

INDEXED

TRAVELLING SEMINAR ON ORGANIZATION AND ADMINISTRATION OF SCHOOLS OF PUBLIC HEALTH

*Visits to Schools in
Egypt, Lebanon, and Turkey*



PAN AMERICAN HEALTH ORGANIZATION
Pan American Sanitary Bureau, Regional Office of the
WORLD HEALTH ORGANIZATION
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Travelling Seminar on
ORGANIZATION AND ADMINISTRATION OF
SCHOOLS OF PUBLIC HEALTH

March 1965



Alexandria
Egypt

Beirut
Lebanon

Ankara
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NOTE

The views expressed in this report are those of the participants in the Seminar and do not necessarily reflect the policy of the Pan American Health Organization or the World Health Organization.

CONTENTS

Page

PARTICIPANTS	iv
INTRODUCTORY REPORT	1
ALEXANDRIA, EGYPT	
High Institute of Public Health, University of Alexandria	8
Development and Organization of Health Services in Egypt ..	8
Public Health Education	12
Establishment of the High Institute of Public Health	13
Curriculum and Activities of the High Institute	16
Medical Faculty of Alexandria University	20
Appendix 1: Field Training at the High Institute of Public Health	21
Appendix 2: Teaching of Biostatistics for Graduate Students in Public Health	24
BEIRUT, LEBANON	
School of Public Health, American University of Beirut	28
Introduction	28
Discussion of Selected Topics	33
ANKARA, TURKEY	
School of Public Health	39
Organization and Program	39
Medical Schools in Turkey	49
The Lepra Institute	52
Health Problems and Nationalized Health Services	53
Maternal and Child Health and Family Planning	58

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Participants in each institution visited were senior faculty and some of their younger colleagues. They are represented for purposes of this report by :

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INTRODUCTORY REPORT

Coordinating Rapporteur: DR. BERNARD D. TEBBENS

The WHO Travelling Seminar on Organization and Administration of Schools of Public Health, held from 6-23 March 1965, included visits to the following institutions in the Middle East: the High Institute of Public Health, University of Alexandria, Alexandria, Egypt (7-11 March); the School of Public Health of the American University of Beirut, Lebanon (13-17 March); and the School of Public Health, Ankara, Turkey (19-23 March). Participants included the deans and other faculty members of thirteen schools in the United States of America and Canada, and representatives of the World Health Organization. Additional travelling participants through part of the period included: Dr. Abdou Abbasy, Dean of the High Institute of Public Health in Alexandria; Dr. Nazir-Ahmed, Dean of the Institute of Hygiene and Preventive Medicine, Lahore, West Pakistan; and Dr. C. Mofidi, Dean of the Postgraduate Medical Faculty, Institute of Parasitology, Tropical Medicine, and Hygiene, Teheran, Iran.

Many of the preliminary arrangements were made by the Regional Office of the Americas. The detailed plans for the visits were made by the Regional Offices for Europe and for the Eastern Mediterranean, in collaboration with the officials of the schools visited.

The purposes of the Seminar were as follows:

(1) To provide an opportunity to observe and consider the organization and facilities as regards staffing, curriculum, and pedagogical approach offered by the various schools to the countries of the Middle East.

(2) To provide opportunities for the exchange of ideas beneficial to both visitors and hosts. The visitors benefited from the opportunity to learn the points of view of the host and later to discuss these among themselves. The hosts in turn derived the benefit of the thinking of the North American schools represented in the Travelling Seminar.

(3) To give the participants, singly or collectively, a closer

liaison with the schools or institutes that will inevitably play a role of increasing importance in the training of personnel for the developing programs.

(4) To observe public health training in relation to the needs of countries at different levels of development.

(5) To stimulate discussion regarding similarities and differences in all aspects of training of public health personnel.

The travelling group was organized in such a way that a president represented the group when necessary in each individual country, a chairman presided over official meetings for a day at a time, and a rapporteur prepared the official record of activities in each country. The assignments were as follows:

	<i>Egypt</i>	<i>Lebanon</i>	<i>Turkey</i>
President:	Dr. Ernest L. Stebbins	Dr. Gaylord W. Anderson	Dr. A. J. Rhodes
Rapporteur:	Dr. John Karefa-Smart	Dr. Richard Henry Daggy	Dr. Edward M. Cohart
Chairmen:	Dr. James A. Crabtree	Dr. Abdou Abbasy	Dr. J. C. S. Paterson
	Dr. Nazir-Ahmed	Dr. Myron E. Wegman	Dr. W. F. Mayes
	Dr. C. Mofidi	Dr. Armand Frappier	Dr. L. S. Goerke

Coordinating Rapporteur: Dr. Bernard D. Tebbens

Subjects for formal discussion varied somewhat from one institution to another. The topics common to all discussions were: student body, degree structure, research, educational objectives, organization of the institution, and curriculum.

At the High Institute of Public Health in Alexandria, Egypt, the following subjects were specifically identified and formally discussed:

- Field training
- Epidemiology
- Biostatistics
- Occupational health

At the American University of Beirut, Lebanon, the specific subjects were:

- Methodology of teaching public health
- Health education
- Epidemiology
- Public health administration
- Environmental health

At the School of Public Health in Ankara, Turkey, the subjects were:

- Education in public health and in preventive medicine
- Tuberculosis education and research
- Epidemiology and statistics
- Nutrition
- Environmental sanitation and industrial hygiene
- Maternal and child health and family planning

Each of the topics was presented by a senior faculty member as the focus for formal discussion by a panel, in some cases, or by all Seminar participants in other cases.

While the reports on each of the three countries visited present the details of these discussions and of other activities, it is of interest to point out in this introductory report some of the similarities as well as the differences between the institutions visited.

A sharp difference was noted in the composition of the student bodies. At Alexandria all of the students were Egyptian nationals, and in Ankara only Turkish students attended the School of Public Health. By contrast, at the American University of Beirut a cosmopolitan student body was in attendance; 19 countries were represented in the School of Public Health, and no country could claim a majority of the graduate students; in fact, the students from Pakistan outnumbered those from Lebanon. The Beirut School, since its organization in 1954, has consistently had a cosmopolitan student body as well as a faculty drawn from the United States of America, from Lebanon, and from other Middle Eastern countries.

Each of the schools operates in a different educational milieu. The Institute in Alexandria is a part of the University of Alexandria, which functions under the Ministry of Higher Education. It is noteworthy that this situation has come about in the last

two years, the High Institute of Public Health having been chartered originally as a segment of the Ministry of Public Health. There now appear to be two allegiances.

The School of Public Health in Lebanon also operates as a part of a large university, the American University of Beirut. In this instance, however, the University is chartered in New York State, U.S.A., and operates with the approval of the Lebanese Government.

In total contrast, the School of Public Health in Ankara, organized in 1959, is a semiautonomous agency of the Ministry of Health. It is therefore not subject to all of the regulations of a typical university.

Each of the schools emphasizes postgraduate education and confers graduate degrees. The Diploma in Public Health (D.P.H.) is common to all of them. Whereas in Alexandria and in Beirut the D.P.H. is available to several categories of professionally qualified graduate students, including physicians, veterinarians, engineers, chemists, and others, it is available only to physicians in Ankara. At the present time none of the institutions gives a Master of Public Health degree, although in Egypt it was stated that the M.P.H., which was given before 1960, has a greater prestige value than the D.P.H. Efforts are being made to reinstate this degree in the Alexandria School.

Each of the institutions provides certificate instruction for various categories of individuals who are essentially technicians in health fields. These certificates attest attendance at courses that may be from one to several months in duration. In addition, the American University of Beirut has a few graduate students who are working toward an M.S. degree in Tropical Health and Parasitology, and has recently inaugurated a four-year undergraduate program leading to the B.S. degree in Sanitary Science.

Reflecting to some degree the previously mentioned emphasis in student selection, there is a marked difference among the Schools in the number of students who receive a diploma as evidence of graduate study each year. From the High Institute of Public Health in Alexandria about 60 diplomas are granted per year. At the School of Public Health in Beirut 20 to 30 diplomas per year will be supplemented in the near future by other advanced degrees. For Ankara there have been from eight to 15 degree students per year, with a low of three diploma students enrolled in the current year.

On the surface, the educational objective of each School is the same—to prepare qualified professional people for public health work. The objective does differ, however, in important ways from one institution to another. In Egypt and in Turkey, for example, where efforts are being made to organize medical care around district and subdistrict facilities in different parts of the countries, it is the clear intent of the School of Public Health to provide health officers for these district operations. Since the student body of each of these institutions is national in character, this objective is feasible; it appears to be more nearly achieved in Egypt than in Turkey. In Egypt the goal of total service to the national health plan appears to be more nearly attained by the wider range of professional classifications participating in the public health educational system.

Quite in contrast, at the American University of Beirut, the educational objective is more nearly public health as visualized in the United States, where it is essentially divorced from medical care practice. This fact reflects the interest of a student body which is international in character and comes from many countries in Asia, Africa, and Europe.

While the internal organization of two of the institutions appears to be quite conventional, that of the third, the School of Public Health at Ankara, differs. It was stated that the School organization derives from research interests; this in turn reflects the function of the School as the research agency of the Ministry of Health.

The faculty in each of the three institutions is well prepared for its activities and duties, most of the individuals having obtained advanced degrees in public health or associated fields in other countries such as England, Canada, and the United States. In two of the institutions—the High Institute in Alexandria and the School of Public Health in Beirut—faculty selection and promotion are constrained by the fairly typical procedures of a large university. By contrast, the School of Public Health in Ankara, being a part of the Ministry of Health, has no such constraints. As expressed by the Director of that School, this was a helpful situation in that the rights of tenure and seniority associated with university regulations may be detrimental to the rapid development of a new discipline which demands intense competition in order to obtain the best staff.

One facet of the educational process that was strikingly similar

in all three locations was the large number of class hours per week of either didactic lectures or laboratory practice to which each student was subjected. While this pattern was especially notable in Alexandria, it was present in the other schools as well and was explained on the basis of the shortage of written material for study by the individual students. In other words, textbooks are either nonexistent or so expensive as to be unavailable to individuals. The limited number of library copies is insufficient for study by all students. There are practically no textbooks, and relatively few literature references, in the national languages.

This problem has led to what was considered by the members of the Seminar to be "spoon-feeding"—a relatively high number of class contact hours and relatively less individual effort on the part of the students. Suggestions were made for alleviating this problem with reading material: low-cost translations might be stimulated; paperback rather than hard-cover textbooks might be used; or subsidy by some international agency, or possibly a national one, might be helpful.

Two of the three institutions impressed the group as being the research and investigative arm of the national Ministry of Health. This was true in Alexandria and in Ankara and was unequivocally stated as one of the objectives in Ankara, where the Director of the School of Public Health is also the Under-secretary of Health in the Ministry. Thus, in these developing countries, the data gathered and analyzed and used subsequently for teaching purposes tend to be strictly national in character and are not likely to be leavened with broader information. In both these countries, where such national data would otherwise not be available, there may be no alternative to this procedure. It is certainly reason enough to suggest that some of the persons making broad public health policy decisions should study in other countries in order to widen their viewpoints. In Beirut this tendency was not so pronounced, although community studies were being carried out by faculty and by some students. One had the impression at Beirut that the School may be somewhat isolated from the community because of its status as an American rather than a national university.

It is of interest to add a few comments concerning special situations which existed at the time of the visit of the Travelling Seminar. In Alexandria, where the High Institute has only recently become a part of the University of Alexandria, a pointed

effort was being made by the Dean and faculty to have the Institute serve simultaneously as the Department of Preventive Medicine in the Medical Faculty. This effort was being resisted by the Medical Faculty, and the resulting impasse could be especially difficult for the Institute, since the latter is also struggling for status within the University and for certain degree arrangements which have not yet been worked out to its satisfaction.

In Ankara, the very close relationship between the Ministry of Health and the School of Public Health was illustrated by the emphasis that was placed on a new law passed by the national legislature during the time of the Seminar visit. This law was one making freely available to the population information on population control; its adoption had been promoted by both the Ministry of Health and the School of Public Health for several years. The School over the years had been instrumental in gathering information concerning the legislation, and its passage was considered an important event for the status of both the School and the Ministry.

