

WORLD FEDERATION FOR MEDICAL EDUCATION

President: Prof. H. J. Walton, Edinburgh

WORLD CONFERENCE ON MEDICAL EDUCATION 1988 SIX MAJOR THEMES TO BE CONSIDERED AT NATIONAL CONFERENCES

Planning Commission, November 1985

PREFACE

A PROGRAMME AND STRATEGY FOR WORLD ACTION IN MEDICAL EDUCATION A PROPOSAL FOR ACTION THROUGH A WORLD CONFERENCE

The World Federation for Medical Education is undertaking a worldwide assessment of all stages in the training of doctors, to result in the compilation of major recommendations for making medical education congruent with the needs of contemporary societies and with the health goals of communities for the Year 2000. The aim is to achieve adoption of an internationally agreed approach in medical education, subscribed to by institutions responsible for the training of medical doctors, and an influential and generally accepted policy about the tasks and responsibilities for which future doctors must be trained.

A foremost component in the programme is the planning and conducting of an invitational World Conference to take place in Summer 1988. It will be a working Conference, attended by 200 selected participants, and very carefully prepared to develop an action programme.

The World Federation for Medical Education, as the international body recognized as representative of medical education in all countries, is now calling for the preparatory discussions in all member countries and in each of the six Regions (Africa, Americas, Europe, the Middle East, South-East Asia and the Western Pacific). National Conferences are to be held in all countries with medical schools (countries with single schools may choose to combine with similarly-situated neighbouring countries), to begin the task of redefining the profile of the contemporary physician.

The National Conferences will be asked to address six themes, set out in the following pages:

1. Educational priorities for medical schools.
2. Educational strategies for medical schools.
3. Supporting resources.
4. Admissions policies, medical schools and medical manpower.
5. The continuities between the phases of medical education.
6. Linkages between medical education and the health care system.

The preparatory papers setting out each of the six Themes will be compiled by a Planning Commission set up by the World Federation, with Members from several Regions. The documents will be distributed to the six Regional Associations and all National Associations for medical education in March 1986.

The members of the Planning Commission are given in the Introduction which follows. The members of the Executive Committee of the Federation, responsible for the Programme, are: Professor H.J. Walton, President (Europe), Dr. D.B. Bisht (South-East Asia), Professor N. ben-el Kadi (Africa), Professor Raif Nassif (Middle East), Dr. Pablo Pulido (Americas) and Dean Fernando Sanchez (Western Pacific).

The Regional Associations will plan and assemble the material received from the National Conferences (which will include information and concerns specific to Regions), and will receive further documents from the Planning Commission in December 1986.

Final Thematic Reports will be sent to the Regional Associations in April 1987, to assist the Regional Associations in their preparations.

The support of the Regional Offices of the World Health Organization will be critically important, and the advice of their Regional Directors essential.

Regional Conferences will have taken place by October 1987, and reports from each Region will have been submitted to the World Federation.

The Report of the Planning Commission will be sent to Regional Associations in April 1988.

The Planning Commission has proposed for consideration of the Executive Committee of WFME that the World Conference should be held in Edinburgh, Scotland in August 1988, entitled: "Medical Education for the Future: an Action - Oriented World Conference". The participation will be restricted, the participants selected by the World Federation, with advice from the Regional Associations.

In December 1988 the Final Report of the World Conference, its supporting documents and its Recommendations will be published.

These plans and strategies have already been conveyed to the Regional Associations.

The Director-General of the World Health Organization has met with the Planning Commission, and is fully apprised of these plans and strategies, and all Regional Directors have been consulted. An undertaking to support the programme has been sought and obtained from the Headquarters of WHO and all the Regional Offices.

The Central Office which planned the World Conference will continue, as the base for the Implementation Phase, with the task of planning follow-up strategies to ascertain how implementation of the recommendations of the World Conference are effected. This follow-up mechanism is a crucial component of the programme, in which Regional Associations will be fully implicated. Its activation will be the key to the effectiveness of the entire programme in training the doctors of the future and improving the health care of populations.

INTRODUCTION

The six thematic papers which follow have been prepared by the Planning Commission, whose members are: Professor Henry Walton, President; Professor O.O. Akinkugbe (Nigeria); Dr. Mario Chaves (Brazil); Dr. George Miller (U.S.A.); Professor V. Ramalingaswami (India); and Professor Felix Vartanian (U.S.S.R.). The Planning Commission has identified the themes on which discussion should concentrate, each thematic paper concluding with specific questions to be answered at national level.

The papers thus set out the issues to which groups participating in the National Conferences should address themselves. The questions at the end of the thematic papers will assist the deliberations in each country, so that a cohesive body of conclusions can emerge from National Conferences. The findings from all the countries in each of the six Regions will be reviewed by the Planning Commission following the National Conferences.

