipment, $4,500 for special seminars, $3,000 for library materials, and $6,500 for a mobile field unit to be used for work villages near Alexandria.

The department has also had support from the Population Council for a postpartum program, initiated in April 1966 as part of the international postpartum program, and the work continues today. Through 1971 the department had applied the Lippes loop in more than 3,200 patients at the hospital. WHO has supported clinical programs of research in family planning since 1971, and recently the department became a member of the WHO task force on contraceptive trials.

The department was designated as a clinical research center on human reproduction in February 1973. Recently, Dr. Mohktar Toppazada has been appointed to the working committee of a task force on injectable contraceptives.

Dr. M. Toppazada spent two years as a Fellow (Ford Foundation, University Grant) at the Karolinska, in Stockholm. During that period he published more than thirty-two papers, in collaboration with other members of a team (Wiquist, Bygdeman, Fernstrom, and others), on clinical problems related

to prostaglandins. Dr. Toppazada has since returned to Alexandria and has continued his program at Shatby Hospital. Here, he is collaborating with Dr. Amin Rizk, of the Drug Research and Control Center, Cairo, who is analyzing serum samples of ovarian venous blood for progesterone levels after intravenous infusion of prostaglandins. There is no question that young Toppazada will be the leader in applied research in reproduction at Alexandria University. Equipment is available for the studies planned.

A workshop on prostaglandins for the academic and clinical community of Egypt is planned for early June, to be held at Shatby Hospital.

Department of Public Health

In 1969 a grant of $70,000 to the department from Ford Foundation was used to initiate field evaluation of family planning services in Alexandria and its environs. The budget called for $40,500 for fellowships, $12,000 for transportation (buses), and $6,500 for field equipment, $11,00 was used for the library, teaching aids, and local consultation.

The department is headed by Prof. Nasfia Kamel. A small staff of ten assistant professors and lecturers assist the chairman in teaching public health matters to the undergraduate and graduate students of the Faculty of Medicine. There has been, and continues to be, some cooperation between the Departments of Public Health and OB-GYN. Several doctoral theses were jointly supervised by the chairmen of both departments. Dr. N. Hedayat, who received fellowship support for training in population dynamics at Johns Hopkins, completed her thesis work on the age of menarche in the secondary school population.

The department continues some field work in collaboration with the Department of OB-GYN. Additional funds have not been requested from Ford,

nor has further funding been encouraged by that organization.

The High Institute of Public Health

The High Institute of Public Health provides graduate training in public health. At present the institute is academically and administratively independent, though situated within the University of Alexandria. The High Institute of Public Health has its own board of directors, which is headed by a dean and consists of eight departments in the university and various other professors. The departments are biostatistics, bacteriology, public health administration and medical care, nutrition, occupational health, epidemiology, environmental sanitation, and tropical public health. The board is responsible for instruction and the curriculum, but policies, appointments, budgets, and degree requirements are the responsibility of the University Council, of which the dean of the institute is a member.

The objectives of the institute are to prepare personnel for health programs and special health projects in Egypt and the various neighboring countries and to conduct research. The educational and training programs are mainly oriented toward the health problems and situation in the Eastern Mediterranean and Africa. Field training is a prominent feature in the curriculum, and various types of health facilities are associated with it. At present, fifteen centers in the Ministry of Health, representing various types of health service, are affiliated with the institute and are used for field training. The institute staff is composed of nine professors, eleven assistant professors, seventeen lecturers, and forty-eight instructors, the latter pursuing studies toward their doctorate degrees. Part-time teaching and training personnel (from forty to fifty) are invited from various other faculties of the university, the Ministry of Health, and other specialized bodies.

The institute offers four academic degrees:

1. Diploma of Public Health (D.P.H.): a course of eleven months (September to July), with a degree equivalent to the M.P.H. degree in other countries.

2. Diploma of Public Health Sciences (D P.H.Sc.): twenty weeks of lectures, ten weeks of practical training, and two weeks of final examinations.

3. Master of Public Health (M.P.H.) or (M.P.H.Sc.): for nonmedical personnel, requiring a minimum of two years, at least one of them in residence after D.P.H. or M.P.H., a thesis, and a final examination.

Students can be enrolled for any of the above degrees in any one of the following fields: biostatistics, microbiology, health administration and medical care, maternal and child health, school health, health education, hospital administration, public health nursing, nutrition, food hygiene, occupational health, epidemiology, environmental health, public health engineering, sanitary chemistry, tropical public health, public health entomology, vector control, parasitology, rural health, or dental public health.

In the future, the following fields will be added: mental health, veterinary public health, public health laboratory services, and ionizing radiation.

The language of instruction for all these degrees is English, and, if necessary, interpretation in Arabic is used.

Besides the above-mentioned degrees, nine-month training courses are organized for training in certain special fields, such as biostatistics. These courses are primarily for nonuniversity graduates. They are usually offered in English but may be given in Arabic if required. In addition, short programs are organized at irregular intervals by the institute in collabora-

tion with other organizations such as the Ministry of Health, the Ministry of Labor, the Ministry of Industry, and WHO. No major emphasis is placed on population activities, but in the Department of Public Health Administration and Medical Care a three-credit course is provided on population and family planning in public health.

Candidates for the degrees must fulfill the following requirements:

1. They must be graduates from any university in Egypt or from any recognized equivalent institution abroad.

2. They must have a minimum of two years of professional experience in any field of public health.

3. They must comply with the specific requirements of the department in which they wish to enroll and specialize.

4. Foreign students must pay the equivalent of LE100 per year in foreign currency as tuition fees.

In addition, candidates for doctoral degrees must have a D.P.H. or M.P.H. from any of the Egyptian universities or from a recognized equivalent institution.

For the Diploma in Public Health: The present curriculum comprises a total of 750 to 880 hours of courses. Of these, 400 hours are devoted to core courses given in the first semester (fall semester), over a period of eighteen weeks. These include biostatistics, microbiology, public health administration and medical care, nutrition, and food hygiene, occupational health, epidemiology, environmental sanitation, tropical public health, and a course in the student's major field of study. A course in the principles of anatomy and physiology is also offered to nonmedical students. An examination is held during the last week of the semester in each of these subjects.

Students who fail in three subjects or less can attend a supplementary examination held in July before the final examination. The enrollment of students who fail in four subjects or more is discontinued.

For the Master's Degree: The first of the two years of study leading to this degree is the same as that of the D.P.H. degree, except that the student is not required to attend the final examination. During the second year, the student prepares a thesis on a subject selected by his advisor, to be submitted at the end of the year. He is also required to attend advanced courses of twelve hours per week during the first semester of the second year. Such courses are selected by the student's advisor, depending on his major field of study as well as the subject of the thesis.

For the Doctoral Degree: A minimum period of two years after D.P.H. or M.P.H. is required for this degree. During the first year, advanced courses may be offered to the candidates, particularly for those who have a D.P.H. degree only. Each candidate is assigned to a certain subject, on which he prepares a dissertation under the supervision of an advisory committee. The dissertation must be accepted through open discussion, and the student must successfully pass a general and a special written examination as well as an oral examination.

V. CONCLUSIONS

Egypt presents multiple opportunities for the development of work in the population field. At the present time, the teaching of population problems is generally presented to students in the Faculty of Medicine by the Departments of OB-GYN and Public Health. Occasionally, specific problems of population pressure and its relation to economics, land reform, and sociology are discussed in other faculties in the universities, but this is rare. In

two institutions, Al Azhar and Assiut, a program involving all faculties and appropriate departments will attempt to bring to the forefront an integrated approach to the study of population. At Al Azhar, an Islamic Center for Population Studies has been formulated, and will be funded by UNFPA. At Assiut, a Population Study Center for Upper Egypt has the support of the administrative staff of the university. Every effort should be made by the donor community to encourage these undertakings.

SOURCES OF INFORMATION

Site visits, March 1974.

May 1974

CONTENTS

IRAN

IRAN

G. Zatuchni and J. Montague

I. COUNTRY SETTING

Iran covers 1,648,000 square kilometers, bordering Turkey and Iraq to the west, the Persian Gulf and the Sea of Oman to the south, Pakistan and Afghanistan to the east, and the Soviet Union to the north. Historically the country has been agricultural, but rapid modernization is now taking place partially because of revenues from the nation's oil resources. The national language is Farsi and the official religion Islam, of the Shia persuasion.

The population in 1973 was approximately 31.2 million, and the net annual increase was 3.1 percent. Forty-six percent of the total population is below fifteen years of age. In 1972 an estimated 83 percent of the female population over fifteen years of age was illiterate. The overall population density in 1972 was approximately 18 per square kilometer with the density per square kilometer of arable land approximately 120. In 1971, 41.3 percent of the total population was urban.

The economic growth rate has been over 10 percent per year for the past few years, and projections indicate a rate of over 25 percent per year through 1978.

II. HEALTH POLICY AND PROGRAMS

Iran has one of the highest per capita health expenditures in the developing world. During the last (fourth) Five Year Plan, 1968-73, the government allotted 5 percent of the national budget for health, a per capita investment of

US$4.83. In the recently revised fifth plan (1973-78), the health budget has been increased to almost 8 percent, and will go much higher if, as is likely, a form of national health insurance is approved. In 1971 there was a total of 9,470 physicians in Iran, many of them in government service for part of their day. The ratio of physicians to population was one to 3,140. The 1973 output of physicians from the seven schools of medicine in the country was 632. The ratio of dentists to population is one to 15,200, and of pharmacists to population one to 9,000. There are four schools of dentistry and three schools of pharmacy. There was a total of 4,922 nurse-midwives and 7,665 assistant nurse-midwives in Iran in 1971. In the same year, there were 508 medical establishments with in-patient facilities with a total of 21,935 beds in government service (one bed per 760 population). In 1969, 3,295 beds in general hospitals were available for maternity-pediatrics patients, to which should be added (by 1971) 4,463 beds in maternity-pediatric hospitals.

In March 1974 the government announced the establishment of a national network of medical and health services for all segments of the population. Under the proposed new network, the three fundamental aspects of health -- promotive, preventive, and curative -- as well as education, will be approached in an integrated manner. The core of the new system will be health teams in each community. A new kind of medical auxiliary will be trained to cover the basic health and medical needs of small communities. Some 60,000 individuals will have to be trained to carry out the activities envisioned by the government.

POPULATION POLICY AND PROGRAMS

The first official government interest in a national family planning program in Iran dates from 1960, when the Shah became concerned about the rate of population increase. A report of a population committee was included in the

studies preceding the third Five-Year Development Program announced in 1963. In 1966 a Population Council mission wrote a report on Iran, and a number of Iranian government officials were sent abroad to study population problems in Egypt and Pakistan. Thereafter the government appointed an under-secretary for family planning in the Ministry of Health, and a specific plan and budget were drawn up to start a government program in 1967. At the present time the Ministry of Health is still responsible for planning, coordinating, organizing and carrying out this national program. There is a Population-Family Planning Organization within the ministry that coordinates with other divisions and with other ministries. By December 1973, some 1,573 family planning clinics were operating in Iran with 708 directly responsible to the Ministry of Health and the remaining 865 responsible to the health corps (mobile units), Imperial Organization of Social Services, educational institutions, the Social Insurance Organization, the Red Line and Sun Society, and various other organizations. A total of 1,350 physicians, nurses, and midwives had undergone three-week training courses, and many other physicians, field workers, and so on, had been trained for the program. More than 40,000 male recruits into the government's literacy corps had also received family planning training. The country profile on Iran published by the Population Council in October 1972 indicated that the program had limited demographic effectiveness.

The Summary of the Fifth National Development Plan, 1973-1978, published by the Plan and Budget Organization in June 1973, spells out the demographic objectives of the Iranian government in the population field. "The objective is to reduce Iran's rate of population growth to about one-half its present level by the end of 1990. The objective of the fifth plan is to reduce the rate of population growth from 31 per 1,000 in 1973 to 26 per 1,000 at the end of the plan period." The average national rate of growth of the population will decline from

3.1 percent at the beginning of the plan period to 2.6 percent at the end of the plan. The population would therefore increase from 31.2 million in 1973 to about 36 million in 1978. A total of $117 million out of a total budget of $68.6 billion is allocated to birth control services during the five years of the revised fifth plan. The plan states that "in view of the fact that health is a basic individual and social right and also an important factor in economic and social growth the basic objective of the fifth plan ... is to promote public health through preventive measures, campaigns against disease, the expansion of environmental sanitation, improved public nutrition, family planning, qualitative and quantitative extension of medical treatment services, and, lastly, rehabilitation."

IV. UNIVERSITY AND INSTITUTIONAL DATA

Unlike some countries in the Near East, Iran has well-developed materials related to the teaching of population. A number of important documents provide outlines on activities in the country (see Sources of Information).

Courses in population in Iran are offered in both public health institutions and universities, and also at the high school level. Public health and specialized institutions include the School of Social Work, schools of behyari, and schools of nursing. In addition there are fifty-seven nursing and assistant nursing (behyar) schools. A behyar is an assistant nurse or an assistant midwife who works primarily in rural areas. There are eleven nursing schools in various provinces that offer from thirty to forty hours of family planning and population dynamics in their training programs. Although there is teaching and training in the fields of social work and in schools for paramedical workers, the major training and research activity in this field take place in the medical schools. There are seven medical schools in Iran and one school of public health

associated with the Medical School at the University of Tehran.

A table providing basic information on the population component in the various medical schools in 1969-70 follows. However, prior to drawing attention to the work of the universities and medical schools, the curriculum of the Tehran School of Social work will be described.

Tehran School of Social Work

Courses in family planning have been offered in the School of Social Work from its beginning, and it has been largely responsible for the initiation of activities associated with family planning in Iran in conjunction with the Iranian Family Planning Association. The head of the school, Ms. S. Farman-Farmaian, is a world leader in the field of social work. Currently the school provides two courses dealing with family planning, one at the graduate and one at the undergraduate level.

The constitution of the Tehran School of Social Work was approved by the higher council of the Ministry of Education in July 1958, four months after the school opened. As of 1970 the school offered bachelor's and master's degrees. The school is recognized internationally and Ms. Farman-Farmaian is considered an expert in social work education.

The curriculum is based on five major topics: (1) human behavior and social environment, (2) social welfare policy and services, (3) human experiences from a historical and philosophical perspective, (4) problem solving methods, and (5) social work methods and principles. During the first two years, all students are required to take a course in public health, which includes sex education and related subjects. During the second two years of the bachelor's program, all students are required to take a course in economic demography and one in the dynamics of population growth and planning. All students in the

TABLE OF POPULATION COMPONENT

OF IRANIAN MEDICAL SCHOOLS[1]

	Total Faculty	Graduates 1969-70	Faculty Members Involved in Population and Family Planning
Tehran University, Tehran[2]			
Arts and Human Sciences	102	652	6
Medical	104	512	2
Public Health	61	18	19
National University, Tehran			
Medical	35	No Report	No Report
Arts and Human Sciences	31	86	8 (?)
Tabriz University, Tabriz[3]			
Medical	78	103	(
Arts and Human Sciences	51	191	(8
Jondi Shapoor, Ahwaz			
Medical	35	45	None
Pahlavi University, Shiraz			
Medical	89	No Report	4
Arts and Human Sciences	132	No Report	9
Mashad University, Mashad			
Medical and Health	[illegible]	83	3
Arts and Human Sciences	[illegible]	113	Unknown
Isfahan University, Isfahan[4]			
Medical and health	86	86	3
Arts and Human Sciences	27	411	2
Total Medical Health	548	847	36
Total Arts and Human Sciences	370	1,453	25
GRAND TOTAL	895	2,300	61

1. Materials from Table 31 of Paydarfar, A.A., et al. March 1972.
2. Extract of report by Whitney, Castadot, and Lanman. November 1973.
3. Report by Whitney.
4. Extract of letter from Chancellor's Office, University of Tabriz.

master's degree program must take a seminar in the dynamics of population growth and family planning.

The standards of the school are reasonably high. All entering candidates, for example, must have a high school diploma and some knowledge of family planning.

The school provides an ideal forum for field work in family planning, and from its inception, students have been actively involved in service, training, and research in the field. This has been due to some extent to the school's involvement in family welfare centers in southern Tehran and its liaison with the Family Planning Association and other organizations.

Jondi Shapoor University, School of Medicine, Ahwaz

The School of Medicine at Jondi Shapoor University is not directly involved in population and family planning activities.[1]

National University, School of Medicine, Tehran

There are no population activities at the National University of Iran's Medical Faculty. In the Department of Pediatrics, Obstetrics, and Social Medicine and Hygiene, population family planning is studied and lectures are given to undergraduate students, but there is no planned program.[2]

University of Mashad Medical School (Khorasson), Mashad

The University of Mashad Medical School has a fairly active program in teaching, research, and administration. Training is given in several stages. In

1. Correspondence with dean, 12 April 1974.

2. Correspondence with chancellor, 15 April 1974.

the preclinical period population is part of the course on general and medical ecology in the second or third year. This is a two-credit course and covers the significance of the environment to mankind and to medicine. A large portion of this course is devoted to discussion of population and its growth. The principal topics are: demography (basic principles), population growth and movements in the world and Iran, problems and negative effects of population growth (biological, economic, and technological, including resources), education and its shortcomings as related to population growth. A study of Khorassan population is required for students when feasible, or it is presented as a course illustration, supplemented by examples from animal ecology. This course is required and has been given by Dr. Minou since 1962. It is the earliest recorded population course in Iran.

In the same preclinical period a discussion of the various rates for measuring vital events is given in the required course in medical statistics, along with methods of standardization of death rates and life expectancy. In both courses, the significance of population control and family planning is discussed.

The health of the individual and the community is also brought to the attention of the future doctor through a course in preventive medicine. The material includes maternal health, discussing the effects of high fertility on the health of the mother; child health, school health, and occupational health, discussing wherever possible the significance of population; and nutrition, discussing the importance of population in resources and good nutrition. Special attention is given to teaching family planning methods. This course is given in the second clinical year and has sixty-four hours of teaching, parallel to the courses in obstetrics and gynecology.

Each medical student must pass a one-month clerkship course in pre-

ventive medicine in his sixth year. During this period, he visits several departments of the town, including the MCH and family planning sections.

School of Nurses and Midwifery

The teaching in the high school of nursing attached to the university consists of a twelve-hour course devoted to problems of family planning and population. The Departments of Preventive Medicine and Obstetrics and Gynecology collaborate in a comprehensive presentation of the necessity, methods, and results of family planning.

A special twelve-hour course on health and family planning is also given to the class of laboratory technicians. In the midwifery school, there is a required course of twelve hours in family planning, principles, and techniques. Moreover, the student is acquainted with family planning during the courses in anatomy and physiology, where the sexual organs are discussed. The future midwife also studies the psychological principles and problems of the family in a general psychology course. A special practical course complements the lectures. For two months, each student is attached to a family planning clinic and observes and practices family planning techniques and consultations.

Other schools of the university, such as Science and Dentistry, also benefit from presentations on family planning and population by members of the Preventive Medicine Department, given alone or in combination with other health topics.

Research and Administration

Research is being undertaken on the acceptance of family planning in relation to the approach; that is, after delivery in obstetric-gynecologic wards, after abortion, or in the pediatric clinics. It is hoped that budgeting of the

research projects will be effected through the national organizations such as the Plan Organization or the Ministry of Health, so that more research plans can be implemented.

Tentative plans call for a population study center to be founded at the university in the near future. A committee of various specialists in the university will study the administration of the center and projects to be carried out when it begins to function. The members of the Preventive Medicine Department already collaborate in courses run by the family planning section of the Ministry of Health to train members of the ministry and of the Health Corps.

University of Isfahan

The Center for Population Studies at the University of Isfahan is officially a university-wide research and teaching program involving ten departments. Its actual operation appears to be more limited in scope. Its offices and activity are essentially those of the director, Dr. M. Saraam, an obstetrician and gynecologist. The center was established in 1968, when Dr. Sarram came to Isfahan from Pahlavi University in Shiraz. He has a research associate and instructor in social science, Mrs. T.M. Ordoobadi, who holds an M.A. degree in Social Science from Sacramento State College, California.

In theory the center has official status as an independent unit of the university, with a director appointed by the chancellor. The chancellor serves as chairman of an advisory council, composed of the heads of the Departments of Education, Sociology, Geography, Public Health and Preventive Medicine, and Obstetrics and Gynecology, the director of the center (who serves as secretary), the head of the family planning section of the Provincial Health Directorate, and three "population family planning authorities of international repute."

On the training side, the center is charged with the teaching of family planning and "population problems," including special short courses, seminars, and conferences. It was also established to carry on research, particularly on population and family planning in Isfahan Province, either alone or in cooperation with various university departments. Finally it assists in running the family planning clinic in the School of Medicine and administers the infertility clinic.

A course in introduction to population is taught by representatives of several departments. They give separate lectures on population trends and problems in Iran and elsewhere, population policies, population education, human ecology, family planning, the anatomy and physiology of reproduction, and biochemistry. This course is optional, open to undergraduates in any faculty, and has a current enrollment of around 100 students. A second course in population growth and economic growth is taught by Mrs. Ordoobadi. It is an optional course, given by the Department of Public Health and taken mostly by medical students, between 100 and 125 each year. Other courses on population distribution and human geography are given in the Department of Geography. Courses relating to family planning are given for public health and medical students, as are courses in reproductive biology.

On the research side, the focus so far has been on three subjects: family planning, reproductive biology, and population education. WHO has supported family planning-MCH services at the university hospital, with a research side based on program records. A study of copper-T has been carried out with Population Council funding.

Dr. Sarram is drafting a long-range study of all women admitted to the university hospital as maternity cases. He wants to collect three kinds of

data: information on women's households and fertility experiences, KAP data, and medical histories. Record taking would be handled by one specially trained person. The data would be transferred to punch cards and in time would, in Dr. Sarram's opinion, provide the basis for a clearer picture of the fertility experience of Isfahan women in relation to age, type of residence, education, husband's occupation, and other indices of status.

Mrs. Ordoobadi is directing a few of her students in a small study of the impact of education and social status on fertility. This is a KAP-type study in two areas of Isfahan, involving three groups of eighty-one families each. One is Jewish, a relatively well-educated and well-to-do group. The other two are Muslim, one roughly comparable to the Jewish families in status and education, the second well below in both categories. The study is unfunded. In addition, Mrs. Ordoobadi has designed a similar study on the fertility of wives of workers in the local Aryamehr Steel Factory. A request to USAID for assistance has been refused, but she still hopes to carry out the project.

A major recent effort of the center, in cooperation with the School of Education, the Medical School, and the Department of Geography, has been the development of a book entitled Planned Research about Population in a Guidance School. The provincial education department has been involved from the start, and eight city and four rural schools will initially use the book for teaching of population at the guidance school level, grades 7 to 9. The five major study areas covered are: the process of population growth; economic development and population; social development and population; wealth, nutrition, and population; and biological factors, family life, and reproduction. This project was funded by UNFPA, with the lesson book published by the Ministry of Health.

To sum up, the center has university status as an independent research

section and is cooperating with various departments in both research and teaching. Although it has carried out some useful projects, it does not seem to be thriving. Its director has many other responsibilities, including a private medical practice. So far he has not been able to secure additional positions from the university. The center has also had difficulty in obtaining outside financial support beyond the projects mentioned. Without a larger staff of trained persons and adequate funding for worthwhile projects, it is doubtful that this center will be able to reach its objectives, except on a limited scale.

University of Tabriz

The Center for Population Studies and Family Planning at present consists of a full-time staff of eight and a consultant staff of about twelve people, and a sizeable expansion is expected in the near future. They plan to develop a series of research projects, with the following objectives:

1. To study the attitudes, motivations, and rationale of the behavior of individuals in relation to fertility in Azerbaijan in Northwest Iran, and

2. To evaluate the administrative structure of communication in population programs as they presently exist in urban and rural areas of Northwest Iran.

At present two pilot projects are underway:

1. Family adjustment to social change and fertility in Northwest Iran. This project explores, through in-depth family case studies, the nature of the change in family structure in Azerbaijan and its relationship to fertility and contraception.

2. Development and design of projects for future research by the center. Since the center has only recently been established, a need was felt

to plan and design research projects for the future. Some of these projects focus on communications and training and on medical and health related problems.

University of Tehran Medical School

The Medical School of the University of Tehran is the largest and most prestigious medical school in Iran. It has been instrumental in bringing scientific medicine to Iran and in meeting a large share of the demand for clinical services of all kinds in Iran's largest and still rapidly growing city. Its main departments are:

1. Basic sciences: Anatomy and Histology, Physiology, Pharmocology, Biochemistry, and Pathology.

2. Alam Saleh Medical Center: Obstetrics and gynecology and neonatology at Saleh Hospital.

3. The Children's Hospital adjoining Pahlavi Medical Center: Pediatrics.

4. Other institutions: The Veterinary School.

The medical faculties, even in their new divisions into one school of basic sciences and two (ultimately perhaps three) clinical faculties, are each still large organizations. They have extensive teaching responsibilities, usually scattered at many sites and extending far beyond the teaching of only medical students. In the clinical years, clinical loads are great. There appears to be little research activity in most of the preclinical departments, though pharmacology was a notable exception. There is considerable interest at Saleh Hospital in clinical research on current methods of care, including family planning techniques.

Teaching is the major and most serious commitment of the preclinical faculty. Teaching is largely didactic, and classes are scattered in many

locations. In addition to medical students, the various departments also teach students of other schools: nursing, veterinary medicine, dentistry, nurse-midwifery, pharmacy, physiotherapy and public health, each usually in its own school.

In the clinical years, teaching is largely by example. The student sees and inherits a system of patient care and attitudes, which for the most part he cannot change and which he comes to accept and follow. In obstetrics and pediatrics, the faculty actively participates in the care of patients for three to four hours a day.

The vast majority of medical students do not read English well when they enter school. Some faculty members thought that the Farsi translations of current English texts were poor and out of date. In any event, the current world medical literature, now predominantly in English, is not available to most students through most of their time in medical school, though many gradually learn English in anticipation of Educational Council or Foreign Medical Graduates (ECFMG) examinations.

Research

With a few notable exceptions, little research activity was being covered. Members of the clinical department of obstetrics and gynecology appeared more conscious of the value of research and made more effort to carry out research projects than did their counterparts in the preclinical departments. With regard to reproduction biology, review of the university's publication list of articles in this field in an European language revealed four in 1971 and five in 1972. (The accuracy of these catalogs is questionable.) However, the overall impression of low productivity remains. Possible causes are multiple:

1. A research tradition may be lacking, particularly in the preclinical years.

2. The multiple teaching obligations of most departments impose time demands that may often be excessive.

3. There are few senior faculty or department chairmen who can either guide junior faculty or serve as examples.

4. Initial support in laboratory space assignment, equipment, and supplies to enable new faculty members to get started is often delayed. Subsequently, the mechanism for supporting research appears to be unwieldly.

5. It is common belief among the faculty that research efforts and accomplishments have not been regarded by the administration or senior faculty of the university as worthy of high academic recognition.

Clinical Facilities

Hospital facilities are often crowded and lack the supporting services that permit good clinical research. Patient follow-up is poor in some cases, so that accurate statistical follow-up of obstetrical patients and newborn infants is not possible, which precludes evaluation of possible clinical changes. Bacteriological, biochemical, and other routine clinical laboratories appear not to function in a way that would support clinical studies. In some cases, the thoughtful and well-organized use of overburdened clinical facilities to afford the best possible clinical care under existing conditions is impressive.

A particularly unfortunate situation arises in the case of neonatology. There appears to be no major center with both a pediatric and an obstetrical clinical service. The Children's Hospital appears to have no obstetrics and no neonatology service other than for transported infants; the obstetrical service at Saleh or Farah have no neonatology services.

Equipment and supporting personnel for current sophisticated techniques in patient care are often lacking.

Department of Obstetrics and Gynecology

The Alam-Saleh Medical Center at Saleh Hospital has a staff as follows:

Obstetrics-Gynecology: three associate professors, six assistant professors; Pathology: one associate professor, two assistant professors; Clinical Pathology: one associate professor; Radiology: one associate professor; Anesthesiology: one associate professor, three assistant professors.

House staff: Twenty to twenty-five residents (five or six in each of four years of training), and sixteen interns, all rotating.

Service loads (in-patient): 170-bed hospital, 20,000 deliveries per year, 6,000 gynecologic operations per year (about half are D & C's), and out-patient services.

Fifth-year medical students are given a two unit (thirty-two hours) course in normal obstetrics, which includes one to two hours on the physiology of reproduction. The number of fifth-year medical students, in classes of 200, represents a heavy teaching load, which will be shared with Pahlavi Medical Center in the future.

Sixth-year medical students are divided in two groups. One is trained at Alam-Saleh Medical Center, the other at Pahlavi Medical Center. The training program at Alam-Saleh Medical Center consists of a six-unit (ninety-six hours) course of obstetrics and gynecology, including eight hours on the physiology of reproduction. This covers ovulation, menarche, menopause, endocrinology of the female genital system, sterility, and one or two hours on family planning. Beyond such theoretical teaching, the sixth-year students spend four and one-half months of practical training on the maternity service, including one week in the human reproduction center. This center offers services and some research material in infertility (twenty to twenty-five patients per day), endocrinology (five to ten

patients per day), and family planning (fifteen to twenty patients per day). This center is open from 8 a.m. to 12 noon daily except Thursday and Friday. Fourth-year obstetrics-gynecology residents spend one month in this unit. Presumably the students who attend Pahlavi Medical Center receive a similar training and use the clinical facilities of Farah Maternity for obstetrical training. Obstetrics and gynecology faculty is present from 8 or 9 a.m. to noon. From noon to 4 p.m. a faculty member is at the hospital to supervise house staff, and after 8 p.m. is on call for complicated cases.

The faculty of Saleh Hospital also provides training to the High Institute of Midwifery, including four hours on physiology of reproduction and twelve hours on family planning (contraceptive techniques, family planning programs, clinic management, and so on). Further training is offered at the school of nursing to nurses aides. Several staff members are engaged in a variety of research porjects, mostly directed toward evaluation of various therapeutic regimens on family planning activities. A number of projects were carried on in cooperation with the Institute for Research in Human Reproduction of the Ministry of Health or with the Department of Human Ecology:

1. Metabolic effects of low-dose progestational contraceptives.
2. Studies on cervical mucus with use of a progestational agent.
3. Studies on amenorrhea: cytogenetic, hormonal, and clinical.
4. A comparison of protein nutritional status of pregnant women and neonatal infants of high versus low socio-economic status.
5. Bacteriologic study of postpartum infection.
6. Endocrine changes during adolescence in Iranian subjects (WHO project).
7. Studies of mycoplasma in unexplained abortions.

There is also interest in fetal monitoring, but with highly inadequate resources.

Saleh Hospital has a part-time staff with surprisingly active research interests, functioning with inadequate facilities and without the quality and extent of supporting services that could undergird a greater research effort. The obstetrical staff works in isolation from other clinical departments and particularly from a pediatric's service. The work is oriented toward gynecological cases. The new family planning clinic is small, though potentially expandable. There are virtually no neonatology services and little apparent awareness of their potential benefits.

The active research interests of the staff merit recognition. Nevertheless, it seems unlikely that this hospital would be a good place to develop a model clinical service for demonstration, teaching, and research in reproductive biology.

The School of Public Health and the Institute of Public Health Research

The School and the Institute of Public Health fulfill a need in the development of public health activities, which are a major component of the socio-economic development plan of Iran. The school and the institute have contributed much to the public health of Iran in the fields of malariology, parasitology, and public health services.

Created in 1966, the School of Public Health benefited, on the research side, from successive transformations of the Institute of Malariology (1952), into an Institute of Parasitology and Malariology (1956), into an Institute of Public Health Research (1965). The Ministry of Health and the university cooperate in this research institution. The School of Public Health also acts as a Department of Public Health for the medical schools. The school

assumes responsibility for training programs, while the Institute of Public Health has responsibility for research programs. Generally faculty members have a double appointment at the school and at the institute.

The School of Public Health employs about sixty full-time faculty members. It includes six departments: biostatistics, epidemiology-pathobiology, human ecology, environmental health, occupational health, and public health practice. The school offers training at the graduate level (Master of Public Health, twelve-month program, and Master of Science in Public Health, twenty-four month program) at the undergraduate level, in schools of medicine, pharmacy, dentistry, and veterinary medicine, in schools of nursing, midwifery, education, and agriculture, and at the auxiliary health workers' level on request from the Ministry of Health or other organizations. Further, the school provides short-term, in-service training programs for various health institutions, including the Ministry of Health, and organizes, in collaboration with international organizations, international courses on special health problems.

M.P.H. students can choose among seven major fields: public health administration, epidemiology, occupational health, maternal and child health, population dynamics and family health, environmental health, and biostatistics. Thirty-two students are now enrolled in the M.P.H. program, with four majoring in population dynamics and family health. The M.S.P.H. program enrolls seventy-five students but offers no option in family planning.

