

WHO Guidelines for Quality
Assurance
of Basic Medical Education
in the Western Pacific Region



WORLD HEALTH ORGANIZATION
REGIONAL OFFICE FOR THE WESTERN PACIFIC

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WHO Guidelines for Quality Assurance of Basic Medical Education in the Western Pacific Region

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CONTENTS

FOREWORD	<i>iv</i>
INTRODUCTION	1
• The global movement for quality in medical education	1
• Quality assurance in medical education in the Western Pacific	1
• Use of international standards and regional guidelines	2
PART A EDUCATIONAL GUIDELINES	3
I. Mission and objectives of basic medical education	3
II. Educational programme	6
III. Assessment of educational outcomes	8
IV. Student selection and support	9
V. Academic staff/faculty	10
VI. Educational resources	10
VII. Monitoring, evaluating and changing the curriculum	11
VIII. Governance and administration	12
IX. Continuous renewal of medical schools	13

PART B FRAMEWORK FOR ESTABLISHING A QUALITY ASSURANCE SYSTEM

14

- Definition of quality assurance
14
- Quality assurance system
14
- Benefits of quality assurance by accreditation
15
- Best practice in quality assurance
15
- Procedures in quality assurance in medical education
15
 - Self study
16
 - External quality assurance
16
 - Accreditation
16
 - Quality assurance in approving new medical courses
16

ACKNOWLEDGEMENT

17

ANNEXES

ANNEX 1: WFME International Guidelines on Quality Improvement 19
 in Basic Medical Education.

ANNEX 2: Guidelines for collecting data (Outline)
 35

FOREWORD

The WHO Western Pacific Regional Office (WPRO) has identified four main themes in its work plan: combating communicable diseases, building healthy communities and populations, health sector development and reaching out for other organizations and communities. Human resources development is one of the priority areas within the theme of health sector development. Quality assurance in the education of medical and health personnel is an important means of ensuring quality healthcare.

In its strategic plan for quality assurance in medical education, WPRO has collaborated with the Association for Medical Education in the Western Pacific Region (AMEWPR) to develop guidelines for ensuring standards in medical education. Regional guidelines on quality medical education will give medical schools an idea of the benchmark and the efforts they have to put towards quality improvement and should assist in achieving acceptable performance of the graduates and meaningful as well as sustainable curricular reforms. Guidelines on standards in medical education have already been in use in Australia, New Zealand and Malaysia.

In implementing the quality assurance plan, WPRO has also undertaken to translate the guidelines into the regional languages, familiarized medical educators with the standards and trained them in the use of the guidelines at inter-country and national workshops. WPRO has also sponsored fellows from various countries in the Region to observe the accreditation process of medical schools in Malaysia and Australia.

The ultimate goal is to encourage national governments to adopt a quality assurance process in medical education that promotes public confidence that the quality of provision and standards of award of a degree in medicine in the Region are being safeguarded and enhanced.

Dr Shigeru Omi
Regional Director

INTRODUCTION

The global movement for quality in medical education

The World Health Organization (WHO) has been actively advocating reform and improved medical education to meet the changing needs of health care. For the past three to four decades, WHO has intensified its efforts and has collaborated with a number of organizations and institutions at both global and regional levels to carry out activities aimed at improving human resources for health through better quality education. Significant among these are the growth of the Network of Community-oriented Institutions for the Medical and Health Sciences, the World Federation for Medical Education (WFME) conferences on medical education and their regional preparation and follow-ups, the global consensus consultation on quality in medical education, the establishment of centres for health personnel education, fellowships and numerous training workshops on medical education.

The need for quality assurance programmes for medical education worldwide has been recognized by the World Federation for Medical Education (WFME), which has committed itself to the project “International Standards in Medical Education. Assessment and Accreditation of Medical Schools’ Education Programs”. The aim of the WFME project is to provide a general quality assurance instrument for medical education that could be used worldwide on a voluntary basis. The primary aims of the project are to stimulate all medical schools to identify their own needs and those of the communities they serve, to assess their strengths and weaknesses, and to consider their potential for reorientation to existing and emerging health imperatives.

WHO has been collaborating with WFME, a global umbrella organization for the six Regional Associations for Medical Education since it was founded in 1972. WHO was a principal signatory to the founding of WFME and has accorded it nongovernmental organization (NGO) status. The shared objectives of WHO and WFME on medical education are expressed in resolutions 42.38 (May 1989) and 48.8 (May 1995) of the World Health

Assembly and led the development of a Global Collaborative Programme for the Re-Orientation of Medical Education. The key component of this global collaboration is the adoption of international standards in basic medical education. The project to formulate these standards was initiated by WFME in 1998, and the final document, *Quality Improvement in Basic Medical Education*, was adopted by the WFME Executive Council in June 2001.

Quality assurance in medical education in the Western Pacific

The WHO Western Pacific Regional Office has had a long history of association with efforts to improve medical education. In 1988 it supported the formation of the Association for Medical Education in the Western Pacific (AMEWPR). Through various collaborative activities, medical educators have been brought together to discuss contemporary theories and practices in medical education and to plan ways and means of improving the quality of education in the more than 300 medical schools* in the Region. In 1996, WHO supported the AMEWPR meeting on quality assurance, accreditation and licensure examinations in Korea. Since then, efforts of AMEWPR have been directed at developing quality guidelines for medical schools. In July 2000, AMEWPR adopted regional guidelines that dealt with medical educational practices and procedures for self-study and accreditation of medical schools. In April 2001 a WHO regional workshop was held in Kuala Lumpur to conduct a trial of the regional guidelines in conjunction with the WFME international standards and the Malaysian Medical School accreditation procedures.

The present document, WHO Guidelines for Quality Assurance of Basic Medical Education in the Western Pacific Region, is the final outcome of several years of consultation with medical educators in the Region, AMEWPR members and participants of the WHO inter-country workshop in Kuala Lumpur in April 2001. It is formatted according to the WFME

* Medical schools in the Western Pacific in 1995: Australia (10), Cambodia (1), China (150), Fiji (1), Japan (80), Laos (1), Malaysia (5), Mongolia (2), New Zealand (2), Papua New Guinea (1), Philippines (28), Republic of Korea (48), Singapore (1), Vietnam (9).

document *Quality Improvement in Basic Medical Education*. It provides guidelines on educational standards as well as a framework for establishing a quality assurance system.

Use of international standards and regional guidelines

The WHO Western Pacific Regional Guidelines on Quality Assurance in Basic Medical Education focus on good practices in medical education and quality assurance. It is organized in two parts.