In each Region (Africa, the Americas, Europe, the Middle East, South-East Asia and the Western Pacific) the Regional Conferences will be based on the assembled conclusions from the National Conferences. The findings of the National Conferences are thus the essential groundwork, in that these conclusions will decide the directions pursued in the detailed and extensive documents subsequently drawn up and extended by six Sub-commissions working in association with the Planning Commission.

The National conferences, in their deliberations at country level, will initiate the global revision of medical education in terms of contemporary health needs, to be investigated further during the planning and holding of the six Regional Conferences.

The World Conference in August 1988 will draw together the collective findings and conclusions generated at National and Regional levels. The deliberation in each country, now initiated, therefore starts the process whereby medical education will examine itself searchingly and responsibly.

THEME ONE

EDUCATIONAL PRIORITIES FOR MEDICAL SCHOOLS

There are now more than 1600 medical schools throughout the world, preparing doctors to contribute to the health care of more than four billion people, in nations which now have a doctor/population ratio extending between less than 1/300 to more than 1/10,000; national health service budgets vary from less than \$1/person/year to more than \$1,500/person/year. In the face of these vast differences any effort to establish a common set of educational priorities for medical schools is at best a formidable task. While acknowledging that variations in educational practices are not only inevitable but in fact appropriate, these different forms of institution may be more rationally planned and justified if some generally-accepted set of principles can be identified, as the base upon which to build the additional elements required to meet local, national, or regional needs. It is the definition of this base to which attention should be addressed during the preparatory meetings for the World Conference on Medical Education.

A reasonable place to begin might be with the question of purpose for a medical school education: is it to prepare a doctor who will be qualified to practice independently on graduation, or one who is simply prepared for further postgraduate education? In virtually all industrialized countries, and in many developing nations as well, the latter pattern is dominant. In the face of this widespread practice it is all but impossible to reach any universal consensus on what a medical graduate should be able to do. Instead there is far more widespread agreement about the knowledge to which students should be exposed during the medical school years, no matter what responsibilities they will face after graduation. The priority given to producing graduates who are well informed (or have at least been informed) leads to domination of the educational programmes by established biomedical disciplines, each concerned with covering their special field and in assuring student exposure to recent advances and high technology, i.e. medicine as science. The underlying assumption appears to be that students who have experienced this kind of education will be prepared either to deliver high quality medical care on graduation or to go on to more advanced training.

Yet there are many thoughtful individuals both within the academic community and in the broader society who have begun to question whether this priority in medical school education allows adequate attention to be given to the equally important obligation of medicine as service. For if service is a high priority then educational planning should begin with a determination of what services are required by the population at risk, what role doctors should play in the delivery of this service (always bearing in mind the limits imposed by available resources and competing social needs). Such a principle of planning would not ignore the traditional biomedical disciplines, but would give greater attention to their place in meeting defined health service needs rather than to assuring full coverage of the content each might claim. It would also mean giving greater attention to issues of efficiency so that, for

example, medical students would learn to become comfortable as part of a health service system that would include other health workers often fulfilling defined functions independently, or together cooperating as members of a team whose leadership might change according to the task, and not always place the physician in that role. And if concern for cost containment, as well as diagnostic/therapeutic benefit, represents a significant educational priority then more time and effort in medical school may need to be given to health promotion and disease prevention than to the care of illness alone.

In reviewing these tasks, a majority of which might be subsumed under the general label of primary health care, an argument could be developed that such responsibilities should be assigned to other health professions/occupations, and that doctors should devote themselves entirely to the delivery of tertiary medical services and to the advancement of medical science. This would represent a substantial shift of professional functions, and in the educational programmes required to prepare medical students for such roles. In the absence of such a policy decision it may be reasonable to continue the present expectation that medical school graduates will follow many career paths in a variety of social and organizational settings, but that at the conclusion of medical school all will have a defined set of professional competences which will allow them to deliver, or participate in the delivery of primary health care, and to continue their own education. For some the further education may be in a medical speciality or in a biomedical science; for most it will mean maintaining, or further refining, the professional competence acquired in a basic medical school education.

The commendable contemporary effort to review and rationalize the preparation of doctors for a rapidly changing world must inevitably be reflected in the educational priorities for medical schools. In the national and regional discussions and debates that will precede the World Conference, answers to several central questions must be sought:

- 1.1 Should medical school education give primary attention to the science of medicine or to the services that graduating doctors must provide?
- 1.2 What are the minimum acceptable competences to be demonstrated at the time of graduation from medical school?
 - in preparation for further learning?
 - in individual diagnosis and management of illness?
 - in promotion of health and prevention of disease?
 - in collaboration with other health workers?

The collective wisdom that will emerge from these preliminary discussions should make it easier for participants in the Regional Conferences and at the World Conference to identify common ground in the delineation of educational priorities. If these underlying philosophical issues are ignored, however, it is unlikely that the more pragmatic questions addressed in other working papers can be answered with any degree of confidence.