The Institute of Public Health Research offers research facilities through eight research divisions in the school and several field research stations. The main research priorities are a series of health and morbidity surveys (cross-sectional and longitudinal), a major health delivery survey in West Azerbaijan, and a future health planning program.

Several factors add strength to both the school and the institute. One is the effort to integrate research and teaching through dual appointments of staff to the school and the institute. The collaboration of the Ministry of Health and the university in the institute provides the faculty with a potential experimental field and has oriented its research toward relevant problems of national interest. The cooperation of a number of teaching hospitals affiliated with the Universities of Tehran and Isfahan and with Pahlavi University, as well as other non-university affiliated hospitals and health institutions, is a valuable asset for both teaching and research.

Eight field stations located in the main ecological regions of Iran broaden the scope of the research and training programs to the whole country. Finally, close contacts with international organizations enable the school and the institute to disseminate their knowledge and to benefit from research done elsewhere.

On-going Research in Population Dynamics

1. Inter-institutional and international programs: Health services development research in Iran, KAP studies on teachers of biological sciences in Iran.

2. Inter-institutional and national programs: Health services research in Kashan, the effects of socio-economic changes on the fertility rates in villages of Torbat-e-Heydaryeh, and determination of fertility rates and death-specific rates in Iran.

3. Intra-departmental programs: Effect of prenatal care and facilities at the time of delivery on infant mortality, KAP studies among teachers, the relation of family size to socio-economic status of the household, study of the interval between birth and the issue of identification card in the

city of Tehran.

Plans for Future Research as Stated by Departments

1. Department of Biostatistics:

a. Determination of birth and death rates in a 1 percent sample of the Iranian population using the Brass technique. Such study is to yield stable rates at the national level (urban and rural) and possibly at the provincial (Ostan) level.

b. Measurement of vital events in another sample of the Iranian population by a dual registration system (Chandrasekaran-Deming technique).

2. Department of Public Health Practice:

a. Health services survey in West Azerbaijan.

b. Creation of an Institute of Health Services Development.

3. Department of Human Ecology:

a. Side effects of contraceptive methods (Jalali, Majd).

b. Use-effectiveness of contraceptive methods (Jalali, Jamd, Azari).

c. Incidence of abortion in Iran (Jalali).

d. The influence of oral contraceptives on coagulation (Montazami).

e. Relationships between family size and mental health (Majd).

f. Evaluation of the family planning program in urban and rural areas through measurements of social changes and attitude changes (Mohseni).

g. Vital rates, family planning practice, and attitudes among nomadic groups (Mohseni).

h. Consequences of induced abortions (Jalali).

i. Acceptability and effectiveness of suction curettage for induced abortion (Jalali).

Population-Related Training

1. Population-related activities are presently scattered among several departments: Human Ecology, Biostatistics, Public Health Practice, and Epidemiology-Pathobiology. This dispersion contributes to an apparent lack of direction in teaching and research. It may also be a handicap in any attempt to increase collaboration among leaders in action programs and the faculty. It certainly leads to duplication of effort and minimizes cooperation among population researchers working in different departments.

2. Contrary to other fields of research of the School of Public Health, population teaching and research and family planning in particular lack access to ongoing programs. This absence of contact with real problems is demoralizing to the staff and precludes research of relevance to the national family planning program.

Only at the undergraduate and auxiliary worker levels are large groups of students exposed to the training programs (250 in the Medical School, 60 in the School of Dentistry, 200 in various schools of nursing, and 250 in health corps and other auxiliary workers' schools). On the contrary, at the graduate level only basic population-related courses, such as biostatistics and epidemiology, were taught to both M.S.P.H. and M.P.H. students (seventy-five and thirty-two students respectively in 1973-74).

The statistics course in the Medical School is given by the Faculty of Sciences. Other basic courses, such as sociology and demography, are offered only to M.P.H. students. Since the initiation of a major in family planning in 1969, the number of students choosing this option has been small (1970: nine, 1971: seven; 1972: three, 1973: four). Consequently the courses on applied population (family planning, administration in FP, communication in FP, epidemiology of population) have had a restricted audience. A similar situation

seems to exist for MCH and health education courses.

A distinction should be made between basic population-related courses such as biostatistics, demography, sociology and anthropology, ecology, genetics, and epidemiology and applied courses such as family planning, social and psychological considerations in FP, epidemiology of population, administration in FP, communication in FP, and analytical demography. The basic courses constitute a complete and well-balanced curriculum offered by the Departments of Biostatistics, Epidemiology-Pathobiology, and Human Ecology. Such basic courses might be offered to all public health students in the M.P.H. and M.S.P.H. programs. The applied courses appear to repeat the content of basic courses (for example, the demographic transition is taught in both demography and family planning) or to be repetitive among themselves (population policy and social structures and fertility are taught in family planning and in epidemiology of population). In general the applied courses are cluttered by generalities and lack specific pragmatic teaching in FP. For instance, there is no course on postpartum family planning programs. This is unfortunate for such programs have recruited over one million FP acceptors in the past seven years. They are offered in over 1,000 maternity hospitals around the world, and an institution in Tehran (Farah Maternity) was one of the first hospitals to demonstrate the efficacy of such programs, incentives, nonclinical distribution of modern contraceptives, traditional methods of contraception, impact of contraception, impact of legal abortions on health and fertility, and new sterilization techniques.

More importantly, perhaps, the training program should make every attempt to use data from the national program, to enroll the services of leading personalities who have acquired experience in family planning programs in Iran, and to maximimize students' exposure to the national program in both urban and

rural areas. Such a policy might increase the number of students enrolled in the program and produce research of direct interest for the Ministry of Health.

Many of the younger faculty members need further theoretical training, which could be obtained abroad at the master and D.P.H. levels, and also programmatic experience, which should be acquired in Iran.

In view of the multiple teaching requirements imposed on faculty members, which will increase if a policy to offer family planning courses to all schools in the university is implemented, there will be a need for additional teaching staff to be recruited or to be hired on a part-time basis from other national organizations.

Faculty publications cover a wide range of topics, from sociological and demographic studies to contraceptive techniques. But too often for university-level publications, they are "case study" oriented. Not unusually, samples are not representative, the data are incompletely tabulated, results lack statistical significance, and the conclusions have little relevance in terms of the priorities of the national efforts in the population field.

Among the present research programs of the school, the health services development research warrants special attention. It demonstrates that it is possible to carry out good quality large-scale research of direct significance for action programs. It also shows that such research attracts support from international and national donor agencies. Other projects of interest and possible significance are the determination of fertility and death rates in Iran and the studies of the relationship between socio-economic levels and fertility and mortality rates. Such projects certainly merit the broadest collaboration between departments in the School of Public Health and the Department of Demography.

The future research plan seems to offer a wide range of topics.

Determination of vital rates on a national sample basis certainly warrants a special study. But whether this requires a second study using a different technique (Chandrasekaran-Deming) is questionable unless other specific objectives are sought. Use-effectiveness and side effects studies could be useful if done on representative samples and analyzed with the best available techniques, including the life-table method. A study of supplementary iron requirements among IUD users might be beneficial to the national program. Studies of blood coagulation among pill users are unlikely to produce new knowledge. On the other hand, an assessment of the incidence of thromboembolic diseases among postpartum patients could yield precious information on the susceptibility of Iranian women to such disease and consequently give some indication of the relative risks of thromboembolism among pill users in Iran. Study of the relationship between family size and mental health should be discouraged, as mental health is the most elusive factor to measure. Nomadic populations constitute an attractive subject for research in the basic sciences of sociology and demography. In view of the likelihood of early liberalization of abortion laws in Iran, an assessment of the new techniques of inducing abortions might give important leadership to the school.

Such a research program implies the collaboration of several investigators from different departments, access to research subjects, additional training from some faculty members, and coordinated funding.

A team of foreign consultants to the University of Tehran in 1973 recommended the following:

1. That a university-wide program of research and training in population be established.

   a. That the program be coordinated by a council to deal with broad questions of policy, program development, and program

financing with the aid of a small secretariat.

b. That this council and secretariat be integrated with the existing Center for Coordination of Studies on Environment, under the revised title of Committee for Coordination of University Programs in Population and Environment.

2. That population research be carried on in two independent but affiliated "institutes," one for biomedical research and the other for research on social and economic aspects of population.

a. That the Institute of Biomedical Population Research begin to function as soon as, in the judgment of the council, departmental resources and university policies provide an environment in which it can fulfill its mission.

b. That plans for the Institute for Social and Economic Research on Population be submitted simultaneously, with implementation delayed for two to three years, during which a minimum trained staff will be developed, in the Faculty of Social Sciences and possibly in the Faculty of Economics.

c. That until a separate social science institute for population research is in operation, such work be carried on in the population section of the Institute for Social Studies and Research.

3. That participation in institute research be open to all departments and to all faculty members of any professional rank with valid and relevant research projects.

4. That each of the two institutes be organized under a director who will have direct responsibility and authority for planning and developing an active research program including research training in the medical fields.

5. That as far as feasible the two institutes cooperate by exchanging project information, engaging in multidisciplinary research projects, and jointly sponsoring seminars, workshops, and small conferences.

6. That from the outset the departments most centrally concerned with population in each school be given special support in order to provide sound development of their population research and training in the shortest possible time.

7. That the council actively encourage the teaching of population in all appropriate faculties and departments but also seek to reduce the pressures on limited manpower that result from duplicate course offerings in separate departments.

Institute for Research in Human Reproduction,

Population-Family Planning, Ministry of Health

Staff: Directorship, vacant, acting director, Dr. Nasr; and Dr. Karaminijat (one-third time pathologist). There are unfilled positions for about six additional staff. Currently (August 1974) the institute is non-functioning.

Research Plans

1. Endocrinology of normal menstrual cycle in Iranian women.

2. Metabolic and other side effects of various contraceptives.

3. Prolactin studies in galactorrhea (not yet started); galactorrhea is unusually prevalent in Iran, for unknown reasons.

4. Sperm cytogenetics, especially separation of X-bearing and Y-bearing sperm.

The institute has a superb physical plant, including modern, well-equipped laboratories, an excellent library, and supporting offices. It is almost a model of the kind of research facilities the university should sponsor.

Its weaknesses lie in its separation from the university and from clinical facilities and the absence of teaching (a great stimulus to staff).

It would appear that there is a real basis for genuine cooperation between the institute and the university, from which both could materially benefit. The university can provide clinical material and teaching opportunities, and the institute can provide an excellent group of laboratories for training and for collaboration in research. The university should make every effort to establish a cordial and productive relationship with this potentially useful facility.

V. CONCLUSIONS

Iran presents an opportunity to undertake useful work in the field of population research and training. The University of Tehran has a critical mass of professionals who could be drawn together to create an important population center. Pahlavi University, Shiraz, while smaller and with less faculty, seems able to undertake more field research and training. Isfahan should be encouraged, as should the newly-started population center at Tabriz and the medical school in Mashad.

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June 1974

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IRAQ

IRAQ

Joel Montague

I. COUNTRY SETTING

Iraq has a total land area of 438,446 square kilometers, of which 160,000 square kilometers are desert. The country is divided into three zones: a northern mountainous region, a central plain, and a southern marsh region. In 1973 the population was estimated at 10.8 million, with a net average annual increase of 3.4 percent, and 48 percent of the population are said to be below fifteen years of age. In 1965, 63 percent of the males over fifteen years of age were illiterate. The population of the capital city, Baghdad, was estimated in 1965 to be well over 1.5 million. About 28 percent of the total dwellings in the country have piped water.

II. HEALTH POLICY AND PROGRAMS

The crude birth rate in 1973 was estimated by the United Nations to be 49 and the death rate 15 per thousand per year. In 1973 the infant mortality rate was estimated to be 104 per 1,000 live births. Adnar Al-Rubaie notes that while fertility and mortality statistics are crucial ingredients in understanding the health situation, not a great deal is known about mortality in most of the Near Eastern countries. However, one point that emerges in Iraq is that barring tuberculosis, the other communicable diseases such as smallpox, malaria, plague, and cholera no longer figure among the major killers. Senility and heart diseases are now problems.

Health services in Iraq are organized at three levels: the Ministry

of Health in Baghdad, the governorates, and the local health service. Nationally, the Ministry of Health is responsible for preventive and curative medical services throughout the country. The ministry is divided into six departments (Preventive Medicine, Health, Medical Services, Medical Supplies, Inspection, and Foundation of Rural Health Services) with a director general in charge of each. At the governorate level, the Department of Health, directed by a chief medical officer, is in charge of all health services and institutions.

There are serious problems in determining the facilities and manpower available to run the national health services. For example, WHO (Alexandria) figures dated November 1973 indicate that in 1970 there were a total of 2,890 physicians in Iraq. More recent figures (February 1974), which we believe are quite accurate, indicate a total of 4,123 physicians. The latter figure represents a remarkable growth in a relatively short period of time.

HEALTH SERVICES OF IRAQ SELECTED INDICATORS

(Summary from Adnar S. Al Rubaie)

	1973	1972	1970	1968	1966
Health Personnel					
Number of physicians	4,123	3,707	2,890	2,205	1,728
Physicians/10,000	3.9	3.7	3.1	2.5	2.1
Nurses/10,000	2.2	2.1	1.7	1.5	1.4
Midwives/10,000	1.6	1.5	1.4	1.0	0.9
Health auxiliaries/10,000	6.3	6.1	5.9	4.7	3.6
Health Facilities					
Number of hospitals	158	154	150	149	--
Number of health services	17	6	3	--	--
Number of beds/10,000	20.7	19.4	19.3	18.4	--
Specialized Care					
Maternity beds/10,000	1.55	0.76	0.44	0.44	--
Pediatrics/10,000	1.86	1.11	0.89	0.92	--
Infectious diseases/10,000	0.67	0.35	0.39	0.38	--
TB and chest/10,000	3.7	2.7	2.5	2.4	--

Relatively good information is available on maternal and child health services in Iraq. Maternal and child care health centers are under the jurisdiction of the directorate of maternal and child health and family health, a division of the Directorate General of Preventive Medicine. MCH centers are established in the capitals of the governorates and the capitals of most of the provinces. A total of [illegible] maternal and child health centers existed a few years ago. Each center is staffed on the average by one woman doctor, one assistant pharmacist, one nurse, [illegible] health visitors, and two vaccinators. The centers provided [illegible] care, child care, and maternal child health care, but no delivery services. Unfortunately, there are no accurate figures on the percentage of institutional and home deliveries in Iraq. It was estimated at one time, however, that more than [illegible] percent of the deliveries were carried out at home, mostly by [illegible] indigenous midwives [illegible]. In the case of live births, 75 percent were [illegible] home, and [illegible] percent of [illegible] were completed at home.

I.C. [illegible]

The government's policy is [illegible] not easily explained. Iraq has a national committee on population policies, which was created by the prime minister for the purpose of "planning and implementing a national program in the population field." It has a chairman from the National Statistics Office and seven members coordinated by a representative of the Ministry of Planning. This group meets frequently.

One of the concrete government activities is a reasonably active family planning program. This government program is a relatively recent development, although pharmacies have been dispensing vaginal contraceptives, condoms, and diaphragms for a number of years. The first organized effort started in the second half of 1969, when help was asked from WHO to start

activities in Iraq. In 1970 a family planning section was established within the Iraq Medical Association, and in the second half of 1971 this became a full-fledged Iraq Family Planning Association, recognized officially by the government of Iraq. In 1972, WHO assigned a consultant to start a program with the following objectives: (1) to provide the Iraqi population with integrated MCH-family planning services, (2) to expand the program within the context of government MCH centers, and (3) to develop and expand maternity center family planning services and maternity hospitals throughout the country. The program started in the National Family Health Demonstration and Training Center in the vicinity of Karkh Maternity Hospital and in nearby centers, and during 1973 its services were expanded.

Figures from the first year of the program showed the total number of family planning visits as 11,261, with new acceptors for contraceptives totalling 3,274. The IUD was the contraceptive of choice.

IV. UNIVERSITY DATA

There are six universities in Iraq, of which three have colleges of medicine and one has a college of nursing. The three medical colleges are in Baghdad, Basrah, and Mosul. The medical course lasts six years. About 350 physicians graduate each year. There is also a High Institute of Health Auxiliaries in Baghdad. There are four schools of nursing in Iraq, which admit female students who have finished nine years of general education. Each school admits about sixty students per year for a three-year nursing course. There is a four-year college of nursing for graduates of secondary school, which offers a Bachelor of Science in Nursing and admits about forty students each year. Since 1966 some 119 students have graduated. Besides formal training courses for medical students at the university, there has been a series of three-week

MCH-family planning training courses for doctors and a series for nurses. In addition, two four-week training courses for health visitors were undertaken in 1972, and twenty-one doctors, twenty-eight nurses, and three social workers have completed clinical training programs in contraceptive management. The primary clinical activity associated with the University of Baghdad's training program is the Arab Maternity Hospital. This facility has 110 beds, and it is staffed with six obstetricians-gynecologists, ten senior and junior resident doctors, two pharmacists, twenty-four nurse-midwives, four assistant midwives, and fourteen student assistant midwives. The annual number of deliveries is 6,000, and 1,500 abortions and still births (about 70 cases per bed per year) are recorded.

Some family planning is taught at each university. The most active program appears to be the College of Medicine at the University of Baghdad, which in recent years has expanded its graduate courses for training in several specialties. Fifty-three graduate students registered in seven specialties in 1971, and by 1973-74, 113 students registered in seventeen specialties, including three in basic sciences.

Figures provided by the Ministry of Education, in April 1973, indicate the following:

Baghdad University: 1,417 men and 299 women in the medical college, 317 men and 123 women in the pharmacy college, and 427 men and 280 women in the nursing college.

Mosul University: 586 men and 128 women in the medical college.

Basrah University: 203 men and 50 women in the first four classes of the medical college.

Staff members are as follows:

Baghdad University: thirty professors, eleven associate professors, thirty-two assistant professors, thirty-six instructors, eight graduate assistants, and various part-time and other personnel. Dentistry college: forty-six staff members. Pharmacy college: thirty-six staff members. Nursing college: nine staff members.

Mosul University Medical College: eighty-three male faculty members and eighteen female faculty members, plus various part-time personnel and five foreigners.

Basrah University: Nineteen male and three female faculty members, twenty-six part-time faculty members, and four foreigners.

V. CONCLUSIONS

One suspects that Iraq is progressing as quickly in the field of population training and research on the medical side as it can, given local circumstances. Certainly, however, the donor community should not close the door to fellowship, research, and other support. However, it is highly unlikely that any American organization -- government or private -- will have a role in its development.

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July 1974

CONTENTS

JORDAN

JORDAN

Joel Montague

I. COUNTRY SETTING

The Kingdom of Jordan is bordered by Syria on the north, Iraq and Saudi Arabia on the east, Saudi Arabia on the south, and Israel on the west. The country is predominately agricultural, but much of it is either sandy or otherwise nonirrigable. Industry and mining, however, are assuming growing importance. As of 1973, the population was estimated at 2.6 million, with an average annual rate of increase of 3.3 percent. The population density per square kilometer was about twenty-five in 1972. It has been estimated that 47 percent of the population is below fifteen years of age. In 1961, 49.9 percent of males over the age of fifteen were illiterate, as were some 84.8 percent of women over fifteen.

The crude birth rate in 1973 was estimated at forty eight per thousand per year and the crude death rate at sixteen. Life expectancy at birth was fifty-three years in 1973.

II. HEALTH POLICY AND PROGRAMS

In 1971 there were 826 physicians in the country, of whom only 278 were in government service. The population per physician was one to 2,880. The number of dentists in the country was 117, giving a population per dentist of 14,680, and there were 241 pharmacists, or one pharmacist per 7,210. In 1969 there were 1,510 nurses and nurse-midwives, a figure that had risen to 1,726 by 1971.

Data from 1972 reports, for the East Bank only, indicate that there were a total of twenty-seven medical establishments with in-patient facilities, twelve of which were in government service. A total of 1,892 hospital beds were reported in 1972, of which 1,274 were in government service and 210 were in maternity and pediatric hospitals.

III. POPULATION POLICY AND PROGRAMS

There is no official policy for population or family planning in Jordan, though from 1964 to 1967 the private family planning association received an annual grant from the Ministry of Social Affairs. King Hussein was one of the original signatories of the world leaders' declaration on population. In December 1972, a conference on "Population Policy as Related to Development Strategy" was held in Jordan, under the auspices of the Ministry of Planning. The seminar was attended by representatives of all the Jordan ministries, as well as various foreign scholars and experts.

At the present time there is no anticontraceptive legislation on the books, as there is or used to be in the francophone Near Eastern countries. The Jordan Family Planning and Protection Association was founded in March 1963 by Dr. Isam Nazer, in cooperation with the Woman's Federation of Jordan, and became an IPPF affiliate in 1965. Since the occupation of the West Bank in 1967, the association has had a West Bank branch, with a central office in Jerusalem and a branch on the East Bank. Two new clinics were opened on the East Bank in 1972, in Amman and Irbid. In 1972 the Family Planning Association reported a total of 2,978 new clients, of whom 2,658 accepted oral contraceptives and 320 the IUD. A total of 12,633 continuing acceptors also attended the clinics in 1972.

In 1972 a KAP study was undertaken on the East Bank, where no

organized family planning activities had yet been undertaken. At that time about a third of all respondents approved of family planning, just over half approved only conditionally, and approximately a tenth approved unconditionally. Fifty-seven percent of all respondents, however, expected to use contraceptives in the future. There are some indications of a major problem with induced abortion in Jordan. A number of publications have appeared on this subject.

IV. UNIVERSITY DATA

Jordan has only one university, the University of Jordan. The entire educational system suffered severe setbacks as a result of the June 1967 War, but the government continues to emphasize education, and students at all levels constitute approximately 28 percent of the population.

The University of Jordan is expanding rapidly. Created in 1962, it consisted initially of a Faculty of Arts. In 1965 Faculties of Science and Economics and Commerce were created, and in 1971 and 1972 a Faculty of Medicine and a Faculty of Islamic Law were opened. In 1972-73 Faculties of Education, Agriculture, and Nursing were added. Initially the enrollment was only 185, of whom eighteen were female. The enrollment has now grown to 3,030, with almost a third female. Approximately 121 students are on Jordanian government scholarships. At present the university offers the bachelor's degree in all faculties and a master's degree in Education and in the Sciences. The language of instruction is Arabic with English used in a few courses.

A major problem is expected in the next few years because of a predicted surplus of university graduates in Jordan. The current three-year development plan forecasts that the country will need 3,500 university graduates in the next three years, yet some 12,000 graduates will be produced. In addi-

tion to University of Jordan students, the American Friends of the Middle East (according to Jordanian statistics) has noted that there are probably 26,616 Jordanian students abroad.

One of the major problems at the university, and throughout the academic system in the Middle East, is the heavy concentration of enrollment, at home and among students abroad in the social sciences, law, and humanities to the neglect of engineering, sciences, and agriculture. Many Jordanian graduates in the social sciences and humanities will not seek employment in Jordan but will work abroad as teachers, particularly in the neighboring Arab countries.

Medical School

The Faculty of Medicine of the University of Jordan will contribute to the training of postgraduate students of medicine, nurses, physiotherapists, and paramedical specialists such as pharmacists, veterinarians, and dentists.

The first forty-five students were admitted to the Faculty of Medicine in October 1973, after successfully completing a two-year course that included physics, chemistry, biology, mathematics, sociology, psychology, and parasitology and entomology. At present the students are halfway through their first year of organ-system studies. Several examinations have been held, as well as public health seminars at the teaching hospitals, and the students have apparently performed well.

While courses are underway, the four-level faculty building, which will be the College of Medicine, is nearing completion. It will contain the Faculty of Nursing as well as departments of Basic Medical Science, Community Medicine, Pathology, Medical Science, and Surgical Science. Clinical work will be done at the 530-bed Amman Civic Hospital, located within walking distance of the College of Medicine. This hospital has been in operation since January 1973 and is gradually expanding its services.

The dean of the Faculty of Medicine is also responsible for administration of the Faculty of Nursing. The two faculties work closely together, sharing facilities and staff. The twenty-three nursing students who were admitted in 1973 are taught by four professors in the basic sciences. The team training approach is used with medical and nursing students sharing many classes together, and various nursing tutors assisting with teaching medical students. The teaching hospital is an autonomous unit administered by the university and the Ministry of Health, and faculty members are paid by both institutions.

The faculty of the Medical School consists of:

Basic Medical Science Department: one full professor (and director), one associate professor, one assistant professor, one lecturer, five technicians, and four others.

Pathology Department: one part-time lecturer.

Community Medicine Department: one part-time lecturer.

Medical Science Department: one associate professor.

The following teaching hospital staff are also in residence: two senior physicians, four resident physicians, seven senior surgeons, six resident surgeons, one radiologist, one full-time anesthetist, and two part-time anesthetists.

The nursing staff consists of one matron, one assistant matron, forty registered nurses, thirty practical nurses, and fourteen nurses' aides.

The surgical staff includes, among others, one obstetrician-gynecologist.

In October 1974, the second year of nursing instruction started, consisting mainly of pathology. There will be a continued clinical program for three years, followed by a one-year internship in which students will rotate

through all departments in the faculty and selected hospitals and health centers. During the fourth year, newly qualified nurses will join medical students in field training, which will culminate in a team exercise. At present, the dean of the Medical School is provided by the Overseas Development Administration of Great Britain, and WHO provides one professor and one chief technician.

As in other institutions in the Near East, Community Medicine is one of the most important disciplines taught by the Faculty of Medicine. It is presented in five of the six years of the course in medicine and takes up approximately seventy hours of formal teaching, plus extensive field studies. Among the major aspects of community medicine that will be studied are maternal and child health in population control.

V. CONCLUSIONS

The University Medical School is still new. In a few years, when its first graduates leave the university, they should be well versed in family planning work. The same applies to the School of Nursing. Because of political sensitivities, it seems inappropriate to attempt to seek a large number of avenues for population work in Jordan.

SOURCES OF DATA

Correspondence with the dean, Medical School, 1974.

July 1974

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KUWAIT

KUWAIT

Joel Montague

I. COUNTRY SETTING

The Arab-Persian Gulf state of Kuwait has a total land area of 17,818 square kilometers. The population was estimated at 900,000 for 1973, with an annual growth rate of 9.8 percent and an average natural increase of 3.6 percent. (Large-scale migration accounts for the difference in the two rates.) Thirty-eight percent of the population are under the age of fifteen. In 1970 36.6 percent of males over fifteen were illiterate even though 97 percent of the eligible school population of primary school age were in schools in 1969. The overall population density was fifty-one per square kilometer in 1972. In 1970, the urban population was 56.3 percent.

Since 1957 quinquennial censuses have been taken, most recently in April 1970. In addition, a system of vital registration, which provides fairly adequate information on the dynamics of population, was established about ten years ago.

Oil forms the backbone of the economy, accounting for 94 percent of the government revenues and 96 percent of all commodity exports. The country is one of the main oil producers in the world, and its proven reserves are the largest in the world.

II. HEALTH POLICY AND PROGRAMS

The government of Kuwait is proud of its health services. The Ministry

of Health is responsible for a comprehensive system of health services, with free treatment for all Kuwaitese and nominal fees for aliens (approximately half the population of Kuwait are aliens). Hospitals and services are well staffed and equipped.

The majority of medical personnel are not from Kuwait. There is a total of 744 physicians in the country (1971 figures), with 614 in government service. This means that the population per physician ratio is one to 120. The number of dentists is sixty-seven (less than one dentist per 10,000 population), and the number of pharmacists is 163 (only two per 10,000 population). There is no school of dentistry and no school of pharmacy in the country. Kuwait has 1,753 nurses and midwives, along with 1,254 assistant nurses and assistant midwives. The number of medical establishments with inpatient facilities is some twenty-six, eighteen in government service. A total of 4,009 hospital beds are registered, with 3,635 in government service. In general hospitals, a total of 333 beds are reserved for maternity and pediatric cases, and in specialized hospitals, there are 758 maternity and pediatric beds available.

III. POPULATION POLICY

The government of Kuwait is relatively pronatalist with regard to its indigenous population. The country has enormous oil revenues and reserves, and it is felt that Kuwait could absorb a much larger population. While there is no official government position on population, government maternity hospitals and gynecological clinics do provide contraceptives on demand, under medical supervision, and free of charge. Though no figures are available on this subject, it is believed that the amount of contraceptives provided through government facilities and private physicians is substantial. This is not to say, however, that provision of contraceptives is having any significant impact on the birth rate.

IV. UNIVERSITY DATA

The University of Kuwait has a Faculty of Arts, a Faculty of Science, and a Faculty of Medical Studies. The university is providing assistance to the Yemen Arab Republic in establishing a University of Sana'a. There are no graduates from the medical school at this time and no reason to believe that any major activities related to population training or research are being undertaken. However, one professor is undertaking a clinical trial with the copper-T IUD.

V. CONCLUSIONS

There is no reason to believe that any emphasis will be given to stimulating work in family planning in Kuwait.

SOURCES OF INFORMATION

The Middle East and North Africa [illegible] Europa Publications Limited.

July 1976

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LEBANON

LEBANON

Joel Montague

COUNTRY SETTING

The Middle Eastern country of Lebanon is bordered on the north and east by Syria, on the south by Israel, and on the west by the Mediterranean Sea. Its total land area is 4,622 square miles, or 10,400 square kilometers. It is essentially a mountainous country but also has a large fertile plain where cereal is grown. The country can be divided into five districts: North Lebanon, Mount Lebanon, Beirut, South Lebanon, and the Bekaa. Beirut, the capital, is also the commercial and cultural hub of the country.

In 1973 the population was estimated to be 3.1 million, and it is projected that by 1985 it will reach 4.3 million. The population growth in Lebanon from 1965 to 1970 was estimated to be 400,000. Overall density in 1972 was 285 per square kilometer. The crude birth rate is 40 per 1,000.

The only available study of fertility in Lebanon was done by Yaukey in 1959. The general fertility rate estimated by UNESOB between 1970 and 1975 is 180 per 1,000, and the crude mortality rate in 1970 was 11 per 1,000. The infant mortality rate was reported by the United Nations in 1965 to be 59 per 1,000. Figures on maternal mortality are not available. The national growth rate is estimated to be 3 percent per year. Figures on in-migration are not available.

The literacy rate in Lebanon is high, and the rate of higher education in the country is approximately 5.1 percent, which is comparable to that of the industrialized countries of Europe. In 1969 there was universal school enrollment at the primary level, and some 35 percent of the total eligible

population were enrolled in schools at the secondary level. An extraordinary number of daily newspapers is published (some 52 in 1970), and in 1971 there were 211 radios per 1,000 population.

The country is known for its religious heterogenity. In the last census (1943), Christians outnumbered the Muslims, but according to current estimates Muslims now outnumber Christians. Most of the Christians are Catholics, but a large minority belong to various Orthodox groups. Marriage is a societal obligation, and girls are married early. The marriage ceremony is handled by the religious authorities and is not a civil ceremony. The strength and power of the family has traditionally been measured by the number of sons.

Urbanization is now a major problem, with the greatest concentration of population in Beirut, the size of which has reached one million, or more than 30 percent of the total population. The percentage of the population under 14 years of age is 44.8 percent, which is high when compared with developed countries, where it may be less than 30 percent. Life expectancy in 1970 for both sexes was reported to be over sixty years. With constant fertility and decreasing mortality, it is projected that for 1985-90 the life expectancy of males will be 68.5 years and for females, 72.5 years.

II. HEALTH POLICY AND PROGRAMS

Relatively little information is available on health services in Lebanon. In essence, however, public health services are divided into three categories: curative services, public health services, and laboratories. As elsewhere in the developing world, these services are concentrated in urban areas. Home deliveries for babies are done either by licensed midwives or by women with some experience. Bickers reported that in 1969 the abortion ratio was high.

Statistics provided by the World Health Organization are not always consistent with other figures. The number of physicians in 1969 was 1,831, which meant a ratio of 6.8 to 10,000. The number of dentists was 531 in 1969 (2.0 dentists per 10,000), and there were 612 pharmacists (2.6 per 10,000). The total number of nurses and midwives in 1969 was 1,821, and there were 707 assistant nurses and assistant midwives.

The number of medical establishments with beds in 1969 totalled 150, of which a surprisingly small number (twenty-three) were in government service. The total number of hospital beds in the country was 11,820, with 662 in pediatric and maternity hospitals.