Alexandria, Egypt

HIGH INSTITUTE OF PUBLIC HEALTH

University of Alexandria

Rapporteur: DR. JOHN KAREFA-SMART

The first meeting of the Seminar was held on 7 March. Dr. Abdou Abbasy, Dean of the High Institute of Public Health, University of Alexandria, welcomed the group and outlined the program for the visit. On 8 March a visit was made to the WHO Regional Office for the Eastern Mediterranean (EMRO), where Dr. A. W. Taba, the Regional Director, discussed with the group the organization and program of the Regional Office.

The group was then received by the Rector of the University of Alexandria, Professor Hassan Ahmed Baghadi, who expressed the hope that the participants might supply helpful suggestions concerning the relationship between the University and the High Institute of Public Health, which only recently had become a constituent part of the University.

At the first working session of the Seminar, held in the High Institute, Dean Abdou Abbasy discussed the development and organization of health services in Egypt, the history of public health education, and the establishment of the High Institute of Public Health. The following is a summary of Dean Abbasy's remarks:

Development and Organization of Health Services in Egypt

The first rules of sanitation and personal cleanliness date back to Pharaonic times. Personal hygiene was taught in temple-schools of medicine, where studies on the prevention of diseases received special attention. Pollution of water streams and reservoirs was forbidden, because these water sources were considered sacred. Social care was provided through the reform of labor conditions and the supplying of suitable housing facilities for workers.

Galen was educated in Alexandria. In the books and teaching of Arab physicians, special attention was given to hygiene.

In more recent times, the first public health service was established in Egypt in 1826, in the form of a "Health Board" consisting of five members. In Cairo and Alexandria, polyclinics provided free treatment to the people. In each of the 24 provinces of that time, there was a small hospital to which a physician and a pharmacist were assigned. Public health officers were appointed for each district in the province.

Following the cholera epidemic in 1831, the Quarantine Board was founded. In 1837 vaccination against smallpox was made compulsory by law. In addition, schools of midwives were opened in Cairo and in many provinces. The first Egyptian medical journal was issued about 1870.

At the present time public health is receiving full support and attention. Social medicine has been established as a function and a service of the hospitals in Egypt. It is expected that great strides will be achieved in raising the standard of health by introducing the methodology of social medicine into teaching and in the hospital.

The new health policy in the United Arab Republic, as stated in the National Charter, is based on the following fundamental principle:

"Medical care should never be considered as a commodity or an article subject to sale. It should be considered a legitimate right of every citizen, and henceforth should be guaranteed for everyone in any part of the country, regardless of his social and economic status. The service should always be available and easily obtainable.

"At the same time, health insurance should be extended to cover all citizens. Social security and sickness insurance should be provided for old people on a much larger scale, in order to ensure security and stability to every citizen in our society, which respects the individual's dignity and prosperity."

In the light of this philosophy, the National Health Plan was geared to the following objectives: (1) improvement of medical services according to the highest technical standards; (2) development of preventive services and control of the major public health problems; (3) extension of health services to all rural areas and to the frontiers; (4) increased production of drugs, pharmaceuticals, and medical supplies to satisfy the local needs, and provision of such products at the lowest possible price; (5)

training of medical, paramedical, and auxiliary personnel required for medical and health units; (6) research in medical and health fields; (7) health insurance for certain groups of population, to be extended gradually to cover all citizens.

Administration. With the adoption of local administration in 1960, the administrative machinery of the health services was established at three levels: central, intermediate, and local.

At the central level, the responsibility is vested in the Minister of Health, who is assisted by a number of Undersecretaries of State and Directors-General at the head of the General Administration. There are also certain advisory committees.

The Ministry comprises 16 General Administrations, each of which includes several Departments. The central administration is now engaged in planning, policy-making, supervision, follow-up, evaluation, guidance, and consultation to local authorities on major health problems and local matters that might endanger the national security. It is also responsible for the training of personnel and for research.

The intermediate level includes the 24 Governorates into which the UAR is divided, each of which has about one million inhabitants, except for the Governorates of Cairo and Alexandria, which have 3.5 and 1.75 million inhabitants, respectively, and the frontiers where the population is less than one million. In each Governorate there is a Health Department headed by a Senior Medical Officer, with eight assistants, one for each of the following activities: curative services, preventive services, endemic diseases, rural health, school health, pharmacies, medical supplies, and administration. The Senior Medical Officer is a member ex officio of the Governorate Council. He is responsible to the Governor as well as to the Minister of Health.

The local level consists of towns, townships, villages, and ranches, most of them rural. At present, there are various types of health centers and health units which are called by different names, though their duties are basically similar, i.e., curative and preventive services. The health centers and combined units are relatively larger; each center serves 15,000 to 20,000 population. The premises include an outpatient service, an inpatient service with 14-20 beds, a dispensary, a day nursery, and living accommodations for the medical and nursing staff. The combined unit includes, besides the health center, a primary school, a social

center, and an agricultural-veterinary center. The health center provides curative and preventive services as well as care for schoolchildren in the area.

The other health units are simple; each serves 500 population living in one village or more than one village within three kilometers from the unit. It provides outpatient and preventive services, including environmental sanitation and endemic disease control. There are no beds. Living accommodations for the staff exist only in the newly built units.

According to the Five-Year Health Plan, the goal is to have a health unit for each 5,000 inhabitants. Of the 6,000 units thus needed, 1,500 were in operation at the end of 1964. Each unit is staffed by a physician, a midwife, and a laboratory assistant.

Program for rural health units. Started early in 1960, the program has the goal of establishing one unit for every 500 rural inhabitants. A total of 2,500 units (including the 300 existing ones) are needed to cover the entire country. Existing units will gradually be modified into modern units, and it is planned to construct 400 new units each year. Construction is the responsibility of the local authorities, while the staffing and equipment of the units is the responsibility of the central authorities.

Efficiency and continuity of care. To achieve this purpose, each Governorate is considered as a medical region, and a close connection is maintained among all health centers in the region. Each three health units would feed a combined center, and several such centers would be served by a district hospital. Each region, consisting of several districts, would eventually have a 400-bed hospital. All treatment at all levels is free.

Major health problems. Among the country's many health problems, the planning authorities have established three priorities: schistosomiasis, malaria, and tuberculosis.

Schistosomiasis, and endemic diseases in general, constitute the largest problem. They are widespread and represent a heavy burden on the national economy. Control programs have been greatly expanded, the treatment units having increased from 438 in 1952 to 1,231 in 1964. Basic and field research are given due attention.

Malaria has recently received special consideration. A program for malaria eradication has been carefully planned and

it is now ready for execution during the second Five-Year-Plan (1966-1970).

During the last 10 years a comprehensive tuberculosis control program has been developed. It includes the construction of dispensaries, establishment of sanatoria with modernly equipped surgical theaters, institution of programs for tuberculin testing, BCG vaccination, and mass radiography. Bovine tuberculosis control and the pasteurization of milk are also given due attention.

Social insurance. In October 1964 a new health insurance program was started in Alexandria. As an initial step, the program covers the industrial workers. Later on, government employees will be included (about 75,000). The final step will be the coverage of their families as well. The experiment is new and it is difficult at this stage to draw any conclusions.

Production of drugs and pharmaceuticals. The industry of drugs and pharmaceuticals is a new development in the country. Huge plants, modernly equipped laboratories, and research centers have been established. In 1952 the local production of drugs amounted to approximately one tenth of the local consumption; the remaining nine-tenths were imported. In 1964 local production covered 60 per cent of the local consumption, which in the same period increased by nearly five times. There are two Faculties of Pharmacy in the country.

Public Health Education

The first medical school in Egypt was established in 1828, in Abu-Zaabal near Cairo, for the teaching of medicine and pharmacy. Hygiene was one of the subjects taught. In 1837 the school was transferred to its present site in Kasr-El-Ainy. When the University of Cairo was established in 1925 the Kasr-El-Ainy school became a part of that University under the name "Faculty of Medicine."

Public health education shared the fate of the ups and downs of the Kasr-El-Ainy school. The first Department of Public Health in the true sense was established in 1930. Before that date, hygiene and preventive medicine were taught to the medical students by part-time specialists from the Ministry of Public Health.

A few years earlier, a Medical Parasitology Department was established, where the teaching of parasitology was applied to

preventive medicine. It was in the Kasr-El-Ainy school that the epoch-making discovery of the *Schistosoma* worms was made by Bilharz. Similar discoveries, such as that of *Vibrio cholerae* by Koch, were made in other medical institutes in Egypt.

In 1942 the University of Alexandria Faculty of Medicine was founded. Later another two Faculties of Medicine were established in the Universities of Ain-Shams and Assiut. More recently, the Tanta, El Mansourah, and Al-Azhar Faculties of Medicine were started.

Establishment of the High Institute of Public Health

In 1955 the High Institute of Public Health was established in Alexandria to offer postgraduate teaching and training. Its objective is to prepare highly trained professional practitioners for the expanding health program and special projects in the country, and also for other countries of the Eastern Mediterranean Region, and to conduct and sponsor research in public health with the main purpose of finding solutions to the various health problems encountered. The educational and training programs is therefore oriented toward the prevailing health problems and conditions in that part of the world.

The origins of the Institute date back to 1952, when the Council of the Faculty of Medicine of Alexandria University discussed with the WHO Eastern Mediterranean Regional Office the possibility of starting a training center for tropical medicine and hygiene, with assistance from WHO. A tentative agreement was reached, and during March 1953 a WHO team of three experts was requested by the Egyptian Government to advise on the teaching of public health.

The plans for a regional training center were eventually abandoned, when it was found that students from outside Egypt were lacking.

The Institute was officially established in 1955 as an autonomous body, with a separate budget, within the framework of the Ministry of Public Health. It was governed by an Institute Council composed of the Director of the Institute as Chairman, the heads of the component department, the Professor of Public Health of the Faculty of Medicine of the University of Alexandria, and a representative of the Council of that University. This Council was responsible for instruction and curriculum details,

and for matters concerning the running of the Institute. Policies, appointments, budget, and degree requirements were the responsibility of the Higher Council of the Institute, composed of the Minister of Public Health as Chairman, the Rector of Alexandria University as Vice-Chairman, the Director of the High Institute of Public Health as Secretary, and the Deans of Medicine and Engineering of Alexandria University, as well as other members from outside, including the Regional Director of EMRO and the Director of the U.S. Point Four program in Egypt. The Institute at that time was organized in eight departments: Biostatistics, Epidemiology, Microbiology, Nutrition, Occupational Health, Parasitology, Public Health Administration, and Public Health Engineering.

The Institute's budget allowed for posts of professors, assistant professors, lecturers, and demonstrators in each of the eight departments, but it proved difficult to find suitably qualified persons to fill all the chairs, and consequently some departments were headed by assistant professors.

In October 1956 the first class of students was admitted in the Institute to a two-year M.P.H. program, and five classes were graduated accordingly. The by-laws and regulations at that time also allowed for a Doctor of Public Health program for holders of the M.P.H. degree. The thesis was not accepted before at least two years of original research work on a topic approved by the Faculty Council. Four candidates were graduated in that program.

Beginning with the academic year 1960-1961, by Presidential Decree, the course of study was cut short to one year. Consequently, the qualification granted to graduates will be a Diploma (D.P.H.) and not a Master's (M.P.H.) degree. The D.P.H. granted by the Institute has a statutory university level, and holders of that degree have the right to register for a Doctor's degree in any university in the UAR. The Presidential Decree did not allow the Institute to grant a Doctor's degree.

The number of the departments of the Institute was increased to nine, with the addition of a Department for Rural and Tropical Health.

Under the terms of the Presidential Decree, the Institute was governed by an Executive Board composed of the Minister of Public Health as Chairman, the Undersecretary of State of the

Ministry of Public Health as Vice-Chairman, the Director of the High Institute as Secretary, and the following members: the Undersecretaries of State from the Ministries of Education, Agriculture, Municipal and Rural Affairs; the Director of the Qualiub Research Center; two of the heads of the departments of the High Institute; and one of the heads of the departments of public health from one of the universities of the UAR to be appointed by the High Council of the Universities. The Director of the Institute was responsible for running the Institute in all respects.

In March 1963, by Presidential Decree No. 33, the Institute joined the University of Alexandria as an independent body equivalent to any other University Faculty. Accordingly, the Institute has its own Council headed by the Dean and composed of the heads of departments and two representatives from the Ministry of Public Health. The terms of reference of this Council are similar to those of the Institute Council when it was established in 1955. The Higher Council of the Institute was replaced by the University of Alexandria Council, of which the Dean of the Institute became a member.

