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**CONFERENCE
OF DIRECTORS OF SCHOOLS
OF PUBLIC HEALTH**

Report of a WHO Inter-Regional Conference

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WORLD HEALTH ORGANIZATION

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**INTER-REGIONAL CONFERENCE OF DIRECTORS OF SCHOOLS
OF PUBLIC HEALTH**

Geneva, 29 August - 2 September 1966

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CONFERENCE OF DIRECTORS OF SCHOOLS OF PUBLIC HEALTH

Report of a WHO Inter-Regional Conference

1. INTRODUCTION

A Conference of Directors of Schools of Public Health, arranged by WHO, was held in Geneva from 29 August to 2 September 1966. Dr E. L. Stebbins was elected Chairman, Dr V. Valenzuela and Dr A. N. Vinogradov Vice-Chairmen, and Dr A. J. Rhodes Rapporteur.

The Conference was opened by Dr J. Karefa-Smart, Assistant Director-General, on behalf of the Director-General. Dr Karefa-Smart recalled that this Conference, with its world-wide representation, could be considered as a continuation of similar conferences of directors of schools of public health convened by the Health Organization of the League of Nations between the two world wars. The aim is very nearly the same, namely, exchange of information and mutual support for further improvements in the educational programmes of these schools.¹

Since then, however, WHO has called a series of advisory meetings of experts from various parts of the world. As the Director-General said in opening the first of these meetings in 1958,² the Organization is providing assistance to many persons so that they may attend postgraduate courses in public health : e.g., persons intending to make public health their career ; seasoned public health workers wishing to consolidate their experience with academic training ; specialists in various branches such as tuberculosis, venereal diseases and psychiatry who are eager to see their own activities in a wider perspective and to weld them into a solid, general public health structure.

The Director-General had emphasized that many of these postgraduate courses in public health are given in countries that are well developed socially and economically and that have advanced public health organization and major public health problems that are different from those of the students' countries. Nevertheless, in these courses students acquire knowledge of methods of work and organization, they grasp general principles and concepts, and they often develop an *esprit de corps* and a vision

¹ See, for example, the recommendations concerning international liaison between institutes and schools of hygiene in a report published in *Bull. Hlth Org. L. o. N.*, 1938, 7, 169.

² *Wld Hlth Org. techn. Rep. Ser.*, 1959, 159.

for the pursuit of public health that persist throughout their subsequent careers.

The institutions providing postgraduate courses in public health differ widely. Some emphasize training, others service to the community, still others research. The content of training is therefore not the same everywhere. Nevertheless, there is a common ground for all of these institutions.

Dr Karefa-Smart noted that the Conference would have the opportunity to clarify further the picture of postgraduate education in public health and to make a wide review of advances made and of future developments for the benefit of all concerned.

2. DIFFERENCES AND SIMILARITIES BETWEEN SCHOOLS OF PUBLIC HEALTH

The Conference began with a wide exchange of information about the organization and programmes of each of the schools of public health or institutions with similar functions that were represented at the meeting. No particulars need be given in the present report, for a publication of the WHO entitled *World Directory of Schools of Public Health*, now in preparation, will summarize the information provided by each of the eighty or more of these schools throughout the world and not only those represented at the present Conference.

Once again it became clear that institutions providing postgraduate training in public health differ greatly among themselves. Many are institutions of higher education that are equivalent in status and general purpose to institutions offering higher education in medicine and other professional disciplines. Other schools are developed within the framework of medical schools. Sometimes they are simply enlarged departments of social medicine, public health or hygiene, but often these enlarged departments function in close association with other departments of the medical school and university, and such a group of departments fulfils the role of a school of public health. In other cases, the organization of postgraduate courses in public health is but one function of a postgraduate school of medical sciences.

The titles of these institutions express, to some extent, their different interests or at least their interests at the time of their establishment. These include the following, alone or in various combinations: hygiene, public health, tropical medicine, social medicine, preventive medicine and public health research.

All institutions commonly known as schools of public health engage, in varying degrees, in postgraduate training, in research and in service functions in the broad field of public health. Some, especially those that

are parts of medical schools, are also active in the undergraduate education of medical students. There are institutions that offer a single postgraduate course for physicians only, while many also accept members of other professions. Increasingly, schools of public health offer a variety of courses for physicians, veterinarians, dentists, nurses, engineers, administrators and members of other professions. A number of schools provide academic training in public health administration and in other specialities of public health beyond that available in the basic postgraduate public health course.

Some schools of public health and similar institutions have their own sources of funds. Most are supported by public funds; for example, through the Ministry of Health, the Ministry of Education, state and local authorities or combinations of these. A variable proportion of funds is derived from tuition fees paid by or on behalf of the students.

A few schools of public health are institutions with faculty of more than one hundred professors and other full-time staff. At the other extreme, some have only two or three full-time staff members and depend to a great extent on teachers from other institutions of higher education and on officials of health agencies, such as Ministries or Departments of Health.