An analysis of the overall state of health delivery systems in Beirut is provided by Dr. A. Abou-Zeid in "Population et santé," a paper read at the First Regional Conference for Population in Beirut, 18 February to 1 March 1974. The paper notes (p. 25) the concentration of physicians, both general practitioners and specialists, in Beirut -- some 66.26 percent of all specialists, for example. Of the total number of specialists in the field of obstetrics and gynecology (118), some eighty-nine were in Beirut and only six were female. Of a total of 416 registered midwives in the entire country, 63.7 percent were in Beirut. The report (p. 28) gives the following medical specialties in Lebanon (these figures are probably the most up-to-date that can be obtained): 2,250 physicians, 612 pharmacists, 538 dentists, 105 dental technicians, 1,530 nurses, 800 nurses' aides, 40 circumcisers, 483 midwives, 58 anesthetists, 61 physiotherapists, 81 opticians, and 13 orthopedic limb specialists.

III. POPULATION POLICY AND PROGRAMS

On 26 and 27 April 1972, a meeting on population activities in

Lebanon was held in Beirut, under the auspices of the United National Economic and Social Office. Attending were representatives of international organizations, donor agencies in the field of population, and representatives from the American University of Beirut as well as other Lebanese universities. At that meeting it was agreed that cooperation and coordination should be effected in population activities among all agencies, federations, and associations in Lebanon. A summary of current research in the area of population was discussed, and the university programs were outlined. No second meeting of this group appears to have taken place.

The obstacles to the development of a population policy in Lebanon are significant. They include official conservatism, religious and traditional pressures, lack of official census data on population, lack of awareness and major interest in important individuals, difficulty in allocation of funds for family planning, the relatively low priority given to government public health, the inadequate nature of the health services should a program need to be undertaken, and inadequate or pronatalist legislation.

In a more positive vein, some useful steps have been taken in recent years. The establishment of the IPPF regional office as well as UNESOB (now ECWA) in Beirut have been particularly useful in developing awareness of population-related matters. The Ford Foundation has been helpful in providing grants in population. The appointment of a UNFPA coordinator in Beirut will no doubt lead to new resources being brought to bear for research and action. Most particularly, the continued interdisciplinary development of a population center or alternatively a series of programs at the American University of Beirut will contribute to research and other activities associated with family planning and population in the region.

In 1974 a regional population conference was held in Lebanon, which did much to focus attention on the question of population in the Near East. The conference was held under the auspices of the Economic Commission for Western Asia Conference, Beirut, Lebanon, in February-March 1974. While it seems unlikely that the government of Lebanon will focus major attention on population problems in the near future because of the sensitive Muslim-Christian balance, it does seem likely that over the years ahead useful research and information activities will be undertaken.

While the law forbidding advertising contraception is against the law, contraceptive services are made available to the Lebanese population by the Lebanese Family Planning Association. Importing contraceptives is illegal, but oral contraceptives are available without prescription and period regulators, as well as douches, could be sold as prophylactics against venereal disease. The government agreed in 1971 to recognize the Lebanon Family Planning Association's activities, which means that it has official support and tax exemption. The government has also ratified an official agreement affirming the tax and customs exempt status of the IPPF regional office in Beirut. The Lebanese Family Planning Association has held a variety of conferences, has undertaken information and education work, participats in training sessions, and runs eleven clinics in rural and urban areas. Service statistics available from 1972 show a total of 1,115 new acceptors and 2,609 continuing acceptors in the clinics, utilizing both oral contraceptives and IUD's.

VI. UNIVERSITY DATA

American University of Beirut

The American University of Beirut is a private, nonsectarian uni-

versity founded in 1866, which functions under a charter from the State of New York. It is administered by a private, autonomous board of trustees. The university has four faculties: Faculty of Arts and Sciences, Faculty of Medical Sciences, Faculty of Engineering and Architecture, and the Faculty of Agricultural Sciences. All faculties are coeducational, and English is the language of instruction. Degrees are granted under authority of the Board of Regents of the State University of New York. The student body consists of 4,386 students from sixty-eight countries. Over 80 percent of the students are from Arab countries of the Middle East and North Africa, and 63 percent of the faculty are from the Middle East. At present, Dr. Samuel B. Kirkwood is president.

Admission requirements are given in detail in the American University of Beirut Catalogue, 1973-74. In essence, they consist of an approved high school or secondary school certificate, knowledge of English (by passing an English entrance exam at the university with a satisfactory TOEFL score), and satisfactory grades on an Arabic language exam (for Arabic speaking students). Advanced standing for some students is arranged.

To be eligible for admission to the School of Medicine, a student must have completed the university's legal premedical educational requirements, passed a proficiency exam in English, completed the junior year in the School of Arts and Sciences of the university, and taken various prerequisites in the sciences and other subjects.

Graduation requirements for the degrees of B.A., B.S., and B.B.A., are 120 credits and a minimum of eight semesters in residence. Medical degrees are awarded in a fashion similar to those of the standard medical schools in the United States, except that the course of study has been extended from four to five years to conform with Lebanese law. The fifth year consists of practical

work as an intern in the university hospital and other affiliated hospitals.

The School of Pharmacy offers a program leading to a degree of B.S. in Pharmacy (four years) as well as an M.S. degree. The B.S. in nursing covers four academic years and three summer sessions. There are also a nursing diploma program (now being phased out) and a "post-basic program in administration and teaching of nursing."

The School of Public Health offers the following degrees: M.P.H. (with various types of course concentration), B.S. (environmental health), diploma in public health nursing, post-basic program in midwifery, and certificate in basic laboratory techniques. For the M.P.H., thirty credit hours are required. Bachelors' and masters' degrees are also given in the Departments of Engineering, Agriculture, and Crop Production.

So far the university has been fortunate in being able to maintain a highly favorable student-faculty ratio. In the Faculty of Arts and Sciences, for example, there were 2,528 students taught by 198 faculty members. When the students of nursing, public health, agriculture and engineering are included, the ratio is about 13 to 1.

The dollar devaluation in 1973 exacerbated an existing financial crisis at the university. In 1972 the university faced spiraling costs and decreasing resources. A program study committee was formed to review the institution's operations and recommended various ways to decrease the deficit and generate new income. Basically the changes recommended were: phasing out the nursing diploma program and eliminating majors in mass communications, religious studies, and music, though courses in all are retained as electives. In the population area, the Board of Trustees rejected the recommendations that the School of Pharmacy be phased out and the School of Public Health be trans-

formed into a Department of Preventive Medicine within the School of Medicine. The School of Public Health was retained in view of its rising enrollment in recent years and because of the great need throughout the Middle East for public health specialists.

The Report of the Meeting on Population Activities in Lebanon of 26-27 April 1971, sponsored by UNESOB, discussed a number of population-related activities undertaken by the American University of Beirut. For example, it had made a household survey in one municipal locality in Beirut to discover the most appropriate way of rendering health services. The most important research being undertaken, with the cooperation of the World Health Organization, was a study of the dynamics of the relationship between family size and family health. The report also mentioned four fellowships for study of population abroad, which had been awarded by the Ford Foundation and the Population Council. Mention was also made of the advisory services of the newly established university clinic on family planning methods and procedures, and the short courses on family planning sponsored by the university in cooperation with UNICEF.

In the same year, the university gave serious consideration to establishing a population studies center. A coordinating committee was formed for the four university facilities to assess the feasibility of establishing such a center. In turn, each of the participating faculties made efforts to develop their own population studies committees, reporting to the university committee. Funds were requested and obtained from the Ford Foundation to assist the effort in its infancy. To deal with the day-to-day needs of the program and to help the Population Studies Program Committee, Dr. L. Verhoestraete, director of the School of Public Health, was designated as coordinator, after the social scientist the university had tried to recruit

for the position could not be hired.

The university had decided to establish a position for a reader in demography (with support personnel), and is budgeted for six research assistant years and six graduate assistant years for work in population. Support was subsequently requested and obtained from the Population Council to develop the university's library resources in the area of population studies. The university program has moved ahead, but somewhat more slowly than originally envisaged, for a number of good reasons. For example, the reader in demography has not been hired. In 1971-72 a study was carried out in the Department of Sociology and Anthropology, with the assistance of a graduate assistant, on the role of indigenous midwives in family planning, pregnancy, and childbearing in the villages of the Peoples' Democratic Republic of Yemen.

In the academic year 1972-73, a study was developed, under Professor Bassen's guidance, on the knowledge of, and attitude toward, family limitation of Lebanese youth. This study utilized the services of a professional person first as a graduate assistant for a period of four months and later as a research assistant for three months, after she graduated from the American University. The services of a research assistant were also utilized for a limited period during the academic year 1972-73, in analyzing and scanning publications needed for population-related research projects.

For the academic year 1973-74 the following research projects were started:

1. A study of indigenous midwives in Lebanon, their family planning practices, and their role in promoting or discouraging family planning. This study will be carried out, under the supervision of Dr. Jamal Harfouche, by Mrs. Mary Chamie, a visiting instructor assigned to the School of Public Health by the Ann Arbor School of Public Health.

2. A study of knowledge, attitudes, and practices of Lebanese married males, under Dr. Peter Dodd of the Department of Sociology and Anthropology.

A project that involves faculty from a number of departments is the preparation of a population reader. Initial plans were changed in 1973 because of the publication of Population of the Middle East and North Africa by Clarke and Fisher. The group of authors cooperating on the reader is headed by Dr. Charles T. Churchill (Public Health Statistics), and one participating author is Dr. Fawzi Al-Hajj, chairman of extension education, Department of Agricultural Economics and Sociology.

In spite of some individuals interested in the social sciences, most of the activity under the university's program has taken place in the medical sciences.

The Medical School

The Department of Obstetrics and Gynecology has assumed some leadership in the population field at AUB. During 1971-72, the teaching staff of the department included one full professor and chairman, two associate professors, two assistant professors, one associate clinical professor, and five assistant clinical professors. All are Arab. During the same year there were four first-year residents, four second-year residents, and four third-year residents. Dr. Samir N. Hajj is acting chairman.

Members of the staff have demonstrated a particular interest in research in family planning. For example, in 1971 Dr. Adman Mroueh delivered a paper at the conference on "Islam in Planned Parenthood" held in Rabat, Morocco, and attended the conference on IUD's at Exeter University, England. Research has been undertaken by Dr. Mroueh on out-patient tubal sterilization

by culdoscopy. The department chairman published an article on "Family Planning in the Middle East" in El-Kulliyeh in spring 1972. Other faculty members have engaged in research, and one physician has done research on the Dalkon shield.

A graduate assistant was appointed for two months to assist Dr. Mroueh in a study related to human spermatozoa. This project is related to the study of mechanisms of fertility control.

Assistance has also been given for a ten-month study in the field of reproductive physiology. Two associate technicians will assist Dr. R. Khuri and Dr. Hajjar of the Department of Physiology of the School of Medicine. The results of this project, if confirmed, could be important for research in applied fields of reproductive physiology.

Another project involves the assignment of a research assistant for eight months and three interviewer-coders for four months. The object is to study the socio-psychological determinants of voluntary female sterilization in Lebanon. This study is to be carried out under Dr. Adnan Mroueh.

The department's Annual Report for 1 July 1971 through 30 June 1972, said that a total of 1,500 new family planning clients and 4,784 old clients were seen at the private obstetrics and gynecological clinics of the university. In addition, at the four public family planning clinics, a total of 1,352 new cases were seen for diaphragms, pills, depo-provera, tubal ligations, and IUD's. The contraceptive of choice appears to have been the IUD, with 697 acceptors, though the Lippes loop (a total of 610), the Dalkon shield, and copper-T were used. A total of 1,253 old cases were followed up. During the year, some thirty IUD's (4.3 percent) were removed by clinic staff for bleeding and other causes. Two and one-tenth percent of the Lippes loops and 1.4 percent of the copper-T's were expelled. These activities represent a remarkable performance

on the part of the university.

In the future an ambitious and regionally significant project will be undertaken by the department in the field of population. The members of the faculty have agreed to provide training in advanced techniques of fertility control for board certified gynecologists and physicians throughout the Arab world. Training will be given in suction abortion, laparoscopy, culdoscopy, and other techniques. Plans call for seventy-two trainees from countries in the region to receive one month of training over a two-year period beginning 3 May 1973.

The School of Public Health

Dr. Verhoestraete, director of the Division of Health Protection and Promotion, WHO, Geneva, was appointed director of the School of Public Health effective 11 September 1972. He replaced Dr. Lichtenwalner, who held the position in addition to his many duties as dean of the Faculties of Medical Sciences. The director has been made coordinator of the population studies programs of the university. He visited the United States between 15 December 1971 and 2 February 1972, sponsored by the Ford Foundation, to become familiar with the operation of population study centers and agencies supporting population studies in the United States. He visited a number of family planning programs and later visited the programs in the Arab Republic of Egypt.

As of 1971-72 there were some sixty full-time students at the School of Public Health, slightly over one-third from Lebanon. Eight were working on M.P.H. degrees, three on master's degrees in tropical health, fourteen on bachelor's degrees in environmental health, two on diplomas in public health nursing, and thirty-two on the certificate of postbasic midwifery, sanitation, and basic laboratory techniques. A number of part-time students were also

enrolled.

During the last two years, the most important event for the School of Public Health was the establishment of the M.P.H. degree (replacing the D.P.H.). During the academic year 1971-72, thirteen students were admitted for the degree program from six different countries: Afghanistan, Bahrain, Ethiopia, Great Britain, Jordan, and Lebanon. Although a number of departments and sections in the School of Public Health have been involved in training and work associated with family planning, the department with the most active program has been Community Health Practice (MCH division). The department, led by Dr. A.A. Harfouche, has held one-week refresher courses in family health and population dynamics, in conjunction with the Department of Obstetrics and Gynecology of the School of Medicine. The program has been funded by USAID, and students, family planning practitioners, and public health workers from a number of countries in the region have attended. Lectures have been delivered by individuals from various departments of the university as well as from abroad and the IPPF regional office.

Other Universities in Lebanon

There is no reason to assume that universities in Lebanon take a major interest in population. A number of other universities do exist, among them the following:

Haigazian College

This is the largest Armenian Protestant institution of university level in the world and is supported primarily by Armenians abroad and within Lebanon, where the Armenian community consitutes 12 percent of the population. Since its founding in 1955 with an initial forty-three students and ten

faculty, it has become a university college recognized by the Lebanese government and grants the B.A. and B.S. degrees.

Beirut Arab University

This university offers undergraduate and graduate study. Courses include a one-year postgraduate course in education leading to a diploma, a two-year postgraduate course in architecture and urban design leading to an M.S.E. in architecture, and M.A. and Ph.D. programs in Arabic, geography, history, philosophy, and sociology.

Beirut University College

"A woman's institute" has been established at Beirut University College under the direction of Gulinda Nasr. The institute will concentrate on changing roles in Arab society, the socialization patterns of Arab children, interaction of social change in the Arab family, and communication among scholars. At present, enrollment is approximately 870 full-time equivalent students.

The Lebanese University

The Lebanese University received assistance from the United Nations Fund for population activities in 1971 to develop its Department of Demography. Since then five demographers, three of whom are Lebanese, have participated in programs at the Institute of Social Sciences at the university. One of them is full time at the institute. Two experts recruited by the United Nations are also associated with the institute full time.

In teaching, demography is a requirement for the "licence" in sociology. In the area of research, two important publications have been issued: A study by Courbagea and Fargues, The Demographic Situation in

Lebanon 1: Mortality Projections; Methods and Results (Publications of the Lebanese University, Beirut, Oriental Library: 1973, 104 pages) and by the same authors, Demographic Situation in Lebanon, 2: Analysis of the Statistics. In addition, a meeting of experts was held by UNESOB in 1972, at which the above two authors appeared, as they did in December 1973 and at the regional population conference in 1974. During the coming year, the Department of Demography at the Institute of Social Sciences plans to further develop its teaching and research by starting a fifty-year study in demography, which will lead to a diploma in special studies with an option to specialization in demography.

St. Joseph University

While St. Joseph University has a medical school, it is believed they are doing no research or teaching in family planning.

V. CONCLUSIONS

Continual emphasis needs to be placed on stimulating work at a university level in Lebanon. Thus far the experience at the American University of Beirut has not been entirely satisfactory to the university authorities. Nonetheless there is reason to believe that they should be supported in the future.

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3. Demographic Characteristics of Youth in Arab Countries of the Middle East: Present Situation and Growth Prospects, 1970-1999. UNESOB, August 20, 1970.

4. Bickers, William. Induced Abortion: A Hazard to Public Health. Beirut: February 1971, p.6.

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LIBYA

LIBYA

Joel Montague

I. COUNTRY SETTING

In 1973 Libya's population was estimated at 2.1 million with a net average annual increase of 3.1 percent. In the same year 44 percent of the population was under fifteen years of age.

The overall population density per square kilometer in 1972 was one, but the density per square kilometer of arable land was seventy. The 1970 urban population was 26.6 percent of the total, and 44 percent of dwellings had piped water as of 1972.

II. HEALTH POLICY AND PROGRAMS

Systematic implementation of a public health service for Libya did not start until 1922, when construction began on the new city of Tripoli. According to 1972 figures, there are eighty-six medical establishments with in-patient facilities, of which forty-six are in government service, and a total of 9,079 hospital beds in the country with 8,803 in government service. This means that there are 43.6 hospital beds per 10,000 population. According to WHO statistics, there are 1,183 maternity-pediatric beds in the country, of which 1,136 are in maternity-pediatric hospitals. As of 1972, out of the 1,525 physicians in the country, 1,501 were in government service. A total of 130 dentists were registered (one

dentist to each 16,000 population), and there were 310 pharmacists (one to each 6,700). Some 2,116 assistant nurses and assistant midwives were registered, along with 3,199 nurse-midwives.

There were no schools of dentistry or pharmacy, as of 1973, and there was one school of medicine (started in 1970).

III. POPULATION POLICY AND PROGRAMS

Libya was not visited in the institutional development survey. As far as can be determined, there are no organized family planning services available, and the official government position is that the country is underpopulated. Pharmacies are not permitted to sell contraceptives without medical prescriptions, and doctors are instructed not to prescribe them except for medical reasons. Abortion is illegal. There is no reason to believe that the government's policy will change in the relatively near future. The revolutionary government is inclined to think in terms of enhanced national power and a sizable army, which means increasing supplies of young men. Traditional values among the people of Libya are pronatalist. Marriage is universal, and reproduction starts early.

IV. UNIVERSITY DATA

There is one university in Libya, the University of Libya in Benghazi. It has Faculties of Arts, Economics, Science, Law, Agriculture, Engineering, Teacher Training, and Medicine. No detailed information is available on the Faculty of Medicine and no university catalogue has been received in spite of repeated requests.

V. CONCLUSIONS

Given the official posture of the nation's leaders toward what

is generally considered "modernism" and "westernism," there seems no reason to believe that there will be an opportunity to work in the field of population. There is, however, a Health Training Institute in Benghazi, established to train health auxiliaries and sanitarians, radiographers, laboratory technicians, and male nurses for hospital and health centers, particularly in rural areas. The institute might be a useful entry point for population education at some future date, as might the nursing school in Benghazi.

SOURCES OF INFORMATION:

WHO, Alexandria, "Libya," Mimeo.

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CONTENTS

MOROCCO

MOROCCO

Jean Lecomte and Joel Montague

I. COUNTRY SETTING

Located in the northwest corner of Africa, the kingdom of Morocco covers an area of 444,000 square kilometers and has a density of thirty-seven people per square kilometer. The population of Morocco was 11.6 million in 1960; the last census (July 1971) reported 15.4 million inhabitants, and the 1973 population is estimated around 16.5 million. The crude birth rate is around 47 per thousand, the crude death rate around 17 per thousand, and the natural rate of increase is estimated at about 3 percent per year. Although urbanization is growing (eleven cities with more than 100,000 inhabitants), 65 percent of the population still lives in rural areas. Forty-seven percent of the population is under fifteen years old and 52 percent under twenty. The working population is 50 percent. There are about 3 million women in the reproductive age (15 to 44), and the average family size is 5.4 persons.

Demographic projections indicate the following population trends according to two hypotheses:

1. A natural fertility decline as a result of social and economic progress and modernization:

1971	15,379
1978	18.914
1985	23,262
1992	28,609
1999	35,185

2. An induced fertility decline as a result of an active population policy and family planning program:

1971	15,379
1978	18,860
1985	22,905
1992	27,133
1999	32,569

The Moroccan population is 99 percent Moslem. Among the three Maghrebin countries (Morocco, Algeria, and Tunisia), Morocco is the most conservative, with strong traditional ties with the Islamic religion. The literacy rate is low: on the average one out of four persons is literate (34 percent of males and 13 percent of females). School enrollment is rather high at the elementary level but drops considerably in the secondary and higher level.

The percent enrollment in school of eligible age groups is:

Elementary: Male, 70 percent, female, 40 percent.

Secondary: Male, 21 percent; female 8 percent.

High school: Male, 3 percent; female, 0.6 percent.

Since it became independent from the French in 1956, Morocco has undertaken a series of planned development steps. Between 1968 and 1972, the actual annual increase (in real price) of the gross national product was 5.6 percent (more than 4.3 percent forseen in the 1968-72 Five Year Plan. The present plan (1973-77) foresees an economic growth of 7.4 percent per year. Priorities of the plan are agriculture, training of top civil servants, tourism and industrial development. The annual per capita income is now about US$230.

In 1973 there were 1,665 elementary schools with 33,670 teachers, almost 100 percent of them Moroccan. Enrollment in elementary schools in 1972-73 was 1,275,857. The secondary and technical levels consisted of 405

schools with 16,364 teachers (56.6 percent Moroccan) and 334,952 students enrolled. In 1972-73, 21,829 students were enrolled in higher education, and there were 896 professors at this level.

II. HEALTH POLICY AND PROGRAMS

The public health system in Morocco is highly centralized, with a vertical chain of command. The focal point is the minister himself. This situation is particularly true in the ministry's headquarters in Rabat, where very few actions, even routine ones, can be implemented before the minister's, or a close collaborator's, approval.

In Rabat, the ministry is divided in two parts: an administrative direction and a direction of technical services. The latter consists of such services as MCH, epidemiology, tuberculosis, sanitary control, health education, health statistics, and family planning. The family planning service consists of a chief of services (at the present time, a part-time gynecologist), a full-time nurse-midwife, and a full-time communications worker.

In each of the twenty-three provinces, all public health activities are the responsibility of the chief provincial physician. The basic philosophy of the Ministry of Health is to provide personalized (as opposed to mass campaign) care to all Moroccan families, with priority given to preventive services. To implement these objectives, the health infrastructure, unlike the administrative organization, is decentralized. Roughly speaking, in each province there is a provincial hospital with the usual medical specialties (internal medicine, surgery, pediatrics, obstetrics and gynecology). Each province is then divided in a certain number of smaller medical units with a health center in each, and these are in turn subdivided into medical sectors with dispensaries.

There are about 200 health centers. Theoretically, each one is responsible for 45,000 people and is directed by a doctor. In fact, a health center must take care of an average of 75,000 persons, and the shortage of doctors leaves some centers under the leadership of paramedical personnel. The health centers provide outpatient medical services, including family planning. In rural areas, MCH activities also take place at the health center level, and usually a center has fifteen to twenty beds. Ideally each center should supervise three dispensaries, each of them taking care of 15,000 people. In fact, each dispensary (about 600 throughout the country) serves, on the average, 25,000 persons. There are no doctors in the dispensaries, which are run entirely by three to five paramedical workers. Dispensaries provide family planning information and education but no family planning services, which are available only at the health centers. This situation is going to be changed, and it is expected that dispensaries will have the authority to resupply pills in the future.

Morocco has about 23,000 hospital beds, one for 700 people. About 400,000 people attend the hospitals each year and the government maternity hospitals deliver about 60,000 women each year -- out of 750,000 deliveries for the whole country. In other words, one woman out of fifteen delivers in a maternity hospital. Infant mortality is still high, about 120 per 1,000 in urban areas and 150 per 1,000 in rural areas.

There are 538 public health doctors, of whom 135 are Moroccans. The private sector consists of 567 doctors (173 Moroccans). The total number of doctors is, therefore, 1,105 with 308 (27 percent) Moroccan, or about one doctor per 14,000 inhabitants. Physicians are very unevenly distributed, however. About two-thirds of the private physicians work in the big cities of Casablanca and Rabat, where only 17 percent of the population reside. The School

of Medicine of Rabat has so far (1974) graduated 269 doctors. Most of them work in private practice, and Morocco will have to rely for quite a long time on foreign assistance for physicians.

The situation in regard to paramedical personnel is better, although not entirely satisfactory. There are 1,436 registered nurses ("diplomees d'etat"), 60 percent of the needs, and 7,553 practical nurses ("brevetees"), 80 percent of the needs).

III. POPULATION POLICY AND PROGRAM

From 1965 to 1967, political, legal, administrative, and medical measures were undertaken to establish a national family planning program, to be implemented by the Ministry of Health.

The legislative framework of the program was established in 1966. A royal decree created a High Commission on Population and local provincial commissions. A law that forbade the sale of contraceptives was abrogated, and in 1967 another law liberalized the abortion procedure. The king was one of the first state leaders to sign the United Nations Population Declaration.

In 1965 several doctors were sent abroad (London and Brussels) to be trained in family planning. Early in 1966 the first family planning clinics began to provide services, and the first national seminar on family planning was held in Rabat. In 1967 family planning services became available throughout the country in the public health centers of the Ministry of Health.

An official population policy became part of the 1968-72 Five Year Plan. The demographic objectives were to reduce the crude birth rate by 10 percent, from 50 per thousand in 1968 to 45 per thousand in 1972. In order to reach this goal, operational objectives were set up: 500,000 IUD's (Lippes loop) were to be inserted, and 100,000 couples were expected to adopt another contra-

ceptive method. In addition, an effort was to be made in the field of information, education, and motivation by having all the ministries collaborate in the program and by training 600 family planning motivators.

Program administration is the responsibility of the Ministry of Health. Family planning is integrated with other health concerns, and except for three persons at the central service of family planning at the ministry's headquarters there are no field personnel specifically responsible for FP. In principle, all public health personnel are involved in the program. Family planning services are available in about 200 health centers, rural and urban. Family planning is said to be a priority activity, and a family planning acceptor is considered a medical emergency at health stations.

Program methods are the Lippes loop, some Dalkon shields, oral contraceptives, and condoms. All family planning services are free of charge, and no special incentives are given to family planning acceptors. Sterilization is not part of the program, although many sterilizations are performed in both the public and private sectors. Abortion is widely available in the private sector. A large number of D&C's are performed in public health facilities, but no accurate statistics are available.

Family Planning Acceptors

Year	IUD's	Orals	Other	Total
1969	10,987	9,257	1,060	21,304
1970	9,763	14,275	1,029	25,067
1971	7,743	17,887	3,323	28,953
1972	5,277	19,346	2,855	27,478
1973	5,086	26,471	4,572	36,119

Education and information have been carried out by face-to-face contact with patients at the dispensaries, health centers, and maternity hospitals and by audiovisual aids (film, color slides, pamphlets, booklets) produced by the Health Education Service of the ministry. Mass media have not yet been utilized on a large scale, although during the past two years there have been more talks and speeches on family planning in the papers and on radio and television than in the past. The Ministry of Youth and Sports and Social Affairs has also become actively involved in promoting family planning information through its own nationwide network of young women's clubs ("foyers feminins") and its field personnel. In-service training has been provided through three national seminars and several local training sessions. Some doctors and nurses have been sent abroad (to Canada, France, London, and Belgium) for further training, and family planning is included in the curriculum of the nursing schools. Research and evaluation have been part of the program since it began. In 1966 and 1967, an urban and rural KAP survey were carried out in collaboration with the Ministry of Planning. Routine statistics are collected by the Ministry of Health, and some analysis of the socio-demographic characteristics of family planning acceptors has been done. A clinical study on depo-provera has been performed at the family planning pilot center of the maternity hospital of Rabat, and in June 1972 the first nationwide pill-IUD follow-up study was carried out. Other studies have been done in some provinces on the initiative of interested doctors.

During the 1968-72 Five Year Plan, the family planning equipment budget was US$1.2 million for the purchase of land, vehicles, equipment, construction and production of audiovisual materials. The operating budget is not separated from that of the Ministry of Health, but according to the plan it should be $1 million by 1972.

During the period 1968-72, the family planning budget represented about 0.5 percent of the health budget, which in turn was about 6.3 percent of the total government budget.

The operational targets of the 1968-72 Five Year Plan were not met. With regard to the number of IUD's to be inserted, only 8 percent of the target has been achieved, and far fewer educational and motivational activities have been carried out than expected. The program of training 600 family planning motivators ended after thirty-five were trained, and later these people were brought back as multipurpose paramedical personnel with the general health infrastructure.

In light of these past experiences, the 1973-77 Five Year Plan put less emphasis on demographic targets, and its major objectives are in the area of population education, information, and motivation. The demographic aim (to reduce the birth rate from 49 per thousand in 1972 to 45 in 1977) is considered only a working hypothesis; it is no longer a criterion for the success or failure of the program. Strengthening family planning services, in terms of quality, organization, postpartum program, better training for medical and paramedical personnel, and more involvement of other ministries are the major operational targets on which the program will focus in the years ahead.

In 1971 a Moroccan Family Planning Association was created under the umbrella of the Ministry of Health. The ministry gives it some help in terms of personnel and equipment, but the association is a private organization and a member of the IPPF. It consists of a national committee and four local branches in four provinces. By far the most active is the Casablanca committee, which concentrates on family planning information and education in special social groups (workers, youngsters, students).

The association also operates five family planning centers, which provide information, education, and family planning services. By the end of 1973 the association had recruited 485 IUD acceptors, 4,893 pill acceptors, and 202 acceptors of other methods.

Contraceptives are easily available from pharmacists in Morocco. It has been estimated that around 80,000 cycles of pills are sold each month (as compared with 12,000 in 1967). Private physicians also insert IUD's, prescribe pills, and perform abortions and sterilizations, but no data are available regarding these activities.

IV. UNIVERSITY DATA

Mohamed V University

The university, founded in 1959, is a state university responsible to the Ministry of National Education. The university consists of four faculties, two libraries, and one research institute. There is no dean or rector; each faculty has its own dean, and the university is run by a university council under the chairmanship of the Minister of National Education and composed of representatives of the various faculties. In 1972-73 there were 17,929 students (443 foreigners) and 671 professional staff. Units at the university are: Faculty of Law, Economics, and Social Science (usually called the Faculty of Law), Faculty of Science, Faculty of Letters, Faculty of Medicine, National Archives, National Library, and University Center for Scientific Research or "Centre Universitaire de la Recherche Scientifique" (CURS).

The Faculty of Law is located in Rabat (6,600 students in 1973-74), and it also has an annex in Casablanca (about 3,000 students). The Casablanca annex is due to become independent in the near future, and it is expected to have an annex in Fez. The Faculty has three departments, each providing a

license degree after three years of study, and a doctoral degree (DES) after a minimum of two years additional study. The departments are: Law, Economics, and Political Science. Each department has an Arabic and a French section.

The number of students registered for the license degree in the academic year 1973-74 are: first year, 4,531; second year, 1,489; and third year, 632; a total of 6,652. There are 996 women and 253 foreign students. At the doctoral level there are 566 students, with 68 women and 22 foreigners.

Although there is no formal curriculum in demography or population dynamics, some related elements are taught in various departments, along with some formal courses such as geography, economics, political and social factors in developing countries, and structural problems of development. Some statistics are also part of the program.

At the doctoral level, students must prepare two certificates and a thesis. Depending on the department, but especially in economics, the candidates for a doctoral degree do some work in demography.

There is no organized or systematic research related to population. A number of students, however, have written interesting theses on such subjects as population, family planning, Moroccan women, and natality. Dr. Belekziz, the dean of the faculty, has been working with Mr. Khatibi, professor of sociology, and Mr. Naoiri, professor of geography, on United Nations-sponsored research on law and population. Since 1968, there has been much talk of a reform of the university, and there are plans to organize a 35-hour course in demography for students in the Department of Economics.

The Faculty of Letters has three departments: Letters, Geography and History, and Philosophy. Here, too, the department provides the license degree and the doctorate.

The Department of Letters has no course in population. In the Department of Philosophy there are some courses in sociology, but the main interest in population rests in the Department of Geography and History, especially in the geographic section. However, this population concern is still minor, and there is no research being done in the population field.

The Faculty of Science has no special activities related to population.

The Faculty of Medicine has graduated 269 doctors, the first group in 1969. In the coming years, the faculty expects to graduate 100 doctors per year. In order to increase the number of physicians, the Five Year Plan foresees the creation of a new Faculty of Medicine in Casablanca, with the first class graduating in 1979-80. The construction of two university hospitals (Casablanca and Rabat) is also planned for 1973-77.

The curriculum of the Faculty of Medicine does not include formal courses in family planning. However, Dr. Chaoui, professor of Obstetrics and Gynecology at the faculty and chief of the family planning central service at the Ministry of Health, does give about ten hours of lectures on family planning when teaching obstetrics and gynecology. All the medical students, receive some practical training in family planning at the maternity hospital of Rabat.