Part A provides recommendations for good educational practices that would enable medical schools in the Western Pacific Region to not only meet the international standards at a basic level in each broad area but also to develop further the quality of their programmes in line with international consensus about best practice. The Western Pacific Regional Guidelines are complementary to the international standards. The international standards define basic and quality development standards across nine broad areas divided into 38 sub-areas. Each sub area has operationally defined criteria that serve as performance indicators for quality assurance in medical education. Irrespective of the state of development of the medical education system in a country, each medical school can use the operational guidelines to measure itself. The international guidelines given in Appendix 1 can also be used as a template to develop national versions of the standards. The guidelines cover the same areas as the international standards, namely,

- Mission and Objectives
- Educational programme
- Assessment of students
- Student selection and support
- Academic staff
- Educational resources
- Programme evaluation
- Governance and administration
- Continuous renewal

In Part B of the Regional Guidelines, a framework is provided for establishing a quality assurance system at national, subregional or regional levels. The framework relies on peer review. Hence those countries with only one or few medical schools may wish to participate in regional quality

assurance systems, with the decision arising from the evaluation process separately ratified in each individual country.

PART A

EDUCATIONAL GUIDELINES FOR BASIC MEDICAL EDUCATION

Approaches to medical education need to be compatible with the health care system and the needs of the community, which vary from region to region. The guidelines below acknowledge that diversity between medical schools is desirable. Thus the educational guidelines define the prerequisites for basic medical education in broad outline only. Medical schools are expected to define their own educational objectives, which should be broadly consistent with those contained in these guidelines.

I. MISSION AND OBJECTIVES OF BASIC MEDICAL EDUCATION

Mission

Medical schools need to define their overall mission and objectives and make these known to their constituencies after consultation with major stakeholders in the parent university, the community and government. Medical schools should then be responsible for developing and implementing curricula appropriate to their mission.

General objectives

1. The overall goal of basic medical education is to produce broadly educated medical graduates with an appropriate foundation for further training in any branch of medicine including family medicine (general practice), medical, surgical, investigational or other

specialties, as well as for careers in medical research, public health medicine or health service administration.

2. Knowledge should be firmly based on scientific principles, and graduates should have developed appropriate learning and clinical skills and professional attitudes.
3. Graduates in medicine should be competent to practise safely, ethically and effectively under supervision while undergoing further vocational training to become independent practitioners. Graduates should be willing and trained to continue to develop their knowledge and skills throughout their professional careers.
4. Because the scope of knowledge relating to medicine is growing fast, and because many aspects of practice are changing rapidly, emphasis in basic medical education should be placed more on the principles underlying medical science, fundamental practical skills and critical judgement based on evidence and experience than on the acquisition of a detailed compendium of current knowledge or a comprehensive list of clinical skills.
5. The quality of each medical school will ultimately be judged by the ability of its graduates to responsibly perform in the roles the community requires of its medical practitioners. This requires responsiveness to changing needs and a commitment to a lifetime of continuing medical education.

Objectives relating to knowledge

Graduates completing basic medical education should have knowledge of the following areas:

1. Scientific method relevant to biological, behavioural and social sciences at a level sufficient to understand the basis for present medical practice, and to assimilate the advances in knowledge that will occur over their working life.
2. The normal structure, function and development of the human body and mind at all stages of life, the interactions between body and mind, and the factors that may disturb these.
3. The aetiology, pathology, symptoms and signs, natural history, and prognosis of common mental and physical ailments in children, adolescents, adults and the aged. (Graduates should have a detailed knowledge of the conditions that require urgent treatment and those that are of particular local significance.)
4. Common diagnostic procedures, their uses and limitations.
5. Management of common conditions including pharmacological, physical, nutritional and psychological therapies.
6. Normal pregnancy and childbirth, the more common obstetrical emergencies, the principles of antenatal and postnatal care, and medical aspects of family planning.
7. The principles of health education, disease prevention, amelioration of suffering and disability, rehabilitation, and the care of the dying.
8. Cultural and social factors affecting human relationships, the psychological well-being of patients and their families, and the interactions between humans and their social and physical environment.
9. Systems of provision of health care including their advantages and limitations, the costs associated with health care, the principles of efficient and equitable allocation of finite resources, and methods of

meeting the health care needs of disadvantaged groups within the community.

10. The principles of ethics that relate to health care and the legal responsibilities of the medical profession.

Objectives relating to skills

Graduates completing basic medical education should have developed the following skills to an appropriate level for their stage of training:

1. The ability to take a tactful, accurate, organized and problem-focused medical history.
2. The ability to perform an accurate physical and mental state examination.
3. The ability to choose the appropriate and practical clinical skills to apply in a given situation.
4. The ability to interpret and integrate the history and physical examination findings to arrive at an appropriate diagnosis or differential diagnosis.
5. The ability to select the most appropriate and cost effective diagnostic procedures.
6. The ability to formulate a management plan, and to plan management in concert with the patient.
7. The ability to communicate clearly, considerately and sensitively with patients, relatives, doctors, nurses, other health professionals and the community.
8. The ability to counsel sensitively and effectively, and to provide information in a manner that ensures patients and families can be truly informed when consenting to any procedure.

9. The ability to recognize serious illness and to perform common emergency and life-saving procedures such as caring for the unconscious patient and cardiopulmonary resuscitation.
10. The ability to interpret medical evidence in a critical and scientific manner, and to use libraries and other information resources to pursue independent inquiry relating to medical problems.

Objectives relating to attitudes as they affect professional behaviour

During basic medical education, students should acquire the following professional attitudes, which are regarded as fundamental to medical practice:

1. Respect for every human being, with an appreciation of the diversity of human background and cultural values.
2. An appreciation of the complexity of ethical issues related to human life and death including the allocation of scarce resources.
3. A desire to ease pain and suffering.
4. An awareness of the need to communicate with patients and their families, and to involve them fully in planning management of their condition.
5. A desire to achieve the optimal patient care for the least cost to allow maximum benefit from the available resources.
6. Recognition that the health interests of the patient and the community are paramount.
7. A willingness to work effectively in a team with other health care professionals.
8. An appreciation of the responsibility to maintain standards of medical practice at the highest possible level throughout a professional career.

9. An appreciation of the need to recognize when a clinical problem exceeds their capacity to deal with it safely and efficiently and of the need to refer the patient for help from others when this occurs.
10. A realisation that it is not always in the interests of patients or their families to do everything which is technically possible to make a precise diagnosis or to attempt to modify the course of an illness.

I. EDUCATIONAL PROGRAMME

Educational principles

There are many ways to achieve the goals and objectives of basic medical education outlined above. The minimum foundation for medical training requires a combination of knowledge, skills and attitudes. These attributes cannot be defined simply as lists of factual knowledge, practical skills or attitudes as many competencies are related to more abstract qualities.

The challenge for all medical schools is to teach sufficient factual knowledge and practical skills, and also to encourage students to be enquiring, analytical and to develop desirable professional attitudes. Attempts should be made throughout the course to inculcate scrupulous ethical principles and to nurture and encourage the development of appropriate attitudes and professional conduct in the caring for patients, in relating to patient's families and to others involved in the care of patients.