In some cases, the basic postgraduate course in public health has a uniform curriculum for all students. In others, certain parts of the course can be arranged according to the particular interests of the students. The duration of the course, although usually of one academic year, may be limited to a few months or extend beyond one calendar year. It may or may not comprise a period of supervised field instruction. It is usually full-time, but may be part-time, with intervals of service.

Some institutions that provide postgraduate training in public health attract many applicants, both national and foreign, and can select their students; others obtain so few applications that selection is impossible. The number of persons seeking to enter a school of public health is determined by many factors. These include the size and state of development of the country; the number of potential candidates, especially physicians; the availability of training facilities and financial support; the extent of research programmes in the school concerned; and the nature of health services in the country, that is, whether they are comprehensive or fragmented. Even in countries where the holding of a basic postgraduate qualification in public health is a requirement for the practice of public health, an adequate and predictable number of candidates is not necessarily forthcoming. Reasons for this include lack of financial support, of incentives for studies, and of career attractiveness.

Despite these and other differences there is clearly a community of purpose among all schools of public health, in that all of them provide postgraduate training to prepare physicians for work in public health. Many also prepare members of other professions for careers in public health. The working definition of a school of public health given in the tenth

report of the WHO Expert Committee on Professional and Technical Education of Medical and Auxiliary Personnel is still appropriate: "an institution with adequate resources which, in addition to research in public health and service to the community, provides a full-time course lasting not less than one academic year, or its equivalent, covering the subjects essential to the understanding of the various problems of public health and the concepts, organization and techniques required for dealing with them, and which is open to members of the medical and allied professions seeking qualifications in public health".¹

This definition should be viewed in the light of the enlarging concept of public health and the consequent growing demand for widening the scope of education in public health. In some cases this implies involvement of the school of public health in extending the teaching of social and preventive medicine to medical students. In other cases, it may mean provision for advanced training beyond the basic postgraduate course in public health and for postgraduate research in specialized fields of public health, including medical care administration.

3. CURRICULUM CONTENT AND ORGANIZATION

The most widely available basic postgraduate programme of studies in public health has been, and almost certainly will remain, that leading to the Master of Public Health or the Diploma in Public Health (M.P.H. or D.P.H.). In some cases the course may be restricted to physicians, but in others it is also open to members of other health professions. This course should be seen as providing basic training and general information on public health subjects. In the fuller postgraduate preparation of the public health physician, this basic course is but one, although probably the most important, component of a programme extending for a period of several years. The use of the term "basic" means that the course provides the groundwork of knowledge needed by the local public health officer as well as by other public health specialists. The basic course should, however, be more than that, for it should serve to challenge students to take more advanced training such as a specialized formal course, a residency or a training post under expert supervision.

This course of study has widespread acceptance as affording a basic education in public health, and the curricula of different schools of public health have enough in common to encourage the possibility of securing mutual recognition of the institutions. Not only is there a consensus as to the main areas around which a satisfactory curriculum can be built, but

¹ *Wld Hlth Org. techn. Rep. Ser.*, 1961. 216, 4-5.

there is general agreement that such courses should extend over at least one academic year of full time study or the equivalent.

The balance struck between higher education and vocational training tailored to meet the needs of the specific job is an important consideration in the structuring of the curriculum of the basic postgraduate course. A too-highly "job-oriented" curriculum would reduce the importance of such a course as a basic education for public health. Thus, while a school of public health cannot ignore the responsibility of meeting the training demands of a health authority, the faculty members must insist on going beyond this requirement so as to discharge their responsibilities to the parent institution as scholars of public health, a subject well worthy of advanced study.

A curriculum for the basic postgraduate course in public health may be usefully considered in relation to the knowledge and skills needed, taking into account both the kind of action that may be needed and the special areas of practice into which public health may be divided.

3.1 Foundations for action

The need for scientific diagnosis as a foundation for action is as essential in public health practice as it is in any field of medicine; the essential difference lies in the unit under study. In public health practice or any of its sub-specialties, the unit consists of a population group. Epidemiology is the science concerned with describing the state of health of a population group and examining the factors determining its state of health. The elements may be defined as follows:

3.1.1 Description of the state of health of a population group

The state of health may be assessed:

(a) by measurements of such indicators as physique, physiological variables, intelligence, emotional state, and growth and development, and by determining the incidence and prevalence of various diseases in the group; and

(b) by determining the differential distribution of these health variables:

- (i) in various segments and constituent groups of the community, as defined by their demographic, genetic, socio-economic and cultural variables, and
- (ii) in relation to differences in the environment.

3.1.2 Making and testing inferences as to the processes that determine the state of health

This would include consideration of such processes as:

(a) the transmission of health and diseases between various members of the group, e.g., genetic transmission and the transmission of infections;

(b) social interaction between members of the group, e.g., the impact on health of relationships in the family and working situation ;

(c) behavioural determinants of health, including covert behaviour, values, attitudes, beliefs and knowledge, as well as the more overt forms of behaviour in customary practices of the group, e.g., diet, exercise, work, tobacco smoking, family spacing.