THEME TWO

EDUCATIONAL STRATEGIES FOR MEDICAL SCHOOLS

The educational strategy employed by most presently established medical schools seems designed primarily to assure systematic coverage of well established biomedical disciplines through sequential presentation by individual departments or institutes. Instructional content and teaching methods are selected by these special interest groups, usually acting alone, since they are presumed to be best qualified to determine what needs to be taught. Such autonomy inevitably means that these decisions are often made by those who have only limited acquaintance with the range of problems that must be dealt with by most medical graduates. Nonetheless this content-based, discipline-organized educational plan has a long and honoured history, and it has produced large numbers of well qualified medical practitioners. The question which now demands realistic consideration, as medical care and health service systems move into a new age, is whether this is still the most efficient and effective pattern for medical school education.

Most alternative strategies that have emerged in recent years are derived from research on human learning, or from further delineation of the services most needed by those who turn to doctors for care. For example, one different method adopted by many medical schools since the mid-1950's is that of organizing the curriculum around body systems instead of biomedical disciplines, since structure and function, diagnosis and therapy, seem more readily grasped and retained if correlated and integrated in some logical fashion rather than pieced together from isolated fragments. This instructional format has the appeal not only of logic, but can be supported also by research on the learning process. However, it does not necessarily assure that students will acquire facility in using the knowledge they have gained. Achievement of that goal has been at the heart of efforts in a growing number of medical schools to employ a problem-based educational strategy. Whether the basic curriculum organization is either on the basis of biomedical discipline or is body system oriented, problems can be identified, which call for manipulation, and not merely possession, of information and can be used as the basis upon which instruction is built. Thoughtful critics of such an educational strategy have been moved to remind these curriculum planners that the problems which graduates must face and solve are medical in nature, and that a problem-based curriculum thus needs to pose practical, not theoretical problems alone, as the framework for learning.

Problem solving, however, may be perceived, taught, or learned as a purely intellectual skill, one that is essential but incomplete if a medical doctor is to fill successfully the role required in contemporary society. Additional elements of professional performance include: the ability to gather information with sensitivity and insight; to make judgements and take action on the basis of probabilities even in the absence of complete data; to make compromises that acknowledge reality without violation of principle; to be part of a medical care system when

individual entrepreneurship is no longer appropriate and to continue independent learning after schooling has been completed. The importance of these broader responsibilities has led a few medical schools to adopt the strategy of organizing educational programmes around the professional competences that must be acquired by the time of graduation.

Yet even the most superficial survey of how medical education is actually conducted makes it clear that these alternatives are more often talked about than implemented. One reason is certainly the inescapable fact that translation of principle into practice requires not only the adoption of unfamiliar curriculum organization but also the incorporation of new instructional and evaluation tactics to match. For example, throughout the world the most prominent teaching method in medical schools is the lecture, a technique widely regarded as essential if coverage of an ever-expanding body of knowledge is to be accomplished. If covering the content of established biomedical fields, or simply telling students how to solve the problems they may encounter, represents the highest educational priority then such a passive method of learning may be justifiable. But if the acquisition and refinement of skill in using knowledge, and of developing and sharpening a wider range of professional abilities is a high priority, then students must be given both opportunity and encouragement to engage in these activities, even at the sacrifice of content coverage.

Still more important than the selection of appropriate instructional methods are the procedures employed to evaluate student attainment of defined learning objectives. Presently, the most widely used testing procedures assess primarily the ability to recall and reproduce fragments of information (even essay and oral examinations as they are usually graded appear to reward content more than reasoning). To the extent this is true, it matters little how a curriculum is organized or instruction conducted: it is the way in which progress is judged that communicates most clearly to students what they are really expected to learn. And it is not as though other methods are unavailable to assess problem solving, judgement, communication and management skills, for example. Development of new and refinement of old evaluation instruments, reviewed at the Ottawa Conference of the World Federation in 1985, has been one of the most exciting educational developments of the last two decades. The widespread lag in incorporating these techniques into the mainstream of medical school examination procedures may reflect a fundamental belief that the major task of a teaching staff is to assure that students acquire what is regarded as necessary knowledge, with the implicit assumption that other aspects of professional competence will be gained in due course through experience. Or it may simply mean that teachers are unfamiliar with these alternatives or unskilled in their development and use.

All of which leads to consideration of another central issue in establishing educational strategies: the preparation of medical school teachers for their educational role. In most of the world, expertise in some biomedical content area is the principal, if not the only, criterion for academic appointment or promotion. But just as those scientific fields have undergone progressive expansion as new knowledge has been generated and new technologies developed, so too has the emerging science of education. If teaching staff members in a medical school are to

represent more than an informational resource, to be effective facilitators of active student learning that will continue throughout an independent professional life, then it follows that they may need to know more than most now do about the dynamics of learning and the varied techniques of instruction and evaluation, to supplement and complement their knowledge of the biomedical sciences.