Medical schools should encourage student participation in the education process through self-directed learning and provide opportunities for studying some areas in depth and for clinical experience in a range of settings.

Any medical training must include a significant period of time devoted to personal contact with patients. During this time, the student has the opportunity to learn of the complex interplay of pathogenic processes, and of social, psychological and physical factors. Students need to witness the roles of family and community supports, and the influence of the physical and social environment in determining the expression and course of disease in different individuals. It is essential that students are taught in an environment where patients as a whole are considered rather than individual organ systems or diseases.

Although the diagnosis and management of the sick is a central function of the medical profession, students must also acquire appropriate knowledge, skills and attitudes relating to disease prevention, health promotion and public health medicine. Students must also be made aware of alternative health practices used by the community including their cultural significance and their dangers.

Design and implementation of the curriculum

Medical schools should be able to demonstrate that the content and balance of the curriculum and its assessment matches the explicit objectives of the medical school. They should also be able to demonstrate that they can implement the curriculum with the resources available to them. Systems of distribution of funds within the university or medical school should promote the cooperation of individual departments or disciplines and be responsive to recommendations of curriculum committees.

Medical schools should have in place an identified group of individuals with expertise and interest in medical education who are responsible for the overall curriculum, implementation and student assessment. Membership of this curriculum committee should include the basic and clinical sciences, but the responsibilities of individuals should transcend specific discipline interests. Medical schools should also have mechanisms to evaluate, review and change the medical curriculum.

Organization of topics and integration of the curriculum

In the past, the early basic science stages of the curriculum were taught on the general campus of the university and the clinical teaching was delivered in the major teaching hospitals affiliated with the university. These traditional settings are changing. Basic science teaching should be relevant to the overall objectives of the medical course and its relevance should be clear to the students. Hence basic science courses designed specifically for medical students should illustrate the importance of the principles being taught to the understanding of human health and disease. Medically qualified teachers should participate in the teaching of the basic sciences using combined teaching sessions based around clinical problems. Not only does this help to enforce basic concepts, but it also highlights the relevance of the basic sciences to later clinical practice.

The level of knowledge and understanding, skills and attitudes expected of the students at each stage of the course should be defined. For example, if particular clinical skills are learnt in more than one year of the programme, the medical school should inform both the students and the staff of the standards required each year.

Special health topics requiring emphasis

A number of special topics that are of considerable contemporary importance may fail to be adequately represented because they cross several disciplines. For example, evidence-based medicine, the specific health needs of indigenous people, minority ethnic groups and socially challenged groups, unorthodox health practices, gender and environmental issues need to be incorporated into the curriculum. The curriculum committee should develop a mechanism to identify local, national and regional needs, such as a consultative committee with broad community representation.

Elective periods

Elective periods provide students with the opportunity to study certain areas in depth or to experience the practice of medicine in other environments, including other countries and other settings both urban and rural. These periods add greatly to the diversity of the students' experience and are to be encouraged provided they are appraised and do not become predominant over training in core disciplines in local settings.

Teaching and learning methods

Teaching and learning methods should be enjoyable and consistent with the medical school's educational objectives. The preclinical stages of medical education have in the past relied on lectures and on practical classes, with some tutorials. The clinical years have used clinical clerkships combined with lectures, demonstrations and case conferences.

While clinical clerkships embody sound educational principles of active student participation, problem solving and development of communication skills, medical schools should also consider other educational strategies that promote student-centred learning, stimulate analytical skills and organization of knowledge, and foster life-long learning skills.

Problem-based learning is one such educational tool that has considerable educational merit. A criticism of learning in small groups is that it is more expensive to deliver than lectures to large groups. However, strategies can be employed to achieve economies in other areas. The use of a computer is becoming an integral part of medical practice. Computer-assisted learning should supplement other educational methods, and medical schools should ensure that students acquire an understanding of medical informatics. Computer-assisted learning modules enable some lectures to be replaced, and digital technology has improved opportunities for practical teaching in physiology, pathology, microbiology, anatomy, medical imaging, histology, and many other disciplines.

Clinical teaching settings

Students need to be exposed to a range of settings in which health care and health promotion are delivered. Major teaching hospitals have a concentration of facilities and teaching expertise, but they are insufficient alone to meet the requirements of medical students. Students need broad exposure to a range of common medical, surgical, paediatric, gynaecological and psychiatric problems, in addition to the complex and severe illnesses found in tertiary teaching hospitals. Students should have the opportunity to work in rural, suburban, community and private hospitals, in general practice, in community health centres, in nursing homes, hospices and other settings that will allow students to gain the necessary clinical experience of ambulatory care.

As well as the common and transitory medical problems encountered in community practice that are not seen in the hospital setting, students should also experience the effect of the family and the community environment on symptom expression and therapeutic responses. Experience of community practice can enhance students' ability to make management decisions based on probabilities without the help of a firm diagnosis or elaborate tests. Students also need experience in such general practice to make informed career decisions.

The objectives and the assessment of all clinical placements, in hospitals and in the community, should be clearly defined and known to both the students and the teachers. The medical school needs to have mechanisms to ensure that all clinical placements enable students to undertake a thorough study of a series of patients under close faculty supervision and are well organized.

When they are attached outside the main teaching hospitals, every effort must be made to ensure equivalent educational experience with appropriate support services, such as library services and accommodation. The medical school should make a special effort to monitor the educational experiences in these more remote clinical attachments.

II. ASSESSMENT OF EDUCATIONAL OUTCOMES

Student learning is driven by assessment and it is therefore essential that methods of student assessment match and reinforce the goals and objectives of the medical course. Assessment methods should be explicit and made known to students at the outset of the course or the course component. When a medical school changes the objectives of its medical course, the assessment process should reflect these changes. Conventional assessment tools are unlikely to be helpful in measuring abilities such as independent learning, communication with patients, working as part of a health team and problem solving skills. Medical schools should therefore seek to develop valid and reliable instruments to assess all their specific educational objectives.

Assessment comprises summative assessment, which serves to determine student progression, and formative assessment, where assessment is for student guidance only. Methods of formative and summative assessment may include written assessments, oral assessments, projects, documentation of the performance of practical procedures (such as log books) and clinical case examinations.

Although the reproducibility (reliability) of clinical examinations is usually less than that of written examinations, clinical examinations, whether on real or simulated patients, should form a significant component of the overall process of assessment of the clinical disciplines. This is partly because of the incentive it provides to students to practise their clinical skills in the wards and partly because no other method has been shown to provide a more valid basis for the assessment of clinical competence. Greater reproducibility can be achieved by using simulated and standardised patients and by testing specific skills in a structured, multiple-station assessment process, sometimes known as the “objective structured clinical examination”. Even when these forms of assessment are used, there may still be a need for an in depth examination of a patient. This allows the medical school to assess the student’s ability to take a complete history,

conduct a full clinical examination, interpret the findings and develop a management plan. Thus assessment should include observation of the student performing a complete clinical evaluation.