Scientific investigation of this kind requires knowledge of epidemiology itself, as well as of statistics, the behavioural sciences, environmental health, and biological sciences such as microbiology, genetics and physiology.

3.2 Kinds of action in public health practice

Public health practice involves decision-making as to priorities, planning of programmes, organization and carrying out of the programmes, and their evaluation. The kinds of action include legislation, administration, education and clinical practice. Each of these elements constitutes an important part of present-day public health practice.

(a) Legislation is an essential element of public health administration, not only for the control of various activities but increasingly as a means of facilitating or permitting the carrying out of certain activities that promote health. In this connexion, social security and health insurance have, through their influence on health and on the organization of health services, become important areas of public health.

(b) The central role of public health administration in postgraduate courses of public health has long been established. However, it is only in recent years that " organization of medical care " has come to be regarded as an important element of courses in health administration in schools of public health. This is probably a reflection of the important role that is being taken in public health by community health centres and of various forms of group practice in governmental or private polyclinics, in which curative and preventive medicine is carried out. Furthermore, in those countries in which hospitals are fully integrated with other personal health services, or wherever the role of the hospital in community health is recognized, hospital administration must inevitably be more closely related to the broader field of public health and medical administration.

(c) Health education is an important component of public health practice, whether in personal clinical and family health programmes or in the administration of health services and community organization for the promotion of the public's health. It is especially desirable that physicians, nurses, and other public health workers whose functions involve direct contact with people, as individuals or groups, have a basic training in

health education. The objective of this training is to enable them to appreciate various situations offering educational opportunity and to have some of the knowledge and skills needed for such education. The WHO Expert Committee on Training of Health Personnel in Health Education of the Public considered that some basic training in health education "is needed in the professional courses of all medical and health workers",¹ and at the PAHO/WHO Inter-Regional Conference on the Postgraduate Preparation of Health Workers for Health Education "There was general agreement that there should be a specific required course in health education for all postgraduate students in public health".²

Effective public health administration and health education are both dependent upon a knowledge of the factors determining how individuals and groups behave and how this behaviour may be modified. Biological, psychological and social sciences have important contributions to make to this understanding. Relevant aspects of these sciences should therefore constitute a part of the training programme of postgraduate courses.

(d) The more personal and clinical aspects are emphasized in such areas as maternal and child health, student and school health, public health nursing, general practice and family medicine, and medical practice in factories and other places of work. A number of these special areas of practice have important places in the instruction given in schools of public health.

3.3 Special areas of public health practice

These may be considered either in terms of special population groups or in terms of specific health problems.

Examples of special population groups are: (a) the mother and her child, (b) the family, (c) schoolchildren and students, (d) occupational groups, (e) the elderly, (f) rural communities, (g) communities in the process of urbanization and (h) migrants.

Examples of specific health problems are: (a) communicable diseases (including vector control), (b) chronic diseases, (c) cancer, (d) cardiovascular diseases, (e) environmental hazards (including pollution and radiation), (f) accidents and injury, (g) nutritional problems and (h) mental health problems.

A number of these areas of public health are important specialities, and some schools of public health offer a variety of courses that enable students to specialize in one of these fields. The extent to which they should be included in the curriculum required of all students is variable.

¹ *Wld Hlth Org. techn. Rep. Ser.*, 1958, **156**, 8.

² *Wld Hlth Org. techn. Rep. Ser.*, 1964, **278**, 14.

Courses in maternal and child health and the control of communicable diseases need to be taken by all students in many schools of public health, whereas other subjects, such as occupational health, may form part of another general-requirement course, such as environmental health. They are often offered as elective courses for students with a major interest in these subjects. Some others, such as family medicine, have found a place in the curriculum of only a few schools of public health.

It is difficult to conceive of a curriculum of basic studies that does not include such important public health areas as mental health and nutrition. The more mental health programmes become integrated with public health practice, the more they must be regarded as integral parts of the public health curriculum. Similarly, the field of nutrition, which represents a major public health challenge in the greater part of the world, must be included.

While the inclusion of this wide field of activities in a curriculum of studies is desirable, it is also clear that full justice to the importance of each subject cannot be done in the limited time available for the basic postgraduate course. Schools may therefore decide to include, as courses required for all students, those subjects considered to be of particular importance in the region in which the school is situated, supplemented by courses directing attention to other fields of general importance (see section 3.3.4) and by elective courses (see section 3.3.5).