One of the main objectives of the Institute in joining the University of Alexandria was to reform its by-laws and regulations in connection with the D.P.H. course, and also to make arrangements to grant the Doctor's degree. The Institute submitted to the University authorities the broad outline of these changes. This was followed a few months later by a detailed draft, which is still under consideration.

For the appointment of the teaching staff of the Institute, all vacant posts (professors, assistant professors, lecturers, and demonstrators) are publicly advertised. Applicants are examined and considered according to the by-laws and regulations governing the universities in the UAR. These can be summarized in the following points:

1. For demonstrators, the only requirement is the University Bachelor's degree or its equivalent, with at least the grade of "Good" in the final examination and the grade of "Very Good" in the specific subject of specialization.

2. For lecturers, the requirements include: (a) a Doctor's degree in a subject that is considered suitable to the speciality of

the post the candidate is going to fill; (b) the candidate must have obtained his Bachelor's degree or its equivalent at least six years earlier.

3. A lecturer is eligible for appointment as assistant professor after spending at least five years as lecturer, during which time he has performed research work which is favorably evaluated by a special scientific committee.

4. An assistant professor is eligible for appointment as a professor after spending at least five years as assistant professor, during which time he has published original research which is favorably evaluated by a special scientific committee.

5. Promotions from lecturer to assistant professor and from assistant professor to professor are, of course, subject to the availability of vacant posts. Because it is sometimes difficult and/or not necessary to create new chairs, and in order to avoid the stagnation of assistant professors in their posts, the law provides for assistant professors who have spent at least seven years in their posts, and whose published research works are favorably evaluated by the scientific committee, to be promoted to professors without chair, i.e., the equivalent of associate professors. This is done without advertising such posts.

Curriculum and Activities of the High Institute

Dean Abbasy's presentation was followed by visits to the Library, the Hollerith Calculating Room, and the Departments of Epidemiology, Biostatistics, Parasitology, Microbiology, Occupational Health, Public Health Engineering, Nutrition, Public Health Administration, Maternal and Child Health, School Health, and Health Education.

The group met again at the High Institute for a presentation of the curriculum by Dr. Abbasy. Matters raised during the ensuing discussion included the following:

Curriculum

The discussion concerned the curriculum as at present offered and as proposed for the future. The present curriculum requires 500 credit hours* each semester, for graduation; there are two

*A credit hour equals one hour of lecture or two hours of practical work.

semesters each lasting sixteen weeks, plus an additional week for examinations. The new system would divide the year into two semesters of eighteen weeks, followed by a period of field training lasting two months.

Career Prospects

The national objective is to have one public health physician for every 30,000 population, or a total of 1,000 public health physicians. In 1900 there were only 7,985 physicians in Egypt; the 1964 estimate is 15,000 physicians and 9,000 nurses. At present one out of seven physicians has a specialty qualification; the goal is to have one specialist out of every three.

Epidemiology

The teaching staff consists of one assistant professor and one demonstrator. Only physicians are admitted to the course. The curriculum covers principles and application of epidemiological methods, the epidemiology of infectious and noninfectious diseases, the epidemiology of important zoonoses, etc. There are 10 separate epidemiology courses. Sixteen per cent of all the graduates of the Institute, and 20 per cent of all medical graduates, have taken the course. Students have been sponsored by the Ministry of Public Health and by the Army. Field studies and research are emphasized.

Among the specific problems and needs, the following were pointed out:

Textbooks: These are in short supply and are so expensive locally that many students cannot buy them. The need might be met by persuading U.S. publishers to print texts at minimal prices, or without royalties, for sale outside the United States.

Cheap local reprints of standard textbooks, and the use of the UNESCO Campus, might also help the textbook shortage. Reference was made to the work done by the WHO Regional Office for the Americas in translating and publishing textbooks in Spanish, at cost price.

Staff: There is need for exchange of staff with universities abroad, and also an urgent need for a visiting professor.

Curriculum: For a one-year course, the curriculum is overcrowded.

Laboratory Equipment: There is a great need for visual aids of all kinds, for both teaching and demonstration.

During the discussion, questions were raised about the sources of data on morbidity and mortality. It was noted that complete reporting existed only in Cairo and Alexandria. In most areas death certificates listed causes of death arrived at only in "retrospect."

The possibility of admitting veterinarians to the High Institute to study epidemiology was discussed. It was suggested that a more important place could be given to the teaching of social sciences to undergraduate medical students, and that other members of the University staff could help in this regard. It was also pointed out that more use should be made of the Fever Hospital in the clinical teaching of epidemiology.

Field Training

This part of the program was presented by Dr. Ahmed F. El-Sherakini, Assistant Professor of Maternal and Child Health and Head of the Department of Public Health Administration. The aims of the field training system at the High Institute of Public Health are, essentially, (1) to demonstrate to students the resources available and the programs already going forward, and (2) to train students in the techniques of applying in local situations the theoretical knowledge presented to them in classrooms.

The statement presented by Dr. El-Sherakini on this subject is summarized in Appendix 1 to this report (page 21).

Biostatistics

This part of the program was presented by Dr. Esmat I. Hammoud, Head of the Department of Biostatistics of the High Institute of Public Health.

Teaching of biostatistics for graduate students in public health takes three forms: a series of lectures in the curriculum for general D.P.H. degrees in the Faculty of Medicine; a separate general course for all students regardless of their major fields; and special courses for students majoring in biostatistics at the High Institute.

A summary of Dr. Hammoud's statement on this subject appears in Appendix 2 to this report (page 24).

Occupational Health

This part of the program was presented by Dr. Mostafa El Batawi, Head of the Department of Occupational Health of the High Institute.

Dr. Batawi discussed the specific problems of occupational health in developing countries, particularly in the U.A.R. He pointed out that industry is relatively new, and only in very recent years has there come an awareness of the effect of industry on health.

Egypt now has approximately 1.2 million workers employed in industry and it is expected that 7 million will be so employed in 1970.

Interest and activities in occupational health are a very recent development. Within the past several years country-wide work surveys of specific health problems in industry have been made and short-term courses and seminars have been held in universities and technical schools. Legislation has been enacted by the Government to provide for factory health inspection, insurance against occupational diseases and injuries, and workmen's compensation. Departments of industrial health and safety have also been established in different Ministries. Special challenges have arisen also in connection with the work on the High Dam at Asswan, where 30,000-35,000 workers are employed.

At the High Institute of Public Health, the curriculum for candidates majoring in occupational health includes the following advanced studies :

1. Environmental physiology and the effects of heat and noise
2. Occupational diseases (for physicians only)
3. Industrial toxicology
4. Organization of health care in industry, and its legislation
5. Industrial safety and prevention of accidents
6. Field visits to factories
7. Tests used in occupational health
8. Industrial dusts
9. Preventive engineering methods in industry
10. Ventilation (for engineers only)
11. Radiological health
12. Mental health in industry

13. Zoonoses of importance in the Middle East
14. Statistical methods : sampling and surveys
15. Surface water sanitation and industrial wastes
16. Seminars in health education
17. Special studies (elective)

Medical Faculty of Alexandria University

On 10 March a visit was made to the Medical Faculty of Alexandria University. Dean Darwish described the structure of the Medical Faculty, which includes the Medical School, the School of Nursing, and the School of Pharmacy. There is a large entrance class of approximately 400 each year, and a graduating class of about 200. Entrance requirements are a passing grade in biology, chemistry, zoology, botany, and English. About 30 per cent of the applicants are successful. There are 40 WHO fellows enrolled in the school.

Tuition is free, and in addition students receive a grant of five pounds for board and lodging per month. There are four other medical schools in the UAR; a total of 1,000 physicians are graduated each year.

There is a compulsory internship of one year, and an additional three months of special orientation for rural posts. Each graduate must spend the first two years in a rural area. During this assignment specialist teams from the Medical School visit the rural posts and give further training and guidance to the graduates.

A visit was made to the Department of Preventive Medicine and Public Health, where the faculty members gave an outline of the content of the courses offered. Instruction is given to medical students in the fourth and fifth years, and includes lectures, seminars, and field visits, together with a period of two weeks in a health center and another two weeks in a rural health center.

The Vice-Rector of the University invited the Travelling Seminar to a discussion of the best way in which cooperation could be achieved between the High Institute of Public Health and the Department of Preventive Medicine and Public Health of the Medical School, within the framework of the University. It had already been agreed that for both the Institute and the Medical School to offer postgraduate work for the Doctorate in Public Health would be an unnecessary duplication. What remained to

be decided was the responsibility for teaching preventive medicine to undergraduate medical students.

Dean Abbasy strongly favored the assignment of full responsibility for this function to the High Institute, which in effect would thus serve as the Department of Preventive Medicine of the Medical School.

Dr. Stebbins expressed the Travelling Seminar's understanding of the problem, but stated that as a group it did not believe it was competent to solve the problem. He pointed out that there is considerable difference of opinion and practice in this very matter in the medical schools in the United States and Canada, and expressed the hope that the Vice-Rector would find a solution that would be appropriate to the local needs.

Appendix I

Field Training at the High Institute of Public Health

Field training in public health teaching has the same value as the laboratory exercise in basic sciences and as hospital training in clinical medicine. The field utilized varies according to the activity of the health worker: it may be a public health laboratory, an outpatient department or hospital ward, or the community at large.

The policy of the High Institute is to give the students an opportunity to observe the possibility of applying on a practical basis the theoretical knowledge they acquire in their classes. This is done through field visits and field work.

Field visits. The aim is to demonstrate what is available and what is already going in the field. Also, the techniques of putting theoretical knowledge into action are demonstrated in local situations. Thus, the field visits are audiovisual aids to theoretical teaching.

Observation of the different ways of applying theoretical knowledge in different environments gives depth to the student's theoretical training, gives him more confidence in the applicability of theoretical knowledge, and makes him more aware of the importance of his role as a human resource for the application of knowledge.

Field work. This is the actual participation of the student in an active public health program, according to his technical skills. Such training reflects the general principles of postgraduate training in the UAR, which is at two levels: (a) Diploma and Master's levels, which

stress the practical application aspects of the field of study; (b) Doctorate level, which stresses the theoretical and philosophical aspects.

Consequently, field work is an important component of the studies for the Diploma of Public Health.

The candidates participate in the field training in one or more of the following forms: (a) individual training, as in laboratory or hospital work; (b) unified groups, such as cooperation of a group majoring in the same branch of public health, attending the same field training action; (c) complementary teams, such as in the community study which forms part of the interdepartmental studies.

Field Training in the Present Curriculum for Diploma of Public Health

The field training takes place in two periods:

1. *Concomitant training.* This is given simultaneously with theoretical lectures and includes:

a) Field visits to project areas, which are organized in the fields of occupational health, sanitary engineering, maternal and child health, and school health. Most of the visits are for purposes of observation and evaluation of the theoretical knowledge acquired in the lectures.

b) Clinical training in hospitals. This training reflects the local health practices in which preventive and curative medical care are integrated, especially in rural areas which constitute the major field of action in which the students will participate when they return to their jobs. This type of training is in the following fields: clinical nutrition, pediatrics, maternal care, occupational diseases, clinical parasitology, clinical epidemiology.

c) Laboratory training.

2. *Final training.* This varies from one department to another, and includes: (a) field observation visits; (b) participation training; (c) a combination of the previous two types.

In field observations, visits are made to active projects outside Alexandria which could not be visited during the regular teaching schedule. Although these visits are of limited value for actual training, they are of great usefulness for teaching purposes.

Participation training may include participation in the operation of one or more aspects of an active program for either service, research, or training. Participation in the services is mostly in pilot projects or in new approaches to solve problems, but most probably not in the routine work. The commonest pattern of participation training is in research, especially that undertaken for evaluation or assessment. Participation in training programs has not frequently been used as an aspect of field work.

Supervision during Field Work

The major part of the responsibility for supervision during field work lies with the faculty. The assistance of other specialists is ob-

tained when the training is taken in agencies other than the High Institute of Public Health.

Reporting of Field Work

This is a complementary part of both field visits and participation in field action. Each student writes an individual report, or each group writes a group report; these are submitted for discussion at the end of the field work.