III. STUDENT SELECTION AND SUPPORT

Methods of student selection

There is no one best method for selecting medical students. Whatever selection process is chosen, the methods must be clearly defined, consistent, defensible and, except where explicit affirmative action in favour of nominated disadvantaged groups is used, free of discrimination or bias. A description of the selection process should be published and available to potential students. Where a medical school uses student interview, it should ensure that it is structured to be as objective and fair as is possible. Medical schools should follow-up the outcome of the selection process, so that the process can be modified as necessary. Each medical school should have in place an appeal mechanism.

Although students need certain standards of literacy, numeracy, aptitude and scientific knowledge to complete a medical course, the medical school should not demand an extensive and prescriptive list of prerequisite subjects for entry into medicine. The school should provide for supplementary tuition for otherwise well-qualified and appropriate students who lack experience in specific areas.

Student support and facilities

The medical school should provide adequate student support services and physical facilities for student study and recreation. Student support services should include access to counselling services with trained staff, a student health service, student academic advisers, and more informal and readily accessible advice from individual academic staff. These services should provide personal support for emotional and stress-related problems, as well as assistance with such matters as vocational counselling, the development of learning skills, and financial advice and support. Physical facilities should include adequate recreation, locker and food services areas.

There should be a formal mechanism that allows the dean to notify the medical registration authority of any non-academic concerns about the

ability of a medical graduate to meet the requirements of medical registration.

Mechanisms for exit to alternative courses

Medical schools should make provision for students who decide in the middle or later stages of the course that they do not wish to complete the medical course. They should be able to transfer to an alternative course, or complete a limited and prescribed amount of additional study to acquire an alternative degree.

Personal development of students

The curriculum should encourage personal development of breadth and perspective in the student, rather than being focused too narrowly on vocational training. Elective periods, self-directed learning, advanced study units in optional areas and intercalated years of research or work experience locally or abroad can all help to develop this breadth.

IV. ACADEMIC STAFF/FACULTY

The quality of teaching staff is a vital ingredient of medical education. Where there are difficulties in recruiting appropriate staff, the medical school should take appropriate steps to resolve it by providing the best working conditions it can afford and by cooperative arrangements with the health care service.

Joint appointments between basic science and clinical departments or part-time appointments can sometimes relieve problems with recruiting medically qualified staff to basic science departments.

There may also be certain clinical specialty areas where it is difficult to fill academic posts. Joint appointments between the university and hospital can help to resolve this problem, with clear responsibilities for teaching and research made explicit in the appointment. Universities may provide honorary clinical academic titles for hospital or community practitioners involved in teaching and research. It is desirable that there be approximate parity in the conditions of employment of university employed clinical academics with those employed by the health service.

Medical schools should have policies on staff development and review. Staff development should be formative, and provide opportunities for the mentoring of younger staff by the senior academics.

In order to undertake and sustain curriculum evaluation and reform, the medical school requires independent staff with educational expertise that can be directed not only to curriculum design but also to teaching and learning methods, staff development, student assessment and course evaluation. There are advantages in creating a medical education centre or unit within the medical school that can facilitate and support school-wide developments. Where educational expertise already exists in the medical school, it may be cost effective to second the staff to a central medical education unit by relieving them of a proportion of their other academic duties.

There are also advantages in exploring the shared use of the educational expertise and resources of other medical schools both nationally and internationally.

V. EDUCATIONAL RESOURCES

Teaching rooms

The medical school should have access to facilities for lectures, tutorials and practical classes that are adequate to allow the educational objectives of the medical school to be achieved. This includes auditoriums, tutorial rooms, computers and audiovisual equipment, and laboratories and laboratory equipment.

Library resources

The libraries should maintain a collection of reference materials adequate to meet the curriculum and research needs of the students and the faculty staff. Supportive staff should be available to help the students. Access to computer-based reference systems should also be provided.

Facilities in hospitals and other teaching centres

The institutions involved in teaching should provide suitable facilities for students. Hospital accommodation to allow students to stay overnight and witness acute presentation of disease and emergency management is

desirable. There should be facilities for quiet study and for relaxation. If the hospital is geographically separate from the university campus, library and computer-based literature search facilities should be provided. Other teaching centres, such as community centres, also need appropriate resources.

Research

Undergraduate medical education is greatly enhanced by a medical school environment in which research is actively pursued. A research ethos attracts high calibre staff who can engender a milieu of critical appraisal and evaluation of existing knowledge, and who can contribute to the advancement of knowledge. Active researchers are also in the best position to interpret and apply advances in medicine occurring elsewhere for the benefit of the local community. The resources they attract through research grants add to the number of available teachers and to the morale of the teaching staff. Moreover, while teaching, service, and research commitments can be construed as competitive for the time of busy professionals, often the contact engendered by interdisciplinary teaching has beneficial effects for research collaboration and delivery of clinical services.

An active research environment within a medical school provides medical students with opportunities to observe and participate in ongoing programmes either as mandatory or elective components of their curriculum. All medical students can benefit from some direct contact with active researchers. Exposure to an atmosphere of curiosity and enquiry promotes the enduring ability to solve problems, analyse data and update knowledge. A proportion of students should have the opportunity for in-depth research experience to encourage an interest in medical research in their future careers. Such opportunities could be provided through electives or intercalated years in a combined medical and science degree programme.

Alongside teaching, research and clinical practice should be mutually reinforcing; it does not follow that all academic staff can be equally active in all three domains.

VII. MONITORING, EVALUATING AND CHANGING THE CURRICULUM

Each medical school should develop mechanisms for monitoring and evaluating its curriculum. Although student questionnaires have limitations, the information gained from them is valuable in identifying problem areas. To be useful, there has to be a relatively high rate of completion, and the questionnaires must be carefully designed and evaluated. There should be mechanisms for feeding the information back to those responsible for designing and teaching individual courses or course components. There may be good and defensible reasons for a specific component of the course being unpopular with a large proportion of students, but at least such components should be identified and the reasons for the students' perceptions analysed. If appropriate, the component should be altered. Thus student questionnaires should be obtained regularly for each component of the course and evaluated by the appropriate committee.

There should be other pathways for student feedback as well. The student body should be represented on curriculum committees, preferably by students from each phase of the course. The students should also have ready access to the convenors of components of the course and to the administrative staff of the school so that concerns may be conveyed before major problems develop.

A medical school can also evaluate its curriculum by examining pass rates in individual components. Unless student selection is inappropriate, a high failure rate in a component implies that the course content is inappropriate, or that there are problems with the teaching or that the examination is set at inappropriate standards. The curriculum committee should oversee the pass rates in individual components of the course, and investigate situations where these are inappropriately low.