3.3.1 *Curriculum core*

In line with recommendations of previous WHO meetings of experts,¹ the Conference agreed on the following components of the basic postgraduate public health course :

- (a) Biological science in public health, including microbiology, genetics, biochemistry, physiology ;
- (b) social sciences in public health, including behavioural sciences,² economics and political science ;
- (c) statistics and demography ;
- (d) epidemiology, including survey and research methods ;
- (e) environmental health ;
- (f) administration, legislation, planning and evaluation in public health and medical care, including social security and health insurance ; and
- (g) health education.

¹ *Wld Hlth Org. techn. Rep. Ser.*, 1959, 159 ; 1961, 216 ; 1965, 311.

² In the present context, the behavioural sciences include the contributions to medicine and public health of sociology, cultural anthropology and social psychology.

All of these should be regarded as areas of knowledge that are essential in the training of all students in the basic curriculum of studies. The way in which these areas are incorporated in the curriculum varies in different schools, but sufficient time is needed for the student to have a real appreciation of the relevance of each of these subjects to the field of public health practice. There is a real danger in the increasing pressure for specialization in one particular subject, since this can lead to a whittling away of the core courses.

3.3.2 *Special courses*

These short courses, which are variously referred to as introductory, orientating, review, survey or supplementary, permit some consideration of areas of public health practice that are not represented in the core of the curriculum. These subjects would thereby be introduced to all students of public health, making them aware of the overall picture of public health problems and practice.

Among the functions of such courses are exposure of the student to recent developments and alerting him to the need to call upon specialists to advise on any problem that he may face at a later date.

The arrangement of these courses would depend upon local resources, and their success would depend on co-ordination of the contributions of different teachers.

3.3.3 *Elective subjects or courses in the curriculum*

The purpose of the elective subjects or courses is to cater for the particular interests of the individual student and give him the opportunity to apply the knowledge gained in the core courses to his subject of choice.

In some schools, students may elect to study a number of subjects on the basis of their personal preference; in others, the student elects a major area of interest and, on the basis of this choice, follows an approved list of related courses in addition to the core subjects. Examples of this latter type are of students electing, as a major field of interest, epidemiology or maternal and child health. In the first example, he may be required to take additional courses in epidemiology, genetics, statistics, demography and the social science; in the second, he would take additional courses in maternal and child health, growth and development, genetics, mental health, and recent advances in social paediatrics and obstetrics.

Some schools offer one-year courses leading to diplomas in special areas of public health (e.g., occupational health, maternal and child health, nutrition), whereas others meet this need by offering the basic public health diploma simply with a major in the special subject, as described above.

In its report on Recommended Requirements for Schools of Public Health, the WHO Expert Committee on Professional and Technical Education of Medical and Auxiliary Personnel stated that :

“ In recent years the scope of public health has expanded and there is often need for specialization in certain areas within the broader specialty of public health, as, for example, in maternal and child health, mental health, international health, venereal disease and tuberculosis control.

“ The Committee discussed whether it is desirable and possible, within the course lasting one academic year, to provide for a student to pursue special studies in an elected field in which he desires further training. It noted that a number of schools provide such facilities by allowing the students to choose from among some elective subjects in the course. The time allowed for electives varies according to schools, reaching up to 72% of the total, but the most prevailing proportion is about one-third, the major part of the course consisting of ‘ core ’ subjects. These latter are the subjects of study required for all students enrolled to take the degree or diploma in public health.

“ It was the Committee’s opinion that the academic and practical training lasting one academic year should be mainly for basic training in public health. Nevertheless, in a general course of public health, time should be allowed for meeting, to a certain extent, the particular interest of students—who may have had training or experience in some special field. This does not provide, however, for real specialization ; to achieve the latter additional training beyond the one academic year is necessary.”¹

4. PROGRAMMES OTHER THAN THE BASIC POSTGRADUATE COURSE

4.1 Advanced public health training

While basic postgraduate courses in public health qualify physicians to practice public health, in some countries the physician who wishes to be recognized as a specialist in public health on an equal footing with other specialists in medicine may need to have :

- (a) further experience in his major area of specialization in a recognized institution, with suitable supervision ;
- (b) experience in research, which may be operational research, as well as the more established fields of research in public health ;
- (c) postgraduate courses of training.

¹ *Wld Hlth Org. techn. Rep. Ser.*, 1961, 216, 17.

All schools of public health provide at least the basic postgraduate course, and many offer students an opportunity to further their studies by advanced specialized courses and, more especially, supervised research experience for the attainment of higher degrees.

The role of the school of public health in directing the supervised experience of those physicians undergoing specialist training depends on the extent to which the school itself is responsible for selected public health practice (e.g., teaching health centres) and its relationship with practising agencies. There is wide variation in the extent to which schools use health services for teaching and in the way in which the school is related to such services.

Several schools begin the advanced study within the framework of the basic postgraduate public health course by requiring students to elect a major subject of interest, which determines the course requirements additional to the core courses. Students may be required to carry out a study in their elected major subject. The completion of such studies and the presentation of dissertations may extend beyond an academic year, constituting the beginning of more advanced studies in a chosen specialty.