The curriculum is clinically oriented. At one time, the former Minister of Health made it clear that he hoped to reorganize the curriculum to better meet the needs of the country. The 1973-77 five year plan also recognizes the defects of the present curriculum and expects to reorganize the program of medical studies to better adapt future doctors to the country's real health problems.

Social medicine, public health, and comprehensive community medicine

are all concepts far from the concern of faculty members. The student doctors, however, do have practical training in a public health center where they can get acquainted with local pathology and working conditions and encounter women who want to practice family planning.

CURS is a research center divided in two parts: the "Institut d'Arabisation," an autonomous institute devoted to linguistic research, and CURS itself has four research sections: history, sociology, geography, and psychology. No planned research programs are organized. The center's major achievement is the publication of the Bulletin Economic et Social du Maroc, a leading sociological publication, which sometimes carries articles on population-related matters. A new director sees it as becoming more active in the future.

Since the abolition of the Institute of Sociology, which was part of the university from 1961 to 1970 and provided among other things a certificate in demography (after one year of study), no formal attention is given to population problems. There are some informal courses on demography, sociology, population problems, and family planning, and some students have written their theses on these subjects. But no systematic, organized, and formal courses on population can be found, nor is any systematic research conducted.

Advanced Institute of Nursing

("Ecole des Cadres")

Located in Rabat, this school is the highest school for training paramedicals in the country. Created in 1963, it is responsible to the Ministry of Public Health. The school provided one-year program study until 1968. Since then studies have been extended to two years and students are graduated with a State Diploma of Assistant Health Specialist (Diplome d'Etat-Adjoint de Sante Specialiste). Four specialties are available: majors in preventive service,

hospital service, nursing education, and midwifery. The school is open to registered nurses ("Diplome d'Etat"), after successful completion of an entry exam.

The curriculum includes common courses for all the sections and special courses in different specialties. All students are required to attend fourteen hours of family planning during the second year of study. At the end of the second year the students do field work and write up a thesis. A few students chose family planning as their subject.

Year	Graduates	Enrolled
1964	16	
1965	11	
1966	17	
1967	6	
1970	15	
1971	12	
1972	18	
1972-74		27
1973-75		22

The teaching staff is composed of six full-time professors who belong to the Service de la Formation Professionelle of the Ministry of Health, and twenty-one part-time professors from the Technical Service of the Ministry of Health, the Institute of Hygiene, the Faculty of Law, the Faculty of Letters, the Institut of Cooperation Pedagogique, and the Population Council.

Schools for Registered Nurses

("Ecoles des Diplomes d'Etat")

The schools for registered nurses are middle-level nursing schools responsible to the Ministry of Health. The first such schools were created in Rabat and Casablanca in 1960, and by 1974 there were a total of four (Rabat, Casablanca, Marrakech, Meknes). The equipment budget for the schools are provided by the provinces or prefectures.

The objective of these schools is to train multidisciplinary paramedical personnel and to give them the necessary theoretical and practical skills to carry out various nursing related activities (hospital care, preventive medicine, health education, training of auxiliary personnel, and so on). Educational requirements for enrollment are: graduation from a high school (baccalaureate); or completion of the eleventh or twelfth grade of secondary school and successful completion of an entry exam; or three years experience as a para-professional in public health ("infirmier breveté"), completion of correspondence courses and an entry exam (different from the one mentioned above).

The program of studies lasts two years, and there is a balance of theoretical and practical training. The first three months of the first year are devoted entirely to theory. After that, every morning is devoted to practical training in various disciplines (internal medicine, surgery, pediatrics, and public health). During the second year the practical training is primarily in pediatrics, obstetrics and gynecology, public health, and various medical specialities. During the first year the students have twenty hours of sociology, and during the second year fifteen hours of demography and public health statistics, ten hours of family planning theory, and one week of practical training in family planning.

The number of graduates is around thirty per year per school, that is, a total of around 120 per year. About twenty go to other ministries, such as the Ministry of Defense.

Schools for Practical Nurses

("Ecoles Preparant au Brevet d'Etat")

At the lowest level of paramedical schools there are about eighteen

schools for practical nurses ("infirmiers brevetes") with around 1,000 students for the entire country. The required level of education for the candidates is the fourth year of secondary school (10th grade) and successful completion of the entrance exam.

Family planning is taught by the monitors of the schools and is extremely elementary. The course gives students some introduction to the subject, and during their practical training they are involved in the motivation, education, and information of the women who come to the dispensary or public health center.

Besides courses in these various paramedical schools, family planning is also included in "in-service training" for local personnel. For instance, in 1969 family planning was part of a training session for nurses in [illegible], and in 1970 it was included in refresher courses for the monitors of paramedical schools.

The National Institute of Statistics and Applied Economics

"L'Institut National de Statistique et d'Economie Appliquee" (INSEA)

A center for training statisticians was created in 1961 in Rabat. The center's objective was to train technicians in statistics and economics from various French-speaking African countries. In 1967 the center became the National Institute of Statistics and Applied Economics. Administratively, the INSEA belongs to the Division of Statistics of the Secretariat of State for Planning. In 1966 a project agreement was signed with the United Nations Development Program (UNDP) to assist development and to help the institute train its own teaching and research staff, which would progressively replace the UN professionals teaching at the institute. The UN project was terminated in 1973, and all the teaching staff of INSEA are now Moroccan.

The INSEA provides three types of degrees:

1. Degree of Assistant Statistician ("Adjoint Technique de la Statistique"): Educational requirement for application, 6th year of secondary school; duration of studies, two years; number of students graduated, 1965-73, 189 (166 Moroccans, 17 Malians, 2 Zairois, 1 Congolese, 1 Ethiopian, 1 Tchadian, and 1 Tunisian). Demography is taught in the second year (sixty hours).

2. Degree of Technician of Applied Statistics ("Ingenieur d'Application de la Statistique"): Educational requirement for application, Baccalaureate; duration of studies, three years; number of students graduated, 1964-73, 221 (120 Moroccans, 44 Algerians, 11 Camerounais, 1 Congolese, 2 French, 6 Malians, and 37 Tunisians).

In the academic year 1973-74 there were 151 students enrolled (86 Moroccans), 74 in the first year, 40 in the second year, and 37 in the third year. The program consists of formal and practical teaching along with field training at the end of each year of study. Demography is taught in the second and third years (seventy-eight hours).

3. Degree of Technician in Statistics and Economics ("Ingenieur Statisticien Economiste"): This third and highest level of study provided by the institute will be inaugurated in October 1974. Admission is subject to an examination, for which candidates should have the following level of education: (1) graduation from the INSEA, Ingenieur d'Application de la Statistique; (2) graduation from the university, License in Science or Economics, or equivalent degree.

Two options, statistics and economic analysis, will be available. Studies will last two years. The first year will be devoted to applied statistics and techniques of planning, and the second to individual work and research, including

This third cycle of studies has been set up with the financial and technical assistance of the Canadian government, which will provide teaching personnel, equipment, and fellowships for foreign students as well as for Moroccan students to get further training abroad. The Canadian assistance is expected to last for about 5 years.

The curriculum for the Ingenieur d'Application de la Statistique also includes substantial experience in the design, field work, and analysis of an actual research project, carried out with the guidance of the faculty. Field work is usually conducted during the summer, with analysis taking place in subsequent class exercises. The 1973 field training project was a study of rural-urban migration carried out in part with support from a Population Council grant. The 1974 project involves a study of the family, including sociological, economic, cultural, and demographic aspects.

INSEA is also planning to carry out a two-year study on external migration. An exploratory mission is expected to go to Europe in September-October 1974 to collect basic information and to contact other research institutes that might be interested in participating in such a study. Based on these basic data and information a two-year research design will then be drafted and possibly submitted to the Ford Foundation for financial support.

INSEA is a training institution for middle and top level technicians, but is expanding quite rapidly into a true institution of higher

education open to Moroccan and foreign students. Although its primary purpose was, and still is, teaching, the institute has recently begun to put more emphasis on applied research. Through its practical training program, not only are students exposed to the full range of steps and problems associated with field research, but also the topics chosen are of immediate policy interest to the government of Morocco.

The present staff of the institute, under the direction of M.C. Bennazou, consists of eleven full-time professors attached to the institute, fifty part-time faculty from the university, other ministries, and so on, and four short-term consultants.

The Center for Research in Demography

"Le Centre de Recherches et d'Etudes Demographiques (CERED)

CERED was created in 1970 to measure and analyze demographic changes in Morocco for better economic and social planning. The center is also located in the Division of Statistics of the Secretariat of State for planning. It has received USAID financial support and technical assistance from the University of North Carolina. The basic objectives of this research institute are the:

1. Design and testing of improved methods for measuring population changes;

2. Collection of special types of substantive data on population

from various sources (census, special surveys, administration);

3. Analysis of available data, determination of future population trends, and population projections.

So far, CERED has concentrated on methodological research on population growth estimation, through a field survey based on a dual reporting system (Deming-Chandrasekar matching procedures). The sampling area covers a population of 80,000. CERED is part of the Poplab organized under the direction of F.E. Linder from the University of North Carolina.

CERED staff consisted of Mr. Rachidi, director (a demographer), five other demographers, four technicians in statistics, and seventy field workers. In Morocco CERED is informally in touch with the Faculty of Letters and the Faculty of Law of University Mohamed V and with the Training Center of Newspapermen, where Mr. Rachidi is giving some courses in demography. Mr. Rachidi is also a part-time professor at INSEA.

CERED is also involved in a study of tape recorded interviews carried out during the 1971 census, and a Population Council grant of $1,500 has been given them to cover the cost of a consultant for this study. CERED has a professional relationship with the University of Alberta in Canada. CERED puts out its own publication, Asoukan (to date, two issues have been published). From 1970 to 1973 a major part of their budget has come from USAID (about US$200,000 per year). For fiscal year 1974, USAID has agreed to support CERED's operational budget at a maximum level of $150,000, with the understanding that the Moroccan government will assume 50 percent of the operational budget for fiscal year 1975 and the full cost of its operation from January 1976. There may be some United States funds, $50,000, in 1976 and 1977, for supplementing salaries for demographers.

Even after the termination of CERED's present analytical and methodological work, Mr. Cherkaoui, director of the Statistical Division of the Secretariat of State for Planning, feels that there is a strong need for a continuing demographic analytical service and research unit within his division. Its function would be rather like a "Poplab II" or CERED II unit, a "think tank" that would analyze already existing data, assist in the planning and analysis of demographic surveys, and so on.

One of Morocco's first priorities in the demographic field is to establish a national demographic survey. This has been authorized by the government and budgeted in the 1973-77 Five Year Plan. Mr. Cherkaoui plans to utilize the experience as well as most of the personnel of the CERED, who would be legally transferred to the Bureau of Census by 1975-76, in order to enable the Moroccan government to include them in its "budget de fonctionnement."

Another of Mr. Cherkaoui's aims is to participate in the world fertility survey. The question of whether this survey can be carried out in conjunction with the national demographic survey is still pending.

One of the major problems Mr. Cherkaoui is now facing is the shortage of high-level trained personnel and middle-level professional staff.

CERED will continue analytical and methodological research for the next two years in order to refine the methodology of the dual reporting system and to apply this experience to the national demographic survey.

By 1976 the new Poplab or CERED II will be established in the Bureau of Census as a demographic unit to provide continuing analysis of national demographic survey, the world fertility survey, and other demographic data.

African Training and Research Center in Administration for Development (CAFRAD)

The center, in Tangier, has as its objective the provision of short courses for senior government officials in both Anglophone and Francophone Africa. It has contacts throughout Africa with international, subregional, and national institutions and agencies that are working in high-level training programs. CAFRAD's efforts are directed at bringing together the most senior officials, as opposed to the national institutions of public administration and universities that provided short and long-term training programs for lower level officials. They are doing relatively little in population but feel that it is a subject that impinges on much of their work. In 1973 they held a conference on "The Problems of Managing Rural and Urban Development in Africa," which was attended by 30 participants from African countries.

In the proposed training program for CAFRAD 1971-74, a seminar on the management of demographic programs and public health services is scheduled. This seminar is to be for permanent secretaries, heads of public health units charged with population programs, and officials working in the area of demography. The seminar would last for ten to fourteen working days. It would probably be followed by two meetings of two weeks duration each on the same subject at the subregional level outside of Tangier. At the time of the site visit, CAFRAD could provide no concrete details on the meeting. The objectives of the meetings as set forth in the draft of the proposed training program were "to develop an awareness of possibilities and problems of new health and family planning technology," the relevance and importance of advanced statistical techniques and computer hardware, and so forth. The content and methodology of the specialized meeting, however, were only to be determined after a survey had been conducted to reveal strengths and weaknesses in the field. In general, the program was

to be concerned with the organization of rural and urban services; short and long-term administrative problems of family planning programs; sociological, economic and political factors surrounding health and population programs; technological possibilities and consequences; the role of statistics; and the relationship of these programs to the planning process.

V. CONCLUSIONS

Although not exhaustive, this inventory of higher educational institutes and research settings in Morocco has surveyed the few institutions most likely to be involved or interested in training and/or research in population. Except for the INSEA, which has both training and field research in demography; CERED, which specializes in demography research (but with no training component); and the paramedical schools of the Ministry of Health, which do include family planning in their curricula, there are no institutions with a formal and strong training or research program in population. The possibility of donors making a contribution to the Medical School appears limited.

Although Morocco suffers from a shortage of persons trained in demography, most of the fellowships available for advanced training abroad go unused each year. INSEA graduates, with their relatively scarce skills in quantitative analysis, are quickly assigned by the government to a wide variety of governmental agencies where such skills are needed, and the agencies are usually reluctant to release junior staff for advanced training abroad. Demography as a specialized area is not well-known in Morocco, and demographic analysis and studies are not given separate and high priority among the many urgent tasks facing the government.

A Population Council/Ford Foundation review team, visiting Morocco in 1972, recommended that the most appropriate form of external assistance

to demographic research and training in Morocco for the foreseeable future should consist of a regular program of consultant visits to assist in on-going projects, provision of overseas training fellowships for advanced work in demography and the provision of French translations of demographic publications written in English.

SOURCES OF DATA

Site visits: Jean Lecomte, January - March 1974.
J. Montague, May 1973

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PAKISTAN

PAKISTAN

J. Timothy Johnson

I. THE COUNTRY SETTING

The crude birth rate in 1965 was estimated to be about 50 for Pakistan.* The family planning target for 1965-70 had been a ten point reduction in this rate, from 50 to 40 births per 1,000 population per year. As the program approached 1970, it became clear that a reduction by this amount was not likely to occur. The planning commission subsequently estimated that a five point reduction had occurred, giving a 1970 birth rate of 45.

When the September 1972 census figures were released, Pakistan was jolted with the realization that its population had increased by over 50 percent since the census of January 1961. This result confirmed what some had feared, that the goal of a significant reduction in natural increase rates had not materialized.

Despite this evidence, the Population Planning Division in 1972 released its estimate, based reportedly on the census figures, that the growth rate had declined even further, to 41 per 1,000 by 1972, which if true would indicate that the program was well on its way to achieving its target growth

*All references to Pakistan, except where specifically indicated, exclude the area formerly known as East Pakistan, which proclaimed its independence in 1971. Thus "Pakistan" as used here refers to the pre-1971 territory of West Pakistan.

rate of 40 by 1975. These figures were used by the government of Pakistan in the preparation and presentation of its revised strategies for the final two years, 1973-75, of the present Fourth Five-Year Plan.

The population of the area now known as Pakistan has quadrupled since the start of this century, from 16.6 million in 1901 to an enumerated population of 64.9 million in 1972 (Table I).

A detailed breakdown of the 1972 census, by age and sex for the different districts, has not yet been released, which makes it difficult to interpret the impact family planning activities may have had on fertility and growth rates. Also, some peculiarities in the population distributions in the different provinces, according to census data thus far released, raise some unresolved questions concerning mis-enumeration in different areas.

Depending on the assumptions one uses for under- or over-enumeration in 1961 and 1972, the intercensal annual continuous growth rate averaged between 2.9 and 3.6 percent, with the upper part of this range considered more likely by most demographers and census officials. Until age distributions are released, it will be difficult to determine whether fertility rates showed any regional changes corresponding to the intensity of family planning efforts, but on the basis of as yet unpublished comparisons of the periodic survey, estimates of the Population Growth Estimation Project (PGE) and the subsequent Population Growth Survey (PGS), there appears to have been little change in crude fertility and mortality rates between 1962-63 and 1969. These survey results indicate a nonsignificant crude birth rate decline from 52 to 50 per 1,000, with a nonsignificant rise in the crude death rate from 18 to 19 per 1,000, for a modest decline in natural increase from 34 to 31 per 1,000 (M. Afzal, prepublication draft of comparison and interpretation of PGE and PGS findings).

Table I

ENUMERATED CENSUS POPULATION OF THE AREA

NOW CONSTITUTING PAKISTAN

Census Year*	Population (millions)	Percent Increase Since Previous Census	Continuous intercensal Annual Growth Rate
1901	16.6	..	..
1911	19.4	16.9	1.56
1921	21.1	8.8	84
1931	23.6	11.8	1.12
1941	28.3	19.9	1.81
1951	33.8	19 4	1.71
1961	43.0	27.2	2.41
1972*	64.9	50.9	3.55

* The pattern of holding censuses in years ending in 1 was broken when the anticipated 1971 census was postponed by twenty months, until September 1972, because of internal difficulties.

The age structure of Pakistan shows the characteristic pyramid of a high-fertility population, in which the high fertility is a more significant determinant of the age structure than is the mortality rate. The age structure of Figure 1 and Table II, based on a projected age structure consistent with the enumerated 1972 population (corrected for an estimated 2.8 percent net undercount), shows the large group of women who in the past ten years have entered the reproductive age groups and have contributed the even larger next wave of females who will be reaching reproductive age in the coming years. The 1961 age structure would have led to a rising crude birth rate about a decade later, if age-specific fertility rates had remained unchanged. Thus, if there has actually been a slight decline in crude birth rate, as Afzal's estimates indicade, the general fertility rate will have declined somewhat more.

Pakistan's 1972 census reported a ratio of 113 males to 100 females. There is evidence that in this 98 percent Muslim, still very traditional and male-dominated society, there is both a differential under-enumeration of females and higher female than male mortality, both of which contribute to the observed sex ratios. The 1972 sex ratio of 113, while very high, still represented a decline from the ratios of 116 and 115 reported respectively in 1951 and 1961. Whether the change represented improved reporting of females or whether reductions in differential mortality rates played a part is as yet unclear. Pakistan's urban population has steadily risen from barely 10 percent in 1921 to 25.6 percent of the total in 1972. During the 1961-72 intercensal period, the enumerated population of eighteen cities, which in 1972 had over 100,000 inhabitants, increased at 4.4 percent per year, and thus increased their share of the total population from 14.3 to 15.9 percent, with over ten million people in these centers by 1972. Over half of this population was contributed by Karachi

Figure 1

Distribution of Pakistan's Population by Age and Sex, 1972

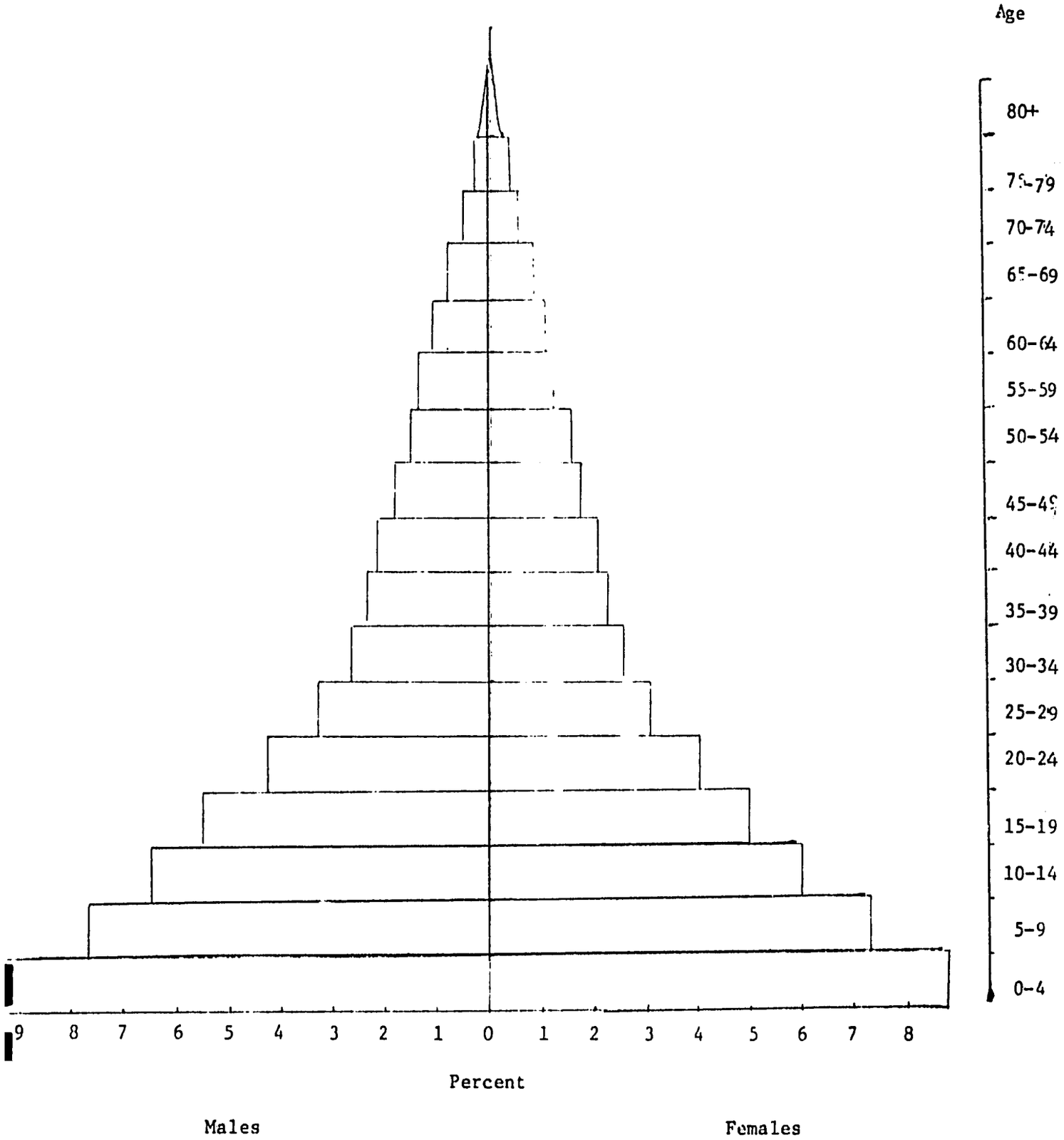


Table II

PROJECTED POPULATION OF PAKISTAN BY SEX AND AGE, 1972

Age Group	Number (in thousands)			Percent		
	Total	Males	Females	Total	Male	Female
0-4	12,060	6,184	5,876	18.1	9.3	8.8
5-9	10,003	5,155	4,848	15.0	7.7	7.3
10-14	8,337	4,305	4,032	12.5	6.5	6.0
15-19	7,035	3,637	3,398	10.5	5.5	5.1
20-24	5,558	2,878	2,680	8.3	4.3	4.0
25-29	4,203	2,180	2,023	6.3	3.3	3.0
30-34	3,440	1,789	1,651	5.2	2.7	2.5
35-39	3,094	1,616	1,478	4.6	2.4	2.2
40-44	2,814	1,476	1,338	4.2	2.2	2.0
45-49	2,410	1,268	1,142	3.6	1.9	1.7
50-54	2,042	1,072	970	3.1	1.6	1.5
55-59	1,726	906	820	2.6	1.4	1.2
60-64	1,380	728	652	2.1	1.1	1.0
65-69	1,054	564	490	1.6	.8	.7
70-74	727	393	334	1.1	.6	.5
75-79	450	245	205	.7	.4	.3
80+	358	182	176	.5	.3	.3
TOTAL	66,691	34,578	32,113	100.0	51.8	48.2

Based on Lee I. Bean, et al., Population Projections for Pakistan, 1960-2000. Karachi, Pakistan Institute of Development Economics, 1968. Table C 8 (interpolated as of 1972 by J. Naeem).

(3.5 million) and Lahore (2.1 million).

In economic terms, Pakistan remains among the poorer nations of the world, with a per capita gross national product estimated at about US$100. Pakistan's unenviable position among developing nations is also seen in its high infant mortality rate, estimated at about 142, and its very low literacy. In 1961, 13.6 percent of the (West) Pakistan population was considered literate. Almost half of this total had less than five years of formal education, and literate females comprised only 21 percent of the total literate population.

Short-term projections of the 1972 population, based on adjusted 1961 census figures, have yielded estimates fairly close to the enumerated 1972 population. If we project further, to 1985, we find Pakistan's population to be around 100 million, depending upon the fertility and mortality assumptions employed. The problems of national economic and social development are not hard to identify, since they are substantially the same as those that have plagued the country in past years. However, the solutions for educating, feeding, and employing a rapidly expanding population in a geographical and social setting that constrains certain types of development remain elusive.

Consideration of Pakistan's present situation among developing countries cannot ignore the historical setting. Pakistan, created as a bipolar Muslim state from former undivided British India in 1947, has had a turbulent history since then. In the recent past the trauma of the 1971 secession of the former East Pakistan, and the associated internal turmoil in the residual state of Pakistan, resulted in setbacks for many existing developmental efforts. The situation in Pakistan, once again apparently under some control, remains somewhat fluid and uncertain, with provincial factionalism and other centrifugal forces still much in evidence. The task of holding them in check, while trying

to solve the range of social problems that plague the country and threaten its stability, will be a major task for the country's leaders in the foreseeable future.

Government efforts to promote reduction in the high rate of natural increase were among the victims of the political and social turmoil of 1969-71.

II. HEALTH POLICY AND PROGRAMS

Under the four province system of post-1971 Pakistan, primary responsibility for health administration rests with the provincial health ministries. Overall coordination of major public health programs, however, is still carried out by the central government through the Health Division of the Ministry of Health, Labor, and Social Welfare.

Like many other activities in Pakistan, the field of health has been under close scrutiny during the past few years. Criticism has been levelled both at the overall lack of adequate provision of health services, and particularly rural health services, and at the fragmented "campaign" type approach that has characterized much of the past health system. The Pakistan Medical Association (PMA), in the preamble to its Alternate People's Health Scheme of June 1972, bluntly states that "it is no secret that our so-called health service is a farce." The report also identifies the key problems as a lack of an integrated health infrastructure to handle the previously separate programs in, for instance, malaria, tuberculosis control, and other preventive health measures, so that "in the existing system, there is no place for rural health... The present set up has been evolved primarily for the urban population, i.e., 30 to 35 percent of the total population." Any attempts to restructure the system, however, much start from a base in which the ratio of physicians to the general population is very poor, yet far better than the

availability of paramedical personnel, such as hospital and public health nurses, medical technicians, and trained midwives. The national average of one physician per approximately 5,000 population masks the great urban-rural disparity, in which rural access to physicians is often virtually nonexistent.

In 1970 there were about 13,500 physicians in (West) Pakistan, of whom about 30 percent were in private practice. At the same time there were 4,700 trained nurses, 1,900 lady health visitors, and 1,800 trained midwives. In addition, there were nationally about 1,200 sanitary inspectors.

Rural health services were provided mainly through 125 rural health centers, supplemented by about 250 rural health subcenters and health units. There were in West Pakistan about 28,000 hospital beds, including 3,000 tuberculosis hospital beds. Ambitious targets for increases in manpower and facilities for the 1970-75 period were established, with an average annual budget of Rs200,000,000. However, it is doubtful that most of these targets will be achieved, largely because of the country's internal problems during the first two years of the plan. Medical training, conducted in 1970 through seven medical colleges and one postgraduate training center, will certainly be increased in numbers, if not in quality. There were in 1970 altogether twenty-one nurses' training centers, plus five training schools for "lady health visitors," who are functionally equivalent to public health nurses. In addition, there were thirty-six midwife training schools and four other paramedical institutes. For these nonphysician training schools, most of which are quite small, the government plans for expansion were very modest.

The preceding comments have identified the key health problems as lack of health manpower, maldistribution of personnel, and a generally inadequate health infrastructure, which in effect has left much of the populace without access to services.

The health scourges that any revised health scheme would have to tackle include such specific problems as malaria and tuberculosis, and less specific problems such as lack of education to overcome unhygienic living conditions and customs and problems of malnutrition. Solutions will require rather drastic restructuring of health services, with concomitant increases in facilities and in training and utilization of medical and particularly paramedical personnel.

Training of Health Personnel

Medical education in Pakistan is standardized in accordance with central government policy, with the medical school curriculum set by the Pakistan Medical Council. The minimum requirement for admission is a second division pass in Intermediate Science (I.Sc.). The M.B.B.S. program, patterned after the British system, takes five years, and a subsequent one-year internship is recommended but not required. Emphasis is on curative rather than preventive medicine, although all schools have some preventive medicine faculty members.

Nursing education is also standardized, and all nursing programs require approval by the Pakistan Nursing Council. Nursing students, who must have achieved a matriculate level education before admission, undergo three years of nursing school training to become "general nurses." An additional year of midwifery is required for full nursing qualifications. In 1966, for (West) Pakistan there were 1,227 places for nursing students, of which 996 (or 81 percent) were filled. This suggests about 300 graduates per year for the three-year program. Of the 186 nurse-midwifery training positions, only 128 (or 69 percent) were filled. More recent figures on nursing school enrollments could not be found. However, between 1966 and 1970 there was an

increase of only one nursing school. One graduate level nursing college, established largely to fill the need for nursing school teachers, also exists in Karachi.

Public health nurses, or health visitors, receive twenty-seven months of training. The admission requirements to the five undergraduate training schools are the same as for nursing schools.

Government midwives receive an eighteen-month apprenticeship training. Admission to this program requires eight years of schooling.

Postgraduate public health training. The only postgraduate public health institute in Pakistan is the Institute of Hygiene and Public Health in Lahore. This institute has nine postgraduate departments (Public Health Practice, Maternal and Child Health, Biostatistics, Administration, Nutrition, Occupational Health, Environmental Sanitation, Epidemiology, and Parasitology). Each department is headed by a professor, and has in addition an assistant professor and a lecturer-demonstrator. There is also an interdepartmental paramedical program, for training of over 100 health assistants annually.

The institute can take in up to fifty physicians each year for the ten-month postgraduate training courses. These diploma courses, comparable to the M.P.H. degree of United States schools of public health, are subdivided into the Diploma in Public Health Program (D.P.H.), and the Diploma in Maternal Child Health (D.M.C.H.).

Most of the physicians taking the diploma courses remain in government service as salaried employees during their training courses and subsequently return to government service, often as district health officers.

While the institute trains physicians from throughout the country, funding at present is still obtained primarily from the Punjab provincial government. The institute hopes that the central government will take on this fund-

ing responsibility, and that funding will be increased by about 25 percent beyond the present level of Rs700,000 to Rs800,000 per year for recurring, and about Rs300,000 for nonrecurring, expenses. Small additional sums have been obtained from other agencies to support particular research projects.

The institute hopes during 1974 to establish a population dynamics department to strengthen the teaching-research capacity in population-related areas. At present, 6 and 10 percent of total lecture time is spent on population in the D.P.H. and D.M.C.H. programs respectively. Research in population has been limited thus far to such topics as "length of gestation" and a study of "provoked abortions." However, the institute is eager to expand its activities and has approached the Pakistan Population Council for support.

III. POPULATION POLICY AND PROGRAMS

As in many other countries, the first organized response to the individual, family, and national implications of rapid population growth came with the establishment of the voluntary Family Planning Association in 1953. This was followed during the First Five-Year Plan, 1955-60, by the central government's allocation of a token sum of Rs500,000 for the promotion of family planning.

During the Second Five-Year Plan, 1960-65, the government's allocation was increased to RS30.5 million (including East Pakistan), for a family planning program which was to operate within the existing health services. Actual expenditures, which include $9 million in foreign assistance, came to only 60 percent of this allocation. Despite claims of 1,330 "health and family planning" clinics operating in West Pakistan, the reported number of IUD insertions was only 9,165, while 1,025 sterilizations were performed in

the province during these five years. In addition, about two and a half million units of conventional contraceptives were sold. These results were far below the target of 600,000 couples to whom services were to be provided in the West Wing. This approach proved inadequate and was followed by a much more ambitious program, introduced in 1965 for the third plan. This program involved the establishment of a largely autonomous Family Planning Division within the Ministry of Health, Labor, and Social Welfare. A Family Planning Council was established at the central government level to plan, implement, and evaluate the program. Provincial family planning boards in East and West Pakistan were responsible for implementing the program. For the five-year period, the allocation for West Pakistan was Rs137.2 million, while the central allocation was Rs11.3 million. These figures include about Rs62 million in USAID PL480 funds, plus sizeable inputs for project assistance and commodities from SIDA, USAID, and the Ford Foundation, and lesser amounts from other donors.