The system of reporting by students varies from one department to another. It includes: (a) immediate reporting after each visit, through narrative reports written by the students; (b) filling out an observation sheet, in order to build up a scheme of systematic observation; (c) critical notes on what is observed; (d) reporting the results of action.

For field action at the end of the academic training, the reporting varies according to the type of action: (a) in observations, the same system as that noted above; (b) in participation training, reporting may be in the form of a daily report of events, or a final report on the findings or action.

Financing the Field Work

The major part of the students are government employees and they attend under government study fellowships.

University education is completely free, including postgraduate education, and the students thus pay no tuition fees. For the field work, some of the additional expenses are covered by the Institute's budget (transportation by train, bus or cars, etc.). Moreover, a per diem is paid to the student if he is obliged to stay overnight outside Alexandria during the field work. Supervisors other than staff members are paid for supervision during field work.

Interdepartmental Studies

These are studies encompassing the following items: (a) principles of human ecology; (b) community study (practical field work); (c) principles of community development and the role of public health in this development; (d) community action (practical field action).

In the community study and community action, complementary teams are formed to investigate the community and collect data, each according to its field of interest and following a designed plan. These data are analyzed in the biostatistics laboratory and the results are presented to the students. The interested departments may participate in planning a team action in the community aimed at developing the present health service into a better one. In these activities the students take an active role.

These courses have been given for the past three years. During two years rural areas were studied, and in the present academic year an urban area near the Institute is being studied.

During the first year candidates majoring in rural health, maternal

and child health, school health, and health education participated in a project for promotion of sanitation in the village studied, as a means to control the problem of ascariasis, which had been shown to be the problem of prime priority from the analysis of the collected data.

In the second year the study centered on the effect of the sudden dramatic changes in environmental conditions as compared with those observed in the village the preceding year.

During the present year the community study is being used in designing a family care center as a model health unit which gives all health services to the family in an integrated way, in order to avoid duplication of services or overlap of the different services.

Appendix 2

Teaching of Biostatistics for Graduate Students in Public Health, and Possibility of Integrating It in Undergraduate Teaching in Medical Schools

Graduate Studies in Public Health

Graduate studies in public health in Egypt were first limited to the Departments of Preventive Medicine in the Faculties of Medicine. It was in 1956 that the High Institute of Public Health was opened as a separate graduate school. One important difference between the two types of graduate study is that students at the High Institute are expected to major in one of the various fields of public health, while the schools of medicine offer a general D.P.H. degree.

Accordingly, the teaching of biostatistics for graduate students in public health takes several forms: (a) a series of lectures in the curriculum for general D.P.H. degrees in the Faculty of Medicine; (b) a separate general course to all students at the High Institute, regardless of their major fields; and (c) special courses to students majoring in biostatistics at the High Institute.

Only physicians are admitted to the D.P.H. program in the medical schools. Most of the graduate students at the High Institute are also physicians, although graduates from the schools of engineering, science, and agriculture may be admitted. They are primarily health officers in the Ministry of Public Health; some work in school health and rural health programs, medical schools, etc. Students majoring in biostatistics are graduates of the schools of medicine, engineering, science, and agriculture.

Objectives and Content of a General Course in Biostatistics

Such a course is expected to give the students (1) a knowledge of the importance and use of vital statistics, especially as they relate to

his field of work; and (2) a general idea about statistical techniques, as regards both the collection and interpretation of data and the application of statistics as an integral part of public health work.

In planning the contents of such a course, the following points are taken into account:

(a) Until recently, biostatistics was not given at all in the medical schools. Most of the students, particularly physicians, have had no mathematics beyond the high school level.

(b) Students often feel apprehensive toward the subject of "statistics."

(c) In the small centers, owing to the lack of personnel, it is often the duty of the health officer to prepare the periodic reports himself.

Accordingly, the content of the course will be along the following lines:

(a) Principles of census data, which are important both as a guide to the study of the community and as a component of vital statistics.

(b) Scope, collection, and uses of vital statistics, as an essential tool in the various fields of public health.

(c) Principles of collection, processing, and tabular and graphic presentation of data. The student should develop the ability to interpret the tables and graphs he encounters in his studies or his work, rather than accept them at their face value.

(d) Computation of the main measures of central tendency and of dispersion, since descriptive statistics is the first step in any statistical analysis.

(e) Normal distribution as an introduction to statistical inference.

The time allowed for this course is two hours of lectures and four hours of practical classes per week, for 16 weeks in the first semester.

Teaching Biostatistics at the Undergraduate Level

Until recently, no courses in this field were given in the medical schools; only one or two lectures on the subject were given in the preventive medicine course in the fifth year. The first trial to introduce the subject as a course was in 1959. At that time, biostatistics was given as a course in the second year of the medical school. It covered 24 hours of lectures, and there were no facilities for any practical classes. The main courses given during the first two years in the medical school were physiology, biochemistry, anatomy, and histology; accordingly, the lectures were adapted to these courses and covered mostly statistical techniques: tabular and graphic presentation, measures of central tendency and of dispersion, normal distribution, and principles of statistical inference.

In that form, the course was not very successful. The students did not feel the need for the course, especially after four new courses were added to the curriculum in the second year: principles of medicine, principles of surgery, psychology, and biostatistics. The students felt

the new burden imposed upon them, and medicine and surgery were more appealing to the "medical" student. Probably the most important reason for the failure of the course was the fact that all of the four new courses were included in one examination paper, for which only 50 points were assigned to be divided between the four subjects. There was no minimum passing mark, as the grade was simply added to the mother course of physiology, with a total mark of 300 points.

Later, biostatistics was shifted to the fifth year in the medical school, but still as part of another course, this time preventive and social medicine. The content was shifted to give emphasis to vital statistics, together with a varying amount of statistical techniques. No fixed number of hours is assigned to biostatistics, and no separate examination paper is given. At most, one or two questions on biostatistics are included in the examinations for preventive medicine.

Integration of Undergraduate and Graduate Teaching of Biostatistics

As a basis for discussing the integration (or coordination) of the courses at the graduate and undergraduate levels, several points should be stressed:

(a) Not all students working for the D.P.H. degree are graduates of the schools of medicine, though the majority are.

(b) Some experience is required before admitting physicians, and other students, to the D.P.H. program. This means that it will be three to five years before students will have had any biostatistics in their undergraduate study.

(c) The autonomy of schools should be preserved.

(d) Only two medical schools, in Ain-Shams University in Cairo and Alexandria University, have faculty members with a Doctorate degree in biostatistics. Both are affiliated with the departments of preventive medicine.

(e) The number of students in the fifth year in a medical school is generally above 200, and no calculating machines are available for practice.

(f) There are only two faculty members in the Department of Biostatistics at the High Institute in charge of teaching the general and special courses, consultation and services to other faculty members at the Institute and to outside agencies, teaching in other schools, and research. Two new demonstrators (associates) will be added, but it will be five years before there are new staff members in the Department.

Nevertheless, coordination of the teaching of biostatistics at both the graduate and the undergraduate level is not an impossibility. However, many professors in the medical school, in both clinical and academic fields, are not sufficiently convinced of the importance of biostatistics in medical sciences to agree to having it as a special course with a separate examination and a passing mark of its own. Apart from this is the question of establishing a department of biostatistics in the schools of medicine.

For the moment, coordination between the two courses can be on the following lines:

(a) More hours should be allotted to biostatistics within the general courses of preventive medicine given to the fifth year medical students.

(b) Emphasis should be given, at the undergraduate level, to the collection and presentation of data, vital statistics, and measures of central tendency and of dispersion.

(c) Accordingly, it will be possible to reduce a good amount of the time devoted to these topics in the graduate teaching to the D.P.H. students, and more time can be spent on population studies, morbidity studies and health statistics in general, statistical analysis to cover the important tests of significance, and some distribution functions for application in public health.

(d) Courses in biostatistics should be required for all graduate students working for any Doctorate degree in the medical fields. This may help to form a new generation of staff members who appreciate the role of biostatistics in medical research.

(e) It does not appear that any facilities will be available in the near future for practical exercises in the medical schools. Medical students may make use of the facilities at the High Institute for the practical part of the course. That can solve the problem for Alexandria University only, however.

(f) In the future, biostatistics should be given as a separate course with a separate examination, preferably again in the second year in the medical school. Another course, stressing vital statistics, should be given in the fifth year, as part of the course of preventive medicine, so that the medical student may better grasp the importance of statistics in public health before he graduates and works in the field.

Beirut, Lebanon

AMERICAN UNIVERSITY OF BEIRUT

Rapporteur: DR. RICHARD H. DAGGY

Introduction

The Seminar group visited the American University of Beirut from 13 to 17 March 1965.

The American University, founded in 1866 as the Syrian Protestant College, will celebrate its 100th anniversary next year. A School of Medicine was founded in 1867, followed by a School of Pharmacy in 1871, a School of Nursing in 1905, and a School of Public Health in 1954. These Schools, together with the University Hospital and the University Health Service, are combined in the Faculties of Medical Sciences under the leadership of Dean Samuel B. Kirkwood. Other faculties of the University include Arts and Sciences, Engineering, and Agriculture.

Organization

The School of Public Health is under the Directorship of Dr. Craig S. Lichtenwalner, who also serves as Assistant Dean of the Faculties of Medical Sciences. Major teaching departments in the School are Administrative and Preventive Medicine, Public Health Practice, Environmental Health, Tropical Health, and Epidemiology and Biostatistics. Faculty members from these departments are also responsible for teaching preventive medicine and public health to undergraduates in the School of Medicine. Similarly, certain members of the Medical School staff teach clinical pathology, bacteriology, and virology to students at the School of Public Health.

These joint appointments of staff and the appointment of the Director of the School of Public Health as Assistant Dean of the Faculties of Medical Sciences allow for close interrelationships

between medicine, nursing, pharmacy and public health studies at the American University.

Courses of Study

Diploma in Public Health. Applicants for this 11-month program must be graduates of approved medical, veterinary, or dental schools or have a Bachelor's degree with preparation in social or biological sciences. Two years' experience in the field of public health is also required. The diploma is awarded in five fields: (1) public health administration, (2) public health education, (3) public health statistics, (4) sanitary science, and (5) hospital administration.

Diploma in Public Health Nursing. This 11-month program is designed for graduate nurses who will provide generalized public health nursing services to individuals, families, and the community within the framework of the general public health program. Two years' experience is usually required before admission to this program.

Master of Science. A Master of Science program is offered in Tropical Health, with concentration on parasitology or medical entomology, and in Epidemiology (including biostatistics). Two years are usually necessary to complete this program.

Bachelor of Science in Sanitary Science. This degree is awarded after a four-year program of undergraduate study.

Certificate Programs. These are designed for secondary school graduates who do not possess the higher educational qualifications required for the diploma and degree programs. The following certificates are awarded after 11-month programs of study:

- (1) Certificate of Public Health:
 - (a) in public health nursing and public health visiting;
 - (b) in sanitation.
- (2) Certificate in Basic Laboratory Techniques.

Curriculum

The D.P.H. curricula in the fields of public health administra-

tion, health education, health statistics, and sanitary science consist mainly of required core subjects with few electives. These core areas include public health administration, health statistics, epidemiology, environmental health, and microbiology. Electives may be chosen from these fields as well as from nutrition and school health. Other specialized curricula are organized to fit the various degree and certificate programs offered.

The future program offerings will be guided by changes already occurring in which the School will emphasize its role as a regional center in developing its program for an international student body. The immediate concern of the School is to strengthen the present diploma program by increasing and upgrading its faculty, by improving the quality of teaching in the core subjects, by offering more electives, and by developing better opportunities for field training and research. Plans are underway to move toward an M.P.H. degree for medically qualified students and an M.S. degree for other health personnel.

Being in the center of a developing area, the School also recognizes the long-term need for auxiliary health workers and the need to improve training methods for these subprofessional personnel. It is hoped in the future, however, that the number of certificate students will be reduced as adequate training facilities develop in their home countries. The certificate program might thus develop into an experimental unit which will be designed to devise and test new methods for training subprofessional health workers.

The School will continue to maintain and improve its program in teaching preventive medicine to student-physicians at all levels. The indivisibility in medicine implies indivisibility in training. The basic unit in the community is the individual, and the final goal of public health can only be attained when its teaching finds an equally effective place in both individual and community medicine. This general philosophy will govern future relationships within the Faculties of Medical Sciences in medicine and public health.