Advanced study is often encouraged in one of the subjects included in core courses, such as administration or epidemiology.

In more developed schools, opportunities for advanced study are considerable, and a wide variety of studies in special areas of public health is possible. In this regard, international recognition of basic postgraduate courses in public health is of much importance, enabling students to proceed for more advanced studies from schools with limited means to those in which there are facilities for more specialized and advanced training.

4.2 International health

Satisfaction of the need for teachers and advanced students who have experience in the international aspects of their specialties will require much thought and action. The international experience of the teaching staff is often very limited, and some schools have taken steps to improve the situation through international assignments. The resources of WHO itself offer a unique opportunity for developing advanced training programmes. Such programmes should focus attention on the international or world health aspects of such areas as the planning of health services, epidemiology, health education, demography, maternal and child health, control of communicable diseases, mental health and nutrition. The feasibility of establishing such programmes should be given further attention.

4.3 Schools of public health and the practice of medicine in the community

In most countries the practice of medicine in the community involves a considerable proportion of medical practitioners and embraces a wide

variety of activities. It includes general practice and family medicine, a considerable amount of paediatrics and other clinical specialties, as well as the services of physicians in schools, universities, factories and other places of work, and in special clinics for maternal and child health and other groups. A large proportion of these doctors practice preventive medicine in their daily clinical activities, and many have some public health functions. This is especially true in rural areas, where the doctor is often a community physician, with responsibility for personal and family medical practice as well as for the public health.

Reference to the importance of general practitioners in public health and their training for such functions has been made in previous WHO reports.¹

The trend toward the integration of curative and preventive personal health services and their provision by practising teams of physicians working with specially trained nurses and other professional staff is being expressed through the establishment of community health centres and group practice clinics. In some cases these functions are fulfilled by community hospitals. The increasing recognition of the need for a close association between medical practice with the more personal aspects of public health, such as maternal and child health, is making medical care in the community a most important element of public health practice.

The question arises as to whether schools of public health should have a more decisive role in this development. An affirmative answer would require special provision to be made for the education of practising physicians, so as to make their functions in community medicine more effective. To this end some schools of public health have, in association with medical schools, developed special courses. One school of public health offers a course leading to the degree Master of General Medicine and devotes over 25% of the total time to the teaching of public health, including practical experience.

Another approach is one that regards "family and community medicine" as a special area of public health practice in much the same way as one might view other aspects, such as maternal and child health. By so doing, students may elect this field as a major area of study within the framework of the basic curriculum of postgraduate studies in public health, with more than one-third of the total time devoted to additional courses being required for this specific major area.

Wherever appropriate, schools of public health might therefore consider organizing special courses in community medicine.

¹ *Wld Hlth Org. techn. Rep. Ser.*, 1957, 140 ; 1963, 257 ; 1964, 269.

5. FIELD EXPERIENCE

There have already been many references in the present report to the need for exposure of students to community practice as part of their academic public health training. "Learning by doing", under the supervision of teachers who, themselves, have varied responsibilities for practice is accepted as the foundation of training for many professions. This is especially the case in the health professions (medicine, veterinary medicine, dentistry and nursing), in which clinical practice has long been regarded as an essential element of the student's total experience. Likewise, the conduct of practical work under skilled supervision is essential in the training of public health scientists, such as microbiologists, nutritionists, parasitologists and statisticians.

Field teaching of administrative practice is being undertaken in other professional fields, e.g., business management, education, and social welfare. A study of methods used in such disciplines may be of value to the field of public health. Further use should be made of case studies as a teaching tool.

The Conference confirmed that "supervised field experience in public health—that is analogous to the clinical education and experience . . . is the most neglected and under-developed aspect of professional education in public health, though most highly developed and emphasized in medical education".¹

The meeting agreed that provision of field experience in public health and some of its various specialties should be regarded as a minimal requirement of a school of public health.

For the benefit of teachers as well as the students, some departments of schools of public health should bear a measure of direct responsibility in the organization and operation of community health services for field training purposes.

There are many ways in which schools of public health use health services for teaching purposes, ranging from observation visits to varying degrees of participation by students in the public health activities of these services. There are also considerable differences in the responsibilities assumed by schools of public health in the services that are used for teaching. These differences range between the extremes of no responsibility, except for arranging an observation visit by students, to a situation in which the school has full control of the service and its staff has responsibility for the day-to-day work.

The arrangements made depend upon a number of factors. The main considerations are the suitability of different elements of a given service

¹ *Wld Hlth Org. techn. Rep. Ser.*, 1959, **159**, 15-16.

in respect to the content of its practice and the quality of its staff for teaching purposes. Where there is a regionalized health service that involves co-ordination of all the health services in a defined region, affiliation of the service as a whole with the school of public health would facilitate selective functioning of the staff of the school within the regionalized service. While the service would benefit from the association, the school of public health would need to relate its participation in the service directly to its essential functions of teaching and research. On this basis, the responsibilities of teaching staff in the service would be determined selectively.