Finally, a major factor in overall educational strategy is the selection of sites where learning is to occur. Debates over the relative merits of lecture hall, laboratory, and conference room have raged for many years but without satisfactory resolution since more fundamental questions of educational priorities and curriculum strategies have not first been answered. Now a new debate is heating up, one that is fuelled by the growing sophistication of medical technology and the excitement that accompanies employment of these tools in the diagnosis and management of complex illnesses encountered most regularly in major medical centres, where most medical school teaching is now carried out. Yet epidemiological data keep pointing to the growing importance of care (for the old, the infirm, the undernourished, the chronically ill, the worried well) rather than cure, needs that are far more widespread in ambulatory settings outside university hospitals than within their walls. If doctors are to gain the knowledge and skills required to deal with these problems then decisions about the most appropriate settings for clinical instruction may need review.

The primary purpose of this working paper is to bring into sharp focus the dilemmas that medical faculties face in the selection of strategies for the education of students whose professional careers will be lived in a new century. If medical school graduates are to be prepared for a future that will inevitably be different from what we have known, then there is no escape from the imperative need to face squarely and to answer forthrightly such questions as:

- 2.1 Shall medical school education be dominated by the effort to transmit biomedical content, or shall equal attention be given to the acquisition of professional skills, attitudes, and values?
- 2.2 Whatever the answer to ?1, shall the instructional process be one that is dominated by active learning opportunities, or those not so demanding of autonomous initiative by the student.
- 2.3 Whatever the answers to ?1 and ?2, shall examinations and other evaluation procedures be directed primarily toward assessment of the knowledge students have acquired, their ability to use knowledge, or to their proficiency in a broader range of professional competences?
- 2.4 Do medical schools need to require or encourage or reward teaching staff members to become increasingly familiar with, and skilled in the use of, a wide range of educational strategies and tactics?
- 2.5 What shall be the primary setting for clinical education in a medical school which aims to produce graduates capable of dealing successfully with the common problems of health and illness?
- 2.6 What mechanisms need to be instituted to monitor and record the implementation by educational bodies (e.g. medical schools) of the strategies that have been agreed upon?

The National Conferences will be asked to consider these questions.

THEME THREE

SUPPORTING RESOURCES

The growth in numbers of medical schools during the last decade is little short of phenomenal: approximately 1100 were listed in the 1974 World Health Organization Directory; more than 1500 will be included in the edition now in press. Useful as that listing may be, it implies no evaluation, accreditation, or certification of adequacy although many have promoted their schools by suggesting that inclusion there is the equivalent of approval by an international organization. Informal accounts, however, suggest that a significant number of both old and new medical schools are operating without the supporting resources that would seem necessary for conducting an acceptable programme of medical education for the contemporary world. These judgements, however, are made on the basis of implicit criteria that surely vary from time to time, place to place, and individual to individual. In the course of the National and Regional Conferences it is hoped that some agreement can be reached on what might be regarded as minimal and optimal personnel, facilities, and financial resources, for such explicit criteria would be useful indeed as guidelines for governments, universities, and individual entrepreneurs responsible for establishing and operating medical schools.

Personnel. There is little doubt that the key to a successful programme of medical education is a suitable cadre of teachers both qualified for and committed to this mission. Qualification in academic discipline is usually the primary consideration for faculty appointment and is without question of great importance. But qualification as an educator or as one concerned with improving the health service system may in the past have been given less attention than either deserves in a world where high technology seems too often to have displaced appropriate technology in education and service alike.

Commitment of medical teachers to the educational task may be more difficult to define but has commonly been described in quantitative terms of full-time teaching staff equivalents. Even using this gross measure, the range may be unacceptably wide: from less than one student/full-time equivalent teaching staff to more than 100 students. But quantitative equivalence is not the same as qualitative commitment. Continuity of instruction that is truly sequential in nature requires more than a parade of lecturers, no one of whom provides the individual counsel, guidance, and feed-back which are essential if students are to acquire needed intellectual and technical skills as well as knowledge about health and disease. These goals require a full-time core of teaching staff large enough to allow each teacher the time for student contact as well as personal research. If the productivity of such a staff is to be high, then they also require the support of secretaries, technicians, laboratory staff and other non-professionals, perhaps as many as 0.5/FTE professional staff.

Facilities. While physical resources may not be as critical as personnel, there is little doubt that the setting for learning has a significant impact upon the outcome. Conventional organization of educational programmes usually divides the course of study into preclinical and clinical phases. The first phase is generally dominated by didactic instruction. Although lectures may not be the optimal approach, if they are to be used then lecture halls should at least be of sufficient size to accommodate a full class, a requirement that is apparently not met in some schools with a very large student intake. In at least the first of these three phases laboratory instruction is also widely used. Traditionally each preclinical science discipline has had its own laboratory, but with the curriculum organized as it usually is such laboratories often stand empty and unused for many months each year. Some schools have attempted to solve this problem of poor space utilization by creating multidisciplinary laboratories, but only rarely has there been careful study of what role expensive laboratory teaching should play in a contemporary medical school, and it is the answer to this question, rather than the influence of tradition, that should determine the requirement for such facilities.