Student Body

The international scope of the current student body is emphasized in the following table:

<i>Country of Origin</i>	<i>1963-1964</i>	<i>1964-1965</i>
Afghanistan	1	4
Bahrain (Persian Gulf)	2	3
Cyprus	1	3
Ethiopia	6	3
India	1	1
Iran	5	7
Iraq	1	3
Jordan	7	6
Lebanon	18	16
Nepal	3	4
Nigeria	4	1
Pakistan	11	22
Palestine	1	1
Saudi Arabia	1	2
Somaliland	3	4
Sudan	2	2
Syria	1	1
Yemen	—	1
Zanzibar	—	2
	<hr/>	<hr/>
Totals: <i>Students</i>	68	86
<i>Countries</i>	17	19

An analysis of full-time students by level of study is shown below:

	<i>1963-1964</i>	<i>1964-1965</i>
Diploma level	20	27
Certificate level	41	48
B.S. in Environmental Health	7	11
	<hr/>	<hr/>
	68	86

The major sponsors of these students are:

	1963-1964	1964-1965
U.S. Agency for International Development (AID)	52	58
World Health Organization	7	13
Other	9	15
	<hr/> 68	<hr/> 86

The above figures do not include six students (1963-1964) and three students (1964-1965) studying for Master of Science degrees in parasitology.

At present, AID supports a great majority of the students in the School of Public Health—some 650 students in the University as a whole. Arrangements are made by contract with AID to receive a specified number of students from contract countries. Once the University accepts these students, AID reimburses the University for full costs of these students; this amounts to about \$3,000 per year per student. Since the regular School of Public Health budget is about \$290,000, it is obvious that the greater part of the budget is currently being provided by AID. If this support were withdrawn, a major effort to provide other sources of support for these students would have to be made.

In the discussions, a comparison was made between the AID policy of full reimbursement of costs and the WHO current policy of paying only the usually charged tuition—when tuition alone represents only $\frac{1}{8}$ to $\frac{1}{4}$ of the entire teaching costs.

If the number of WHO-sponsored students is small, no great difficulty arises because most schools are anxious to cooperate with WHO and to absorb major costs through endowment or other income. If, however, the number of WHO-sponsored students is large, a definite financial problem may result.

A similar situation in the United States of America, with U.S. Government-sponsored students in U.S. schools of public health, led the Congress to adopt the Hill-Rhodes Act in 1958. This Act provides for annual grants, under a formula weighted by numbers of U.S. Government-sponsored students, to help compensate

the school for the difference between tuition paid and the actual costs of instruction.

It was suggested that, as the WHO fellowship program grows, some thought should be given to ways of helping schools handle such unreimbursed costs. Recognizing WHO's limited financial resources, and its intergovernmental character, one possibility in the U.S., at least, might be an extension of the Hill-Rhodes formula to include WHO fellows.

Discussion of Selected Topics

Methodology of Teaching Public Health

This discussion was led by Professor Robert Najemy and Dr. Harfouche.

The methodology of teaching public health at the American University is complicated by great diversity in background among the student body as to: (1) *geographic conditions*, including the extensive range of countries contributing students, variation in home climates, and communication problems; (2) *cultural conditions*, such as diverse languages, dress, foods, traditions, class structures, economic systems, and social expectations; (3) *educational conditions*, with different standards, requirements for degrees, teaching methods, general background knowledge, and language used; (4) *psychological conditions*, with differences in intellectual capacity, perceptive ability, and emotional maturity; (5) *health conditions*, including general health and nutrition, attitudes toward medical care, standards of medical care, and superstitions; and (6) *diverse motivation* for studies in public health as affected by complete sponsorship, travel opportunities, as well as job improvement prospects.

This great diversity in students and background makes teaching difficult. Emphasis is given to University-wide as well as School orientation programs. Lectures are in English and are geared at a relatively slow pace at the beginning of the year. Moderate outside reading is assigned. Seminars provide a new approach for many students, but are useful in providing opportunities for discussing various ways of meeting public health problems under different social systems and customs. The bulk of epidemiology teaching materials comes from the West, pri-

marily the United States of America and the United Kingdom. Attempts are made to adapt these materials to Middle Eastern conditions. This dearth of Middle East examples is a weakness now, but hopefully teaching materials can be increased by strengthening research in the area.

Field work is currently difficult because local health problems are often quite different from those in students' home countries. University-sponsored health programs, such as the Social Health Center in Beirut, are so used. Planned use of the regional hospital-health center at Sidon is contemplated.

Audiovisual aids are stressed along with materials from WHO, UNICEF, and UNESCO. The single concept film and programmed instruction are being studied. There is a great need for textual material from this region, and here many of the WHO Technical Reports are very useful.

Special lecturers from many of the international health agencies with regional headquarters in Beirut contribute to the teaching program, as do many international visitors to the University.

Health Education

This part of the discussion was presented by Mrs. Aida Shamma and Mr. Shawki Hasna.

Only the diploma is offered in this field. The certificate program was discontinued in 1959 in order to concentrate on higher qualified students for training. Some 75 health education specialists have been graduated in the past 10 years, many of them occupying top administrative posts. More than half the graduates are from Pakistan and Iran, the remainder from 14 other countries.

In addition to common core courses, students specializing in this field are offered courses in (1) public health education, (2) community organization for health education, (3) school health, (4) problems in health education, and (5) seminar in health education. Field training involves special projects with reference to their home countries; placement in agencies to study and evaluate local programs and to assess the potential role of health education in their activities; visits to television, radio, and photographic studios; school settings; and visits to maternal and child health and welfare clinics.

Problems include the use of a foreign language in instruction and diversification in background of students, plus the lack of any well-organized health education program in Lebanon to use as a basis for study. Current Ministry of Health planning for expanded programs in health education will hopefully relieve this difficulty.

Epidemiology

This presentation was made by Drs. Kamal Abou Daoud, Joseph Azar, and Nadim Haddad.

Epidemiology is taught to three different groups insofar as levels of emphasis are concerned. First, a physician D.P.H. group takes a two-semester course covering the principles of epidemiology, and in the second semester, epidemiology of infectious and non-infectious diseases. The second group are D.P.H. students in nursing, statistics, and education who are given a one-semester course in principles of epidemiology. The third group are certificate students in nursing and sanitation who are given lower-level instruction in basic epidemiology.

The curriculum includes (1) behavior of disease in human populations and interrelationships of host, agent, and environment; (2) methods used in epidemiology; (3) application of these methods to a study of the natural history of infectious and non-infectious disease; and (4) application of epidemiology in the control of disease. In general, more emphasis is placed on infectious disease than in the United States. The basic reason for this is that infectious diseases continue to cause the major public health problems in the areas from which these students come and to which they will return.

A variety of epidemiological research has been undertaken. Of special interest is the recent (1961) discovery of the first focus of schistosomiasis in Lebanon. Evidence suggests that the disease is a recent introduction that has spread along an irrigational canal system.

Hydatid disease has also been studied extensively. In Lebanon it occurs mainly in a dog-sheep cycle. Dogs become infected by eating cyst-infested offal from animals usually imported from neighboring countries. The disease occurs twice as frequently in Christians as in Moslems. This is explained by the fact that Moslems, for cultural reasons, are less likely to come into close

contacts with dogs. Since the only treatment is surgical excision of the cyst, a study of 10 years' surgical records in 54 hospitals in Lebanon was undertaken. A surgical case rate of 3.82/100,000/year was calculated. A study of patients with the disease in the Beirut area showed a close association with pet dogs, watch dogs, or hunting dogs.

An epidemiological study of trachoma in South Lebanon is also underway, in preparation for future vaccine trials. This work is sponsored by the Harvard School of Public Health in cooperation with the Lebanese Ministry of Health.

Research in non-infectious disease was started more recently. A case study of American University hospital patients with heart disease has been initiated. Another study on epidemiology of cancer of the cervix is also underway. General morbidity from cancer in Lebanon is also being studied.

Epidemiological research in Lebanon, and the Middle East generally, is complicated by the absence of reliable population data, incomplete reporting, and incomplete registration of births and deaths. Morbidity and mortality rates are thus difficult to calculate and any such determinations should be interpreted with caution.

Public Health Administration and Hospital Administration

This part of the program was presented by Dr. Said Dajany and Mr. La Vand Syverson.

Public health administration is given as a common core course for all diploma programs. It is also a major department of specialization for physicians who are working or expect to work in public health agencies. Principles of public health administration are well established, and emphasis is placed on teaching the adaptation of public health principles to various country backgrounds. Practice of public health administration in the area is difficult without adaptation to local situations. Coordination of government with voluntary agencies is also stressed.

The program in hospital administration aims at applying the art and science of administration to hospitals. The program has been given the past nine years and has graduated some 39 students to date from 12 different countries. Most of these are government-sponsored, since most medical care in this part of the world is government-operated. Lebanon is an exception. There

is great need in this part of the world for training in administration—public administration as well as public health administration in which clinical medicine and public health can be coordinated.

The hospital administration course presents the basic principles of hospital organization and management. Professional, semiprofessional, and administrative departments of the hospital are discussed from both their functional and organizational viewpoints, with emphasis placed on facilities, personnel, and staffing patterns. Other points studied include: organization of the medical staff and its relation to the hospital, education of professional and semiprofessional personnel, financial management, legal problems, planning and construction, public relations, and standards.

In addition to the basic course, courses are given in (1) medical background, (2) human relations, (3) medical care administration, (4) statistics, (5) public health principles and practice, and (6) culture, social organization, and health.

A summer field training of two months enables students to observe a hospital in operation and see the application of the knowledge they have acquired. Special projects are also assigned to give students experience in hospital problem-solving.

Future planning for 1965-1966 will probably include extending the course to a two-year program plus summer field training. Residency training, as practiced in the United States, is not as yet planned. There is also a need for continued training, consultation services, and even correspondence courses to meet growing requirements of the region in hospital administration.

Environmental Health

This portion of the program was presented by Profs. Aftim Acra, V. Harry Adrounie, Harry Scott, and Edward Hope (the latter from the School of Engineering).

The objectives of the training programs in environmental health are threefold: (1) to produce professional pioneers with leadership qualifications through undergraduate and graduate education, in an attempt to meet the acute shortage of environmental health personnel in the region; (2) to restrict offerings to degree programs at undergraduate and graduate levels; and (3) to phase

out certificate level programs which are best handled on a local national basis.

Curricula emphasize training in depth in the basic sciences, and in breadth on professional subjects. A limited allowance for specialization occurs at the undergraduate level. Emphasis is placed on the practical and rural aspects, without overlooking urban needs. Because of their regional importance, priorities are given to water supplies, excreta and refuse disposal, milk and food control, and insect and animal reservoir control.

The Department of Environmental Health is especially interested in promoting the establishment of national auxiliary or technician-level training centers, and subsequently in developing only degree programs at undergraduate and graduate levels for the region.

Such national training centers are already established in Pakistan, India, Iran, Ceylon, Jordan, Iraq, Saudi Arabia, Syria, Sudan, Ethiopia, and Libya. The Department has assisted some of these newly established centers in developing their programs.

The group cooperates with the Faculty of Engineering by offering courses in Sanitary Chemistry and Biology as part of the graduate program leading to a Master of Engineering degree with a major in Sanitary Engineering.

Special problems in attracting students and in teaching environmental health are found in the lack of knowledge and appreciation of this professional field in the region, limited career opportunities, low pay, and competition offered by other professions. Hence there is a critical shortage of competent candidates although the need for this personnel is increasing steadily in proportion to the increasing complexity of problems arising both from population growth and technological advances.

Teaching difficulties are increased through shortage of appropriate texts and reference materials for this part of the world. There is also difficulty in visually acquainting students with certain practices, methods, operations, maintenance, and handling of equipment because of the absence of local facilities. There is also a dearth of local programs in environmental health to be used for the student's own civic education and background knowledge.

Ankara, Turkey

SCHOOL OF PUBLIC HEALTH

Rapporteur: DR. EDWARD M. COHART

Organization and Program

The visit to the School of Public Health in Ankara, Turkey, took place on 19-23 March.

The Seminar opened with a lecture on the organization and the educational and research programs of the School, given by Director N. Fisek. Medicine and public health have very high priority in the economic and social program of the Turkish Government, and the School of Public Health has a very important role in the Five-Year Plan which was inaugurated in 1961.