Theoretically, the best method of evaluating the appropriateness and effectiveness of the medical course is to examine the quality of the graduates. Medical schools should have follow-up mechanisms for obtaining feedback from the hospitals where their students work as interns and residents after graduation and from the graduates themselves. Medical schools should monitor and, where appropriate, respond to community perceptions about deficiencies in their graduates. Medical schools should also identify forms of medical practice that their graduates appear reluctant

to pursue, as this may reflect insufficient exposure to these areas during basic medical education and the early stages of postgraduate training.

VIII. GOVERNANCE AND ADMINISTRATION

Administration and structure within the university

There are many ways of administering medical schools. Whilst the specific structure is the responsibility of the parent university, the medical school should be able to demonstrate sufficient control over its curriculum to allow its objectives to be achieved. Methods of management also differ between universities. Schools of medicine should have sufficient autonomy to be able to direct resources in an appropriate manner to achieve the overall objectives of the school. There should be a clear and direct line of responsibility for the curriculum and its resourcing. The dean, as the chief academic manager of the medical school, should be appropriately qualified by education and experience and have the managerial authority to provide leadership of the medical school.

The medical school must be able to demonstrate that its resources are sufficient to allow the school's objectives to be achieved and to maintain high standards of medical education for the proposed period of accreditation.

Grouping medical schools with other health care professions (such as schools of nursing, physiotherapy, dentistry and pharmacy) in larger faculties of health sciences can result in economies of scale and interdisciplinary cooperation. Nevertheless, the specific needs of medical education differ in some ways from those of other health sciences. Although elements of basic medical education may appropriately be undertaken together with other branches of health care, the differing depth of knowledge required in many areas will usually necessitate specific courses designed for the medical curriculum.

Where important basic medical science departments (such as biochemistry, physiology, anatomy, microbiology, pharmacology and behavioural science) are administered through other faculties, the medical school should be able to demonstrate that it exercises sufficient curriculum control to achieve the specific educational goals of medical education.

Relationship of the medical school with health departments

Medical education depends on strong and supportive state-financed health care institutions. It is essential that the medical school has a constructive relationship with the government health department. Health care institutions benefit from being centres for undergraduate medical education and students benefit from access to patients and teachers within institutions administered through the government. Medical schools need a supportive health authority and appropriate channels of communication to allow problems to be addressed and new initiatives to be developed.

Relationship with affiliated institutions and the community

There should be effective communication and liaison between the university, the school of medicine and the health care and research institutions affiliated with the university. Academic staff of the medical school working within teaching hospitals or other health care institutions must be integrated into the service and administrative activities of the institution so that they have appropriate access to patients for teaching and clinical research and are able to maintain their clinical skills. Staff employed by the affiliated institutions must recognize their teaching obligations. Whilst formalised arrangements can protect these relationships, they are best developed by an ethos of reciprocity.

As it is important that institutions associated or affiliated with university medical schools share the educational and research objectives of the medical school, the university should be represented on the relevant staff appointment committees, and preferably the board of management of its affiliated institutions. In turn, the institutions should be represented on the committees of the medical school, especially those appointing academic staff who will have clinical responsibilities.

A formal mechanism for high-level consultation between the university and affiliated institutions should ensure appropriate communication and liaison on matters of mutual interest, particularly those relating to teaching, research and clinical service. Consultation should include regular communication with the health department and formal agreements that meet the interests of both parties.

So that it can respond appropriately to the health care needs of the community, the medical school should have effective methods for communicating with and receiving the opinions of medical practitioners, health workers and recipients of health care in the community.

IX. CONTINUOUS RENEWAL OF MEDICAL SCHOOLS

Communities increasingly demand more accountability from their public institutions including medical schools. Communities need accessible doctors who are competent to treat common conditions and to serve the needs of social groups such as the elderly, the mentally ill, and the socially and geographically disadvantaged. Medical schools need to focus more of their education, research and service on the requirements of health care delivery in their region. The World Health Organization has derived measures of social responsiveness of medical schools that take into account the relevance, quality, cost effectiveness and equity focus of these activities.

In addition to being responsive to these social needs, medical schools need to continuously adapt to changes in scientific, educational and health practices worldwide. To meet these challenges medical schools need robust and dynamic procedures for reviewing, modifying and renewing its fundamental structures and activities.

PART B

FRAMEWORK FOR ESTABLISHING A QUALITY ASSURANCE SYSTEM

Definition of quality assurance

An acceptable definition is obtained from the Quality Assurance Agency in UK Higher Education, which defines quality assurance as:

the totality of systems, resources and information devoted to maintaining and improving the quality and standards of teaching, scholarship and research, and of students learning experience.

Institutions have to maintain and demonstrate quality because they are subject to increasingly fierce competition for students and resources. The markets in which they compete are themselves becoming increasingly competitive and well informed.

Quality assurance system

There are two parts to a quality assurance system, an internal and an external quality assurance process. The most important part of the system is the medical school's own internal quality assurance processes. The internal quality process is important because ultimately the quality of medical education depends on the interaction between the teacher and the student; and the collective integrity and professionalism of the academic community. The medical school develops its own goals and objectives that are relevant to local and national health care needs as well as the methods to achieve the goals. It then conducts periodic reviews to assess the extent to which goals are met within the framework of the guidelines, and whether the methods of teaching and learning, the facilities, and the financial and human resources for delivery of the curriculum support the goals. The school may invite external reviewers to assist in the review.

The other part of a quality assurance system is the external quality assurance practised in most countries through mechanisms such as accreditation, validation and audit. External scrutiny is needed to confirm that medical school's responsibilities are being properly discharged. This is because in many countries, large sums of public money are allocated to medical education and there must be reasonable evidence that competent and safe medical graduates are being produced to meet the needs of the nation. There is also rapid expansion of the numbers of students and medical schools and methodological approaches have to be adopted to provide guarantees of quality.

For the purpose of external quality assurance most countries establish an independent agency that carries out its functions in a continuous, transparent and open way. The external agency is usually called the accrediting authority or quality assurance agency. The external agency usually includes in its quality process representatives of the universities with medical schools, the medical profession, the health care authorities, the registration authorities and the community. In most countries the processes of the external agency incorporate the medical school's own internal quality assurance processes.

Benefits of quality assurance by accreditation

Benefits flow from the feedback provided by external reviewers and report. These include the opinions of experts in particular fields of medical education, the shared experiences of colleagues who have faced similar challenges, the cross fertilisation of ideas from institutions that have adopted different methods and the local and national leverage that authoritative reports can provide in rectifying deficiencies.

Regionally, a voluntary system of quality assurance of medical schools based on the quality guidelines for medical education can provide many benefits beyond formal mutual recognition of individual qualifications for the purpose of registration as a medical practitioner. In the age of telemedicine and cross border health care, ensuring satisfactory healthcare from a distance is of prime importance when jurisdictional issues of laws and regulatory enforcement are still in conflict. Whilst the final responsibility for granting or withholding authorisation for the award of a medical degree lies with national governments, regional quality assurance can remove many barriers to formal mutual recognition of medical qualifications between

countries. These barriers include differences in health care needs and systems, as well as workforce and immigration considerations.