In planning clinical instruction the first consideration is commonly that of identifying a hospital focus, preferably a university hospital whose wards can serve as the primary site for teaching. The out-patient departments of such hospitals may also be used for instruction, but both teachers and students seem to prefer the in-patients setting where the most seriously ill are seen, and the most sophisticated diagnostic and therapeutic tools can be employed. Yet there is ample evidence that the problems most graduates will encounter most frequently, and will be called upon to deal with, are not those found in the wards of tertiary care hospitals. Nonetheless medical school staff members have seemed reluctant to make community hospitals or ambulatory care centres a major site for student learning, although a slow change in that view appears to be in the air. Some thoughtful members of teaching staff have even suggested that university hospitals should be reserved for post-graduate programmes alone, and that all clinical instruction of medical students can occur in those other settings. Whether it is a generally acceptable proposal seems open to question, but the conclusion is inescapable that there is a growing shift of emphasis in undergraduate instruction toward ambulatory and community care. The movement certainly implies that medical schools need to give far greater thought to the identification or creation of community health centres, appropriately staffed with professional and auxiliary personnel, as major teaching facilities.

Whatever the nature of basic and clinical instruction, one facility is essential to both: a library. In the past, a comprehensive collection of reference works has been thought to be of critical importance, but with the growing availability of regional and international library resources a selective collection of standard works may be the more reasonable pattern for individual schools to follow. That collection, including periodicals, would certainly be dominated by materials in the national language or the language of instruction, but since access to world literature seems essential for the maintenance of currency in professional competence, at least a few major journals in one of the international languages may also be required. And finally, it would seem important to consider the inclusion of such non-print materials (slides, audiotapes, videotapes, computer programmes) as may be easily used within the limits imposed by available power sources and technical maintenance of the required machinery.

Financial Support. In most of the world the medical schools, like other units in the higher educational system, derive their support primarily from the state, competing for funds not only with other fields of higher education but also with other legitimate social needs. For those allocating these fiscal resources there may be limited understanding of what is required to operate a sound programme of medical education, and this is one of the most persuasive reasons why an international organization, without a local stake in the matter, may be particularly helpful in defining basic fiscal requirements. It may also be useful, where private sources of support are employed, to express a view on what portion of operating cost can acceptably be met through tuition and/or service fees.

The most costly elements of medical education are those already dealt with in this paper: personnel and facilities. The specifications suggested in earlier sections clearly outline what is needed. Most important is that there must be provision of adequate salary for each of the teachers needed to fulfill the tasks described. The definition of what is "adequate" will remain a thorny issue, for in many parts of the world the point of reference is what medical doctors might make in private practice rather than the level of payment to other full time staff members in an academic setting. This discrepancy may be reduced in the future as a physician (and even a basic scientist) surplus intervenes, but the question will not be completely resolved by that change in numbers.

The cost of facilities is also complicated by confusion of what is needed for sophisticated tertiary medical services and research with what is required for the basic education of primary care physicians. It might be well to address the question of cost by beginning with the latter, and working toward the former as national needs dictate and national resources allow. It may be a source of pride to have available in the capital city the most advanced facilities and services required for the training of specialists and the management of complex illnesses, but if this can be accomplished only at the expense of denying more basic training and services required for prevention and management of more widespread health problems, then it may be a source of shame.

For none of these problems are there simple solutions, but National and Regional Conferences should at the very least address these fundamental questions:

- 3.1 Is a nucleus of teaching staff who have full-time appointments required for a sound programme of medical education?
- 3.2 If so, can a minimal and/or optimal student/full-time teacher ratio be suggested?
- 3.3 What ratio of supporting personnel would be acceptable?
- 3.4 What portion of operational support to students can be derived from tuition charges to students?
- 3.5 Is there a minimum acceptable description of basic science and clinical facilities in terms of specific student numbers?
- 3.6 Is it possible to define a suitable library resource, without which an acceptable programme is unlikely to be mounted?

THEME FOUR

ADMISSION POLICIES, MEDICAL SCHOOLS AND MEDICAL MANPOWER

Medical Schools exist primarily to educate doctors (although an important secondary role is to educate enough medical scientists to assure continuing basic and clinical research and development). In turn, medical doctors exist to meet societal needs for health care which are also being served in varying degrees by a number of other health workers. In any society there is an upper limit to what it is able to spend on health care in relation to other competing social needs. Medical manpower, while only a part of the total health manpower pool, is the most expensive to educate.

In modern societies most doctors, and especially those devoted to primary health care, tend to work increasingly as members of health teams which include nurses and various technical and auxiliary staff personnel. In this context, the numerical requirement for doctors is very much related to the division of labour within the health team, the number of tasks delegated to other members, and the efficiency of the operation of the team itself.