District boards were established in all program districts to oversee the implementation of this program, through provision of clinical services, distribution of nonclinical contraceptives, and publicity and educational activities. The district organization was headed by a publicity-executive officer, who also served as secretary to the district board. He was assisted by a district technical officer, whose task was to oversee the activities of the medical and paramedical staff. Under the executive officer were family planning officers, who in turn were responsible for activities in their subareas. The base of the organizational pyramid consisted of indigenous midwives (dais), whose duty was to motivate clients and bring them into the family planning clinics, or else supply them with nonclinical methods. Conventional methods were also distributed through a network of shopkeepers acting as agents

for sale of program-supplied methods. The personnel levels reported at the end of the third plan, in June 1970, are shown in Table III.

During the early part of the third Five-Year Plan, the national family planning program enjoyed strong central government support, manifested not only by the large increase in funding but also by the frequent favorable public pronouncements by President Ayub Khan and by the appointment of a capable and particularly energetic senior civil servant as Family Planning Commissioner. As Table IV shows, program performance figures rose consistently and fairly rapidly, and the program was widely hailed as a success, even though no direct evidence of its impact on fertility had yet been demonstrated.

By the middle of the 1965-70 plan, a number of projects had existed long enough to be evaluated. While it was evident that there had been an increase in family planning knowledge and in accessibility and use of services, it also became clear that many problems existed. The organization of the program, with its heavy reliance on inadequately trained and supervised indigenous midwives, was reviewed and a number of weaknesses identified. Notably, strong emphasis on meeting preset performance targets, plus the use of monetary incentives to workers, had compromised the integrity of the reporting system, so that estimates of program effects on fertility were highly suspect.

Toward the end of the 1965-70 plan, difficulties in the operation of the program had led to experimentation with a revised approach to field motivation. This approach, started first in the district of Sialkot in late 1969, involved assignment of male-female teams of literate motivators to register all eligible couples. Household registration was to be followed by

Table III

FAMILY PLANNING DISTRICT LEVEL PERSONNEL

WEST PAKISTAN, JUNE 1970

Personnel Category	Number
District Executive Officers	37
Family Planning Officers	972
Medical Personnel (mostly part-time)	1,468
Paramedical Workers	856
Dais	13,865
Agents for Sale of Conventional Contraceptives	29,334

Table IV

REPORTED CONTRACEPTIVE PERFORMANCE, PAKISTAN

(By Six-Month Periods)

	Male & Female Sterilizations	IUD Insertions	Units of Conventionals Distributed	Oral Pill Packets
1965 Sept.-Dec.	476	31,589	9,652,652	..
1966 Jan.-June	889	124,240	14,165,953	..
1966 July-Dec.	972	155,263	26,493,093	15,862
1967 Jan.-June	854	182,617	36,409,984	28,994
1967 July-Dec.	877	193,148	45,179,446	11,259
1968 Jan.-June	13,681	232,807	51,987,082	8,830
1968 July-Dec.	36,526	234,810	52,869,240	1,599
1969 Jan.-June	21,090	203,538	49,561,887	3,780
1969 July-Dec.	6,043	167,536	50,252,634	1,722
1970 Jan.-June	4,254	175,418	52,462,822	3,125
1970 July-Dec.	2,717	134,678	44,790,692	4,640
1971 Jan.-June	2,042	102,874	24,023,101	6,228
1971 July-Dec.	1,988	69,311	12,126,017	16,511
1972 Jan.-June	1,325	55,070	13,075,110	43,037
1972 July-Dec.	1,582	51,602	12,886,404	47,930
1973 Jan.-June	1,582	55,263	16,869,900	115,041
1973 July-Dec.	1,711	35,688	15,648,948	539,130
TOTAL	99,428	2,205,452	528,454,605	847,688

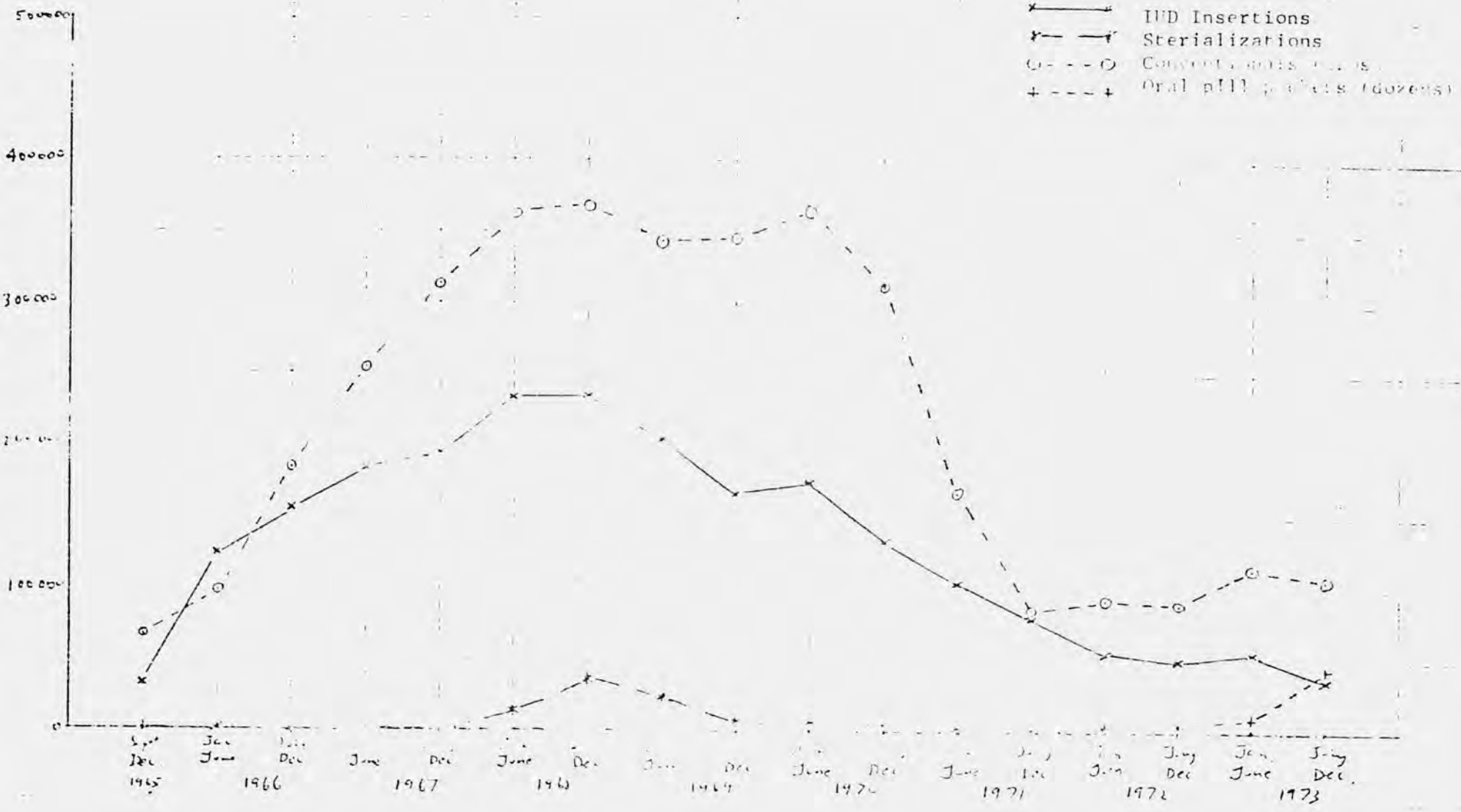
quarterly visits, designed to motivate couples to family planning acceptance and also to update household registers. Each team was responsible for an area containing 10,000 to 12,000 people, with an estimated 1,200 to 1,300 eligible couples. For every six teams, a family planning officer was assigned as supervisor. The work of these officers was in turn supervised by an inspection officer, who was responsible for six family planning officers, and hence thirty-six motivator teams.

In October 1969 the Planning Commission decided to recommend an increased budget of Rs606.7 million for the 1970-75 plan, with Rs259 million of this assigned for West Pakistan. Unfortunately, the early years of this plan coincided with internal political upheaval, culminating in the 1971 war with India and its political and social consequences for Pakistan. Earlier political support, which had helped the family planning program to survive and expand despite considerable social resistance, evaporated rapidly, and the program and its works, badly demoralized, floundered. Actual rupee releases for West Pakistan, instead of steadily rising as originally planned, fell to 35.4 million in 1970-71, and to 19.5 million in 1972-73. The contraceptive performance figures (Table IV and Figure 2) are a stark reflection of the decline in program activity that began in 1969.

In May 1972 the president appointed a high-level committee, chaired by M. Aslam, the president's representative on administrative inspection, to propose a revised approach to reducing population growth rates. The basic recommendations of the committee's report of June 30, 1972 were that:

1. The Continuous Motivation System (CMS), based on the Sialkot pilot project, should be extended to all tehsils (subdistrict administrative units) with a population density of at least 300 per square mile. This would provide intensive motivation to 74 percent of the population.

Reported Contreception Performance, Pakistan, by six month periods



Annual Reported Contreception Achievement

Figure 2

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2. The Family Planning Program should be renamed the Population Planning Program, in recognition of its more broadly based approach to population.

3. For the foreseeable future the program should retain its independence from health services. A merger could be considered after a small family norm had been developed.

The Aslam committee's report was substantially approved, and with minor modifications became the basis for the present population planning scheme. The endorsement of the CMS approach was based upon review of the reported Sialkot findings, as well as upon the recognition of the inadequacies of the previous system. The present writer, however, is constrained to introduce a note of caution, based in part on his own reading and recomputation of published findings, including particularly the "Sialkot Validation and Evaluation Study." These findings cast serious doubt upon the Aslam committee statement that acceptance levels jumped to three times the national level in Sialkot. If adjustments are made for urban-rural differentials in use, "Current users" reported in the Sialkot survey constitute about 7 percent, rather than the 11 percent based on urban over-sampling (uncorrected in the "Validation" results). This is not very much higher than the 5.5 percent reportedly found nationally by the 1968-69 Impact survey. Further, the three-year crude birth rate decline of 9.1 per 1,000 assumed (but not measured) in the committee report is not consistent with the much more modest declines in marital fertility rates measured in the first year and assumed for the subsequent two years. Further, there is some evidence (not published) that the Sialkot population registers have been neither as complete in coverage, nor as regularly updated, as the program planners had intended. These comments are

not intended to detract from the present program administrators' efforts to correct earlier program weaknesses, but rather to indicate both that the CMS approach is still largely experimental and inadequately tested, and that administrators must be alert to field problems in developing and maintaining complete registers and adequate data feedback on program performance.

After the doldrums of the 1970-73 period, the program appears, like the country, to be moving forward again. A much increased budgetary provision of Rs204.8 million has been made for the two years. The bulk of this will be provided by USAID, with about Rs74.1 million committed for 1973-74 alone. The government has committeed about Rs30 million for the first year, and may commit more for the second. The UNFPA is also expected to make a contribution of about Rs20 million in the second year.

Under the present four province structure, family planning funds are disbursed from the center, which has a provincial coordinating board, to the provinces, for distribution to districts. Distribution is based both on population size and on anticipated program activity. For 1973-74 the center expects to absorb Rs16.5 million, or 16 percent of the Rs102.3 million population planning budget. The Punjab's share is 52.7 million, Sind Province 19.2 million, the Northwest Frontier Province 11.0 million, and Baluchistan 2.9 million. It is actually estimated that total expenditures for 1973-74 will fall at least Rs20 million below budgeted amounts, due to delays in release of some donor funds and time lags in bringing the program to full operating level. It also appears, however, that any unexpended funds that can be carried over to 1974-75 can be readily absorbed during that period, since program costs are now expected to rise considerably above originally anticipated levels, and may reach Rs140 million. Though the program is still in a very fluid phase, certain patterns and strategies are emerging and can be briefly reviewed.

The former Pakistan Family Planning Council, redesignated the Population Planning Council, has been reconstituted as a smaller body of twenty-seven individuals and now includes a large component of nongovernmental representation.

The postpartum project, aimed at reaching women through motivational and clinical services in larger hospitals, has been expanded and will continue to be expanded. It will emphasize clinical contraceptive methods, particularly female sterilization and IUD insertion. In contrast, in the remainder of the program there will be a shift to oral contraceptives and condoms. Under revised program procedures, oral contraceptives can now be dispensed by field motivators and the network of distribution agents without medical examination or prescription.

The training of the cadre of paramedical clinical workers formerly known as lady family planning visitors has been expanded to include a much larger MCH component. It is anticipated that inclusion of some basic non-family planning health activity will enhance the public acceptability of these workers, and hence of their family planning activities. In token of their expanded role, these workers have now been redesignated as "lady family welfare workers." These workers formerly received their classroom training from training-research institutes. These institutes have recently been renamed as regional training centers (RTC's) and several new ones will be established.

The foundation of the present program is that the CMS approach will be extended to cover 74 percent of the population, residing in tehsils with a population density of at least 300 per square mile. This approach will involve about 8,500 full-time motivators. A less intensive system, more akin to the 1965-70 approach, will cover another 19 percent of the population. In these

areas, clinic-based services will be supplemented by mobile motivation units and by a network of supply outlets for conventional contraceptives.

The network of services thus covering 93 percent of the population will require an extensive and smoothly functioning data feedback system, to permit improved routine evaluation of the program. An ambitious system has been designed but awaits field testing to determine its adequacy.

A two-tier system for verification of eligible couples, acceptors, and birth status of these acceptors has been established for CMS areas, through follow-up by population planning officers of samples of couples listed on registers of motivators under their supervision. A small subsample of these verified records is then field verified by senior population planning officers. Feedback will also be used to assess the program effects on fertility at the local level, as a basis for rewarding effective field workers.

The field motivators receive a basic salary of Rs150 per month, plus various allowances currently totaling about Rs58. In addition, they receive a referral fee for sterilization cases. For clients using pills or condoms, a rebate of 50 percent of the payments for contraceptive sales is given after one year of "no birth." In the second no birth year, the rebate amounts to twice the cost to the client, and in the third year, three times the cost. This system is designed to continue until the fifth no birth year, after which payment ceases.

Since motivators can obtain considerable increases in their incomes by reporting good contraceptive sales figures, and by reporting nonbirths to registered acceptor couples, there appears to be a danger of misreporting, similar to the misreporting that helped to undermine confidence in the integrity of third plan achievement reports. This potential problem will require close

scrutiny, particularly as the CMS approach advances beyond the second year.

Recognition of the need to move beyond the CMS and clinic-based family planning orientation of the program, exemplified by the decision to substitute the broader term "population planning" for the program, has also resulted in the establishment of an embryonic Demographic Policy and Action Research Centre (DPARC), which will operate as a separate cell within the Population Planning Council headquarters. Although this unit has been planned for over a year, staff recruitment has barely begun. The task of the DPARC will be to look into ways to influence population trends through involvement of such fields as education, law, industry, and agriculture. The council budget has provision for subcontracting studies to universities and other bodies with appropriate research interests and capabilities. Panels of subject specialists, not all drawn from the Population Planning Council, will solicit and review research and action proposals from various sources.

IV. UNIVERSITY AND INSTITUTIONAL DATA

Program Training and Research

During the 1960-65 plan period, the first steps toward establishing research and evaluation centers and training institutions were taken. These activities were expanded during the 1965-70 period, in which West Pakistan had three training-research institutes, established mainly for training of paramedical lady family planning visitors. In addition, a central evaluation unit performed routine tabulations of district and provincial program performance and conducted a few more specific studies. A West Pakistan Research and Evaluation Center (WEPREC), assisted by the Johns Hopkins University through Ford Foundation support, conducted a number of specialized studies and collaborated in provincial training activities. In Karachi the National Research

Institute for Family Planning, assisted in part by the Population Council, took the lead particularly in promoting and conducting biomedical fertility-related studies.

During the turmoil of the 1969-72 period, these and other researh and training centers underwent various changes in functions and names. The new structures for training and research are still evolving to meet the changed emphasis of the program. The paramedical training institutes have recently been renamed regional training centers (RTC's), and are expanding in numbers and functions. Instead of the previous four months of institute-based training followed by eight months of supervised field training for LFPV's, the new RTC training lasts for fifteen consecutive months. The longer period provides the extra time required for MCH training, which is now included to make this renamed cadre of lady family welfare workers more acceptable through provision of basic health care. The number of such regional training centers is being increased to at least ten, of which seven are already in operation.

The former WEPREC and central evaluation unit have been combined with the Swedish Project to form the Lahore-based Training, Research and Evaluation Center (TREC). Within the program, the TREC is the key institution not only for training field workers (directly and through training of trainers) but also for nonmedical studies relating to the program and its operations.

The former NRIFP, renamed the National Research Institute for Fertility Control (NRIFC), has overall responsibility for the conduct of fertility-related biomedical research, which is its main focus, even though it also engages in some nonmedical studies.

National Research Institute for Fertility Control (NRIFC)

This institute formerly functioned as the key research coordinating

institution, in part because it was a central government unit, and in part because it was located in Karachi, where the Family Planning Council also maintained its headquarters.

During the third plan period, this institute received biomedical and social science advisory assistance from the Population Council, through the Ford Foundation. In addition, the Population Council provided some financial support, and USAID provided a demographic advisor. With the termination of the Population Council and USAID support, and the departure for Islamabad of the Family Planning Council, NRIFC activities have declined. Consistent with the medical background of the director and most of her senior staff, there has been a weakening in interest and activity, particularly in social science research. Biomedical activities continue, however, in collaboration with interested staff of other institutions. Current research in new methods includes study of the copper-T IUD and depo-provera.

The only public health oriented family planning research project now underway through the NRI is a study of the utilization and impact of combined health and family planning services in a semi-urban area of Malir, adjacent to Karachi.

The main recent involvement of the staff in training activities has been their active collaboration in developing a text combining instruction in family planning and in general health, for use by lady family welfare workers.

Training, Research, and Evaluation Center (TREC)

The Training, Research, and Evaluation Center, located in Lahore, is the premier training and social science research institute for family planning in Pakistan. The TREC is constituted as a "statutory body under the

central government." It receives its total funding of about Rsl.5 million from the central family planning division budget. This unit, located in part on the grounds of the former Swedish Project, from which it took over equipment and some trained personnel in addition to the physical facilities, was formed to take over some of the functions of the former West Pakistan Research and Evaluation Center (WEPREC) and the Central Evaluation Unit (CEU). The eight senior staff, almost all of whom have received overseas training, bring a broad range of skills to this center.

The TREC has been, and remains, very active in training of field personnel. The training section, whose deputy director appears to be particularly capable, has twelve trainers. Their main activity in the past year has been in training the senior population planning officers, who in turn (and with the assistance of the TREC staff) become the trainers of the field motivation teams. By March 1974, 6,000 motivators had been trained out of an eventual total of 8,500. Motivator training currently consists of one week of classroom learning on family planning and health, followed by a week of field practice in visiting potential clients and correctly filling the required registers and forms. After three months of field work, the motivators are brought back for an additional week of refresher training, which includes review of problems encountered in their work.

The senior population planning officers, whose functions include both training of motivators and subsequent supervision of their work, take a one-month course that emphasizes methods of teaching as well as subject matter.

The training efforts are supported by the publicity and materials section, through which various educational materials are produced. These have

included thus far training manuals for the senior population planning officers, population planning officers, and field motivators. The publicity section also produces mass publicity materials for the provincial boards, at their request. Pamphlets are also produced to support special publicity campaigns.

Within the Population Planning Division, the TREC demonstrates the greatest capability for identifying and investigating relevant research issues. Unfortunately this capability is not always matched by adequate communication links with the chief program administrators in Islamabad so that findings can be translated into suitable program modifications. The main example of this is the Sialkot validation study, which was undertaken through the TREC and has been widely cited in support of the present scheme. In reality, a careful reading of the parts of the report that were released raises several questions that have potential program implications both for the estimates of likely achievements and for the adequacy of the reporting system. Some highly imaginative and potentially important preliminary studies have been conducted on the incidence and correlates of induced abortion, and also on the attitudes of hakims (indigenous medical practitioners) toward the practice of family planning.

The TREC medical division has been engaged in a study of the acceptability of the oral pill brand Norenyl, which USAID supplies, but which had not (in March) been approved for general program distribution because of fears of side effects stemming apparently from those previously experienced with the Norlestrin brand. Preliminary results appear satisfactory, and indications were that by May, even before final results would be available, clearance for distribution would be granted.

Regional Training Centers (RTC)

Regional training centers were visited in Karachi, Hyderabad, and

Lahore. These three site visits plus information obtained from other sources form the basis for subsequent observations. During the post-1969 atrophy of the national program, the training-research institutes, which had been responsible for training the paramedical lady family planning visitors, also suffered, and some temporarily closed down. In recent months one of the most hopeful signs of the resurgence of family planning activity has been the reactivation of these institutes and the establishment of several new ones. Previously existing centers that have been rejuvenated are Karachi, Lahore, and Hyderabad. New RTC's have been established since July 1973, or will soon open, in Multan, Larkana, Nawabshah, Peshawar, Lyallpur, Quetta, and perhaps later in Bahawalpur, Abbottabad, and Gujranwala.

Under the revised Population Planning Planning Program an increased attempt is being made to relate family planning to general health and welfare in order to increase its acceptability. Consistent with this is the revised training program for the paramedical workers trained by the RTC's These girls, who are generally posted to rural family planning clinics following their training, are now given fifteen months continuous training at the training centers. Satisfactory completion of the course qualifies them as "lady family welfare workers." The revised curriculum includes a much larger component of nutrition and maternal child health training. While training has not been fully standardized among the centers, the intention is to have about 429 hours of lectures and classroom demonstration and 702 of practical training and observation in nearby clinics. This is generally handled by giving two hours daily of lectures and about three hours of clinic attendance, with one hour allowed for travel.

At present there are seventy two trainees in Lahore, thirty-eight in Karachi, and thirty in Hyderabad. Precise figures for the other newer

centers were unavailable. Staff sizes for these institutes vary but are intended to reach a standard of one principal (a physician), two additional women doctors as lecturers, two social scientists, and two women health visitors, plus the usual complement of drivers, clerks, ayahs, and other supporting staff.

In addition to their primary training function, the RTC's also engage in periodic refresher training courses for previously trained workers, who return in small groups for this purpose. In some cases the staff of the RTC also give lectures and clinic observation opportunities to satisfy the two-week family planning requirement for the lady health visitor training schools. The RTC clinics in some cases also provide the six hours of family planning clinic experience required for medical students.

No independent research is now carried out by RTC's. However, some do collaborate with NRIFC studies of contraceptives, through their model clinics. There is a need, expressed by several RTC staff, for more training materials and publications on medical and social aspects of family planning.

Postpartum Project

One of the hospitals selected to participate in the Population Council's International Postpartum Project was the Jinnah Postgraduate Medical Center, Karachi. This may be considered the forerunner of the present much expanded postpartum program of Pakistan. This program had been expanded to fifteen large hospitals by 1970, and there are now forty-four clinics, of which thirty-three are actively operating. Present plans call for expansion to fifty-four clinics by June 1975. These clinics, which function as part of the hospital obstetrics department, have staffs consisting in general of a medical officer, a lady health visitor, a lady family planning worker, and an ayah. The objective of the postpartum approach is to reach women during the pre-

and immediately post-natal period, when their level of motivation for spacing or limitation is presumed to be high, and to do this from a hospital-based clinic in which the connection between family planning and health is likely to be readily recognized. Thus far, acceptance through this project has been increasing, and with the increasing number of clinics it promises to rise well above the 14,574 total acceptors recorded for 1972, the last complete year for which records are available. These clinics emphasize female sterilization and IUD's, but other methods are available upon request.

Thus far, evaluation of this project has been limited to simple tabulations of acceptors, and even this has suffered from marked irregularity of returns from some clinics. Analysis, like overall coordination of the project, is handled from the national project headquarters in Karachi and a regional field office in Lahore.

Training is limited to in-house training of clinic staff in this service-oriented project. The project is included in this "institutional development" report because, despite its lack of the characteristics normally associated with an institution, it could become the base for certain types of family planning training, and has some potential as a research base.

University Training and Research

University and Medical School System

Pakistan has six general universities, five of which have been founded since partition from India in 1947. These universities have, in addition to their central campuses and constituent colleges, about 200 affiliated colleges throughout the country, at which most undergraduate instruction takes place. In addition to these six general universities, Pakistan also has a University of Engineering and Technology, with 2,400 students, and an Agricultural

University with about 2,000 students. Altogether there were in 1971 about 115,000 students enrolled in the university system. With the exception of the University of Islamabad, founded in 1965 as a national postgraduate institute, the universities are provincial. Although all are corporate autonomous bodies, statutes formed by them are subject to approval by the provincial governments. Their main funding source is annual grants from the provincial governments, and the remainder is derived from registration, tuition, and examination fees.

Since the present government took power in 1971, the numerous private (often denominational) colleges have all been nationalized. Medical colleges are currently being expanded rapidly, in line with the People's Party government policy of increasing the accessibility of health services to the populace. This expansion is taking two forms. First, the number of medical colleges is being increased. At the time of the Lesinski report, cited below, there were six West Pakistan medical colleges granting M.B.B.S. degrees. Three more have begun operations, and at least two and possibly four more are expected to start soon. In addition, the sizes of entering classes in the establishing colleges have been greatly enlarged, without a commensurate increase in classroom space and numbers of faculty. These moves have been initiated in the face of considerable opposition from the Pakistan Medical Association, which backed the establishment of the seventh school (Sind Medical College, affiliated with the Jinnah Postgraduate Medical Center), but feels that the remaining moves will simply serve to lower the already inadequate level of physician training in Pakistan. Reportedly, part of the government's strategy is to force physicians into rural areas by a combination of monetary inducements of 40 percent above base government pay and saturation of urban areas by increasing

No independent public health-related family planning research is being conducted in medical schools, though some schools collaborate in NRIFC and postpartum project studies on acceptability of contraceptives, on physiological effects of hormonal compounds, and in one case the copper-T IUD.

University of Karachi

The University of Karachi, founded in 1950, had in 1970-71 a total of [illegible],000 students on its main campus, of whom slightly more than half were [illegible], and 40 percent were female. In addition, about 25,000 students were to be found in Karachi's forty affiliated colleges.

Dow Medical College is affiliated with Karachi. Dow, located in the city adjacent to the civil hospital, has eighty-five teachers, and until recently, when annual new enrollments were doubled to 400, had been enrolling about 200 new medical students per year. Also affiliated with Karachi University is the Jinnah Postgraduate Medical Center, with its Basic Medical Sciences Institute, which gives M.Sc. and Ph.D. training in basic medical sciences. More recently, the Sind Medical College, also affiliated with Karachi, has opened its doors to its first medical students.

Karachi University is in the process of negotiating a Type II USAID agreement, in collaboration with the University of North Carolina, for establishment of a population study center. No clear picture could be obtained of the likely form this center would take if it is funded. However, the university has established an active population studies committee under Dr. Jahangir Khan, assistant professor of Sociology. Courses in population are already given in a number of departments, including sociology, psychology, political science, geography, physiology, and social work. Public health aspects of

population planning seem to enter mainly through one medical sociology course, which is designed to explore psychological-social aspects of delivery of health services.

The University of Karachi is already engaged in a Type I USAID project, also in collaboration with North Carolina, for study of "Family Structure and Fertility in Pakistan," through detailed interviews in 600 households.

Under the present population planning program there appears to be increasing willingness to work with universities on contract research projects, for which there is budgetary provision in the central Population Planning Division budget. So far, this has not resulted in much family planning and health related research, at least in part because, though the joint secretary of the Population Planning Division favors increased university involvement, he feels that the topics the universities tend to favor are not as directly relevant to program needs as he would wish.

The teaching programs of Karachi share with almost all Pakistan institutions the problem of major inadequacies in availability of books and journals. Very limited departmental library funds, plus a lack of foreign exchange, make this a major bottleneck to research and teaching programs.

University of Punjab, Lahore

This university, founded in 1882, is by far the oldest and largest in Pakistan. At its central campus in Lahore it has about 8,000 students and an additional 41,000 students are registered in the 98 affiliated colleges scattered throughout the Punjab. The total of 49,000 students (in 1971) included 7,000 postgraduate students. Almost one-third of the total student body (about 16,000) was female.

The University of Punjab included within its system three medical colleges, of which two were in Lahore. The coeducational King Edward Medical College, Lahore, has over 100 teaching staff. The smaller all-female Fatima Jinnah Medical College has about 60 faculty, produces about 100 medical graduates (M.B.B.S.) per year, and plans to expand this to at least 140. The third medical college, Nishtar, in Multan, has 72 teaching staff.

At the University of Punjab the health and population activities of two units were investigated. These were the Social Sciences Research Center and the Institute of Statistics. As their names imply, the population-related activities of these two units are more in the realm of demography and related social sciences than in health. However, indirectly both units do contribute to the pool of manpower possessing population skills, and both units do small amounts of relevant research.

The Social Sciences Research Center (SSRC), which was started originally in 1961 with support from the Population Council, gives a training program that leads, after fifteen months of study, to a diploma in demography. The candidates for the diploma meet for classes for two hours daily, from 3:30 to 5:30 p.m. since most of them already hold full-time jobs. The minimal entrance requirement for the approximately twenty students in each group is a bachelor's degree, and in most cases an M.A. is also required. Typically only four or five students eventually receive the diploma out of each group. Most of the candidates already hold positions with the Census Organization, which now requires that senior level workers take this course. Satisfactory performance is rewarded by the diploma, and this generally leads to promotion.

This department has four instructional staff who share the lecturing and tutorial responsibilities. The center, though small, holds full

departmental status in the university. University support is limited to provision of classroom and office space, staff salaries, and some limited support for equipment and supplies. For research conducted by the SSRC, external support must be found. Some sources exist within the country, especially with the Population Planning Board's apparently increased willingness to use university centers as research resources. The SSRC has also engaged in studies supported by international agencies. Collaboration with TREC would be welcomed by the director of SSRC, but is unlikely to materialize to any great extent in the near future because of somewhat strained relations with the TREC director. SSRC has also collaborated in the past with the voluntary Family Planning Association and the provincial Population Planning Board, though only in a limited manner.

The Institute of Statistics of the University of Punjab started as a department in 1950 and became a teaching and research institute in 1953. There are eight instructional staff for the 60 to 70 students, who enter the department after completing a B.A. or B.S. degree. The program leads to the M.Sc. (Prev.) degree after one year, and the full M.Sc. degree after two years, during which ten courses are required. The course work covers statistical theory, sampling techniques, experimental design, and statistical analysis and inference. Demography was formerly emphasized but became an optional course in 1971. The course work appears to be theoretically rather than practically oriented. The institute has engaged in some surveys, including one on low-cost housing, through which students can and do gain some practical experience.

University of Baluchistan, Baluchistan

The University of Baluchistan, founded in 1970 in Quetta to serve the province of Baluchistan, is still in its early stages of development.

However, it includes several colleges that before 1970 were affiliated with the Punjab University. The new Bolan Medical College is affiliated with Baluchistan.

University of Islamabad, Islamabad

Islamabad University, founded in 1965 and incorporated in 1967, is entirely a postgraduate (that is, post-first degree) institution, and unlike the other provincial institutions is centrally affiliated. In 1971 it had only about forty teaching faculty and 139 full time students, mainly in the natural sciences, with emphasis on physics and mathematics. Since 1972 the curriculum has been balanced by increasing emphasis on the social sciences.

University of Sind, Hyderabad

The University of Sind, Hyderabad, was founded in 1947 and had a total of about 12,500 students in 1971 (last available figures), of whom 2,500 were at the central campus at Jamshoro, near Hyderabad. Less than 15 percent of the student body was female. The only affiliated medical college is the Liaquat Medical College in Hyderabad, which had seventy-five teaching faculty. The University of Sind serves the Sind province, with the exception of Karachi District, which is separately covered by Karachi University.

University of Peshawar, Peshawar

The University of Peshawar, founded in 1950 to service the Northwest Frontier Province area, had in 1971, 4,150 students on its central campus, and another 12,500 in eighteen affiliated and associated colleges. Of the total of 16,600, 17 percent were female and 8 percent were postgraduate. The Khyber Medical College is a constituent college of the Peshawar University, and has about 36 teaching staff.

Institute of Hygiene and Preventive Medicine

The Institute of Hygiene and Preventive Medicine, Lahore, is the only postgraduate public health institute in Pakistan. While its dean hopes the institute will be nationalized, with subsequent central government funding, at this time funding is provided by the Punjab provincial government. Total annual expenditures now are a little over Rs1 million.

The institute has the capacity to take up to fifty physicians into its two diploma courses, in public health (D.P.H.) and maternal child health (D.M.C.H.). This year there are thirty-four students enrolled in these one-year courses. These diploma candidates require an M.B.B.S. plus at least two years of field experience for admission.