Apart from the above benefits to the institution, quality assurance mechanism also serves many useful purposes for its stakeholders. These include prospective students, employers of the graduates of the medical schools and, ultimately, the community that relies on the medical school to produce safe, effective and caring doctors.

Best practice in quality assurance systems

While universities have a long tradition of academic autonomy that has ensured that fundamental educational principles are not compromised by other interest groups, in professional programmes such as medicine, the community, the profession and government all have legitimate interests in the quality and orientation of the graduates of the programme.

A credible quality assurance process should therefore have the following attributes:

- It should include all major stakeholders.
- It should be open to external public scrutiny.
- It should be conducted in a consultative and consensus-building fashion.
- It should be collegial but not collusive.
- It should balance academic priorities with those of regulating authorities.
- It should identify both strengths and weaknesses.
- It should encourage innovation and re-orientation toward changing health needs.
- It should have the means and authority to implement its conclusions.
- It should monitor progress on an ongoing cycle of review.
- It should focus on the achievement of self-specified objectives.
- It should encourage a variety of methods of teaching and learning.
- It should ensure the choice of credible student assessment methods appropriate for the teaching and learning methods chosen.
- It should ensure there are adequate resources to deliver the curriculum.
- It should be concerned with good outcomes and not detailed specifications of curriculum content.

Procedures in quality assurance of medical education

The following processes are recommended for an effective quality assurance system:

1. Self-study by the medical school

This process enables the medical school reflect and identify its strengths and weaknesses, and to decide on areas for change. In self-study, the medical school brings together representatives of the administration, the academic faculty, students, those associated with its teaching facilities and other constituents to collect and review data about the medical school and the educational programme, identify the strengths and problem areas and devise strategies to ensure that the strengths are maintained and problems are addressed. The educational guidelines are used to evaluate the school's sufficiency and organization of the resources as well as the performance and effectiveness of the programme. The school usually sets up an internal task force chaired by the dean. Chairpersons are appointed for each section of the guidelines and a person who is familiar with the medical education process is appointed as coordinator of the self study process.

2. External quality assurance

In an external quality assurance, the medical school submits its self-study report and database of information about the school and its programme, to an external agency. The external agency constitutes a panel of four or five reviewers with a balance of expertise in the various disciplines, health services and community interests. A chairperson and secretary of the panel are usually appointed. Each member is responsible for reviewing specific sections of the medical school report and to identify issues they would like to be clarified.

A reviewer's visit is usually arranged by the school. The visit should be sufficiently long enough (about three days) to enable the reviewer to understand the educational programme, to visit the physical facilities and to interact with students, faculty, hospital staff and administrators. The panel assesses whether the school is operating within the educational guidelines and is meeting its own objectives. Apart from observing first hand the activities and facilities in the school, the other purpose of the visit is to clarify issues identified from the school's self-study report and database as

well as to validate some of the information. The visit is a peer review process and the review panel is professional, collegial and positive, not punitive. The aim is to be helpful to the school. The reviewers prepare an interim report which is given to the school for correction of errors of fact. A final report is then prepared.

3. Accreditation

In countries that have an accreditation process the report is submitted to the accrediting authority. The accrediting authority makes a final decision on accreditation based on the report. The period of accreditation, if granted, usually varies from five to ten years. Sometimes a medical school is given accreditation subject to certain conditions being addressed within specified periods. The accrediting authority may revisit a medical school in this category during the period of accreditation, depending on the periodic reports. If the medical school does not achieve the required progress, the accrediting authority may revoke or reduce the accreditation to a shorter period of time. It may also impose additional conditions.

4. Quality assurance in approving new medical courses

The development of a new medical school is a complex undertaking. Before a new school is set up, decisions need to be made about the workforce implications of the new school, how it will be resourced, and the educational needs it will serve. Another decision that has to be made is whether the proposed school is likely to meet the standards in the educational guidelines, whether it has demonstrated the commitment and capacity to manage the change process and how the new medical school will have an impact on the educational and clinical resources available to existing schools. A panel of reviewers is usually constituted to study the broad outline of the new course which is submitted by the medical school well before the new course is to be introduced (at least 18 months). A site visit may be arranged when the school is ready.

ACKNOWLEDGEMENT

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ANNEX 1

THE WFME INTERNATIONAL STANDARDS

DEFINITIONS

The WFME recommends the following set of international standards in basic medical education. The standards are structured according to nine **areas** with a total of thirty-six **sub-areas**.¹

AREAS are defined as broad components in the structure and process of medical education and cover:

1. Mission and Objectives
2. Educational Programme
3. Assessment of Students
4. Students
5. Academic Staff/Faculty
6. Educational Resources
7. Programme Evaluation
8. Governance and Administration
9. Continuous Renewal

SUB-AREAS are defined as specific aspects of an area, corresponding to performance indicators.

STANDARDS are specified for each sub-area using two levels of attainment:

¹ WFME is aware of the complex interactions and links between the various areas and sub-areas.

- **Basic standard.** This means that the standard must be met by every medical school and fulfilment demonstrated during evaluation of the school.

Basic standards are expressed by a “must”.

- **Standard for quality development.** This means that the standard is in accordance with international consensus about best practice for medical schools and basic medical education. Medical schools should be able to demonstrate fulfilment of some or all of these or that initiatives to do so have or will be taken. Fulfilment of these standards will vary with the stage of development of the medical schools, their resources and educational policy. Even the most advanced schools might not comply with all standards.

Standards for quality development are expressed by a “should”.

ANNOTATIONS are used to clarify, amplify or exemplify expressions in the standards.

Annex 1

1. MISSION AND OBJECTIVES

1.1 STATEMENTS OF MISSION AND OBJECTIVES

Basic standard:

The medical school **must** define its mission and objectives and make them known to its constituency. The mission statements and objectives **must** describe the educational process resulting in a medical doctor competent at a basic level, with an appropriate foundation for further training in any branch of medicine and in keeping with the roles of doctors in the health care system.

Quality development:

The mission and objectives **should** encompass social responsibility, research attainment, community involvement, and address readiness for postgraduate medical training.

Annotations:

- *Statements of mission and objectives* would include general and specific issues relevant to institutional, national and regional policy.
- *Any branch of medicine* refers to all types of medical practice and medical research.
- *Postgraduate medical training* would include pre-registration training, vocational training, specialist training and continuing medical education/professional development.

1.2 PARTICIPATION IN FORMULATION OF MISSION AND OBJECTIVES

Basic standard:

The mission statement and objectives of a medical school **must** be defined by its principal stakeholders.

Quality development:

Formulation of mission statements and objectives **should** be based on input from a wider range of stakeholders.

Annotations:

- *Principal stakeholders* would include the dean, members of the faculty board/council, the university, governmental authorities and the profession.
- *A wider range of stakeholders* would include representatives of academic staff, students, the community, education and health care authorities, professional organizations and postgraduate educators.