In the great majority of cases this comprehensive type of affiliation with a regionalized health service is not possible, and schools need to make arrangements with numerous institutions to provide for the varied experience needed. In some cases, the school may assume full responsibility and direct control of particular services such as a community health centre, giving a comprehensive service, a maternal and child health centre, or an occupational health unit in factory or other place of work. At the same time, it might arrange an affiliation with a suitable regional, district or city health office, assuming certain defined responsibilities within its functions, and reaching agreement on its use for teaching and research purposes and on the staffing of key positions consistent with teaching responsibilities. In this way the school and health service could function together in a number of activities, such as the investigation and control of communicable diseases.

It is probable that, in developing countries, the only way to ensure standards of practice adequate for teaching requirements is for the school of public health to assume full responsibility for certain services, as suggested above. At the same time, this would provide an important experimental approach to the varied health needs of the community. The development of such practices in the teaching of public health would be of great benefit to students returning from training in institutions of more developed countries as well as to public health physicians and other professional health workers who come from such countries to work in less developed areas. In determining the service responsibility which a school will undertake, the over-riding consideration must be its functions in teaching and research.

The establishment of experiments in administrative practice and the "ploughing back" of meaningful experience gained therefrom into teaching programmes is being extensively developed in some schools of public health. This means that the teachers should have continuous field experience.

Where schools admit students from different disciplines and afford facilities for a wide variety of specialization, it is necessary to provide for varied field experience in order to meet their manifold needs. Receiving students with differing interests and backgrounds also helps to strengthen the concept of the public health team.

As indicated, the supervised practice might be developed in various ways, with its functions and structure depending upon

- (1) the needs of different community groups, urban and rural ;
- (2) the structure of the health services in the particular country or region ;
- (3) the purpose that the practice would serve in the teaching and research programmes of various units of schools of public health.

There is now a considerable body of experience in the use of health services for teaching and research purposes by schools of public health in different parts of the world. A report on this experience would lead to further knowledge of the ways in which various services are used, the specific purposes of such services, evaluation of the student's experience, as well as the different administrative arrangements made to facilitate study.

WHO could contribute in studying this important aspect of public health education and training and in the preparation of specific guidelines concerning field experience.

6. RESEARCH AS PART OF PUBLIC HEALTH TRAINING

A WHO Expert Committee on Public-Health Administration has indicated that "Research, whether epidemiological, clinical, sociological, or administrative, must be an essential component of any progressive health administration".¹ This concept would naturally include research of an operational and administrative nature, as well as socio-medical and environmental health studies. A school of public health should be organized to provide teaching, research and community service. As stated in the tenth report of the WHO Expert Committee on Professional and Technical Education of Medical and Auxiliary Personnel, "a school of public health which does not carry out research does not meet its obligations", but "Attention to research should not be pushed so far as to affect unfavourably the teaching and service responsibilities of the school".²

With the development of more complex health services, there is need to promote operational research related to improvement of methods, techniques and operations of public health administration. Schools of public health are particularly suited for such efforts. There is also a growing realization of the important role of epidemiological research, often in association with clinical, statistical and laboratory experts for the elucidation

¹ *Wld Hlth Org. techn. Rep. Ser.*, 1954, **83**, 11.

² *Wld Hlth Org. techn. Rep. Ser.*, 1961, **216**, 9.

tion of disease, including study of the changing pattern of health and disease in relation to health and other services.

One of the important tasks of the school of public health is the teaching of scientific methods. The development of scientific methodology is as essential to public health as it is to other health sciences and clinical fields.

Research is an essential part of study leading to the higher degrees. The Conference considered the amount of time that should be devoted to research by students in the basic public health course. Several WHO Expert Committees have drawn attention to the value to the student of participation in a research project, however small, and of the presentation of results.

Students in the basic public health course should not be expected to carry out any major research. Nevertheless, it is advisable to develop, in every student, an interest in research and skill in the investigation of public health problems. His involvement in an actual investigation is therefore intended, principally, to develop his skill in survey and research methods.

Adequate financial support, as well as the expenditure of a great deal of time and effort by the staff are essential for this purpose. The teaching staff are required to assist in many ways, such as helping in the selection of the theme, in the collection of bibliographical material, in the selection of various methods for studying the problem, and in recommending such travel as may be considered necessary.

Involvement in student research activities is a source of satisfaction and stimulation to the staff as well as to the students. It develops a strong *esprit de corps* in the faculty, promotes personal contact between the staff and the students and increases co-operation between the school of public health, the medical school, other divisions of the university and professional groups, to mutual advantage. Faculty time and effort devoted to student research are well invested.