The supply of doctors that may be maintained fully occupied in a country is therefore under a set limit. Ideally medical school output should be targeted to that limit, thus avoiding the dangers of over- and under-production. In the past underproduction was a serious problem but today it remains so mainly in a number of developing nations. Far more serious now in developed countries particularly is the issue of overproduction and maldistribution. The former has led to a growing problem of unemployment or under-employment of doctors in an increasing number of countries while inadequate distribution still leaves many segments of the population in many nations badly underserved. Yet medical school admissions in many parts of the world, even those already experiencing an oversupply of doctors, are still rising. Some rationalize that it may be good for society to have a consumer market, meaning a reserve of doctors which can be tapped at any time. It is even suggested that since doctors are such well educated members of society they can easily undertake other community activities. But many would question this rationalization, considering it a waste to spend so much time in training individuals for functions that they are unlikely to perform. There is, therefore, a social interest in keeping production of doctors closely related to utilization capacity, and for this reason some countries have explicit or implicit medical manpower policies reflected in the size and capacity of their medical school systems. Yet in others there is an intentional policy of overproduction, either as part of assistance to "Third World" nations inadequately supplied with doctors, or as a purely economic product that will enhance much needed foreign exchange.

These various social and economic pressures, coupled with the issue of individual opportunity for maximal personal development (or upward mobility) have led to several solutions of the numerical question of medical school admissions. In some countries there is essentially an open door policy for university entrance, the opportunity for this higher

education being available to all who have demonstrated an acceptable level of performance in school examinations. At the other extreme is the "numerus clausus", in which the size of each entering class is predetermined. In the first there is commonly a high attrition at the end of the first or second year of the 5-6 year course of study, while in the second that wastage rate is usually very small, and in some countries virtually zero.

In each instance, however, a selection process is at work - in one instance before admission to the university, in the other during medical education itself. Both systems, however, depend almost exclusively upon a single criterion: academic achievement. In the schools with open entry the highest performance in basic medical science course examinations decides which medical students proceed to subsequent years, while in the "numerus clausus" schools it is only those who have achieved the highest grades in school examinations who are admitted.

Since the best predictor of future performance is past performance this academic criterion is generally quite effective in identifying those who will succeed academically in medical school. But the responsibilities which society expects a medical graduate to fulfil relate to competence in delivering health services, not only to achieving high grades. Those who are high achievers may also prove to be good practitioners, but there is no evidence of any significant correlation between academic performance and the quality of subsequent medical competence in practice. It is for this reason that many medical schools are exploring the usefulness of additional criteria in student selection, criteria that may more closely match the ultimate performance goal. In one country all applicants above a fixed floor of school achievement are placed in a single pool from which final selection is then made by lottery. In many others, information derived from personal interview, and from reports of prior activities, are employed in an effort to identify patterns of behaviour that suggest a personal commitment to such things as human service or independent learning or creative thinking, for example. In still others the views of community representatives on the personal qualifications of an applicant are sought. Still other entry systems include psychological tests designed to reveal attitudes and values which are considered desirable in a doctor. But whatever the technique, the goal is that of improving selection, to increase the likelihood that those admitted will be suited to the kinds of medical careers and practice patterns which may be demanded in the future, and which will almost certainly be different from those of the past.

With these issues in mind it will be important for National Conferences to seek some consensus on at least the following questions:

- 4.1 Should medical school admissions policies in a country reflect national (or regional) needs for doctors?
- 4.2 Is open admission (in contrast to entry by selection, or "numerus clausus") still a reasonable practice?
- 4.3 Are academic performance data still appropriate as the sole, or the major, criterion for selection or retention of medical students?
- 4.4 If additional criteria should be employed which are the most important?

THEME FIVE

THE CONTINUITIES BETWEEN THE PHASES OF MEDICAL EDUCATION

Detailed attention needs to be given to the impact on the doctor of the future if the present schisms persist between the different stages of medical education. Basic medical education is often viewed as self-contained, and not seen in appropriate relation to provisions made for specialist training in different countries; systems for continuing medical education of experienced doctors are seldom, if ever, related to the two prior phases. Medical education in every country stands to benefit from steps to achieve more effective continuity of medical schools with the later phases of medical training, and with greater reference to what doctors actually will be called upon to do in their professional careers.

The need to consider the impact of discontinuity applies to both patterns of training referred to in Theme 1: not only those countries with elaborate postgraduate education in the specialities, but also those in which the health care system does not provide for extensive and systematic specialist training.

In countries where postgraduate medical education is required of most, if not all, doctors this postgraduate phase is often held to constitute the area of medical training where perhaps the most decisive and influential recent developments in training have occurred. The educational contribution of postgraduate training to the undergraduate medical curriculum cannot be overlooked.

While some countries actually offer very elaborate postgraduate programmes, other countries which officially require further formal postgraduate medical training are without organized postgraduate training and lack sufficient training places. Under both circumstances the postgraduate and the medical school phases of medical education almost always exist independently (often under separate Ministries).