1.3 ACADEMIC AUTONOMY

Basic standard:

There **must** be a policy for which the administration and faculty/academic staff of the medical school are responsible, within which they have freedom to design the curriculum and allocate the resources necessary for its implementation.

Quality development:

The contributions of all academic staff **should** address the actual curriculum and the educational resources **should** be distributed in relation to the educational needs.

1.4 EDUCATIONAL OUTCOME

Basic standard:

The medical school **must** define the competencies that students should exhibit on graduation in relation to their subsequent training and future roles in the health system.

Quality development:

The linkage of competencies to be acquired by graduation with that to be acquired in postgraduate training **should** be specified. Measures of, and information about, competencies of the graduates **should** be used as feedback to programme development.

Annotations:

- *Educational outcome* would be defined in terms of the competencies the students must acquire before graduation.
- *Competencies* within medicine and medical practice would include knowledge and understanding of the basic, clinical, behavioural and social sciences, including public health and population medicine, and medical ethics relevant to the practice of medicine; attitudes and clinical skills (with respect to establishment of diagnoses, practical procedures, communication skills, treatment and prevention of disease, health promotion, rehabilitation, clinical reasoning and problem solving); and the ability to undertake lifelong learning and professional development.

2. EDUCATIONAL PROGRAMME

2.1 CURRICULUM MODELS AND INSTRUCTIONAL METHODS

Basic standard:

The medical school **must** define the curriculum models and instructional methods employed.

Quality development:

The curriculum and instructional methods **should** ensure the students have responsibility for their learning process and should prepare them for lifelong, self-directed learning.

Annotations:

- *Curriculum models* would include discipline, system, problem and community based models etc.
- *Instructional methods* encompass teaching and learning methods
- The *curriculum and instructional methods* should be based on sound learning principles and should foster the ability to participate in the scientific development of medicine as professionals and future colleagues.

2.2 SCIENTIFIC METHOD

Basic standard:

The medical school **must** teach the principles of scientific method and evidence-based medicine, including analytical and critical thinking, throughout the curriculum.

Quality development:

The curriculum **should** include elements for training students in scientific thinking and research methods.

Annex 1

Annotation:

- *Training in scientific thinking and research methods* may include the use of elective research projects to be conducted by medical students.

2.3 BASIC BIOMEDICAL SCIENCES

Basic standard:

The medical school **must** identify and incorporate in the curriculum the contributions of the basic biomedical sciences to create understanding of the scientific knowledge, concepts and methods fundamental to acquiring and applying clinical science.

Quality development:

The contributions in the curriculum of the biomedical sciences **should** be adapted to the scientific, technological and clinical developments as well as to the health needs of society.

Annotation:

- *The basic biomedical sciences* would, depending on local needs, interests and traditions, typically include anatomy, biochemistry, physiology, biophysics, molecular biology, cell biology, genetics, microbiology, immunology, pharmacology, pathology etc.

2.4 BEHAVIOURAL AND SOCIAL SCIENCES AND MEDICAL ETHICS

Basic standard:

The medical school **must** identify and incorporate in the curriculum the contributions of the behavioural sciences, social sciences, medical ethics and medical jurisprudence that enable effective communication, clinical decision making and ethical practices.

Quality development:

The contributions of the behavioural and social sciences and medical ethics **should** be adapted to scientific developments in medicine, to changing demographic and cultural contexts and to health needs of society.

Annotations:

- *Behavioural and social sciences* would, depending on local needs, interests and traditions, typically include medical psychology, medical sociology, biostatistics, epidemiology, hygiene and public health and community medicine etc.
- *The behavioural and social sciences and medical ethics* should provide the knowledge, concepts, methods, skills and attitudes necessary for understanding socio-economic, demographic and cultural determinants of causes, distribution and consequences of health problems.

2.5 CLINICAL SCIENCES AND SKILLS

Basic standard:

The medical school **must** ensure that students have patient contact and acquire sufficient clinical knowledge and skills to assume appropriate clinical responsibility upon graduation.

Quality development:

Every student **should** have early patient contact leading to participation in patient care. The different components of clinical skills training **should** be structured according to the stage of the study programme.

Annex 1

Annotations:

- *The clinical sciences* would, depending on local needs, interests and traditions, typically include internal medicine (with subspecialties), surgery (with subspecialties), anaesthesiology, dermatology & venereology, diagnostic radiology, emergency medicine, general practice/family medicine, geriatrics, gynaecology & obstetrics, laboratory medicine, neurology, neurosurgery, oncology & radiotherapy, ophthalmology, orthopaedic surgery, otorhinolaryngology, paediatric s, pathological anatomy, physiotherapy & rehabilitation medicine and psychiatry, etc.
- *Clinical skills* include history taking, physical examination, procedures and investigations, emergency practices and communication skills.
- *Appropriate clinical responsibility* would include health promotion, disease prevention and patient care.

- *Participation in patient care* would include relevant community experience and teamwork with other health professions.

2.6 CURRICULUM STRUCTURE, COMPOSITION AND DURATION

Basic standard:

The medical school **must** describe the content, extent and sequencing of courses and other curriculum elements, including the balance between the core and optional content, and the role of health promotion, preventive medicine and rehabilitation in the curriculum, as well as the interface with unorthodox, traditional or alternative practices.

Quality development:

Basic sciences and clinical sciences **should** be integrated in the curriculum.

Annotations:

- *Core and optional content* refers to a curriculum model with a combination of compulsory elements and electives or special options. The ratio between the two components can vary.
- *Integration of disciplines* would include both horizontal (concurrent) and vertical (sequential) integration of curricular components.

2.7 PROGRAMME MANAGEMENT

Basic standard:

A curriculum committee **must** be given the responsibility and authority for planning and implementing the curriculum to secure the objectives of the medical school.

Quality development:

The curriculum committee **should** be provided with resources for planning and implementing methods of teaching and learning, student assessment, course evaluation, and for innovations in the curriculum. There **should** be representation on the curriculum committee of staff, students and other stakeholders.

Annex 1

Annotations:

- *The authority* of the curriculum committee would include supremacy over specific departmental and subject interests, and the control of the curriculum within existing rules and regulations as defined by the governance structure of the institution and governmental authorities.
- *Other stakeholders* would include other participants in the educational process, representatives of other health professions or other faculties in the university.

2.8 LINKAGE WITH MEDICAL PRACTICE AND THE HEALTH CARE SYSTEM

Basic standard:

Operational linkage **must** be assured between the educational programme and the subsequent stage of training or practice that the student will enter after graduation.

Quality development:

The curriculum committee **should** seek input from the environment in which graduates will be expected to work and **should** undertake programme modification in response to feedback from the community and society.