7. SCHOOLS OF PUBLIC HEALTH, AND THE NEEDS OF DEVELOPING COUNTRIES

7.1 Basic considerations

There is increasing awareness of the various educational problems involved in training suitable public health workers for work under conditions that differ markedly from those of the more advanced countries, in which the main educational and research centres are established. The subject was discussed at length in the sixth report of the WHO Expert Committee on Professional and Technical Education of Medical and Auxiliary Personnel.¹

¹ *Wld Hlth Org. techn. Rep. Ser.*, 1959, 159.

Infections and nutritional-failure syndromes dominate the pattern of morbidity and mortality in many developing countries. In many areas, measurement of the mortality and morbidity is inadequate for planning and evaluation of health services. Linked with the high rates of preventable morbidity and mortality is usually a high birth rate, and population increase unrelated to the material resources available are further aspects of the public health problems now facing many of these countries.

The extent to which the health services of the developing countries, which have often been patterned on those of the more developed countries, meet their needs is a question of importance, not only for public health administrators, but equally for those responsible for education of professional and auxiliary public health workers. Standards of health education and behaviour relevant to health are significant in all public health practice. Special attention must be given to the fundamental problem of the widening culture gap between the mass of the people living in the developing countries and the advancing knowledge of medical and public health sciences.

7.2 The training of students from developing countries

The Conference considered two aspects of the training of students from developing countries ; first, the role of the well-established schools of public health, and second, the establishment of training facilities in these countries.

7.2.1 Role of the well-established schools of public health

Well-established schools of public health may help developing countries, especially by :

- (a) providing a flexible basic public health course, with elective subjects, thus permitting students to avoid such subjects as detailed national health legislation and to select other topics such as tropical public health ;
- (b) providing more advanced training beyond the basic postgraduate public health course, thus enabling students from developing countries to prepare themselves as leaders, teachers, specialists and research workers ; and
- (c) by pairing and linking schools of public health and by seconding staff to countries that are establishing or developing their own medical schools and schools of public health.

For some time to come, it can be expected that the better-established schools of public health will be requested to admit many students from other countries to their basic postgraduate courses. Several schools already

offer courses that are designed to meet the needs of students from developing countries.

These discussions brought out the benefits that accrue to schools of public health—faculty and national students alike—from the acceptance of qualified students from other countries. The different backgrounds of such students and the special public health problems of their countries offer opportunities to acquire a wide range of knowledge. Also, arousal of the interest of the staff and national students in the problems of others will stimulate their self-criticism and comparative thinking and thus eliminate the danger of parochialism.

The need for supervised practical experience in the students' countries or areas of origin is well recognized by the schools of public health to which they come for training. However, arrangements for this are not easy to make, and there is the problem of cost, since travel between countries that are great distances apart may be required. Further study is needed of ways to develop such field training areas and of the appropriate arrangements for their use, especially for co-operation between schools of public health in more developed countries and training facilities, including medical schools, in developing countries.

7.2.2 Establishment of training facilities in developing countries

In the course of time, it can be expected that facilities for teaching the basic postgraduate programme of study will be provided within an increasing number of countries. Consequently, students seeking admission to schools of public health outside their own countries will tend to do so primarily for more advanced training.

The Conference considered the subject of schools of public health in developing countries, where there is urgent need for trained professional staff in public health. There was general agreement that training in public health in one's own country, or at least within the same geographical area, is most desirable. This does not, of course, exclude the need for further experience and additional study in more advanced institutions elsewhere.

In the developing countries, there may be good reasons favouring the establishment of schools of public health as autonomous units, whether outside a university framework or within it. The facilities, faculty and executive direction of such a school would be separate from those of the medical school of the university. However, militating against this concept are the meagre resources of manpower, physical plant and equipment in the very countries most in need of public health training facilities. The establishment of separate and independent schools of public health will increase the demand on the already very limited resources.

Discussion of this question is usefully linked with that of medical and university education as a whole. The need to establish medical schools in

various countries is now well recognized and, despite the considerable difficulties involved, a number are, in fact, being founded throughout the world.

7.3 Association of postgraduate education in public health with new medical schools

The Conference suggests that postgraduate education in public health be developed in close association with that of newly established medical schools in these countries. Among the main reasons for this proposal are the following :

(1) The difficulties in finding adequate numbers of suitably qualified teachers will be shared. By functioning within a university medical school or in close association with it, the staff and facilities of a number of medical and other university departments would be used for both postgraduate and undergraduate education.

(2) The importance of public health practice in developing countries is recognized by a considerable number of their medical authorities. This recognition is expressed in the importance attached to social and preventive medicine in the undergraduate medical curriculum of many of the newly established medical schools in these countries. However, the staff required must be adequate in number and variety to meet the needs of both undergraduate and postgraduate programmes.

(3) In many of the new medical schools, teaching community health centres have been established to ensure that the medical student gains the practical experience required in this field. These centres could well become nuclei for more comprehensive postgraduate field training facilities.