Continuing medical education (CME) is a result of both professional pressure and public demand. There is widespread concern to provide better facilities for experienced doctors in practice, enabling them to maintain and continually update their clinical competence. Developments include "peer review", a method by which practising clinicians meet regularly as a group to evaluate the quality and efficiency of the services provided by themselves and their colleagues. Another method is "audit", the sharing by a group of peers of information gained from personal experience and/or records in order to assess the care provided to their patients, both to improve their own learning, and to contribute to medical knowledge. The development of new procedures in "distance learning" has resulted in methods by which instruction is transmitted from the centre to the doctor at his workplace, made possible by educational technology such as computers and videotape. The questions whether periodical "recertification" of established doctors is now needed, by examination or on the basis of required courses, and whether

CME should be obligatory or voluntary, are keenly debated.

The relative neglect of primary medical care in the medical school curriculum, as distinct from secondary and tertiary hospital-based curative medicine, has already received attention in Theme 2. Distortion in content of the undergraduate medical curriculum may become less if appropriate regard is given by medical school curriculum planners to the postgraduate (specialist) training sphere and to the work experienced doctors, both general practitioners and specialists, are called upon to undertake.

The schism between medical school, the concerns of postgraduate training, and the continuing medical education phase has obscured the fact, given scant attention in curricula, that the practice of clinical medicine involves managerial decisions (about sick people, aiming to alter the course of disease) which have as yet hardly been investigated at all. Most erroneously, this sphere of medical practice, concerned with managerial decisions by the doctor about sick people, has too often and too glibly been explained away as "the art of medicine".

With the availability of X-rays, EMI scans, biopsies, histology reports, non-surgical exploration of body cavities, safer surgical investigation, etc. doctors can now more precisely diagnose many diseases. The challenge is not the intellectual act of explaining deductive decisions, but the managerial act of deciding which investigations to carry out. The same type of decision-making is involved in deciding which treatments to apply. The challenge in establishing clinical science is to create better, and recognizable, methods for observing, identifying and classifying patients. Improved medical education calls for clearer definition of the clinical methods a doctor uses when providing therapeutic services. This recognition will not occur until medical school curricula are planned with appropriate reference to the actual work of doctors when in clinical practice. That also has most immediate relevance for the content of postgraduate training in any country.

Experienced doctors are not necessarily competent, nor is the proper emphasis always given to the most important clinical areas. Whether or not this is so needs consideration at the National Conferences. Also to be examined is the charge that undue emphasis on technology can be held to have dominated medical school values in certain settings. Medicine is sometimes erroneously held to have become a science with the publication of the Flexner Report of 1910, when the teaching of medicine became integrated with the natural sciences. The harm to medical education of this viewpoint has started to receive some attention. Analysis of medical teaching rounds has shown the clinical respects in which senior physicians at the bedside are often deficient: they have been shown to give little emphasis to the approach to the patients, for example, or to establishing a doctor-patient relationship. In arriving at clinical decisions and relating the case findings to medical theory teachers at the bedside were found to pay very little attention to individual or personal aspects of the patients. The misinterpretation of the place of science in clinical medicine is held to have contributed to a diminished concern with patients as people.

Another concern has been to assess more critically whether the medical school curricula, and also the policy of the country regarding postgraduate training, are sufficiently related to the health services and the health care needs of the population. To what extent should the national health care approach adopted in a particular country decide which of the very many different basic sciences and medical subjects are to be included? How should these be put together, taught, learned, evaluated, and monitored, how should the students be assessed, and how can educational change be brought about effectively when it is necessary?

It may be argued that no phase of medical education and training can be adequately planned and implemented without a perspective which takes into account the entire continuum. When considering the medical school phase itself, the National Conferences will need to decide whether, if it is to be "relevant", teaching has to be provided and learning take place where the phenomena are actually present, that is to say, at the actual sites where patients are seen with their ailments and illnesses. The implication clearly follows, if such a view is taken, that training settings should properly include the community, with its homes, factories, schools etc.; health care clinics, of all types; primary medical care settings and outpatient clinics. That hospital medicine has been over-emphasized may not necessarily be accepted by all medical teachers; all medical teachers do now have to consider whether the three classical phases of education and training need greater coordination. If they do need to be less separate, each country needs to specify how the desired degree of coordination will be achieved. For example, the relations between each of the different stages with the Ministries of Health and of Education may need re-consideration. The place of the medical school within its parent university may require examination, and the extent to which that university as a whole is viewed as a resource for improving the health of the community in which it is located.

The National Conferences will need to consider the following questions:

- 5.1 Is the medical school curriculum planned with appropriate attention to the training which will follow, and is needed, after graduation?
- 5.2 Does the curriculum taught in medical schools reflect appropriately and sufficiently what doctors will actually be called upon to do in later practice, particularly the new components of primary health care?
- 5.3 Is medicine as actually practised (in primary health care, primary medical care, and specialist medicine) in keeping with the knowledge, skills, professional attitudes and values which are advanced as educational objectives of the curricula of the medical schools?