The health program has three main features:

- (1) Emphasis on public health, training of public health personnel, and research. The School is all-important as a training center for public health workers; it also serves as the public health research center for the Ministry of Health.
- (2) Nationalization of health services.
- (3) Population control.

The need for a postgraduate training center in public health was first appreciated by the Turkish Government in 1920. The first such training was given in the Central Institute for Public Health in 1928. In 1936 a School was established; the Government furnished the building and equipment and the Rockefeller Foundation the instructors. From 1936 to 1957, the School had a director but no permanent staff; it offered short training courses (two to three months) for health officers and conducted research, primarily in environmental sanitation and malaria.

In 1958 the Ministry of Health asked Dr. Fisek to reorganize the School of Public Health. One major objective was to establish a research center for public health. To do this, it was first necessary to recruit and train the faculty. The WHO, the Rockefeller Foundation, UNICEF, and CENTO assisted by making available

many fellowships. Today the School has a full-time teaching staff of 34 and needs more. It also has some visiting lecturers from the London School of Hygiene.

The School is not a part of the University but is attached to the Ministry of Health. Dr. Fisek believes this arrangement to be preferable for the following reasons :

(1) It is difficult to convince the University to give public health the emphasis in terms of money and staff that is essential to its rapid development.

(2) Since the University is a state institution, staff is appointed in accordance with laws governing tenure and seniority. In developing countries, great staff maneuverability and intense competition are required for the development of a new discipline.

(3) Cooperation between governmental agencies often leaves much to be desired; it has been difficult to achieve between the Health Ministry and the University. It would be difficult for the School of Public Health to operate under University auspices, since public health is an applied science and its teaching must utilize field work in programs or agencies connected with the Health Ministry.

(4) The Health Ministry badly needs public health research, consultation, and training. It therefore is able to support the School with a much larger budget than would be available under University auspices.

Under a new law the School will be an independent scientific institution governed by a Committee of Nine (seven outstanding people outside the School and two from the School), which will make all staff appointments. Staff will be appointed for five-year terms.

The School is divided into the following Departments: Public Health Education and Research; Epidemiology Education and Research; Health Surveys; Rural Health Education and Research; Microbiology Education and Research; Tuberculosis Education and Research.

Research Activities

The School is organized on the basis of research areas because (1) research is the primary need; (2) there is no other way

to convince physicians that public health is a science; and (3) this is the way to emphasize the importance of research to the staff.

During the past five or six years, research activities of the School included six mass screening surveys. Among them, screening of 11,000 people in an Ankara slum revealed a tuberculosis prevalence of 2.3 per cent; 10,000 people in another area had a prevalence rate of 2.5 per cent; while in a very poor rural area the prevalence was 3.4 per cent.

Prior to these studies it was believed that there were 150,000 cases of tuberculosis in Turkey; present estimates are that there are 750,000. This appreciation of the magnitude of the problem helped to get programs started for dispensaries and sanatoria. Plans are underway to evaluate the cost and success of the treatment programs.

The second major area of research undertaken by the School was a manpower study made in conjunction with the Johns Hopkins School of Public Health. The study is concerned not only with physicians and the requirements and costs of medical education but also with other nonprofessional health personnel. In addition to about 10,000 licensed physicians in the country, there are 39,000 untrained midwives, 30,000 needle men, 11,000 bone setters, 2,400 tooth pullers, all practicing illegally. Though the country has made tremendous strides in medical practice in the past 40 years, much remains to be done. The Ministry recognizes that the illegal practitioners fill a vacuum and often meet the demand for "folk medicine." Thus, villagers often go to blood letters in the spring "to freshen up their blood," and to needle men for "shots." In many of the villages needle men often treat the villagers with penicillin.

A study is now being planned to establish indices of the success or failure of health services.

A demographic survey is being made to correct the present lack of accurate statistics on birth, death, and infant mortality rates. This study is being conducted with AID help. The aim is to develop a continuous sampling survey that can be used afterwards for other purposes.

Initial data point to an infant mortality rate in the neighborhood of 60/1,000. Villages with schools have lower rates than those without schools, but the distance of the village from a physician appears to have no effect.

Other research activities include a study of mental health and an initial survey of the severe problem of air pollution in Ankara.

Training

The second major activity of the School is training. The School gives both short courses in such subjects as tuberculosis control, health education, and statistics, and the regular course for the D.P.H. degree. The latter consists of a two-month (206 hours) introduction, and a six-month (464 hours) amplification by both theoretical and practical training of the introductory subject matter. The second year of the course is devoted to practical training in epidemiology, biostatistics, microbiology, tuberculosis control, nutrition, maternal and child health, environmental sanitation, etc. The courses are taught in Turkish, but all students are also required to take a course in English language.

The Sections of the School's Department of Public Health Education are the following: Mother and Child Health; Nutrition; Environmental Sanitation; Occupational Health; Public Health Administration; Mental Health; Health Education.

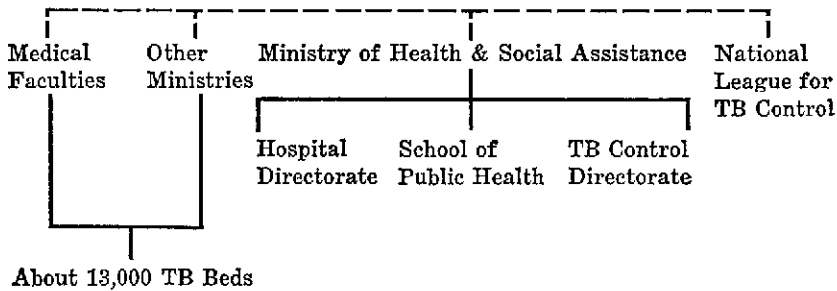
Currently the School has admitted three new D.P.H. candidates. In previous years the number varied between eight and 15. While many different categories are admitted to the short courses, only physicians are admitted to the D.P.H. courses. Physician-applicants are admitted without screening. As students, they receive a salary of \$60 a month from the Ministry of Health as well as \$60 a month from UNICEF. It is difficult to live on this amount.

Recruiting of students is made difficult not only by the financial considerations just discussed but also by the low status in which public health is held among physicians. Two steps have been taken to assist recruiting, the first financial and the second related to professional status. In the Nationalized Health Program the public health specialist receives as high a salary as the surgeon. The salary has been raised to \$250 a month plus a furnished house. In order to qualify as a public health specialist, the physician must complete satisfactorily two years of post-graduate work in the School of Public Health. This is to be compared with four years of residency in the other specialties, followed by the successful completion of an examination given by a Board in the Ministry of Health or the University.

Tuberculosis Education and Research Center

At the Tuberculosis Education and Research Center attached to the School of Public Health, Dr. Baskok discussed tuberculosis campaign methods in Turkey. Tuberculosis is the most important health problem in Turkey; efforts to control the disease have been handicapped by lack of coordination between the Research Center, the control program, and the voluntary association. There are a number of major agencies concerned with tuberculosis, as shown in the following diagram:

Tuberculosis Activities in Turkey



First efforts to control tuberculosis were initiated by the National League for Tuberculosis Control in 1918. The League now supplies funds to compensate some personnel working in the Ministry of Health. Through its Tuberculosis Consultation Committee, the League attempts to coordinate the activities of all agencies engaged in tuberculosis activities.

In 1958, the Turkish Government, WHO, and UNICEF agreed on a tuberculosis control plan for the country. Responsibility was given to the School of Public Health, which established the Tuberculosis Education and Research Center. In 1961 the Tuberculosis Control Directorate was established in the Health Ministry to complement the Tuberculosis League. The former operates 87 dispensaries and the latter 41. The Directorate also operates 10 mobile X-ray units (the Center operates two more) and has 80 BCG vaccination teams.

An attempt is being made to transfer the administration of tuberculosis hospital beds from the Hospital Directorate to the TB Control Directorate.

At present the Center's total staff consists of 44, including eight specialist physicians and two bacteriologists.

Activities have included the first mass case-finding in several areas, including Topraklik and Hacettepe in Ankara City, 24 villages in the Kazan region of Ankara Province, and Yozgat Province.

The pilot treatment area began activities in Yozgat Province in 1962. It provides ambulatory treatment, BCG vaccination, and chemoprophylaxis for the 0-6 age group.

In ambulatory treatment cooperation has been about 85 per cent. Factors in non-cooperation have been lack of interest and confidence in treatment on the part of chronic cases, insufficient knowledge of the importance of ambulatory treatment on the part of local physicians, continuous movement of population due to social and economic causes and frequency of gastrointestinal disturbances in PAS treatment.

The Center, in cooperation with other educational institutions, trains medical personnel and participates in health education of the public. Since 1962, 252 physicians and 571 auxiliary health personnel have attended short and long-term courses.

Epidemiology and Statistics

Dr. M. Akyol, Director of the Department of Epidemiology, described the 1964-1965 teaching and research activities in his Department.

Three-month courses in epidemiology are given for the Certificate in Public Health, and five-month courses for the Diploma in Public Health. In addition, one-year advanced courses are given to public health specialists under special regulations of the Ministry of Health. At present three physicians are in attendance at the D.P.H. courses and 15 physicians who have obtained the D.P.H. are attending the advanced courses.

The epidemiology courses for the C.P.H. include 42 hours: 24 hours for the theoretical lecturing, mainly concerned with principles and methods; and 18 hours for practice and discussion, centering on the place of epidemiology in the public health administration and organization of Turkey.

The courses for the D.P.H. include 78 hours: 24 hours for theoretical lecturing, with emphasis on the epidemiology of infectious diseases; 30 hours for practice and discussion, including respiratory and intestinal infections and non-infectious diseases;

and 24 hours for discussion of the important notifiable infectious diseases, and visits to the Central Public Health Laboratory (Refik Saydan).

The subjects of the lectures and practice include the following: introduction to epidemiology; importance of epidemiology in public health administration and organization; study of community health programs by epidemiological methods; description of disease patterns; measurement and analysis of mortality and of morbidity; special studies (descriptive and etiological studies, assessment of disease control, the controlled trial); factors or causes in the occurrence of infection or infectious diseases; time, place, family, and occupation; specific notifiable diseases and their epidemiological aspects; non-infectious diseases; study of health problems in the community through available data.

The principal objective of the advanced course is to promote interest in the country's public health problems among physicians. Emphasis is given to infectious diseases. The studies include medical statistics and bacteriology.

The Department of Epidemiology of the School has two divisions: infectious diseases and non-infectious diseases. The staff includes two lecturers (M.D., D.P.H. specialists), two sanitarians, and one secretary.

It is planned to establish an additional division for the field work and to fill the need for an additional M.D.-D.P.H., four more sanitarians, and statistical technicians.

The teaching of biostatistics to D.P.H. candidates is especially important because of the general lack of understanding of statistics among physicians. Emphasis is placed on those statistical methods that will be of practical value in the field.

The course content for the introductory course covers, among other things, the gathering of data and their analysis, demography, birth and death rates, tables and graphs, hospital statistics, measures of control tendency, and units of dispersion. In the second period, these subjects are covered in more depth and the students are also taught probability, significance tests, and correlation. In the second year students spend a major portion of their time on infectious disease epidemiology and biometry at the Ankara University Medical School and the Central Institute of Hygiene.

Dr. Y. Heperkan, of the Department of Health Surveys, discussed the work of his department, which includes: (1) the con-

duct of surveys, usually requested by the Health Ministry, (2) the teaching of biostatistics, and (3) advice to other departments concerning methods of collecting and analyzing data.

Nutrition

Dr. O. Köksal discussed the training program in nutrition. There is as yet no independent nutrition curriculum in medical faculties in Turkey. Nutrition is taught in physiology, biochemistry, general hygiene, and clinical medicine. It occupies a small place in these curricula and generally there are no applied studies on nutrition in relation to public health problems.

Since the reorganization of the School of Public Health in 1958, nutrition lectures and applied studies have been included in the D.P.H. courses. The chief objectives of these studies are (1) to demonstrate the nutrition problems which adversely affect community health in Turkey; (2) to train students in assessing and evaluating the nutritional status of people; and (3) to conduct research and discover practical ways of combating malnutrition.

The program for the D.P.H. course is divided into three terms in the Ankara School of Public Health. The first term (lasting three months) includes 12 hours of theoretical nutrition lectures and two days of practical work. The following subjects are covered: effect of proper nutrition on well-being (1 hour); assessment of nutritional status (8 hours); factors causing malnutrition in Turkey (3 hours).