In addition to the postgraduate diploma courses, the institute annually trains 100 to 160 "health assistants." The entrance requirement is matriculation (equivalent to tenth grade). After a ten-month training program that heavily emphasizes preventive medicine, but also includes some MCH and general health, these workers are usually hired by local health bodies.

The school is divided into nine departments, which do not yet include population as a separate unit. A "population dynamics" department will be established, perhaps later in 1974. At present population is taught through the departments of Public Health Practice, Maternal Child Health, Epidemiology, and Biostatistics. Of a total of 1,000 classroom hours, 100 are specifically devoted to population studies for D.M.C.H. students, and 60 for D.P.H. candidates.

If a new population dynamics department is set up, it will concentrate on the social sciences, including demography, since public health aspects of population will still be touched upon by other departments. The department will consist basically of one professor, one assistant professor,

and one demonstrator-lecturer.

Pakistan Institute of Development Economics

Although this institute is not directly involved in public health or population planning research at present, it deserves brief mention because it does contain a population section, staffed by four senior researchers, including one who holds a recent doctorate from Johns Hopkins. The institute also has a senior USAID advisor to the population section, in addition to a support staff including several research assistants.

The PIDE population section has recently been asked to consider undertaking a number of population studies having direct relevance to the national population program. These include, before the end of 1974, an independent assessment of the population situation in Pakistan and the probable impact of the national program upon this. In addition, consideration is being given to a repetition in the near future of the 1968-69 "Impact" survey, a survey of fertility combined with family planning knowledge, attitudes, and practice. The funding for this is expected to be a relatively modest Rs200,000. More ambitious is the intention of repeating the Population Growth Estimation project (PGE), which could cost as much as Rs3 million over a four-year period.

PIDE was established in Islamabad in late 1972, as an autonomous structure funded largely by the government. Before its renovation in its present location, PIDE had beenlocated in Karachi and then in Dacca, where it became a victim of the Bangladesh secession. The institute is now in the process of rebuilding and formulating its plans for the future. While its funding is largely governmental, Ford Foundation and USAID both provide assistance, with USAID as the main donor to the population section, through

provision of an advisor and help in reestablishing the library. If the population section does indeed embark on the Impact of PGE repeat studies, USAID is again likely to be the main external contributor, even if only indirectly through the Population Planning Council.

The amount of research now conducted by the institute in population-related areas is limited by manpower and monetary constraints. The provincial government does not provide separate funds for research and external sources are limited. Some notable research, however, has been done on induced abortions, in Lahore.

Funds for acquisition of books and journals are also limited. At present the institute receives about 100 journals and has a reference collection of about 6,000 volumes.

The dean of the institute, who has a broad public health perspective on population, would like to see a cadre of district health officers developed, who have a good understanding of the health and welfare implications of rapid population growth. Such district officers could, in their capacity as administrators, serve as team leaders in action-oriented health and family planning programs, which he feels the country lacks.

Despite its lack of strong organized linkages with the present population planning program, the Institute of Hygiene and Preventive Medicine is an important unit, worthy of support in its population-related training and research activities.

V. CONCLUSIONS

Activities relating to population control remain weak outside the government program, but seem to be gradually increasing. Medical schools

devote at least five hours to population and family pl[illegible] lectures and require at least six hours of clinical observation. [illegible]nt, though small, still represents an increase from previous years.

The only graduate level public health institute, [illegible] stitute of Hygiene and Preventive Medicine in Lahore, devotes consider[illegible] population and also has some limited research activities. The [illegible] schools, for training of matriculate level girls as lady health [illegible] functionally equivalent to public health nurses, include s[illegible] clinic observation in family planning facilities. Populati[illegible] receive only five or six hours of training time in regular s[illegible] which require no practical clinical family planning traini[illegible]

The role of universities remains quite limited, [illegible] tion to health aspects of population. Karachi University is d[illegible] institutional links with the University of North Carolina [illegible] a population center that will be concerned primarily with [illegible] research in the social sciences. The University of Punjab [illegible] Research Center that grants postgraduate diplomas in demo[illegible]

Outside universities, the only notable contribut[illegible] research in population appears to be the Pakistan Institute for Deve[illegible] nomics. This institute, particularly hard hit by the secession [illegible] desh, where it was formerly located, has been reestablished in Islam[illegible] s population section possesses a core of competent investigators, [illegible] should gradually expand in numbers and in range of activities.

From the standpoint of institutional deve[illegible] in the health and family planning area, Pakistan is not at present in a prime target situation. The need for activity is immense, but receptivity to external assistance for

institutional development is limited. It is likely to remain so until the present government shows greater understanding of the dimensions and implications of the population problem and program functionaries indicate willingness to investigate approaches that go beyond the largely untested CMS approach. For the present, the best course for external agencies is, in this investigator's view, to help the few institutions that are most likely to be able to (1) identify problems in the present population planning approach, (2) be in a position to make their findings and proposals known to individuals and government bodies that may affect policy, (3) identify solutions to the problems, or else propose alternate approaches, and (4) engage in training individuals to move into key population planning related positions in the future.

In the area of public health and family planning, candidate institutions are very limited. Assistance in developing a viable population dynamics department in the Institute of Hygiene and Preventive Medicine, through provision of relevant training materials and possibly other forms of assistance, should be considered. A second potential candidate, the TREC in Lahore, would at present rank a little lower in priority, mainly because an adequate source of potential funding already exists through the heavily USAID and UNFPA subsidized population planning program. Its main need is for a better channel of communication to program administration so that there can be greater receptivity to findings and to suggestions based upon findings.

Pakistan is at this stage extremely willing to accept foreign currency and commodity aid for its national program. However, perhaps as an overreaction to the Third Plan excess of population advisors, and perhaps

influenced by the general isolationist tendencies surrounding the Bangladesh secession and the accompanying internal problems and war with India, Pakistan has expressed the view that "we...no longer need to send out officers on foreign training or accept foreign advisors" (Aslam committee report, Section IV, Paragraph [illegible]). Regarding training of officers, this viewpoint has already been modified, as a small number of officers have been sent overseas to obtain training to resume interrupted training programs. There should be encouragement given to external training for particularly capable candidates, especially where there is strong likelihood that such individuals will subsequently remain in population-related activities, whether within or outside the program.

The relevance of policy advisory assistance remains, though short-term consultants have assisted to specific projects including most notably the development of the data feedback system. There are at present no long-term advisors from outside the country attached directly to research or training cells within the program. The major external funding agency, USAID, has its own officers to monitor the program.

Some research officers at both the NIPS and TREC expressed a desire for at least short-term advisors to assist with various projects. From officers in the postpartum project came also the request for assignment of a physician skilled in teaching the laparoscopic sterilization technique to conduct a course for physicians, who could then become trainers as well as practitioners of this method. A six to eight week course either at the Jinnah Postgraduate Medical Center in Karachi, or else in Lahore, was suggested.

If the need for "in house" building up of the program's research, training, and evaluation capability is to be met, through, for instance,

external advisory assistance or long-term collaboration of the NRI or TREC with United States population centers, the lead must come from the program administrators, who thus far show no such inclination. Meanwhile, an effort should be made to resume building up the research capability of the NRIFC and the training and research capability of the TREC, through overseas training of suitable candidates.

Assistance to institutions outside the population planning program, to help them build up a national core of people with relevant skills in population and health, while also building these institutions' capabilities for conducting relevant studies, appears to be the best approach until a clearer picture of the national population policy and program emerges.

Unfortunately, the potential for institution building activities outside the program is also limited at present. Medical schools are undergoing a painful period of adjustment in response to demands for much increased output of physicians, and this problem has come to occupy much of the attention of medical college authorities. For now, the only facilitative action to strengthen medical college training in population and family planning would be to provide appropriate texts and other teaching materials to the departments of preventive medicine, which are principally charged with population and family planning education.

Similar support through training materials and texts for university departments, particularly to help train advanced students who are likely to go eventually into policy making positions, should also have priority. This suggestion goes beyond the health-related aspects of the problem of population, since it implies that in all spheres a greater understanding of the relationships of population and population growth with other developmental fields is required.

In conclusion, Pakistan's needs are great, but the climate for external institution building assistance remains uncongenial, though it is improving. Only a few specific suggestions regarding priority institutions and activities have been made. It should be emphasized, however, that signs of increased interest could develop rapidly in the present very fluid social and political climate, and this suggests that potentially interested developmental agencies should maintain a careful watch on developments in Pakistan, in order to be ready with appropriate responses.

SOURCES OF INFORMATION

Site visit by J.T. Johnson, March-April 1974.

April 1974

CONTENTS

SAUDI ARABIA

SAUDI ARABIA

Joel Montague

I. COUNTRY SETTING

The land area of Saudi Arabia is 2,149,690 square kilometers. The country, which is largely desert, is a monarchy. The administrative capital is Jeddah and the royal capital is Riyadh. The 1973 population was estimated at 8.4 million with a net average annual increase of 2.8 percent; 44.2 percent of the population was said to be below fifteen years of age in 1970, with 15 percent of the population of primary school age enrolled in schools. The overall population density per square kilometer in 1971 was 4, and the urban population in 1970 was estimated at 23.6 percent. The crude birth rate estimated by the United Nations for 1973 was 50. The crude death rate was 23. Life expectancy at birth was 42 years.

II. HEALTH POLICY AND PROGRAMS

The total number of physicians in 1970 was 770 all of whom were working for the government. There have been no dentists in recent years, though there were fifty pharmacists, making the ratio of pharmacists to population, 1 to 154,800. There were 4,080 nursing personnel in 1969 and 2,057 nurse-midwives in 1970. Medical establishments with beds numbered sixty-seven in 1971 and hospital-beds numbered 8,891. In 1969 there were 594 beds in maternity and pediatric hospitals.

The government has a health plan covering mid-1971 to the end

of 1975. The first two years were devoted to laying the foundations for long-term expansion of health services by improving training facilities, nursing, and technical services and by creating facilities for expanding integrated health services into all of Saudi Arabia. In future years the network of hospitals, health centers, and subcenters will continue to expand. The support of research activities, the collection of data, and various planning activities will be conducted by the planning and programming unit of the Ministry of Health in the capital. The health network, as envisioned in the existing Five Year Plan, divides the country into six health sectors, each of which will have a central hospital, three district referral hospitals, nine health centers, and twenty-seven subcenters. The subcenters will provide preventive and curative health services including maternal and child health care. High priority will continue to be given to quantitative and qualitative improvement of training, with emphasis on preventive health at the central hospital, the three existing nursing schools, and the three health technology institutes. Six more schools and institutes will be built in the latter part of the plan period.

III. POPULATION POLICY AND PROGRAMS

The population is Muslim. Islam was founded in what is now Saudi Arabia. The people are by and large traditional in their beliefs. There is no government population policy, nor are there any official family planning activities. There is no family planning association. Certainly the attitude of political religious leaders is pronatalist and it will probably remain so in the immediate future. Children, especially males, are highly valued and provide the main form of security. Status of women in

the tribal system is low, and a woman's value is to some extent measured by the number of male sons she produces. There is no reason to believe that the Saudi Arabia medical profession does not subscribe to the same attitudes and beliefs. This is not to say that contraceptives are not available, for indeed we are led to believe that some pharmacies dispense contraceptives over the counter, especially to foreigners. Also there is good reason to believe that in a number of hospitals, contraceptives are available to those who require assistance.

IV. UNIVERSITY OR INSTITUTIONAL DATA

Higher education in Saudi Arabia consists of:

The University of Riyadh, 7,000 students

College of Islamic Law, Mecca, 435 students

The Islamic University of Medina 501 students

The College of Petroleum and Minerals 606 students

King Abdul Aziz University, Jedda, 491 students (which graduated its first class of 161 students in November 1973)

Girls College, 80 students

Religious Intermediate Colleges and Institutes, 10,942 students.

There is no reason to believe that any of these universities teach either population or contraception.

University of Riyadh, Faculty of Medicine

The Faculty of Medicine, University of Riyadh, was inaugurated in the academic year 1389-90 A.H. (it is now 1394) at its temporary campus, south of the university campus at Malaz. Some of the laboratories of the Faculties of Science and Pharmacy serve the Faculty of Medicine as well.

At the present time admission to the Faculty of Medicine is confined to Saudi students. Applicants must hold the General Secondary Education Certificate or an equivalent certificate, with total marks not less than 75 percent -- a rate that may be increased in the future. Moreover, they must sit for an admission examination conducted in Arabic, in addition to an interview conducted partly in English.

The duration of study in the Medical Faculty is seven years: two preparatory years, two preclinical academic years and three clinical years. At present the faculty has an enrollment of 192 students. The last stage of study arrived at by now is the third medical year, as the clinical stage has been started during the academic year 1393-94 A.H. Classes are conducted entirely in English.

An agreement of supervision and cooperation exists between London University and the Faculty of Medicine, whereby the former approves the staff members nominated by the latter and delegates external examiners to take part in the examination held by the faculty. Such agreement also secures a high standard of graduates and foreign universities' recognition of the B.Sc. conferred by the faculty.

Students who pass the final examination successfully are granted the M.B.B.Ch. degree, and they are required to undergo medical training for one year at a recognized hospital before they are officially authorized to practice. That is the beginning of the specialization phase. The faculty has a modern library provided with all necessary scientific references. It also contains up-to-date international medical reviews covering all specifications.

A student is entitled to a monthly allowance of SR.325 to which another SR.50 or SR.100 are added for those who obtain estimates"Very Good"

and"Excellent"successively.

Future plans are:

1. To gradually increase the number of students to a total of 100 per year.

2 To provide opportunities for missions abroad for all the graduates to whom the rules of the university apply, for specialization in higher studies. Priority will be given to academic specializations.

3. To hold scientific seminars for the doctors in the kingdom, to participate in medical conferences, and to allow the teaching staff to join training courses.

4. To establish laboratories at the temporary building of the faculty.

5. To erect permanent buildings for both the faculty and the university hospital in the near future on the new campus for the Riyadh University, Darya Road, which will contain 500 beds in the first stage.

6. A female section will be starting from the academic year 1974-75.

V. CONCLUSIONS

Given the newness of the university and the traditional attitude of the Saudis toward contraception, we do not recommend any assistance in population.

SOURCES OF INFORMATION

Correspondence with Dean Gezairy, University of Riyadh, Saudi Arabia, 1974.

June 1974

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THE SUDAN

THE SUDAN

Joel Montague

I. COUNTRY SETTING

The Sudan comprises 2,505,813 square kilometers with a total population estimated in 1973 to be 17.4 million. The net average annual increase, based on 1963-71 figures, was 2.8 percent. In 1973, 47 percent of the total population was said to be below 15 years of age, 85 to 90 percent were illiterate; and only 25 percent of the total population eligible for primary school were enrolled in the school system. The urban population in 1971 was estimated to be 12.1 percent, and the population of the capital city (Khartoum), 261,840. The crude birth rate in 1973 was 49 per thousand and the crude death rate was 18.

II. HEALTH POLICIES AND PROGRAMS

In 1971 there were 1,168 physicians in the Sudan, 1,007 of them in government service. The number of dentists was 64 or one to 251,400 people. There were 306 pharmacists and 1,239 medical assistants. The total of nurse-midwives in 1971 was an astonishingly low 187, but there were 11,112 assistant nurses and assistant midwives. The population per nursing midwifery personnel was therefore 1,730 to 1. The number of sanitary engineers in 1971 was only 7 and the number of medical and laboratory technicians was 66.

In 1970, 681 medical establishments with in-patient facilities were registered, and the beds in government service, according to WHO, numbered 15,042, and 1,480 beds in general hospitals were utilized for maternity and pediatric service.

III. POPULATION POLICY AND PROGRAMS

The government has no official population policy at the present time. Among the major reasons, no doubt, is the friction between Muslims and Christians in the country, and the legacy of the recently ended civil war between the predominantly Muslim north and the pagan and Christian south. These factors suggest that family planning is a politically sensitive issue which the government prefers not to deal with at present. Over a period of time, an official attitude more favorable to family planning may emerge. Even at present there is an extremely effective postpartum family planning program underway at the University of Khartoum Medical School, in the Department of Obstetrics and Gynecology. Also there is a Family Planning Association which, while not very active, provides support to a number of clinics in and near Khartoum.

There is no mention of population policy in the Five Year Plan of Economic and Social Development, 1970/71 to 1974/75, or in the 1971-72 or 1972-73 development budgets. Population policy is not mentioned in Volume I of the same series, entitled Major Trends in Development, published in 1970. The The Ten-Year Development Plan (1961/62 to 1971/72) did recognize that the country's 2.8 percent rate of population growth would make economic growth more difficult. One of the primary objectives of the plan was to increase national income at a greater rate than the rate of population growth, in order to achieve a continuing increase in per capita income. In late April 1973, a family planning week was held by the IPPF affiliate, and the opening session was addressed by the Minister of Youth and Social Affairs. At present, the Sudan Family Planning Association does have affiliates in Khartoum, North Omdurman, Blue Nile, Dehr El Gazelle, and Port Sudan.

IV. UNIVERSITY AND INSTITUTIONAL DATA

The University of Khartoum

In 1898 Lord Kitchener decided to build a college in memory of General Gordon. By 1940 some 560 boys were receiving an education in the "college," which by then had become a secondary educational institution. By 1940 it had become a center of higher education and included schools of Agriculture, Arts, Law, Science and Engineering, and Veterinary Science. In 1947 the college established a special relation-ship with the University of London, and by 1951 the University of London was setting the examination papers and awarding the degrees. After the Sudan became independent in 1956, a Sudanese bill gave full university status to the college.

The library consists of approximately 170 000 volumes and includes a number of departmental libraries such as physics, engineering, law, medicine and pharmacy, agriculture, and veterinary science.

The Sudan Research Unit Board has as its chairman the dean of the Faculty of Arts. Other members include the vice chancellor, dean of the Faculty of Economics and Social Sciences, various other deans, and the editor of Sudan Notes and Records.

There is a research committee, with the vice chancellor of the university acting as chairman and with faculty representatives elected by the senate. The dean of the Faculty of Economics and Social Sciences (whose field is business administration) stressed that faculty are encouraged to do research on the problems of the Sudan. Indeed, faculty promotions are largely based on original research and publication. He cited studies now in progress by faculty members on: (1) pricing problems, (2) public corporation marketing, (3) manpower policy and training, (4) labor force absenteeism, and (5)

public debt. There is also an Institute of African and Asian Studies at the university, which publishes Sudan Notes and Records, one of the better African academic journals, and the Bulletin of Sudanese Studies. The dean of the Faculty of Economics and Social Studies indicated that his faculty will be publishing a Sudan Yearly Economic and Social Studies Journal. The schools of Agriculture, Medicine, and Veterinary Science also publish journals.

The facilities of the computer center consist of an Elliott No 803 computer and support equipment. The center is divided into five departments, is headed by a manager, and operates with a staff of one systems analyst two programmers, one engineer, and one maintenance engineer. It is divided into five departments: systems analysis, programming data preparation and operators, maintenance and engineering, and secretarial. Courses are given for undergraduates as part of the degree curriculum in scientific programming, commercial programming, advanced programming and computer appreciation

Shortly after the 1969 revolution, university decision-making was entrusted to a council composed of both political and academic figures. The result proved unworkable, and since then the council has reverted entirely to academicians. The government seems to play a minor role in university affairs. The situation is a little unclear at present, as the Ministry of Higher Education has been abolished and its functions are now part of the Ministry of Education. On the university side there is some feeling that the government gives the university too low a priority and expects the university to do too much. The university apparently negotiates directly with the Treasury for its budget allocation rather than with the Ministry of Education. For example, by 1975 there is expected to be a 40 percent increase in the student body (responding to the needs of and pressures from the increased number of high school graduates), but the government is not increasing its budgetary support

proportionately. Among other factors is housing. Interestingly enough, 85 to 90 percent of the student body comes from the provinces and, being poor, needs subsidized housing. The university is criticized for teaching what is not relevant to national need. There is some effort to make curriculum [illegible] seminars, discussion groups, and [illegible]

[illegible] on faculty consulting [illegible] the dean of the Faculty of Economics [illegible] faculty members were encouraged to do consulting [illegible] government of Sudan. University faculty members [illegible] have served on the civil service council and reorganization [illegible] ministries. In addition, members of the government do some teaching at the university.

The university now consists of nine faculties. The Faculties of Agriculture and Veterinary Sciences are located in a suburb of the capital. The original old buildings in the center of the old city are now used by the Library, the Faculty of Arts, the Faculty of Economics and Social Studies, and the Faculty of Law, while the Faculty of Science and the Faculty of Engineering and Architecture are housed in new buildings. The Faculties of Medicine and Pharmacy are in the central part of town, adjacent to the Khartoum Civil Hospital.

The number of students enrolled at the University of Khartoum in 1971-72 was 5,198, of which 446 were women. The academic staff numbered 368. The university is almost entirely residential, and student hostels are available for 4,700 of the 5,198 students.

The nine faculties of the university are:

Faculty of Agriculture (nine departments).

Faculty of Arts (nine departments including Geography and The Sudan Research Unit).

Faculty of Economics and Social Studies (four departments: Sociology and Social Anthropology, Economics, Business Administration, Political Science)

Faculty of Engineering and Architecture (six departments).

Faculty of Law (five departments)

Faculty of Medicine (eleven departments including Obstetrics and Gynecology and Social and Preventive Medicine).

Faculty of Pharmacy (four departments).

Faculty of Science (six departments, including Mathematics).

Faculty of Veterinary Science (seven departments).

Faculty of Economics and Social Studies

Some attention will be paid in this report to the Faculty of Economics and Social Studies, because that is where the university's major interest in population lies, where population studies have taken place in the past and are most likely to develop in the future.

The dean is Dr. Ali Ahmed Suleiman, and the faculty consists of four departments:

The Department of Anthropology and Sociology has a staff of six: five have degrees from the University of Khartoum, three are lecturers and three are tutors; one has a Ph.D., two have M.A.'s and three have B.A.'s. The department head is Ustaz Tag Anbia Ali el Dowi.

The Department of Business Administration has a staff of nine: six have degrees from the University of Khartoum; three are lecturers; six are tutors; one has a Ph.D.; one has a B.Sc., and the rest have M.A.'s. The depart-

ment head is Ustaz Ibrahim Hassan Abdel Galil.

The Department of Economics, the largest department, has a staff of twenty-two: fifteen have degrees from the University of Khartoum, seven have Ph.D.'s and seven have M.A.'s. There are one senior lecturer, six lecturers, and five tutors; three have Ph.D.'s, three have M.A.'s, and six have B.A.'s. The department head is Mutasim El Bashir.

A large percentage of those with staff positions are abroad working on higher degrees.

The dean of the Faculty of Economics and Social Sciences hopes to have some sixty-two out of a possible seventy-two teaching posts in the faculty filled in the academic year 1973-74. There is a considerable turnover, however, in the expatriate staff. Last year, for example, there were three British, a Norwegian, two Egyptians, a Hungarian, and a Pole on the staff. This year the Hungarian, Pole, Englishmen, and one Egyptian are leaving. The dean can fill the posts in social anthropology with little difficulty, but has trouble filling posts (expatriates and Sudanese) in economics and business administration.

Tenure for faculty is hard to achieve. New faculty have a probationary period of two years. Then they become "permanent" and follow an arduous route: lecturer, senior lecturer, reader, and finally professor. There are only about ten full professors in the university.

Entrance requirements for the Faculty of Economics and Social Studies are: Sudan or Cambridge School Certificates, or G.C.E. Certificates with a credit or its equivalent in at least three of the following subjects: accounting, general science, geography, history, mathematics, or additional math and philosophy. Individuals with an Egyptian secondary school certificate need to have at least 60 percent of the aggregate in each of six subjects including

English. Students whose best performances are in history, English, geography, mathematics, and English literature are preferred.

Undergraduate degrees offered are: B.Sc., Accounting, four years; B.Sc., Business Administration, four years; B.Sc., Political Science, four years; B.Sc., Social Anthropology and Sociology, four years; B.Sc., Economics and Social Studies, four years; B.Sc , Statistics, four years.

The curriculum, which is quite rigid, is as follows:

First year: There are eight compulsory subjects. (1) English Language, (2) Introduction to Sudan Politics, (3) Socio-Economic History of Sudan, (4) Economic Geography (with special reference to Africa and the Middle East), (5) Mathematics, (6) Introductions to Economics, (7) Concepts in Organization, and (8) Methods of Thinking and Learning.

Second year: Three courses are offered. Course A, Intermediate Accounting (six 3-hour papers), Course B, Intermediate Business Administration (five 3-hour papers); Course C, Intermediate Economics and Social Studies (six 3-hour papers). For Course C one subject combination is chosen from the following: (1) Economics, Political Science, and Mathematics and Statistics (six 3-hour papers), (2) Economics, Political Science, and Statistics (six 3-hour papers), and (3) Economics, Social Anthropology, and Mathematics (six 3-hour papers).

Third and fourth years: Students take one of the following courses, provided that the intermediate year requirements for each have been met: B.Sc. Accounting (thirteen 3-hour papers); B.Sc. Business Administration (twelve 3-hour papers); B.Sc. Economics (eleven 3-hour papers); B.Sc. Political Science (eight 3-hour papers); B.Sc. Social Anthropology and Sociology (eight 3-hour papers); B.Sc. Statistics (thirteen 3-hour papers). For the B.Sc. in Economics

and Social Studies, students take two subjects, both of which have been studied in the intermediate year, in any one of the following combinations: (1) Economics and Political Science (ten 3-hour papers), (2) Economics and Social Anthropology (ten 3-hour papers), and (3) Political Science and Social Anthropology (nine 3-hour papers).

According to the dean, in the 1972-73 academic year about forty third year students were majoring in economics, forty in statistics, twenty-five in political science, and fifteen in sociology and anthropology. The remainder were in accounting and business administration

There is a fifth-year honors program, which now has an enrollment of seventy students, in the following fields: B.Sc. (Honors), Business Administration; B.Sc. (Honors), Economics; B Sc (Honors), Political Science; and B.Sc. (Honors), Social Anthropology and Sociology.

The regulation and details of the program are outlined in The University of Khartoum Calendar, 1971-72. Senior students in the fourth year and honors students (fifth year) have research projects they must undertake and which contribute to their overall grades. The research is generally working with a field project and original data. The dean's marketing students, for example, wrote papers on Sudan-based information related to (1) vegetable prices, (2) gas and oil prices, and (3) the introduction of soft drinks.

Graduate degrees offered are: M.Sc Economics; M.Sc. Business Administration; M.Sc. Political Science; and M Sc. Social Anthropology.

Requirements for the master's level program are that a candidate must have previously obtained a first or second-class honors degree in a relevant subject from the University of Khartoum or its equivalent. A degree candidate must submit a thesis of not more than 40,000 words, undergo a written examina-

tion, and submit a dissertation of not more than 15,000 words.

School of Medicine

On the clinical side, the acting head of the Department of Obstetrics and Gynecology (Mutasim Abubakr Mustafa, M.B.B.S., Ph.D., M.R.C.O.G.) is a member of the Sudan Family Planning Association and has done extraordinarily useful work in the family planning field at Khartoum Hospital (a teaching hospital) during 1971-72. During this period, 350 patients left the postnatal wards of Khartoum Hospital after contraception had been instituted. This number was 10 percent of the total number of patients delivered in 1971 and 1972. The methods used were oral contraception (165 patients), IUD's (65 patients), and surgical sterilization (120 patients). The curriculum of the medical school contains very little that relates to family planning. The subject is not taught as such but occurs in bits and pieces in various departments. The student gets about twenty hours of education in reproduction and behavioral science in his preclinical years and about twelve hours in the pathology of reproduction in his fourth year. In the fifth year the Department of Social and Preventive Medicine teaches population structure in the Sudan, tribal and family relations, manpower, economic conditions, and disease distribution. In addition, the student attends lectures on population dynamics and family planning. Demonstrations and visits to family planning centers are included in the program of teaching in the Department of Social and Preventive Medicine. There is no specific teaching of family planning in the curriculum of Obstetrics or Pediatrics; such teaching is undertaken only by teachers who have a keen personal interest in the subject, such as Dr. Mustafa.

Demography and Related Social Sciences

Roushdi Henin (now Professor of Demography at the University of Dar es Salaam) introduced the teaching of demography at the Faculty of Economics and Social Studies in July 1965. The subject was offered as an optional paper to B.Sc. economics students who were taking statistics as a special subject. Demography was also made compulsory for B Sc. statistics degree at the fourth-year level. The first group of fourth-year students (in the academic year 1971-72) were taught by Mohammed Galal el Din. He received a fellowship from the Population Council to complete his doctorate at the London School of Economics. Therefore, in the 1972-73 academic year there was no demographer or demography at the University of Khartoum. Galal el Din returned to Khartoum in December 1973 and is currently teaching the courses formerly taught by Professor Henin. In addition, he is supervising a small research project on the availability of contraceptives and services at both family planning clinics and through commercial channels in Khartoum, Khartoum North, and Omdurman as part of the Council's Changing African Family research program.

Further expansion of demographic teaching and research will depend on the availability of trained manpower. According to the dean, if two such individuals were available, he sees the following program: (1) an undergraduate course in demography for statisticians, (2) an undergraduate term of population to be taught by a demographer for economists, political science and social science students for ten weeks (two hours per week plus a one-hour seminar, fifteen students per seminar, ten seminar groups), (3) demography as an option for fifth-year statistics honor students, (4) a diploma course in demography (postgraduate) with twenty graduates from government departments (he admits that this is rather daring), or (5) a small course for M.Sc. students who would

work on statistics and demography. An expatriate senior demographer could be appointed to an already existing university position, if his salary could be topped-up by a donor agency.

V. CONCLUSIONS

In terms of demography and related social sciences, the University of Khartoum requires the advice of a senior demographer on its current and proposed teaching and research program. In addition, fellowship support for staff development should be provided, as well as material support in the form of population literature, computer software, and related teaching/research equipment. Research proposals should be encouraged and supported to the extent possible.

In the medical field, one of Africa's better small postpartum programs already exists in the Department of Obstetrics and Gynecology, and additional work could well be done in that field with external assistance.

SOURCES OF INFORMATION:

Site visit: Joel Montague, May 1973.

The Middle East and North Africa, London, 1972.

June 1973

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SYRIAN ARAB REPUBLIC

SYRIAN ARAB REPUBLIC

Joel Montague

COUNTRY SETTING

The Syrian Arab Republic, which covers an area of 185,180 square kilometers, had a population in 1973 of about 6,800,000. Figures from the same year showed the crude birth rate to be about 48, the net average annual population increase 3.3 percent, and the life expectancy at birth about 53 years. About 43.5 percent of the population is concentrated in urban areas. In 1965, the fertility rate was 126.3.

As of 1970, 47.1 percent of the population was below 15 years of age. Literacy figures, available from the 1960's, show that in 1960, 51.2 percent of males 15 years and above were illiterate, and in 1969, 83 percent of eligible children of primary school age were attending school.

II. HEALTH POLICY AND PROGRAMS

According to 1971 figures, there were 1,673 physicians, 445 dentists, and 874 pharmacists. There were some 2,003 nurse-midwives and 854 assistant nurses and assistant nurse-midwives. In 1973 there was one school of dentistry and one school of pharmacy.

As of 1971, there were seventy-nine medical establishments with in-patient facilities, of which some thirty-one were in government service. The total number of hospital beds in the country was 5,945, with 4,786 in government service, and the population per bed was 1,080 to one. There were 330 beds in maternity and pediatric hospitals in that year.

Under the Ministry of Health, there are some 170 dispensaries, and there are also thirty-four dispensaries under the control of other ministries. In addition there are forty-three health centers with integrated, curative, and preventive health services within the control of the Ministry of Health, and forty-two MCH centers. As in many countries in the Near East, medical services are not equally distributed among the different governorates in the country or between rural and urban areas of the same governorate.

III. POPULATION POLICY AND PROGRAMS

Family planning has been viewed with considerable caution and suspicion in Syria on both the official and private level. In 1952 a decree was passed awarding a decoration to parents who produced more than three children. They also benefit from tax reductions and reduced fares on internal and public transportation. There are family allowances for government employees scaled upward according to the number of children.

In 1972 the Ministry of Health organized, in collaboration with the regional office of WHO in Alexandria, a seminar on modern concepts of the mother, child, and family health in Syria.

Late in 1974 the government established a family planning branch. The duties of this branch were. (1) to provide services to raise the health and social level of mothers, children, and families as a whole, (2) to provide family planning guidance and advice to parents, including advice on infertility, (3) to improve delivery services at home that are carried out by health services, (4) to improve the general health standard of the family through maternity and childhood care, (5) to develop and improve family planning services and services provided by health centers, (6) to develop and enlarge family planning in hospitals with maternity services, (7) to prepare relevant studies on the conditions of the family, pregnancy, and psycho-social conditions,

(8) to qualify a cadre of doctors, nurses, midwives, and technical assistants, (9) to encourage medical research and family planning, and (10) to promote hygienic awareness in general and family planning in particular. It should be noted that there was no family planning association in Syria until 1974.