(4) The considerable facilities established for the basic sciences of the medical school and for the teaching of social and preventive medicine could more readily be extended to include special training of public health workers than would be the case if additional independent institutions were proposed. It was agreed that this training should be provided both for physicians and for other health workers, along the following lines.

Physicians

(a) In addition to the training of undergraduates, there should be special postgraduate courses for those already working in public health or wishing to specialize in it.

(b) "Residency training programmes" in social medicine and public health similar to those of other departments of the medical school should be organized. This would involve the establishment of house-physician and

assistantship posts in this specialty as well as in the more traditional hospital clinical specialties.

Other health workers

Careful consideration needs to be given to the post-basic training of nurses in public health nursing and the training of other public health workers such as sanitary engineers, health inspectors, sanitarians, nutritionists, health educators and social workers in public health. While the role of the medical schools in the training of such personnel may vary considerably in different countries, they should play an important part in the overall direction of the programme and, wherever possible, participate in teaching.

The Conference believes that the bringing together of public health workers of different disciplines and of different levels is of such importance that joint sessions, especially in field work and possibly in seminar discussions, should be arranged wherever possible between medical students, physicians specializing in public health, public health nursing students and others training to become professional health workers.

8. MUTUAL RECOGNITION OF SCHOOLS OF PUBLIC HEALTH AND OF DIPLOMAS

The major objectives in establishing a procedure for mutual recognition of schools of public health and of degrees and diplomas would be :

- (1) to improve teaching and training so that all institutions could quickly attain the agreed standards for offering the basic postgraduate course in public health ;
- (2) to facilitate interchange of students for advanced training ; and
- (3) to encourage co-operative arrangements between schools of different countries.

Ways of promoting these objectives were considered. The present system of formal " accreditation " of schools of public health in the USA and Canada, based on annual returns and on periodic on-site visits to schools by an accrediting team was reviewed, and reference made to newly established criteria and guide-lines.¹ It was noted that, in the United Kingdom, the General Medical Council regulates the curriculum of the D.P.H. diploma, and that use is made of external examiners. While the Conference was impressed by the beneficial effects of visits by such highly

¹ American Public Health Association, Committee on Professional Education (1966) *Amer. J. Publ. Hlth*, 56, 1308.

qualified and experienced persons, it agreed that further study of the system is required before it can be applied more widely.

Another way of facilitating the movement of holders of the basic public health diploma to other institutions for advanced training would be the introduction of a system for assessing their knowledge. Such a system, however, would only indirectly have the desired effect of improving the standards of the basic postgraduate course.

A meeting of deans and directors of schools of public health of Latin America held under the auspices of PAHO/WHO has agreed on certain recommended norms applicable to Latin American schools.¹

It was noted that two meetings of representatives of schools of public health in Europe have recently been organized by WHO and that another conference is due to be held shortly to discuss standards for schools of public health and the possibility of establishing an Association of European Schools of Public Health.

Such meetings and the formation of other regional associations of schools of public health would be useful in achieving the objectives mentioned above, and facilitating the adoption of a curriculum along the lines outlined in section 3 of the present report.

The Conference favoured further regular meetings of deans and directors of schools of public health, on as broad a basis as possible. Such meetings promote the establishment of sound personal relations and, in conjunction with visits to other institutions, can help to lay the foundation for an International Association of Schools of Public Health or a World Federation of Public Health Associations.² Such an association could possibly be a means of setting up an acceptable instrument to promote the objective of mutual recognition of schools of public health on a world-wide basis.

The Conference expressed the hope that WHO, in addition to promoting the wide acceptance of minimum standards for schools of public health, would take further action to :

(1) Speed the eventual introduction of a procedure for mutual recognition of schools of public health on a voluntary basis by (a) providing experts ; (b) promoting exchange of faculty members ; (c) arranging meetings of heads of schools at regular intervals ; and (d) encouraging schools of public health to invite external examiners.

(2) Assist the federation, on an international basis, of national, regional or inter-regional associations of schools of public health as a means for raising standards in basic postgraduate public health education.

¹ *Recommended Norms : Schools of Public Health in Latin America* (unpublished report of a PAHO/WHO Study Group, Buenos Aires, 9-13 November 1964).

² The Conference noted that the formation of a World Federation of Public Health Associations is under active consideration.

9. CONCLUSION

The Conference reviewed the differences and similarities between various institutions that provide postgraduate training in public health.

General agreement was reached on matters of curriculum content and organization for the basic postgraduate course in public health for physicians, as well as on the related matters of field experience and research.

There was also agreement on certain other contributions that schools of public health could make, as for instance in preventive medicine, in the practice of medicine in the community and in extending health administration to include the organization of medical care and hospital administration, and the public health aspects of social security and welfare.

The role of schools of public health in meeting the needs of developing countries for trained health personnel constituted another large area of agreement.

Finally, the conference expressed itself in favour of promoting a system of mutual recognition of schools of public health that would contribute to the raising of standards and the acceptance of students in schools other than their own for more advanced training.