The second term includes 24 hours of theoretical nutrition lectures on the following subjects: energy needs and supply in Turkey and in the world; protein requirements and supply; minerals; vitamins; simple goiter in Turkey; obesity; edible fats and ischaemic heart diseases; national food and nutrition policy; nutrition education.

In the third term, which is extended for one year with practical work in different departments, the studies on nutrition and maternal and child health together last for two months. The students are sent to pediatric, obstetrical, and internal medicine clinics for six days each, and to ophthalmology, dermatology, and otorhinolaryngology clinics for three days each. They are also taken to a public school in Ankara for one day a week to observe schoolchildren.

Among the major problems encountered in connection with

these courses are the following: shortage of reference works in Turkish; lack of research work and statistics on nutrition in Turkey; insufficiency of audiovisual teaching materials in the School. Moreover, the small number of teaching staff in the Nutrition Section restricts the activities to those that are most useful to the students.

Additional points made by Dr. Köksal included the importance of first evaluating problems. A better methodology is needed. Clinical impressions are not enough. It has been found unfeasible to apply in Turkey the dietary advice of developed countries.

In Turkey, children are breastfed for two years. It is necessary to teach mothers to introduce supplementary foods at six months. Vegetable or fruit juices are needed for Vitamin C. In addition, wheat flour (plus 15 per cent milk or yogart, or 10 per cent meat or fish) is a very satisfactory and economically feasible supplement.

Studies by the School of Public Health show many evidences of malnutrition. Thus 25 per cent of the children seen in well-baby clinics show evidence of unsatisfactory growth and development as a result of protein deficiency, while vitamin deficiencies are manifested by rickets in 9 per cent, evidence of riboflavin deficiency in 17 per cent, and Vitamin-A deficiency in 18 per cent. Expectant and lactating mothers show even more frequent deficiencies: 35-40 per cent are deficient in Vitamin C, 30 per cent in Vitamin A, and 30 per cent in riboflavin. Iron deficiency is quite common among women of child-bearing age (15 to 45).

Environmental Sanitation and Industrial Hygiene

Dr. A. Ileri, Chief of the Environmental Sanitation Section of the School, described the activities in that field, and Dr. I. Topuzoglu reported on the teaching of occupational health.

The Environmental Sanitation Section was established in 1960 for purposes of teaching and research. Only graduate physicians are accepted as students for a period of two years.

During the first public health basic (introduction) course of two months, lectures (15 hours) are given in food sanitation, refuse collection and disposal, rodent control, water supply, excreta disposal, air pollution, and housing.

In the D.P.H. course, the same subjects are dealt with more

comprehensively (35 hours). In the second year, there is one-month practical environmental health work.

In addition, short courses have been offered for physicians and health officers, including one in rural sanitation for workers from Iran, Pakistan, and Turkey.

Cooperation is maintained with other agencies, including the Middle East Technical University, and research on air pollution in Ankara has been undertaken.

The existing teaching activities in occupational health in Turkey were reviewed. In the four medical schools in Turkey, occupational health is generally included in the preventive medicine and general hygiene subjects. At the graduate level, the Ankara School of Public Health included occupational health in the D.P.H. curricula in 1959; the number of hours devoted to this field ranges from 27 to 33 and the following subjects are covered: principles of occupational health (2 hours); industrial hygiene (10 hours); medicolegal problems, social security and labor legislation (3 hours); occupational psychology (2 hours); field visits to factories (10 hours).

Occupational health studies in the School have been handicapped by the lack of full-time teaching staff. Dr. Topuzoglu has now been appointed on a permanent basis and with the aid of WHO it is hoped to establish a special Department for this subject in the future.

At the postgraduate level, short-term courses are given at the School of Public Health and seminars are held at the Labor Institute for the Near and Middle East in Istanbul.

Dr. Topuzoglu provided background material relating to occupational health in Turkey. The country has a population of 27.8 million (1960) and is 71.3 per cent rural and 28.7 per cent urban. The literacy rate is 40.1 per cent and the labor force (active population 15 years and above) is 13 million.

Approximately 9,800,000 are engaged in agriculture, 1,180,000 in industry, and 1,157 in services. A national effort is being made to speed industrialization through a 15-year program (1962-1977) of training of scientific and technical personnel and development of industry.

Both private and state enterprises operate industries in Turkey. The largest manufacturing industry is textiles. Coal, copper, chrome, and iron are mined.

Legislation regulates child labor, night work, employment of

pregnant women, and the provision of preventive and curative health services.

There is a lack of long-term (Diploma) training in environmental health and occupational health for engineers. There are no qualified industrial hygienists in Turkey at present and no facilities to train them.

The Middle East Technical University is developing a teaching staff for the training of sanitary engineers. It is difficult to recruit sanitary engineers for public health services because of the demand for their skills in construction and private industry.

The training of paramedical people in sanitation is more promising. A four-year school for the training of sanitary inspectors (who must be graduates of junior high school to be eligible for admission) was opened several years ago.

Medical Schools in Turkey

Ankara University Medical School

On 23 March a visit was made to the Ankara University Medical School. Dean L. Tat pointed out that the School, founded in 1945, is modeled closely on the German medical schools. It takes high school (11th grade lycée) students for a six-year course. The first two years are devoted to the study of chemistry, physics, biology, anatomy, etc.

Most undergraduate "public health" education is conducted by the Department of Hygiene and Preventive Medicine, but other Departments also participate, e.g., Dermatology in syphilis and leprosy, Microbiology, Infectious Diseases, Obstetrics and Gynecology.

The Department of Hygiene and Preventive Medicine, opened in 1947, includes the following sections: Hygiene and Sanitation, Epidemiology, Biostatistics, and Industrial Hygiene.

Hygiene and sanitation are taught during the third and fourth terms (32 weeks), for two hours per week in theoretical classes and two hours in the laboratory; field work is also included. Epidemiology is taught in the ninth and tenth terms, for one hour per week. Lectures are given on statistics for one hour per week during the third and fourth terms. Industrial hygiene and occupational diseases are taught one hour a week during the fourth term.

For the last two years a health center for training in health work has been in operation. Under an agreement with the Ministry of Health, a health center for training will be set up 90 km from Ankara; this will be a real rural health center, in contrast with the present center in a slum area of the city. The present training center cares for about 1,000 people.

In the last two years clinical clerkships have been established in various fields. A one-month clinical clerkship in the training health center is contemplated. According to a recent program the student, with the assistance of a social worker, is made responsible for a family, under a Committee of Five—from the Departments of Preventive Medicine, Microbiology, Internal Medicine, Pediatrics, and Gynecology and Obstetrics.

The School is changing its courses in chemistry and physics to medical chemistry and medical physics, and is attempting to add courses in human genetics, biometry, and sociology.

Hacettepe Medical Center

On 23 March the work of the Hacettepe Medical Center was discussed by Dr. Dogramaci, permanent head of the Center and acting president of Ankara University.

Hacettepe Medical Center is the fourth medical school in Turkey; it is also in the unique position of being one of two medical schools of Ankara University. It is planned to give equal support to each school and then to assess the differences between them as educational institutions.

In contrast to the Ankara Medical School, applicants to Hacettepe Medical School must have completed two years in the Faculty of Arts and Sciences, where they have taken 64 credits. Two-thirds of these credits must be in courses in biology, chemistry, physics, mathematics and statistics, and one-third in sociology, psychology, and related courses. Two thousand students compete for admission to this two-year course in the Faculty of Arts and Sciences, and 200 are accepted. Of these 200, 80 are accepted at Hacettepe Medical School. The others, if good students, can go on in biology, chemistry, physics, etc.

Hacettepe Medical School requires four years of courses and one year of internship. The program is modeled very much after that of Western Reserve University. Freshman students are being admitted this year for the first time. Although the depart-

ments are independent for postgraduate teaching, they are integrated for undergraduate teaching, which is planned on the basis of committee decision. Freshmen devote one day a week to the clinical sciences. On this day, one hour is devoted to lecture, two hours to discussion; the afternoons are devoted to care of a pregnant woman or a newborn child in the home under the supervision of a physician or a public health nurse, or to the care of sick children in outpatient services or wards under appropriate supervision. A medical-surgical nurse and a psychiatric nurse are members of the faculty.

One-half day each week is devoted to a journal club. Papers are selected and assigned to groups of eight or nine students who meet with a preceptor to discuss these papers critically.

The remainder of the student's time is spent in the laboratory. Except for anatomy, the laboratory is a multidiscipline laboratory; the student stays put and the professors change.

Students have an eight-week elective period in the first year. They must elect to spend it in one of the laboratory sciences.

It is planned to establish an eight-week elective period in the second year, to be spent in one of the clinics. In the third year, students will be required to spend eight weeks in an urban health center, and in the fourth year eight weeks in a rural health center. The urban health center is under the administration of a medical school; the rural health center will be run in cooperation with the School of Public Health and the Health Ministry.

In the internship, six months are spent in surgery, and two months each in medicine, in obstetrics and gynecology, and in pediatrics.

While instruction is in Turkish, students must know English and pass a proficiency examination in it. A special effort is made to get medical students to develop the habit of using the library. Therefore, the library has open shelves and the students are taught how to use this facility by the librarian when they first enter medical school.

Anatomical dissections are done in both the first and the second year. In the first year an infant is dissected, and in the second year an adult.

The Medical Center will have a 1,250-bed hospital. It also has a School of Nursing, the first School of Physiotherapy, the first School for Dieticians, and the first School for Medical Technology. The hospital is a nongovernment, nonprofit foundation, deriving

its support as follows: 25 per cent from fees, 25 per cent from public subscription, and 50 per cent from Government subsidy.

Other Medical Schools

The Military Academy of Medicine has a training program for preventive medicine and hygiene for the several military services. Its Institute of Preventive Medicine and Hygiene gives a Diploma in Preventive Medicine and Hygiene after nine months of academic training and three months of field training. The Academy believes that candidates for this Diploma should have been granted the Diploma in Infectious Diseases previously. It also feels that, within six years, it can train at least one young man from each village in Turkey as a sanitary corpsman.

Dr. Berksan also alluded to the epidemiological research of the Academy; he specifically mentioned a survey of the nutritional status of 10,000 recruits.

Dr. Payzin made some remarks on the pattern of training of students for public health in the other departments of the medical school.

Finally, Dr. Dirican gave some data on the number of hours and the percentage of the total time devoted to preventive medicine, biostatistics, and public health in each of the medical schools. Apart from the Military Academy of Medicine, the Ankara School devoted 192 hours, or 2.4 per cent, of its total to these subjects; Istanbul 188 hours, or 2.8 per cent; and Izmir 151 hours, or 2.6 per cent.

If one were to include all clinical subjects that might have some preventive medicine content, then the figures become Ankara 17.3 per cent, Istanbul 18 per cent, Izmir 16 per cent.

Izmir appeared to be most adequately staffed, with a student to staff ratio in preventive medicine of 24 to 1, compared with a ratio of 14 to 1 in internal medicine. Ankara was next, with a ratio of 57 to 1 and 26 to 1, respectively. Istanbul had a ratio of 81 to 1 in preventive medicine and 25 to 1 in internal medicine.

Istanbul is by far the largest school with an annual admission of 636, an enrollment of 3,143, and a teaching staff of 553. Ankara is next with 225 admissions, an enrollment of 1,045, and a teaching staff of 338. Izmir had 131 admissions, an enrollment of 568 and a staff of 204.

The Lepra Institute

On 22 March Dr. A. Akcabay discussed the Lepra Institute.

The Institute is connected with the Ankara Medical School and works closely with the Ministry of Health, the School of Public Health, and the hospitals. It receives some support from WHO, UNICEF, the agency concerned with leprosy, CARE, the Swiss Leprosy Society, and the French, Belgian, and Turkish Red Cross.

The Institute has 30 beds for research, instruction of medical students, and postgraduate instruction. It performs laboratory examinations on referral, and acts as a center for diagnosis and study.

Medical students receive four hours of instruction in leprosy. The Institute also trains teachers for rehabilitation in leprosy centers through occupational therapy, and gives many types of postgraduate education. It has given training to 122 clinicians, 313 health officers, 155 medical students, and 8 nurses.