Although there was no publicity for contraceptives in Syria in the past and publicity is prevented by law, many contraceptive devices are readily available. Indeed it has been stated that there is a "pill boom" in Syria, due to a considerable public demand, and that there is smuggling of pills into the country.

IV. UNIVERSITY DATA

As far as can be determined, family planning is not taught at Syrian universities or medical schools. On the other hand, a considerable amount of training does take place on the demographic side.

V. CONCLUSIONS

Assistance in the population field to Syria is a sensitive issue. However, the government is now interested in starting a national program, and a family planning association has started. Certainly fellowship and other support should be made available to the country's medical schools for training in contraceptive technology.

SOURCES OF INFORMATION

Dr. Adnan Habbeb,"Family Planning in the Syrian Arab Republic,"mimeo, ECWA, 5 February 1974.

Mushi Eddin Mamish, "Population Situation in the Syrian Arab Republic," ECWA 9 February 1974.

October 1973

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TUNISIA

TUNISIA

A. Marcoux

I. COUNTRY SETTING

At the end of 1973 the population of Tunisia was slightly more than 5.5 million. Tunisia has a total land area of 163,600 square kilometers. The crude birth rate was estimated to be 38 per thousand per year and the rate of natural increase 2.2 percent. In 1971 the general fertility rate was 175 for ages fifteen to forty-nine years, and the legitimate fertility rate was 265. The total fertility rate was 6.4 percent. Fifty-six percent of the population are under twenty years of age, and 37 percent are twenty to fifty-nine years of age.

The population is almost entirely Arab and Muslim (1 percent Berber, 1 percent foreign). Half the population live in urban agglomerations of over 2,000 and half live in rural areas. In 1966, it was estimated that one-third of the men and three-fifths of the women over ten years of age were illiterate.

Fifty-seven percent of the economically active work in agriculture; 17 percent in industry, including construction, and 26 percent in trade and services, including transport.

Because of a young age structure in Tunisia, population growth will continue even if the birth rate continues to decline. Thus energetic action is needed. Fortunately, official commitment in the field of population policy is high. Many actions have already been taken, a good example being the complete liberalization of abortion in 1973.

II. HEALTH POLICIES AND PROGRAMS

The 1973-76 Four-Year Plan sets its objectives as follows:

1. To meet the growing needs of the population, investments of 5 million T.D. (US$11 million) and current expenses of 20 million T.D. will increase rapidly. Major programs projected are: (a) to fight endemic and epidemic diseases and reinforce the structures of prevention; (b) to improve the environment (rural housing, water supply); (c) to make people sensitive to the relations between health and family welfare by development of the Office of Family Planning and Population; and (d) to create more health facilities, especially in rural areas.

2. To increase the quality and efficiency of health services by improving equipment, expanding emergency services, furthering the policy of providing inexpensive drugs, and appropriate training of medical and paramedical personnel. The aim is to train 150 physicians per year, mainly general practicioners, "adapted to the medical practices of the country." It is admitted that this objective will be only partly accomplished under the Four-Year Plan. In the paramedical sector, the proportion of specialized nurses will be increased.

3. To reach a more balanced distribution of responsibility between the state, the private sector, the communities, public organizations and Social Security. External help, bilateral and multilateral, will be increased and diversified.

Basic information on health manpower resources as provided by WHO is as follows: In 1970 there were 694 physicians in government service in Tunisia and 65 dentists. There were 238 pharmacists in 1971 (a ratio of pharmacist to population of 1 to 22,000). There were forty-six veterinarians in 1969 and 3,214 nurses and midwives and nurse/midwives in 1971. The number

of assistant nurse/midwives was 4,361. The Faculty of Medicine of the University of Tunis is the only medical school in the country. There is no school of dentistry or school of pharmacy at the present time. As of 1971 there were eighty-eight medical establishments in Tunisia with a total of 12,834 beds or one bed per 410 population. There were, in 1969, 1,553 maternity and pediatric beds in the country.

III. POPULATION POLICY AND PROGRAMS

The main objective of the population policy in Tunisia is to decrease the growth rate through the reduction of fertility. The recent developments in that field show an ever-growing governmental commitment, and vital statistics show that the birth rate is still declining. The 1973-76 Plan puts as a "minimum objective" the reduction of the general fertility rate by 2.5 points each year.

The Office Nationale du Planning Familial et de la Population (ONPFP) was created in March 1973 to implement the government's population policy which is primarily centered in the family planning program. The ONPFP is a financially autonomous public institution under the tutelage of the minister of public health.

An important step was taken in the legislative field in 1973 when abortion was made available on demand for every woman (married or single), provided only that the operation be undertaken during the first twelve weeks of gestation.

The ONPFP's demographic policy, as defined by the government of Tunisia, and in accordance with the Plan, is:

1. To undertake studies and research of an economical, social and technical nature, relevant to population development, and to propose to

the government legislative actions related to that objective;

2. to design and implement, in collaboration with the relevant public and private organizations, programs aimed at creating and maintaining family health and balance;

3. to disseminate information on these programs;

4. to undertake programs in the field of training at the Faculty of Medicine, in professional schools, and in training sessions abroad;

5. to undertake a permanent program of information and education at family, school, and professional levels.

Family planning services, offered through more than 300 public health establishments, are the major components of the population policy. The family planning program, established in 1964, was administered by the Ministry of Public Health until early 1973 when the ONPFP took charge. This program is the most advanced in the region both in terms of impact (8 to 9 percent coverage of married women of reproductive age) and in terms of the wide range of techniques offered to the patients, including female, and recently male, sterialization and abortion on request. The legislative record is impressive with laws that limit child allowances to four children (1960), legalize the importation, sale and advertising of contraceptives (1961), set the minimum legal age for marriage at seventeen for women and twenty for men (1964), and liberalize the use of abortion (1973).

Over the past seven years, there has been a steady trend of increase in the proportion of married women of reproductive age protected by the program. The recent decline in fertility can be attributed to the changes in marriage age (roughly 1/3), the direct effects of the program (roughly 1/4), the changes in the age structure (roughly 1/4), and the private practice of contraception (roughly 1/8).

IV. UNIVERSITY DATA

Faculté de Médecine de Tunis

The Faculty of Medicine of the University of Tunis, a state institution, produced its first graduates in 1971. It is organized on the French system, with slight variations. All students undergo five years of medical studies then take a competitive examination for internship. After two years of regular internship, a special category "resident interns" receive at least one year of training in one or several hospitals to undergo specialization; then they take an examination to become a "hospitalo-university assistant."

The whole course of studies takes place in Tunis. The teachers are generally Tunisians, with a few foreigners (French and Swiss). Classes formerly held by foreign specialists have been replaced by monthly seminars open not only to students but also to all interested persons.

There are presently 1,112 students at the faculty: 1st year, 330; 2nd year, 276; 3rd year, 249; 4th year, 137; 5th year, 66; 6th year, 54; and 168 teachers: professeurs agreges, 7; maitres de conferences agreges, 78; assistants hospitalo universitaires, 58; assistants contractuels, 25; the total includes 8 foreigners. The professeurs agreges and hospitalo-university assistants are, in principal, full-time teachers and have no private practice.

Teaching in family planning takes place in the 4th year, in the obstetrics and gynecology curriculum. The course and clinical practice at Habib Thameur Hospital are compulsory.

The only foreign participation comes through bilateral cooperation with France, which brings a few French professors to the faculty. The French government provides one-third payment for some of these teachers. All other expenses of the faculty are charged to the Ministry of Education.

The Plan foresees the expansion of medical teaching and earmarks more public money for fellowships, with the possible creation of a second faculty at the University of Sfax. The whole problem of regional faculties is being discussed at top level, and the odds seem to favor their extension. It is apparent that family planning is of great interest among the students, with only marginal ideological opposition

Ecole Avicenne de Santé Publique

The EASP is a state institution under the Ministry of Public Health. Its aim is to provide specialized training for paramedical personnel. The curriculum has four fundamental sections each leading to an official degree: Nurses, Laboratory and Pharmacy Technicians Midwives, X-ray Technicians. The nurses and laboratory/pharmacy technicians are recruited during the 5th or 6th year of secondary school and study for two years at EASP. The midwives and X-ray technicians are recruited during the 6th and 7th years of secondary school and study for three years. Recruitment is done by competitive examination.

The midwives are taught courses in family planning and have a compulsory period at a family planning center. Their whole curriculum includes a probationary first year of basic sciences, a second year in obstetrics and gynecology, and a third year with pathological obstetrics and gynecological surgery.

Summer courses are organized for a dozen graduate midwives each year, who will become supervisors in midwifery. These courses take place at Habib Thameur Hospital under the supervision of a French professor. They include intensive training in family planning and related questions.

The EASP has a second cycle for nurses to specialize in one of five

disciplines: Anesthesia, Intensive Care, Surgical Unit, Pediatrics, or Psychiatry. This second cycle is two years and includes primarily clinical work and on-the-job training. Until 1973 there was a third cycle of two years that enabled nurses to become monitors in their specialty. That cycle was operated with WHO assistance. The assistance was stopped because the Tunisians provided no counterparts to the WHO experts.

All students have government fellowships ($35 monthly), except those who live in the school who are given free board. Second cycle students work in a hospital and are given time out to attend school. The EASP has forty-seven full-time teachers and a little more than 100 part-time teachers, including forty M.D.'s. The teachers are Tunisian except for fourteen Canadians. There are 537 students: 290 female (including 87 boarders) and 247 male. The following table shows a detailed breakdown of course enrollment.

	First Cycle					Second Cycle - Nurses				
	Nurses	Lab.	Pharm.	Midwives	R.X.	Anest.	I.C.	Surg.	Pedi.	Psy.
1st year	66	50	23	33	26	26	11	18	11	7
2nd year	44	43	--**	31	14	13	7	10	--**	14
3rd year	--	--	--	27	--*	--	--	--	--	--

Others: 27 aides-soignantes; 36 medical secretaries (school in Hamman Lif).

* Training began in 1972
** Training began in 1973

In 1974 the budget amountes to 185,300 T.D. (US$410,000). Total funding comes from the government.

WHO provided support from 1965 to 1973 by supplying resident experts and teaching materials. UNICEF has also provided teaching material, and the Population Council provides publications in French. The only assistance in personnel for the moment is provided by the government of Canada through

bilateral cooperation. Equipment has been provided and, as stated above, there are fourteen full-time Canadian teachers (thirteen in MCH and pediatrics and one in radiology).

An extension of the plant is underway as part of the IBRD program in Tunisia. A lecture room will be built The library is lacking in pediatrics and radiology materials since WHO ceased sinding its publications when its experts left. The main problem is caused by the interruption of the training of specialized monitors, which has created a lack most notably in the midwife section. The shortage is felt especially during training periods in hospitals and clinics, since the needs are multiplied by four or five when a class of forty to fifty splits into groups of ten

Given the objectives of the Plan and the subsequent creation of new medical sections in the provincial schools, there is potentially a greater need of specialized monitors. If the training cannot be resumed in Tunis, it would be helpful if several nurses or midwives were awarded fellowships for a French or French-speaking institution

There seems to be a lack of interest in family planning among the students. This is partly due to the fact that family planning is of very limited interest for the nurses in the pursuance of their degrees One may wonder if it would not be useful to have a MCH/FP section for nurses at Avicenna School.

Other Institutions

The Ministry of Public Health has eight schools besides Avicenne: (1) Sousse: nurses and midwives; (2) Sfax: nurses, midwives, laboratory technicians, anesthesiasts; (3) Menzel-Bourguiba: nurses; (4) Le Kef: aides-soignantes; (5) Gafsa: aides-soignantes; (6) Kairouan. aides-soignantes; (7) Gabes: aides-soignantes; and (8) Nabeul: Institute of Public Hygiene. There

are three schools run by other departments or organizations: (1) Military School of Health, (2) School of the Red Crescent, and (3) School of the General Union of Tunisian Workers (UGTT), which offers evening courses for nurses and aides-soignantes. The school in Sousse has opened a section for laboratory technicians.

DEMOGRAPHY AND RELATED SOCIAL SCIENCES

University of Tunis

The University of Tunis offers a certificate in demography as part of the "maitrise" (which has replaced the "licence" and is given after four years instead of three) in sociology and economics. The curriculum consists of two courses in general demography and demographic analysis. The courses are taught in the economics department by Mahmoud Seklani and in sociology by Moncer Rouissi. Seklani has published two demographic textbooks.

Most demographic research at the university is carried out at the Center for Economic and Social Studies (CERES), a semi-autonomous research institute. Organizationally, CERES has "sections" dealing with demography, law, economics, geography, linguistics, sociology, history, Islamic studies, and literature. The demographic section is headed by Mongi Bchir and consists of seven researchers. Two of the seven (Bchir and Moncer Rouissi) hold Ph.D.'s in sociology; three hold "expert" degrees in demography from the Institute of Demography at the University of Paris (IDUP) (Rouissi, Hedi Djemai, and Younes Zoghlami); and the others have degrees in sociology (Abdelmajid Taktak, Sadok Sahli, and Abdelhamid Bouraoui). The center publishes two journals, La Revue Tunisienne des Sciences Sociales, and Les Cahiers du CERES. A review of the research conducted by the demographic section between the years 1964-1972, shows a total of sixty-seven publiched articles, of which twenty-one were written by

expatriates. The major contributions by Tunisian authors were by Seklani (eight articles, Bchir (seven), Rouissi (five) and Bouraoui (three).

Institute of Statistics

Much demographic work is done within the Institute of Statistics under the director for demographic and social statistics, headed by Chedli Tarifa. He has been in his present position since he graduated from the Ecole Nationale de la Statistique et de l'Administration Economique (ENSAE) in 1956, and his staff presently includes one statistician economist from ENSAE, two middle level statisticians from ENSEA (Morocco) and a junior level demographer with a year of training at the Cairo United Nations Center. There is also a French demographer from ORSTOM, Bernard Lacombe. Much of the work accomplished during the past several years in the institute has been under the direct supervision of French demographers on loan to it. The institute has a number of trained statistical clerks and the nucleus of a trained team of interviewers.

The largest recent project conducted by the Institute is the National Demographic Survey. Field work was done in 1968-69 under the direction of Jacques Vallin (then a Council staff member seconded from INED). The survey consisted of three rounds of interviewing and involved a sample of 27,000 households. A major sampling error resulted in extensive delays in analyzing the data, but results are now beginning to be published.

An internal migration survey was done in 1972-73. Five volumes of analysis have been published to date. Michel Picouet (ORSTOM) prepared, directed, and analyzed the survey.

The institute has also published several volumes of results from

the 1966 census, and is engaged in preparation for the 1975 census.

The Institute of Statistics has a school, "l'Ecole de la Statistique" which trains low level statisticians; middle-level statisticians are usually trained at INSEA in Rabat; and high level statisticians at ENSAE in Paris.

The "Office National du Planning Familial et de la Population" (ONPFP) has a population division that is supposed, among other duties, to provide advice to the government on population matters. It is supposed to coordinate population research in Tunisia and to do some of its own. Its part-time head is Mongi and it has a staff with two IDUP trained demographers (a Tunisian, M. Ayed, and a French woman married to a Tunisian, Mme. Djemai), an economist, a sociologist, a psychologist and a statistician. The Population Council has provided resident advisors since 1967.

V. CONCLUSIONS

Currently the teaching of family planning takes place at Habib Thameur Hospital under the supervision of Dr. Jahan. Other specialists devote most of their time to private practice and are very little interested in teaching and research. An exception is Dr. Tewhida Ben Cheikh who is pursuing an evaluation of the copper-T. The Habib Thameur unit is in constant contact with the major institutions regarding future methods of contraception. The most valuable aid in contraceptive teaching would be one that operated at the grass roots level and supplied teaching materials, such as books, documents, microscopes, and so forth.

Because of high costs, the Faculty has ceased its invitations to foreign lecturers. It would be useful to resume that program. It would be

valuable if some organization provided the library at Ecole Avicenne with relevant publications on pediatrics. Also, the resumption of WHO publications would be useful.

The most fruitful action in the field of paramedical training would certainly be to resume training specialized monitors. While the plan states the need for increased specialization of nurses and for more midwives, there is a persistent lack of monitors to ensure their training and to assist students during their clinical periods. The best solution would obviously be to resume the training at Avicenna School (former third cycle). This would require a few fellowships specifically earmarked to that end, so that four to five nurses and midwives could acquire specialization in an important French-speaking school of public health, then WHO assistance to the former third cycle should be resumed.

The training of supervisor midwives has been abandoned. There will be no session in 1974. The main reason is the opposition of major Tunisian obstetricians and gynecologists. Yet the initiative was full of promise, and one should remain alert to future opportunities in that field.

Any assistance to Tunisia in this area should be concentrated on solving the simplest problems and meeting the basic requirements of teaching. Similarly, the paramedical approach should have priority in our considerations, as opposed to the somewhat elitist concept that seems to prevail in some local instances.

SOURCES OF INFORMATION

Site visits by A. Marcoux, 1974

March 1974

CONTENTS

TURKEY

TURKEY

Ved Montague

I. CURRENT STATUS

Turkey had an estimated population of 38.[illegible] million in 1973, with an estimated birth rate of 40 and a death rate of 15. [illegible] infant mortality rate was estimated at 114 per 1,000 live births. Regional differences were very significant. The general fertility rate, according to the Turkish Demographic Survey 1966-67, was 194 per thousand, with the rate in rural areas being 188 and in urban areas 122. The adjusted crude death rate for the rural areas was 17 per thousand and for urban areas 11 per thousand. Proportional mortality rates are one of the best indicators for measuring the level of health and living conditions as well as the demographic structure of the population. Fifty-one percent of total deaths were child (0-4 [illegible]) deaths: 55 percent infant deaths in rural areas and 43 percent in urban areas. In Turkey as a whole the average number of children born to women age 47-[illegible] is 4.

II. HEALTH POLICIES AND PROGRAMS

A comprehensive description of Turkish health services has been prepared by a WHO consultant in public health administration. Much of the background material and conclusions found here have been taken from his report.

Turkey has made remarkable progress in the field of health during the last half century. Hospital construction has reached about one bed per

400 population; the rate of training doctors has grown to about 1,000 per year, and at the present time there is one doctor per 2,100 population, excluding those practicing abroad. The training of nurses and village midwives at the auxiliary level has grown, with health colleges and village midwifery schools in almost all the provinces. There has been a development of nursing at the university level, and if this continues a large number of well-educated women should be available for teaching and administrative posts in nursing. Applications for training in nursing and village midwifery now exceed the places available, the level of students has improved, and the duration of the courses (three years for village midwives and four years for nurses) has lengthened. Nonetheless, there remain many problems in the staffing of medical facilities and in the field of public health at the operations level.

Two major efforts have been made during the last quarter of a century to make public health services more generally available in the rural areas. First was an effort in the 1950's to establish a health center at a rural hospital in each district. Then in the 1960's an effort was made to nationalize health services. The former program was felt not to have succeeded because of the load of clinical work for the rural physician in each community. The fundamental concept of the nationalization program is the union of preventive and curative medicine at the level of the general practitioner in the rural areas. The team concept is stressed, with the village midwife acting as an auxiliary and living in a central village with responsibility for about 2,500 persons. The rate of staffing by village midwives is now about twice that found in non-nationalized areas, and the fact that she has living facilities undoubtedly helps. In the twenty-four eastern provinces where the

[illegible] system has existed, services have improved. The nationalization [illegible] failed [illegible] to the needs of rural areas rather [illegible]. Moreover, it has had a significant impact [illegible].

[illegible] health system, there are [illegible] described as [illegible] relative failure to provide [illegible], good supervision and [illegible] of related factors: lack [illegible] administration; excessive [illegible] coordination; lack of attention to and study of [illegible] parts of the country; unproductive [illegible] single-purpose auxiliaries; in a word, an overall lack [illegible] services.

[illegible] does plan to make substantial additions during the [illegible] period [illegible] and preventive services. By 1977 it is [illegible] additional [illegible] general hospital and MCH beds will have been provided, [illegible] beds, 2,500 beds in oncology hospitals, [illegible].

[illegible] field of public health, preventive medical centers to be established during [illegible] period are found in the following table:

Preventive Medical Centers to be Established

During the Period 1973-77

Provinces	Village Health Center	City Health Center	Health Station	Public Health Infirmaries
25 provinces under nationalization	65	93	1,790	75
Ankara-Istanbul-Izmir	98	311	324	59
Yozgat, Tokat, Nigde, Sinop, Corum, Kirsehir, Cankiri, Afyon, Kastamonu, Zonguldak, Bolu, Ordu, Usak, Bilecik, Amasya, Mugla, Konya, Samsun	719	116	2,402	69
TOTAL	882	520	4,516	203

The Health Statistics Year Book of Turkey, published by the General Directorate of Health Education and Medical Statistics of the Ministry of Health, contains a variety of information on public health activities, morbidity and mortality statistics for the nation, and distribution of clients in hospitals and other health institutions. There is good reason to believe, however, that these statistics do not present an entirely accurate picture of the health conditions or health services as a whole.

Probably the best single source of vital statistics for the nation, though they are not of great help to the biostatistician, are the vital statistics published in the Turkish Demographic Survey 1966-67.* In that survey the adjusted crude birth rate for Turkey was 40 per 1,000, with the rate for

* There are a variety of statistics used in the body of this paper, and not all of them agree on birth rates and other statistics. Rather than provide uniform vital statistics, we have chosen to leave certain inconsistencies, because they represent figures found in the literature or told to us by informants.

rural areas 44 and urban areas 31 per 1,000.

III. POPULATION POLICY AND PROGRAMS

The government of Turkey, tacitly or actively, followed a pronatalist policy from World War I through 1960. The First Five-Year Development Plan (1963-68) spelled out a change in policy, and in 1965 a population planning law specified that individuals might have as many children as they wished but contraception was allowed. Sterilization and abortion could be performed only in cases of medical necessity. The government was to carry out educational programs in contraception, provide family planning services throughout the country, and subsidize the cost of contraceptives and services if necessary.

In the Second Five-Year Development Plan (1968-72), "population planning" was changed to "family planning." The objectives of the second plan were couched in health rather than demographic terms. Targets were established: to make family planning available each year to 5 percent of the women in the childbearing age so that by 1972 about 2,000,000 would benefit from the service. By 1972, however, there was no reason to believe that the program, given its low targets, was a government priority, and indeed the funds budgeted exclusively for family planning represented only 1 percent of the Ministry of Health's budget and .04 percent of the national budget. The Third Five-Year Development Plan (1973-77) indicates that family planning services will be carried out in the provincial health units as part of an integrated system of health care given through the nationalized health services. Special programs will be carried out in areas where the birth rate is higher than the average for Turkey. Public institutions other than those attached to the Ministry of Health will also participate in providing family planning

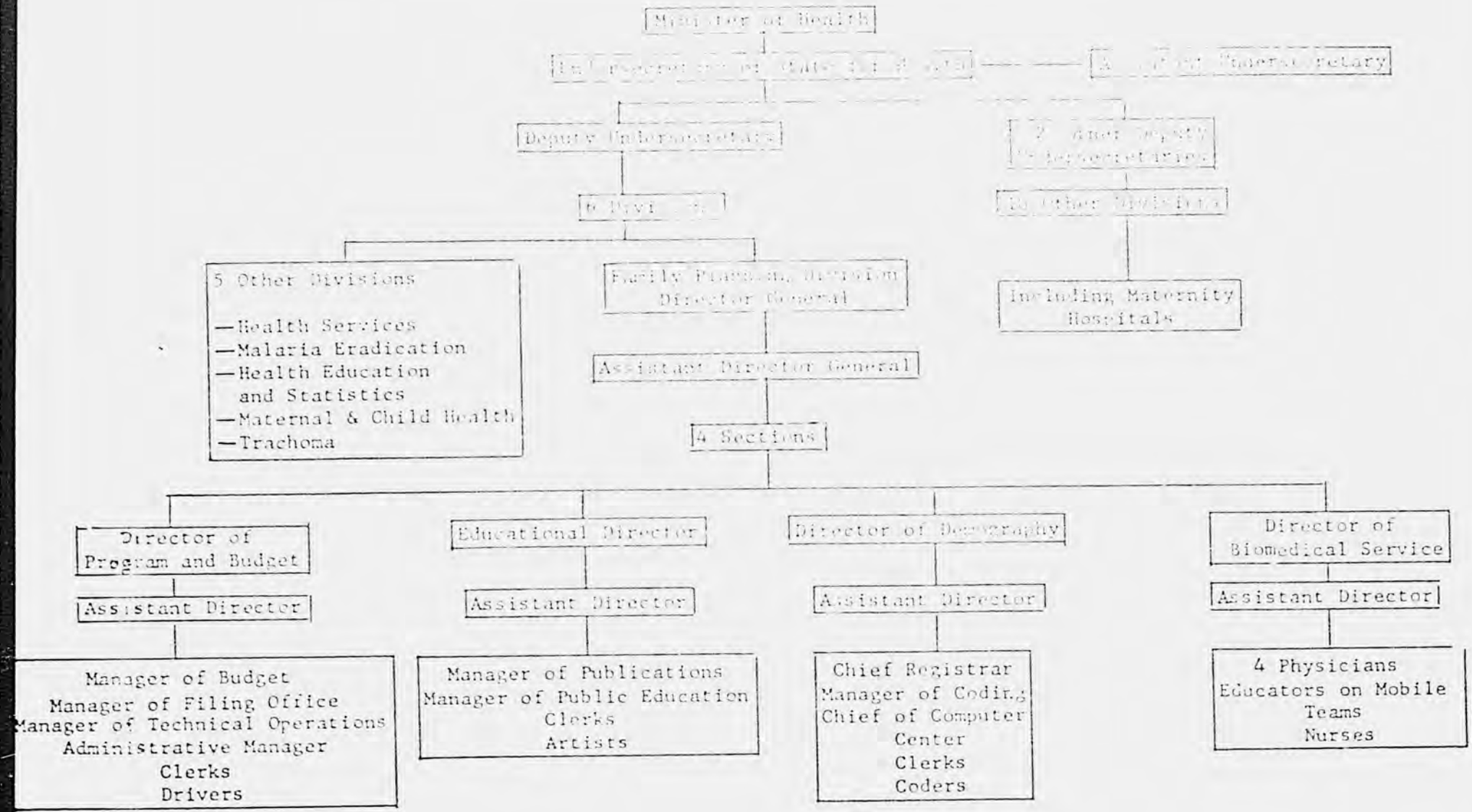
services. No demographic objectives are spelled out, nor are targets for services indicated. However, the birth rate is projected to be 24 per 1,000 by 1995.

Government-sponsored family planning activities in Turkey started in 1965. Before that time, propaganda as well as the import and distribution of contraceptives had been prohibited. To carry out the program, a General Directorate of Population Planning was established in the Ministry of Health. As the chart that follows indicates, the family planning division is one among many, and there is a separate division for maternal and child health.

The director general of the division was for many years Dr. Turgut Metiner. In October 1973, his deputy, Mr. Tendogan Tokgoz, was appointed acting director. There are four sections in the division: the section on program and budget has a director and sixteen staff members; the education section has a director and five staff members; the demography section has a director and eighteen staff members; the biomedical section has not had a director for about two years, but there are six staff members -- two midwives, one nurse, and three health trainers. With few exceptions, most support staff members have had only high school educations.

In the Turkish plan, the directorate was to have a field organization with sixteen regional directors throughout the country. In fact, there is only one regional director, in region seven, which includes Ankara. Services in the provinces are coordinated through liaison with each of the sixty-seven provisional health directors. The only staff-line relationship the Population Planning Directorate has with the field is through mobile teams delivering family planning services. In the early years of the program

ORGANIZATIONAL CHART OF THE DIVISION OF POPULATION PLANNING



there were seven mobile teams, which were directly responsible to the Family Planning Directorate.

Family planning services are delivered, in theory, through 566 fixed clinics, located in provincial facilities under the direct jurisdiction of the other directorates in the Ministry of Health. For example, there are clinics in the state hospitals and the maternity hospitals, such as the one in Ankara, which are under the General Directorate of Curative Institutions; there are also clinics in the maternity centers under the MCH Directorate; there are clinics in the health centers in the nationalized medicine areas of the country, which are under the jurisdiction of the General Directorate of Nationalized Medicine; and there are clinics operated by physicians under the jurisdiction of the General Directorate of Health Affairs. Some hospitals (for example, social security hospitals) do not deliver any services. The General Directorate of Population Planning, with the consent of the other general directorates, does train its medical and other personnel and provide materials for operating these fixed clinics.

The General Directorate of Population Planning also has 528 vehicles, supplied by USAID. These have been distributed to the provinces and are utilized primarily for educational teams to go to the villages to motivate villagers and to distribute condoms and vaginal tablets. SIDA has also donated an offset printing press. Other facilities include data processing equipment provided by the Population Council, as well as a UNIVAC 7300 computer that belongs to the Ministry of Health.

The budget for the General Directorate of Family Planning in fiscal year 1972 totalled approximately $1,500,000, and contraceptive services (primarily IUD's) were provided to approximately 42,000 persons. A survey

by the Westinghouse Population Center indicated that among the 5.5 million "potential" consumers of contraceptive services, about 2.8 percent were being served by the public sector and 5.1 percent by the private sector through commercial sales of pills and condoms.

The Ministry of Health has for some years been planning a reorganization, which would combine the General Directorate of Population Planning with the Directorate of Maternal and Child Health. If this reorganization takes place, the new division will have authority over the service delivery infrastructure in the field, including line authority over maternity centers in each of the provinces as well as a staff of more than 7,000 midwives stationed in villages throughout the country.

[illegible] AS INSTITUTIONAL DATA

Professional and Paramedical Training

In Turkey there are eight schools of pharmacy, three of which are attached to the Universities of Istanbul, Ankara, and Hacettepe. There are schools of dentistry and schools of nursing at Ankara University and Ataturk University and Faculties of Pharmacy and Dentistry at Istanbul University. Hacettepe University has (besides a Faculty of Medicine) Faculties of Health Sciences (nursing, physiotherapy, and home economics) and Faculties of Nursing and Dentistry. There are nine schools of dentistry.

In addition, there are numerous schools for the training of various categories of nurses: registered nurses (Hemsire), professional midwives (Ebe), multipurpose workers (Saglik Memuru), nursing instructors and assistant nurses (Hemsire Yardimcisi), village midwives (Koyebesi), and hospital aides (Hastakiecl). As of 1972 there were thirty health schools with 5,292 students learning midwifery and assistant nursing, thirty-five health colleges

with 6,243 students, four postbasic schools with 114 students, the Florence Nightingale School of Nursing with 126 students, and the Yenisehir Health College with 210 students (all male).

About 11,000 midwives and 6,000 paramedical personnel who are graduates of these schools are now working in the field of health in Turkey.

Medical Training

There are eleven medical faculties in five universities in Turkey. These are: Istanbul University: Istanbul Faculty of Medicine, Cerrahpasa Faculty of Medicine (Istanbul), Bursa Faculty of Medicine (Bursa); Ankara University: Ankara Faculty of Medicine, Diyarbakir Faculty of Medicine (Diyarbakir); Haceteppe University: Haceteppe Faculty of Medicine (Ankara), Gevher Nesibe Faculty of Medicine (Kayseri), Eskisehir Faculty of Medicine (Eskisehir); Ege University: Ege Faculty of Medicine (Izmir); Ataturk University: Ataturk Faculty of Medicine (Erzurum), Cukurova Faculty of Medicine (Adana). Some of these faculties are not fully operational and others are in the planning stage.

All Turkish universities have agreed to conduct a common aptitude examination for high school graduates. Lists are made from the highest to the lowest scores. Each university has authority to decide how many students can be accepted in its medical faculty, and since the number of applicants is far greater than the places available, those with higher scores are given preference. At present all medical schools use these common criteria for admission, but any university can change its rules of admission. No other criteria for university admission are apparently used.

Graduates of Turkish universities are awarded the diploma of Doctor

of Medicine and allowed to practice medicine without any further licensing formalities. Specialization in medicine is governed by regulations of the Ministry of Public Health. In most areas of medicine or surgery, four years residency training in approved hospitals is required before a specialty examination can be taken. This period may be extended to six years, for example, for neurosurgery or thoracic surgery. These examinations are conducted by a board of examiners authorized to organize examinations along the same lines.

Turkish universities are autonomous institutions, with their own administrations and a loose link with the Ministry of Education. Each has a rector, assisted by an administrative committee and a senate. Administrative policy of the faculty is determined by a council of professors, who elect a new dean of the executive council every two years. Annual fees of limited amount (TL100 per person) are paid by students for registration, training, examinations, and diplomas. Other financial support is provided by the government. The links of the faculties of medicine with the Ministry of Health are loose, but the ministry awards fellowships to students with the proviso that students, once their course is finished, work for the government for a time equivalent of two-thirds of the duration of the fellowship.