...../.....

- 5.4 Is continuing medical education (CME) given due importance in maintaining the competence of experienced doctors and ensuring their continuing fitness to practice, and are proper resources made available for it?

- 5.5 Are the medical school curricula and postgraduate training programmes sufficiently aligned with the proper provision of health care to the population, on an equitable basis and not on a basis which discriminates unduly in favour of the privileged?

THEME SIX

LINKAGES BETWEEN MEDICAL EDUCATION AND THE HEALTH CARE SYSTEM

The relationship of a medical school to the health service system may vary from country to country, but traditionally the most prominent link is between the school and one or more hospitals which are usually designed to provide the most advanced tertiary care that is available. These "teaching hospitals" are sometimes owned and operated by the parent university, but are often public or privately supported institutions which have agreed to provide clinical opportunities for medical student education though they are operated by a health service rather than an educational authority.

It is in such settings that most clinical instruction occurs, and in most instances it takes place on the wards to which the most seriously ill, or those requiring the most sophisticated diagnostic technology, have been admitted. In some instances admission is even limited to those suffering from specific diseases, or ailments which reflect the research interests of an academic staff. While it is true that virtually all such hospitals have outpatient departments, many of which are filled far beyond a manageable capacity by patients seeking help they cannot find in their own towns or villages, these ambulatory care settings only rarely serve as central to medical education. But even in those places where they may be extensively used for such a purpose, the overwhelming emphasis is upon diagnosis and treatment of disease, to the neglect of health promotion and disease prevention, and the care of those who cannot be cured.

Where such educational settings predominate, medical students and doctors in postgraduate training rarely encounter the vast majority of health problems faced by populations in developing and developed countries alike, for these problems are more likely to be seen in community-based health clinics. In them the emphasis is upon primary care, which includes focused efforts to prevent illness, taking into consideration economic realities, living conditions, social and family traditions, as well as the purely medical interventions.

In recognition of the often biased perspective which the usual settings for clinical education may produce, some medical schools are exploring new arrangements for the articulation of medical education and health services. That which has been the easiest to achieve is simple cooperation between education and service authorities, usually through discussion of common problems and opportunities, leading to consideration of ways in which these autonomous groups might work together to resolve problems and capitalize on opportunities. At the next level is coordination of work between the two systems, with written agreement on mutual obligations and responsibilities. For example, there may be medical school commitment to provide total health care for the population of a defined geographical area. Here students will participate not only in conventional diagnostic and therapeutic activities but also will have an opportunity to learn through experience the ways of helping individuals and groups to lead healthy lives, the contributions to general health care that can be made by others (nurses, dentists, village health workers for example) in a cooperative enterprise, and the need for gaining

greater competence in system management including cost containment. The fullest expression of such interrelationships would be a full integration of education and service, which thus far has taken place in only a few settings. But experience gained by several medical schools in recent years has included shared programmes with schools of dentistry, nursing, and public health, in which comprehensive health services and education are focused either on primary care or in providing macro-models for better ways of delivering primary, secondary and tertiary care for large populations.

Such linkage between medical schools and health service systems is felt by many observers to represent a significant advance in medical education, one which represents a badly needed shift in emphasis away from undue preoccupation with complex illness, high technology, concern with cure rather than care, toward a more balanced consideration of the health problems faced by a total population. It takes as a goal the actual improvement of health indicators and not simply the production of more knowledgeable graduates. Such a relationship once adopted will also be reflected in an epidemiological rather than a subject approach to curriculum design.

But the achievement of such cooperative, coordinated, or integrated programmes requires a fundamental shift in what many medical faculties see as their primary role: research and development of medical science. In fact there is considerable fear in some places that a move in this direction will so dilute these efforts that the future improvement of health care will be threatened by diverting medical teachers' time and efforts, and by failing to expose students to the most advanced thinking about fundamental mechanisms of disease.

It is such issues, and the resolution of such conflicts which participants in National and Regional Conferences should address, attempting to formulate specific actions to deal with at least the following questions:

- 6.1 Should medical school education give greater attention to providing more learning opportunities in non-hospital ambulatory settings?
- 6.2 Should more intimate links be established between medical education and health service systems/
- 6.3 Should medical schools assume responsibility for a system of comprehensive health care (health promotion, disease prevention, diagnosis and management of acute illness, care of chronic disorders, and rehabilitation)?
- 6.4 Should medical schools assume responsibility for some defined population group?
- 6.5 Should medical schools establish closer links with other health professions in both education and service?

SUBSEQUENT ACTION REQUESTED

The National Reports should be sent by the Chairman of the National Conference to the President of the World Federation by 1 December 1986, or sooner if that is feasible in relation to the timing of the National Conferences.

These reports will be integral to the further documentation to be prepared by the Planning Commission, and sent to the Regional Associations by April 1987.