Cases of leprosy are isolated during the infectious stages. The classical incubation period is 2½ years. Dapsone is used in treatment; this drug must be imported.

Intensive screening for case-finding in 1963-1964 has increased the number of cases under treatment from 941 in 1962 to 3,118 in 1963, and 3,324 in 1964. The disease is endemic in eastern Turkey, where there are 2,651 cases among 6,000,000 people. In most of western Turkey, with 15,000,000 people, it is considered to be sporadically endemic, with 552 cases. Around Istanbul and in southwest Turkey, there are 31 known cases among 4,000,000 people; here the disease is considered to be sporadic.

Health Problems and Nationalized Health Services

Dr. Fisek reported on health problems in Turkey.

The interest of the Turks in health goes back centuries. The first medical school was established in the 12th Century. In 1827 the first modern medical school was opened in Istanbul. In 1871 the Ottoman Empire undertook to pay the salaries of private physicians to treat the poor and thus initiated the first regular program of health services in Turkey.

With the establishment of the Ministry of Health after World

War I, one physician was sent to each of 600 districts in the country and created an independent organization to combat malaria, syphilis, and trachoma.

Trachoma is a problem in southeast Turkey only. Malaria is a problem throughout the country. Before 1957 there were millions of cases annually. The figure has dropped precipitously to almost 3,000 cases, since the introduction of the malaria control program.

Syphilis is a major problem on the Black Sea coast. Leprosy is found mostly in the eastern provinces; there are about 3,000 cases.

Much has been accomplished in the control of epidemics, although typhoid and typhus are endemic. Measles is a major problem. Recently an isolated mountain province had an epidemic with a 15 per cent case fatality. Malnutrition adds to the case fatality.

Diarrheal diseases are a major cause of mortality in children. However, tuberculosis continues to be Turkey's No. 1 health problem today.

In 1960-1961, the Government had at least one hospital in each province, with a total of 62,000 beds.

Since contraceptive advice is illegal in Turkey, people turn to criminal abortions. One-third of all pregnancies end in abortion; there are an estimated 500,000 abortions a year. A sample survey indicated that 10,000 women die every year from criminal abortions.

After the 1960 military coup, civilian ministers were appointed; the Health Ministry was asked to nationalize services. Three schemes were proposed: (1) to establish health units (physician and paramedical personnel) for each 7,000 population; (2) to provide mobile units for health purposes in each district; (3) to foster the same organization for eastern Turkey as for the rest of the country. The first plan was accepted.

Seventeen million people live in communities of 2,000 or less; they are served by only 200 physicians. While there is one physician for every 600 people in Istanbul, some provinces have only one physician for 22,000 population. Only one-quarter of the 10,000 physicians in Turkey are general practitioners.

In the Nationalized Health Services, physicians will work full-time for the Government on a contract and will be paid adequately. At present, some physicians are part-time employees of the Government; they are paid poorly and must depend upon

private practice for a living. No person is required to use and no physician is required to join the Nationalized Health Services.

It is not possible because of the shortage of both funds and manpower to nationalize health services all over Turkey at the same time. The shortage of paramedical personnel is even greater than that of physicians. Turkey has 1,700 pharmacists, 1,700 dentists, 5,900 public health nurses, 2,300 nurses, 2,200 nurse's aides, 10,000 registered midwives, and 3,000 registered rural midwives.

The law fostering the Nationalized Health Services emphasizes long-range planning and recognizes the right of every person to benefit equally from the health services offered by the Government. It also provides that provincial health services will have the authority now possessed by each locality, and that physicians will be paid properly and will be employed full-time by the Government and not permitted to engage in private practice.

All Government health services—now spread among many agencies—will be integrated in one administrative unit. The Health Ministry will have the right to undertake administrative research.

Eighty per cent of physicians and all political parties favor the Nationalized Health Services. Budgetary considerations delayed the initiation of nationalization until 1963. In that year, the service was begun in one province and the following year in five additional provinces in eastern Turkey. In rural areas the organization consists of a health unit for 7,000 people (usually about 12 villages). Patients are entitled to free care, which includes physical examination and life-saving drugs in emergencies or antibiotics. Patients must pay a small fee for other drugs, for home calls after ordinary working hours or for calls which are not necessary in the opinion of the physician. The fee is paid to the Government and not to the physician. Physicians are now paid by the Government.

Depending upon routes of transportation, seven to 20 or more health units are attached to a hospital. When referred by the general practitioner, the patient is entitled to free hospitalization or consultation. If the patient is self-referred, he must pay for these services.

Specialists are attached to the hospital where they work. However, they are required to visit the rural health units periodically, according to a schedule. This is important not only for good

medical service but also for the continued education and morale of the rural general practitioner. To the same end, rural general practitioners are also required to attend meetings in the hospital once or twice a month.

Each province will have one or more health districts depending on their size. Each district directorate will serve in an advisory capacity to the general practitioner in the rural health unit, and provide services which he could not provide himself. However, it is difficult to educate physicians to accept teamwork and supervision, and also to find provincial health directors who can make the system work. Physicians with diplomas in public health should hold the positions of district health officer and higher. The provincial health director has authority over the hospital; the district health officer is currently responsible for the liaison between general practitioners and the hospital.

The aim of the Nationalized Health Services is to introduce "comprehensive medicine," including prevention, treatment, rehabilitation, and community services. Many physicians do not readily accept this concept.

In order to qualify for the specialist's pay of \$250 a month in the Health Service, a physician must have completed two years of rotating hospital experience, some courses in public health, and an assistanceship of six months' duration. It is hoped by this means to increase the ratio of general practitioners to specialists. There is need for 200 practitioners a year (out of 400 graduates) to carry out the nationalization program. At present a general practitioner gets no special training except for a one-month short course in various aspects of public health. It is hoped to double this—to two months' training in public health in the schools. Furthermore, it is believed that something must be done to change the attitudes and practices of clinicians. In undergraduate education medical students learn by observation, not by lectures. Lectures in preventive and social medicine cannot replace the first-hand observation of the clinical practice of medicine. Hacettepe Medical School is attempting to overcome this difficulty by assigning an assistant professor of community medicine to each of its field training centers.

Staffing plans for the country's health units call for the following, in addition to the physician:

A male public health nurse (who is not really a nurse but a health technician or sanitarian), to take responsibility for com-

municable disease control, school health, and rural environmental sanitation. It should be recalled, however, that the Health Ministry has no direct responsibility for environmental health; this is the responsibility of the village or municipality. The Ministry can only make suggestions.

A female public health nurse, to take responsibility in maternal and child health and hopefully to supervise the rural midwives. In actual practice, however, the public health nurse (who was previously a hospital ward nurse) is used as a clinical nurse by the physician, and the rural midwives (nurse's aides) are the ones who really go into the homes. Rural midwives make one-third of deliveries and see another one-third in Turkey, where the birth rate is probably about 50 per 1,000. Even though this is not the best service, it is much better than no service at all.

As was indicated previously, the nationalization of health services is handicapped more by shortage of auxiliary health personnel than by the lack of physicians. There is a great shortage of nursing schools, and public health nursing is barely in its infancy. Nursing schools admit junior high school graduates and give them four years of training. It is hoped to graduate 1,000 nurses a year.

The aim is also to graduate 1,000 rural midwives every year. These workers receive three years of training after primary school. The rural midwives are usually country girls, in contrast to the nurses who are city girls and often do not adapt readily to rural conditions.

The midwife (public health nurse's aide) gives all injections, including intravenous injections, in the home. In the future Army medical corpsmen (with two years' training) may be given some additional training and made available in each village to collect vital data and give injections and other medication.

The country's economy and the remuneration of Government employees have both adversely influenced the recruitment of physicians into the Government services. The economic level in the past has not been high enough to support all Turkish medical graduates in private practice. Thus, there are 2,000 Turkish physicians practicing abroad, in addition to the 10,000 in Turkey, and not a few doctors have left the profession for more lucrative pursuits.

In the last 15 years the best students have been going into engineering rather than medicine. Engineers command high

salaries in private enterprise. Even when they worked for the Government, they were not civil servants and were paid from \$5 to \$25 a day. This compared with a \$50 a month gross starting salary for physicians and \$45 a month for others of comparable education, with increments every three years. Since it was impossible to hire physicians at this salary, the Government paid them that amount for part-time services. Now the starting salary in the Nationalized Health Services is \$250 a month (plus furnished house) with increments that may result in an eventual salary of \$550 a month.

The nationalization program will create more need for training in public health, which will result in more support by the Ministry for the teaching functions of the School of Public Health.

It is still too early to assess the results of the Nationalized Health Services. In the one area where there has been at least one year's experience with the program—in the Province of Mus—the increase in the use of health services has been phenomenal. Whereas 13,000 treatments per year were given prior to the introduction of the Nationalized Services, in the following year 122,000 treatments were given, plus inoculations for smallpox, diphtheria, etc. This tenfold increase in health services should have a beneficial effect on the health of the people.

Maternal and Child Health and Family Planning

During the visit to Hacettepe Medical Center, maternal and child health and family planning were discussed by Dr. Kaya Aydar, Chief of Obstetrics and Gynecology.

Maternal and child health programs were inaugurated in 1952 under an agreement between the Government and WHO and UNICEF. Today there are 39 MCH centers in 35 cities, 44 MCH sections in 44 towns, and 359 MCH stations in rural areas. However, under the new health scheme, emphasis is being placed on developing the preventive and curative activities through a network of health units, in which the MCH activities will be integrated.

Data relating to birth and death statistics are limited. However, during recent years several sampling surveys have been made. These indicate that the infant death rate in Middle Anatolia is 175 per thousand, 155 in the Marmara area, and 166.1

in Turkey as a whole. Maternal deaths due to abortions are 2.4 per cent in Middle Anatolia, 0.6 per cent in Marmara, and 1.5 per cent in Turkey.

The Hacettepe Medical Center, in addition to its activities in rural health, maintains a maternity hospital and an outpatient department for children. Medical supervision and care are provided without cost for 943 children of 494 families and 21 pregnant women who live in the Hacettepe area. The center is a training medium for residents and students of the nursing and medical schools. The MCH studies are planned by the Departments of Pediatrics and of Obstetrics and Gynecology.

There is growing interest in and public acceptance of the principles of family planning in Turkey. Proposals for the establishment of educational programs are now under consideration in the national legislature.

The rate of population growth in Turkey is considered to be about 3.2 per cent per year; at that rate the population will have doubled in 25 years (from 28 million in 1960 to 59.1 million in 1985) and would reach 85 million in the year 2000. With a successful family planning program, the country hopes to have about 55 million people in 2000.

Thus with family planning the population increase would not stop, but would be prolonged, and that delay would permit the economic development process to produce a higher standard of living.

For the moment, the 7 per cent increase in the national product is decreased by the 3 per cent population increase, to a net of about 4 per cent.

For these reasons, and others such as unemployment, need for social stability, juvenile delinquency, maternal and child health and nutrition problems, etc., a family planning law was drafted which gives authority to the Government to practice family planning and to establish an organization to educate the public. The proposed law has been passed by the Assembly and is now under consideration in the Senate.

According to the surveys conducted, the public is willing to accept and is looking forward to the establishment of family planning in Turkey.

Under the proposed law, the Ministry of Health is authorized to implement family planning in the country by a special organization, consisting of a director and four sections: Education,

Information and Training, Research and Demography, and Biomedical and Programming.

The first step in the program will be the training of medical personnel. Seven-day courses have been prepared for obstetricians, gynecologists, and midwives; these courses will start after the passage of the law and medical and paramedical personnel will be trained in groups of 20, starting with obstetricians and midwives.

Public education will be carried out in central and local programs. Coordination will be maintained with related Government agencies, such as the Ministries of Education, Defense, Agriculture, and Rural Development, and with agricultural associations, women's associations, and professional societies. Local community leaders, teachers, mobile health and education teams, local branches of the health department, and MCH centers will broaden the education campaign.

The goal is to educate 400,000 women (10 per cent of the women in the reproductive ages) in the first two years, then 300,000 women every year. According to the estimates, in eight years almost half of the women in the reproductive ages will be reached.

A scientific medical committee will decide on the methods to be employed; it will be formed by professors from the universities and medical schools, and medical representatives of the Health Ministry. A national coordination committee composed of representatives of related Government agencies and members of the Health Ministry is also being considered.