Information on the number of medical graduates is published regularly in the annual statistics of the government. A large percentage do not practice medicine in Turkey, and those who do tend to cluster in urban settings.

Figures for 1971 showing enrollment and graduates are as follows:

	Enrollment	Graduates
Medical Faculty, Ankara University	1,356	125
Medical Faculty, Istanbul University	3,818	538
Medical Faculty, Ege University Izmire	1,178	74
Medical Faculty, Haceteppe University Ankara	1,191	62
Diyarbakir Medical Faculty, Ataturk University	291	--
Erzurum Medical Faculty, Ataturk University	227	22

The teaching of medicine in Turkey has been divided into two sorts by Dogramaci: a "traditional" system and an "integrated" system. Those subscribing to the former system are Istanbul, Ankara, and Ege universities (the Department of Community Medicine at Ankara tends to blend both approaches). Those utilizing the integrated approach are Haceteppe and Ataturk University at Erzurum.

Curriculum at Istanbul and Ankara Universities

The course of study is six academic years. The first year is devoted to premedical studies, including physics, chemistry, and biology (zoology and botany). Mathematics and statistics and an introduction to anatomy are also included. Foreign language is started during the first year and continued in the later years unless the student proves his proficiency in the language. The second, third, and fourth years are mainly devoted to basic medical sciences -- biochemistry, anatomy, physiology, microbiology, parasitology, pathological anatomy, physiopathology, pharmacology, forensic medicine, hygiene, and preventive medicine. Introduction to clinical sciences is started during the

third year and intensified in the fourth. The fifth year is devoted to clinical subjects, and the sixth to clerkships in various clinical departments. Some of the faculties use both the fifth and the sixth years for clerkship, and during these years theoretical teaching in clinical subjects also continues.

Curriculum at Hacettepe and Ataturk Universities

The total course of study for an M.D. degree is seven academic years, and a two-year premedical phase at the school of basic sciences of the university is required for admission to the Medical faculty. The student must complete courses in physics, chemistry, molecular biology, mathematics, applied basic statistics, general psychology, social anthropology, and a foreign language. Approximately 42.5 percent of the first two years are devoted to the study of sciences, and 57.5 percent to the study of the humanities and social and behavioral sciences. Following the premedical phase, students are admitted to the Faculty of Medicine for a five-year course.

An integrated teaching approach to medical education is the main characteristic of the system. The subject matter is not merely arranged according to the various departmental topics. Rather, the anatomy, physiology, biochemistry, pathology, and clinical aspects of each subject are presented in an integrated and coordinated program. Isolated departmental laboratories do not facilitate multidisciplinary study; therefore, the student laboratories are designed to enable each student to have a unit of his own in the laboratory, which he retains throughout his training period. All his laboratory studies with the exception of dissections, take place here.

The first year of medicine is divided into six blocks of study terms, each administered by a committee of representatives from the different dis-

ciplines. Maternal and child health and community medicine are integrated parts of the curriculum from the beginning. During the first year, four hours of theoretical teaching a week are devoted to community medicine, two of lecture and two of small-group discussion. During the first year of the medical course, approximately 20 percent of the curriculum time is set aside for clinical sciences and community medicine, with the remaining 80 percent devoted to basic medical sciences.

The second year is also divided into a number of study terms. Basic medical sciences, such as microbiology, pharmacology, and pathology are taught, again in an integrated fashion. About 65 percent of the curriculum time is spent on basic medical sciences and 35 percent on the clinical sciences and community medicine. Psychiatry is the main clinical area stressed.

Beginning in the third year and continuing through the fourth year, students rotate as clerks through various clinical departments. During this period, instruction continues in seminars, clinico-pathological conferences, group discussions, case presentations, and symposia. The students are also expected to take some responsibility for night duties. During the third year, each student spends two and one-half months each in medicine, surgery, obstetrics and gynecology, and pediatrics.

During the fourth year each student rotates as a rural health intern and lives in a village. Home calls are part of his responsibility. For rural internship purposes, at Hacetteppe, seven health centers located in seven villages with a total population of 63,000 are used (see section on Etimesgut). These centers are attached to a fifty-bed rural hospital, and the complex is staffed by members of the medical faculty. In Erzurum, where Ataturk University is located, students have used twelve rural health centers. The

instructors have lived in the villages and served as rural health officers in all cases. This arrangement was made with the cooperation of the Ministry of Public Health and the local authorities. At present, however, the system seems to have broken down.

The third year is the predoctoral internship period. The student can select one of two alternative courses, each of which provides a mix of study programs in the field of internal medicine, pediatrics, emergency services, surgical specialties and anesthesiology. During this year the student assumes the essential duties and clinical responsibilities of a [illegible] resident [illegible] services.

[illegible] at Hacettepe and Ataturk Medical Schools

[illegible] at Hacettepe and Ataturk includes family [illegible] students in the first year of the premedical college, when students [illegible] demographic problems, and social problems of [illegible]. Family [illegible] clinical aspects of family planning are taught [illegible] attitudes of contemporary Turkish culture and [illegible] forces, such as [illegible] behavior and attitudes.

Each first year medical student is assigned to a family in which there is either a pregnant woman or a baby less than one year old. The student is introduced to the family as their "student doctor." He takes part in the periodical medical check-ups and is encouraged to motivate the clients to adopt family planning. Gradually the student takes increasing responsibility, under the supervision of the doctor assigned to the family through the maternal and child health unit of the Medical Faculty. In this way, the student is exposed to the fundamental principles of observing and recording all pertinent information about the patient.

In the second year the students study epidemiology, which includes population problems in addition to other subjects. In the third year the staffs of the clinical departments emphasize the community aspects of medicine. The population problem and methods of fertility control are also covered in epidemiology and in obstetrics and gynecology. During the clerkship in OB-GYN, which lasts one and one-half months, students spend one week in family planning clinics.

The fourth year has a clerkship in community medicine, which includes a seminar. Some of the topics included in these seminars are demographic data, source of errors, evaluation, population and health, population and nutrition, population and economic growth, economic resources, and social factors.

During the internship, students spend another week in the family planning clinic. Besides the practical work, they attend seminars directly related to family planning, which deal with the use and effectiveness of contraceptive methods, contraindications, side effects, and medical and social reasons for abortion.

In postgraduate education, a Haceteppe resident works one month in a family planning clinic and one month in a rural area. Then he presents a seminar report on the social and educational aspects of family planning.

In the words of the chairman of the Department of Community Medicine at Haceteppe, Dr. Nusrat Fisek, "Teaching family planning, to me, is not only teaching medical aspects of family planning but teaching the subject as a whole. When I say family planning education, I include demography, social anthropology, and contemporary Turkish culture. I also include a study of the change of behavior and attitudes because all this is required to enable medical doctors to understand family planning and to take responsibility in

a program [illegible] family planning is only [illegible] idea, it is giving doctors [illegible] in Teaching Family Planning [illegible].

[illegible]

[illegible] Faculties of Medicine as well as [illegible] Chemistry, Pharmacy, Dentistry, [illegible] sciences, and an Institute of [illegible] staff of 1,330 and a student enrollment of [illegible] volumes and the faculty libraries [illegible] schools now enrolls from [illegible] and [illegible], community medicine [illegible] and family planning work at Istanbul [illegible] the Faculty of Medicine [illegible] Medical School, associated [illegible] Department of Public Health and Preventive Medicine [illegible] There is also [illegible] pasa, directed by Prof. [illegible].

At the University of Istanbul Medical School, Prof. [illegible] Celicangil is the head of the Department of Preventive Medicine and Public Health and also head of the faculty's Institute of Community Health.

It is felt that [illegible] the Department of Community Medicine nor the Institute at Istanbul are very active, though some field surveys and data are collected by the Institute. Nonetheless, one pediatrician, Prof. Olcay Neyzi, has asked the Ministry of Health to sign a protocol to utilize an MCH center

for practical teaching. This, at least, will be a first step in exposing students to the problems of mothers and children.

At Cerrahpasa Medical School plans call for establishing a community health hospital at Silivri, 60 miles from Istanbul. The director of the Institute of Community Health at Cerrahpasa is Dr. Suatvural, a microbiologist. The Bursa Medical Faculty, also affiliated with Istanbul, is just now starting and little can be said about it. At both Cerrahpasa and Istanbul, all students must take two semesters of public health. However, little time is spent on family planning or population in the curriculum, and only two students have gone on to do postdoctoral work in public health.

The only real interest in the field of family planning at the medical faculties at Cerrahpasa and Istanbul appears to be in the Department of Obstetrics and Gynecology. This department at Cerrahpasa has eleven members, two of whom are reputedly interested in family planning. These individuals are the department chairman, Dr. Selcuk Erez (also associated with the local planned parenthood affiliate) and Dr. Munir Turkent. At the Medical Faculty (Department of OB-GYN) of the University of Istanbul, Dr. Cevat Babuna and Dr. Ercument Bora are also said to be interested in family planning. However, the only tangible evidence of any real interest at the university is a family planning clinic at Cerrahpasa, which operates under the leadership of Dr. Erez. It is open once a week, and residents insert IUD's and prescribe pills. However, the clientele consists of only five or six women per clinic session. The family planning clients are those referred to the clinic from the university's outpatient clinic, and no real motivational techniques are utilized to recruit clients or keep them contracepting once started.

The university hospital has about 110 beds for obstetrics and gynecology with about 50 beds or more used for obstetrics. There are about 3,000 deliveries per year. The hospital presents an ideal opportunity for a postpartum family planning program, and the chairman of the Department of OB-GYN would like to start such a program. The need for increased family planning is obvious, given the apparent seriousness of the abortion problem. Among the hospital clientele a sample of some seventy in-patient hospital record forms from the Department of OB-GYN were examined by the author, because they include statistical information on reported abortions. This type of information is collected on all patients to the hospital's out-patient OB-GYN clinics. From this small, but apparently typical, sample, it appeared that over 25 percent of the women in the hospital on that day had from one to six criminal abortions and over 25 percent had from one to five spontaneous abortions. If one assumes that some of the "spontaneous" abortions were actually illegal abortions, it would appear that a remarkably high percentage of the women in the OB-GYN ward at any given moment in time are probably utilizing induced abortion as a method of family planning.

The Chairman of the Department of OB-GYN has requested outside assistance to establish a postpartum family planning program. This would provide increased opportunity for residents and interns to become familiar with IUD insertion. There would be no problem in getting peer-level motivators onto the ward for OB-GYN. The decision to undertake such an activity could be made at the department level. The chairman of the OB-GYN Department is also interested in undertaking a study of his medical records for the last ten years to determine the various trends related to reported induced and spontaneous abortion and age, parity, and so on of the hospital's clientele.

The relative lack of family planning activity at the three Faculties of Medicine at the University of Istanbul should not be construed to mean that university faculty members have no interest in the subject of population generally. Indeed, at the university's Institute of Statistics (founded in 1953) there are individuals whose concern about population is both serious and articulate. The head of the Institute of Statistics is Dr. Haluk Cillov, and the assistant director is Prof. Kemel, who is an associate professor at the Institute of Statistics. Dr. Cillov has been writing on subjects related to population for many years and is the Turkish delegate to the United Nations Population Commission. At the present time the staff of the Institute of Statistics includes five professors, three associate professors, four research assistants, two secretaries, and one librarian. Faculty members associated with the institute teach statistics and demography in the Faculty of Economics, Faculty of Business Administration, and the Faculty of Law. Prof. Velicangil, head of the Department of Preventive Medicine and Public Health at the University of Istanbul, is associated with the institute and teaches biostatistics at all three faculties. In the past, also, the Institute of Statistics has hosted seminars on research, design, and so on for medical students.

Both Dr. Cillov and Dr. Kemel teach demography at the university. Demography is a required course in the last semester of the Faculty of Economics, and the same course is taught in the Faculty of Business Administration. A good Turkish text, is available, we are told, written by a Prof. Gurtan, who is no longer at the university. Although there are fifteen to twenty doctoral candidates in the field of statistics, only one student has concentrated in demography, and his thesis was not published. During the coming year Dr. Cillov will teach a course in economic development and population growth.

Dr. Kemel feels uneasy with the teaching of demography and wishes a fellowship to study demography in the United States at some time in the future, so that he can share with Dr. Gillov an increasing amount of the teaching responsibility.

At the request of the Institute of Statistics, a visit was carried out to the Istanbul Maternity Hospital. Dr. Naci Bucakoglu is the head of the hospital, which functions under the government's social security system. It has some [illegible] obstetrical and gynecological beds. Curiously enough there are no facilities for family planning, but the hospital does a considerable number of [illegible] abortions and has a vacuum aspirator for this purpose. Sterilizations are also done, after [illegible] Caesarians have been performed. Approximately 20 deliveries are carried out each day. However, those patients who are interested in family planning are referred to government clinics. [illegible] family planning should [illegible] hospital's apparently excellent services. However, the hospital's director interprets the social security law to exclude family planning; [illegible] law, he feels, [illegible] medical services and family planning is a public health measure.

Atatürk University

Atatürk University was founded at Erzurum in 1957. It is a state institution responsible to the Ministry of Education and has somewhat less autonomy than other Turkish universities. There are faculties of Law, Agriculture, Medicine, Science, Letters, Economics, Dentistry, and Islamic Sciences, and Institutes of Farm Products Research and Carpet Production. Graduate degrees are awarded in agriculture and medicine. As of 1969-70, there were 427 full-time faculty members, three part-time faculty members, and 2,115 students.

In the Faculty of Medicine during that year, there was a total staff of 190, and there has been a gradual growth in the staff of the medical school over time. In 1971 there were 9 professors, 10 assistant professors, 68 specialists, and 113 residents. In 1974 there are 12 professors, 14 assistant professors, 40 specialists, and 150 residents. Medical student enrollment in 1974 was 111 in the first year, 89 in the second year, 77 in the third year, 79 in the fourth year, and 49 in the fifth year. Although there is some variation by year in the number of students, the dropout rate for medical students is relatively low, apparently because of the high faculty-student ratio, which allows more individual work by faculty members with students. The university is also supposed to have a university level nursing school, but it has never opened, reportedly because teachers will not come to Erzurum, and salary scales are too low.

The Medical School at Ataturk consists of five basic departments: Internal Medicine, Surgery, Laboratory Sciences, Preclinical Sciences, and Community Medicine. The head of the Department of Community Medicine is Dr. Rahimi Dirican. The curriculum in Community Medicine (the only department at Ataturk that stresses population matters) is based on the curriculum utilized at Hacetteppe University.

During the first year, all students are exposed to a certain amount of material (about eighty hours) on the environment and MCH. Approximately three teaching hours are devoted exclusively to population problems in the world and in Turkey. During the course on maternal and child health, two hours are spent on the physiology of reproduction. During the fifth year of their training, when all students go through a community medicine clerkship, the department head encourages approximately one out of every five students to undertake research on maternal and child health.

[illegible] the teaching of family planning and population matters to medical students seems further advanced at Ataturk than at Istanbul University, there appear to be some serious problems associated with student exposure [illegible] in field settings. Until fairly recently, there [illegible] which included some seven health units, [illegible] a total population of approximately 70,000 people. At [illegible] it is impossible to find physicians to staff the health units [illegible] for training purposes. Therefore, there is virtually [illegible] for medical students who undergo their clerkship in rural areas. The students are given their clerkship in an urban health unit regardless of [illegible]. The shortage of doctors in rural areas is far [illegible] related to salary scales.

Two medical students are presently pursuing the diploma in public health in Community Medicine at the Department of Community Medicine. One is concentrating on infectious diseases and the other is concentrating on pediatrics.

No particular emphasis is placed on family planning in the department at [illegible], although some clinical teaching does take place. The situation has apparently deteriorated during the last four years. At one time each obstetrical resident had to work in a Ministry of Health family planning clinic. The department head in community medicine is quite dissatisfied with the situation. He is, in effect, alone in the department and the sole individual at the university who is pushing for population. It is difficult to discern exactly where the problem lies, since some years ago the university had an extremely active field demonstration area, with a vigorous family planning teaching and service program incorporated into the department's efforts.

Nonetheless, even with the limited resources available, the department head carries out survey research as best he can without any outside help and also teaches family planning in the local nursing school. At the time of my visit he was coding a survey of 715 mothers to try and determine what ideal and actual family size might be. Interviewing for the survey was done by trained midwives.

Hacettepe University

Hacettepe School of Medicine and Health Sciences was founded in 1964, and a new university charter and the present title were granted in 1967. (A Turkish sultan established a medical school in Kayseri in 1206, and Hacettepe University plans to start a medical school in Kayseri. In connection with this decision, there is a desire to push the history of the university back to the 13th century.) It is an autonomous state institution financed by the government with a university executive committee and a senate consisting of the members of the executive committee and other members elected from the faculty. Registration fees are nominal and the language of instruction is Turkish, though dissertations and theses may be presented in English, French, or German. There is a library of some 60,000 volumes. As of 1969-70 there was a faculty of 825 and a total student body of 7,500, of which almost half were women. Faculties at Hacettepe University are: Health Sciences, Science and Engineering, Social Sciences and Administration, Graduate Studies, and Medicine. There are three Faculties of Medicine associated with the university: one in Ankara, one in Kayseri, and one at Eskisehir. There are also Schools of Science, Pharmacy, Nursing, Home Economics, Dentistry, Physical Therapy, and Rehabilitation, and Institutes of Population Studies and Child Health. Hacettepe University is the prototype of the "integrated" medical

curriculum. At Haceteppe University, the population problem is touched upon in courses related to epidemiology, community medicine, and obstetrics and gynecology. During their clerkship in obstetrics and gynecology, which lasts one and one-half months, students spend one week in family planning. The Department of Gynecology has three clinics: one in a rural area, one in a squatter area, and one in the central hospital. However, curriculum related to family planning is integrated into the teaching of community medicine, which starts in the first year of premedical college. During that year students take biostatistics, demography data, social anthropology, and medical psychology. On the clinical side, the student is given a family to care for, and the students are encouraged to talk with husbands and wives about family planning if the families are not contracepting. In the third year of training, students work in clinics in the fields of obstetrics, psychology, medicine, and pediatrics and once again are exposed to family planning. In the fourth year, during their two-month community clerkship, students working in rural areas and in the city once again become involved in family planning and population. A seminar is held on demographic data, source of errors, evaluation, population and health, population and nutrition, population and economic growth, economic resources, and so on.

During their internship, all students spend another week in family planning. In the postgraduate education program, residents have to work one month in a family planning clinic and one month in field work in a rural area. They then present a seminar report on the social and educational aspects of family planning.

There is a relationship between the Department of Community Medicine and the Haceteppe Institute of Population Studies, which concentrates its

efforts primarily on the social sciences and the social aspects of the population problem and family planning. The Institute was established in 1967. Details of its operation are covered in another section of this report.

One of the most remarkable aspects of the Department of Community Medicine's work relates to the field demonstration area, Etimesgut. The area was established in 1965 as a prototype for the nationalized medicine law. It is located to the west of Ankara and covers eighty-four villages and two towns, comprising some 640 square miles. The total population is approximately 63,907 (1972), consisting of approximately 11,035 families with an average family size of 5.8 persons. The educational level of the people in this area is somewhat higher than the national level, and their per capita income is about TL2,000. Health services in the area consist of seven health units, thirty health stations, and a fifty-bed community hospital under the direction of a district health officer. The total number of professional and service workers in 1972 was 158. The community hospital's staff consists of a pediatrician, an internist, a surgeon, an obstetrician gynecologist, two dentists, a pharmacist, a medical statistician, a medical technologist, ten qualified nurses, four laboratory and two X-ray technicians, six secretaries, and thirty-one other employees. The health units are staffed by a physician, two public health nurses, two to six auxiliary nurse midwives, and a medical secretary. This team serves a population of 5,000 to 10,000 persons, and the nurse-midwives reside in the villages where their stations are located.

Under the system at Etimesgut, the district health officer is the chief administrator, and on his staff are senior personnel responsible for coordination and evaluation of work. These individuals include an epidemiologist, a public health head nurse, a sanitary inspector, a health educator,

a public health nutritionist, and a statistical clerk.

At Etimesgut family planning is an integral part of the existing health services. The rationale behind this integration of services is that the confidence of the public in health workers is the most essential element of the success of family planning programs, and therefore, multipurpose workers have a better chance of providing good, coherent service than single-purpose workers. Secondly, multipurpose health units serving populations of an appropriate size with their own links to hospitals are the most efficient and effective system for achieving fertility control.

The key member of the auxiliary health team is the nurse midwife, who works under close supervision and is trained continuously. Her main function is to prevent disease and to assist in deliveries. These nurse midwives visit villages regularly and offer services to the homes of the population. Well care does not have to be given at clinic sites, but antenatal care, home delivery, child care, and so on are delivered where most convenient. Auxiliary nurse-midwives in the demonstration area talk to women, before and after delivery, about the need for child spacing, the possibilities of becoming pregnant while nursing, the health hazards of having too many children, and the various methods of contraception. They can distribute vaginal tablets and condoms and will distribute pills following the instructions of the medical officer if these are available. They will provide information on where to go for IUD insertion and what to do about the side effects of contraception.

The experiment or demonstration at Etimesgut is one of the most striking and well documented undertakings in the field of community medicine in the world. It is more than an exercise in good administration; it represents a philosophy and demonstrates what a community oriented academic institution

with extraordinarily good leadership can provide. A good system of vital statistics is in existence, and the infant mortality rate has fallen during the period 1967-72 from 146 to 85 per 1,000 live births. Maternal mortality has fallen from 10 to 5 per 10,000 population during the same period of time. In one of the areas where there are two health stations (population 5,000), there have been no births in the last year and the vast majority of all fertile women are carrying the IUD. The crude birth rate for these villages is 25 per 1,000 population, compared with Turkey's national crude birth rate of 42.

One fairly significant statistic is that the percentage of couples practicing family planning has only increased from 50 percent in 1967 to 54 percent in 1973. However, there has been a switch from more traditional to more modern methods. Another interesting statistic is that the educational level of women in Etimesgut has no significant effect on the rate of contraceptive practice. The differences observed in the use of condoms and withdrawal among women of different educational levels are not statistically significant either.

Perhaps one of the most important lessons to be learned from Etimesgut is that the so-called classical fertility differentials lose their importance when a family planning program is run efficiently for a reasonable length of time in communities where a relatively low family size norm has been established. The level of urbanization, schooling, and professions in communities seem to make relatively little difference in terms of contraceptive use and acceptance in Etimesgut. The Etimesgut area provides an ideal opportunity for the Department of Community Medicine and the Institute of Population Studies at Haceteppe to undertake research and training activities. Much of the credit for the success of this program must of course go to the medical team in community

medicine at Hacettepe University. The head of the department is Dr. Nusret H. Fisek, M.D., Ph.D., who is presently director and professor of community medicine at Hacettepe. He established the Institute of Population Studies at the university in 1967 and was its director until 1972.

Ankara University

Ankara University was founded in 1946 [illegible] University incorporating the faculties of Law, Letters, and Medicine [illegible] established prior to the early 1920's [illegible] present, the university [illegible] Faculties of Letters, Language, Education, Science, Law, and [illegible] Sciences, Medicine, two faculties), and Fine Arts [illegible] two to [illegible] are also Schools of Journalism and Communications and [illegible] faculties totals were [illegible] 1,400 [illegible] some 17,000 students, [illegible] are women. Almost 1,000 were from foreign countries [illegible] Ataturk University, leadership in the field of family planning [illegible] Department of Community Medicine. The department chairman is [illegible] Ayres Gurkan, who was also the head of the Community Medicine Institute.

[illegible] the medical faculty of Ankara University is considered one of the "traditional" rather than "reform-oriented" medical faculties, in the field of community medicine there is considerable innovation and interest in family planning work. All medical students receive considerable training in family planning, including two hours of instruction in [illegible] year. As in Hacettepe and Ataturk Universities, students are assigned a family to follow for a period of three years so that they can become familiar with such practical problems as abortion, infectious disease, and child [illegible]. Unlike Istanbul and to some extent Ataturk University, Ankara has a well developed field demonstration area, the Abidinpasa field project area. It is a nationalized medicine

area with a population of 65,000 in the poor residential area of Ankara. There is also a community health worker training institute in the area, where training in public health is given for health service personnel, medical students, paramedical personnel, and community health specialists.

There is a complete record of all families in the field project area, which includes pregnancies. Seventy-two percent of the women in the age group fifteen to forty-five use contraception, with over 50 percent using modern methods. In the fourth year of medical school training all students from the Ankara Faculty of Medicine go and live in a rural health unit in the area, where they work as a team with paramedical personnel with a population of approximately 7,500. Each student is exposed to family planning activities for at least one month during his training.

During the fifth year, a training program is undertaken in community medicine related to the rural health units. For twenty days, field training is once again undertaken, with a total of six hours devoted to research in family planning. Each student is required to make a small study of the reproductive habits of women from fifteen to forty. Information collected on the basis of home visits in the morning is discussed in an afternoon seminar, which covers the nature of the high risk groups, fertility differentials, contraceptive methods, the best methods for delivery of services, the value of mobile units, and other subjects.

Medical students can be exposed to an excellent field demonstration area at Ankara University. The birth rate in the demonstration area is said to be 26 per 1,000 live births, compared to 40 per 1,000 in Turkey generally, and death rates are 7.5 per 1,000, as compared to 12 per 1,000 generally. There is obviously an effort to incorporate team training approaches to

training of medical school students in the field. For example, students from the [illegible] college do field work in community medicine, receiving one day of training in family planning under the auspices of the Department of Community Medicine.

Associated with the Institute of Community Medicine at Ankara University are three graduate [illegible]'s work [illegible] diplomas in public health. The staff of the Institute consists of a director, one assistant professor, one specialist, one [illegible], one pediatrician, four general practitioners, and three community medicine graduate students. This group is a relatively small component of the entire medical faculty, which is fragmented into some thirty departments with 150 professors and assistant professors.

[illegible] the major difference between the [illegible] graduate programs [illegible] medicine is that at [illegible] three year period after the student receives [illegible] program apparently includes [illegible] clinical and public health [illegible] program at Hacettepe is [illegible] more popular [illegible] with [illegible] the clinical side, and [illegible] specializes after receiving [illegible] can go into private practice after receiving [illegible] community medicine graduate program. This is not so with graduates of [illegible] Ankara University program.

V. CONCLUSION

In 1966 Bernard Berelson wrote of Turkey: "A large proportion of Turkish couples want fewer children than they have or are likely to have ... About 60 percent of Turkish couples want two to four children. Thus, the small family norm is strongly established in Turkey... On the whole, Turkish

people approve of family planning. About 43 percent of this population report that they do not know of any way of keeping the wife from getting pregnant."

During the ten years since 1964, there have been significant changes in the Turkish government's policy toward family planning and in the institutional apparatus at both the national and university levels to implement population programs. Even though there is wide acceptance of the small family norm, the provision of modern contraceptive services in Turkey is not generally felt to have been successful. The cumulative number of acceptors by 1970, for example, had only reached 223,000. Any number of reasons can be given for the program's relative lack of success. Fisek, for example, feels that in Turkey population control is still a politically sensitive subject. High priority cannot be given to the family planning program, as it is likely to be criticized for failing to achieve economic objectives. He notes also the inefficiency of the administrative machinery and managerial services as barriers to expansion of the services. He writes also that while most intellectuals agree that rapid population growth may be undesirable for Turkey, they are not sufficiently motivated to press for the development of the program. In addition, the extensive migration of the Turkish labor force to Europe during the last decade has adversely affected the family planning program by improving the balance of foreign exchange in the country and as a result diminishing the fear of overpopulation.

If we accept the above as accurate, it is extremely difficult to define what the role of a university medical school in Turkey might be to exercise leverage to improve the system. There are advantages, of course, to improving population and family planning teaching in medical schools. If a physician wants to do something in family planning nobody stops him. An

example is Ziya Durmus in Ankara Maternity Hospital.

In a general sense, it is not difficult to describe the kind of health services that would be more effective and efficient in terms of the great mass of population, in Turkey and elsewhere. More emphasis needs to be given to community medicine, preventive medicine, and public health and, within the curative or clinical health sector, to the delivery of rural health services offering only out-patient facilities. Less emphasis should be placed on large urban facilities. It is likely in Turkey, as in most countries of the world, that doctors will continue to be too few (particularly in rural areas) and cost too much to train ever to be the first point of contact for a patient. In the public sector, they will have to see only the most difficult cases and referrals and spend much of their time supervising the health teams and training medical auxiliary staff, who will have to undertake the routine of day-to-day clinical and preventive medicine. The development of these new types of health services stand, as Brockington has noted, on three legs: good training, good supervision, and good organization. University medical schools do have a role, particularly in providing training that can help develop better public health services if its graduates choose or are forced to work in the fields of public health. However, in Turkey as elsewhere, physicians attach low status to public health work (faculty members cannot even be found to teach in the school of public health) and shun the administrative tasks associated with organizing and training others to provide medical care when they have spent so many years learning clinical and curative techniques. Whatever the training at the university level in public health may be, there is reasonable evidence that those few graduates who do choose to work in public health (and who can thus make a real contribution to the government's family

planning program) are relatively unhappy with their professional roles. In short, good supervision and good organization are lacking.

In our estimation, and on the basis of a number of relatively short trips to Turkey, the role of the university medical school should not be overemphasized. Whatever their potential role may be, a number of the schools do seem to be moving in useful directions, even if in a rather limited way. Certain medical faculties, particularly those that use the integrated curriculum, have undertaken extraordinarily exciting approaches to teaching medicine at the undergraduate and graduate level. Hacettepe University's Department of Community Medicine is a model for the incorporation of population curriculum into the teaching process, which could well be emulated not only in many countries of the developing world but in the Western countries also. However, the population component of the Hacettepe course apparently does not carry over even into the other university medical schools in Turkey with integrated systems. No doubt both Hacettepe University's Institute of Population Studies and its Department of Community Medicine will continue to be in the vanguard of population work in Turkey. There are many other medical faculties in Turkey, however, and they have their own system which we are told does not equip graduates to carry out the public health burdens placed upon them during their two years of compulsory government service. Apparently very few universities have appropriate field training units; Ankara University and Hacettepe are exceptions. Unfortunately, the once active and probably very effective field demonstration and training unit at Ataturk University at Erzurum seems to have regressed because it is impossible, for many reasons, to recruit physicians to staff the rural health units and supervise the training of medical students. We are told, by several good authorities, that most of the

medical faculties in Turkey, other than those we have mentioned, spend very little time on family planning teaching and training at an academic level, much less at a clinical or field level. There is no strong evidence to show that even physicians with appropriate training have real commitment to working in family planning. As Stokes has noted, "as a specialty in medicine the area has low prestige . . . it is often relatively controversial, legally ambiguous, morally dubious and economically unrewarding." Certainly the faculties of medicine in Turkey, our informants tell us, could be improved. They could provide better undergraduate professional education, stressing population, preventive clinical work in family planning. They could provide better postgraduate professional education and more in-service and nondegree training in related fields. They could offer more seminars, professional and technical conferences, and do far more research and publishing. Their libraries and reporting services could be considerably improved. They could be providing advisory services to government offices and private institutions.

There is also the significant reason why the university teaching hospitals should not have family planning clinics and postpartum family planning programs. The international donor community would do well to encourage such activities. Further, a way must be found to make the School of Public Health at Ankara a viable training institution that can make a serious contribution to work. At present, the school appears to be in dire straits because of the shortage of competent staff. So far it has trained some seventy physicians scattered throughout Turkey. It could continue to play a key role as a link between the academic institutions and the real world of delivery of services, particularly in the field of family planning, if it were formally attached to a university that could provide teaching staff on a planned basis.

Alternatively, it could be made into an independent school with its own budget and governing body. At the present time the School of Public Health comes under the Ministry of Health. Its salary scales are not competitive, nor are its positions as prestigious as those at nearby Haceteppe Medical School. One of its main objectives was to train staff to work in the health services, in addition to acting as an intelligence center and advising the Ministry of Health on health matters. However, students are given no encouragement to attend, particularly when they can take training at a university

In the last analysis, the development of an effective Turkish family planning program lies less with the university medical schools than with the central government, particularly the Turkish Ministry of Health. The medical faculties can and should play a key role in the training and motivation of physicians to undertake work in the population area. However, the Ministry of Health itself could perhaps without too much stress undertake certain remedial measures to alleviate some of the deficiencies that handicap the development of its health services and the implementation of an effective national effort in family planning. Without the latter, particularly decentralization and the increasing use of auxiliaries for the delivery of health services even the creation of a whole series of population training programs such as exist at Haceteppe and other medical faculties will have a relatively limited impact.

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