Annotations:

- *Subsequent stages of training* would include pre-registration training, and specialist training.
- *Operational linkage* would imply clear definition and description of the elements and their interrelations in the various stages of training and practice, and should pay attention to the local, national, regional and global context.

3 ASSESSMENT OF STUDENTS

3.1 ASSESSMENT METHODS

Basic standard:

The medical school **must** define and state the methods used for assessment of its students, including the criteria for passing examinations.

Quality development:

The reliability and validity of assessment methods **should** be documented and evaluated and new assessment methods developed.

Annotations:

- The *definition of methods used for assessment* may include consideration of the balance between formative and summative assessment, the number of examinations and other tests, the balance between written and oral examinations, the use of normative and criterion referenced judgements, and the use of special types of examinations, e.g. objective structured clinical examinations (OSCE).
- *Evaluation of assessment methods* may include an evaluation of how they promote learning.
- *New assessment methods* may include the use of external examiners.

Annex 1

3.2 RELATION BETWEEN ASSESSMENT AND LEARNING

Assessment principles, methods and practices **must** be clearly compatible with educational objectives and **must** promote learning.

Quality development:

The number and nature of examinations **should** be adjusted by integrating assessments of various curricular elements to encourage integrated learning. The need to learn excessive amounts of information **should** be reduced and curriculum overload prevented.

Annotation:

- *Adjustment of number and nature of examinations* would include consideration of avoiding negative effects on learning.

4 STUDENTS

4.1 ADMISSION POLICY AND SELECTION

Basic standard

The medical school **must** have an admission policy including a clear statement on the process of selection of students.

Quality development:

The admission policy **should** be reviewed periodically, based on relevant societal and professional data, to comply with the social responsibilities of the institution and the health needs of community and society. The relationship between selection, the educational programme and desired qualities of graduates **should** be stated.

Annotations:

- *The statement on process of selection of students* would include both rationale and methods of selection and may include description of a mechanism for appeal.
- *The review of admission policies* and the recruitment of students would include improvement of selection criteria, to reflect the capability of students to become doctors and to cover the variations in required competencies related to diversity of medicine.

4.2 STUDENT INTAKE

Basic standard:

The size of student intake **must** be defined and related to the capacity of the medical school at all stages of education and training.

Quality development:

The size and nature of student intake **should** be reviewed in consultation with relevant stakeholders and regulated periodically to meet the needs of community and society.

Annotations:

- *The needs of community and society* may include consideration of balanced intake according to gender, ethnicity and other social requirements, including the potential need of a special admission policy for underprivileged students.
- *Stakeholders* would include those responsible for human resources in the national health sector.

Annex 1

4.3 STUDENT SUPPORT AND COUNSELLING

Basic standard:

A programme of student support, including counselling, **must** be offered by the medical school.

Quality development:

Counselling **should** be provided based on monitoring of student progress and should address social and personal needs of students.

Annotation:

- *Social and personal needs* would include academic support, career guidance, health problems and financial matters.

4.4 STUDENT REPRESENTATION

Basic standard:

The medical school **must** have a policy on student representation and appropriate participation in the design, management and evaluation of the curriculum, and in other matters relevant to students.

Quality development:

Student activities and student organizations **should** be encouraged and facilitated.

Annotation:

- *Student activities and organizations* would include student self-government and representation on educational committees and other relevant bodies as well as social activities.

5 ACADEMIC STAFF/FACULTY

5.1 RECRUITMENT POLICY

Basic standard:

The medical school **must** have a staff recruitment policy which outlines the type, responsibilities and balance of academic staff required to deliver the curriculum adequately, including the balance between medical and non-medical academic staff, and between full-time and part-time staff, the responsibilities of which **must** be explicitly specified and monitored.

Quality development:

A policy **should** be developed for staff selection criteria, including scientific, educational and clinical merit, relationship to the mission of the institution, economic considerations and issues of local significance.

Annotations:

- *Balance of academic staff/faculty* would include staff with joint responsibilities in the basic and clinical sciences, in the university and health care facilities, and teachers with dual appointments.
- *Issues of local significance* may include gender, ethnicity, religion, language and others of relevance to the school.

Annex 1

- *Merit* can be measured by formal qualifications, professional experience, research output, teaching, peer recognition etc.

5.2 STAFF POLICY AND DEVELOPMENT

Basic standard:

The medical school **must** have a staff policy which addresses a balance of capacity for teaching, research and service functions, and ensures recognition of meritorious academic activities, with appropriate emphasis on both research attainment and teaching qualifications.

Quality development:

The staff policy **should** include teacher training and development and teacher appraisal. Teacher-student ratios relevant to the various curricular

components and teacher representation on relevant bodies **should** be taken into account.

Annotations:

- *Service functions* would include clinical duties in the health care system, administrative and leadership functions etc.
- *Recognition of meritorious academic activities* would be by rewards, promotion and/or remuneration.

6 EDUCATIONAL RESOURCES

6.1 PHYSICAL FACILITIES

Basic standard:

The medical school **must** have sufficient physical facilities for the staff and the student population to ensure that the curriculum can be delivered adequately.

Quality development:

The learning environment for the students **should** be improved by regular updating and extension of the facilities to match developments in educational practices.

Annotation:

- *Physical facilities* would include lecture halls, tutorial rooms, laboratories, libraries, information technology facilities, recreational facilities etc.

6.2 CLINICAL TRAINING RESOURCES

Basic standard:

The medical school **must** ensure adequate clinical experience and the necessary resources, including sufficient patients and clinical training facilities.

Quality development:

The facilities for clinical training **should** be developed to ensure clinical training which is adequate to the needs of the population in the geographically relevant area.

Annex 1

Annotations:

- *Clinical training facilities* would include hospitals (adequate mix of primary, secondary and tertiary), ambulatory services, clinics, primary health care settings, health care centres and other community health care settings as well as skills laboratories.
- *Facilities for clinical training* should be evaluated regularly for their appropriateness and quality regarding medical training programmes.

6.3 INFORMATION TECHNOLOGY

Basic standard:

The medical school **must** have a policy which addresses the evaluation and effective use of information and communication technology in the educational programme.

Quality development:

Teachers and students **should** be enabled to use information and communication technology for self-learning, accessing information, managing patients and working in health care systems.

Annotations:

- A policy regarding the use of computers, internal and external networks and other means of *information and communication technology* would include coordination with the library services of the institution.
- The use of *information and communication technology* may be part of education for evidence based medicine and in preparing the students for continuing medical education and professional development.

6.4 RESEARCH

Basic standard:

The medical school **must** have a policy that fosters the relationship between research and education and must describe the research facilities and areas of research priorities at the institution.

Quality development:

The interaction between research and education activities **should** be reflected in the curriculum and influence current teaching and **should** encourage and prepare students to engagement in medical research and development.

6.5 EDUCATIONAL EXPERTISE

Basic standard:

The medical school **must** have a policy on the use of educational expertise in planning medical education and in development of teaching methods.

Quality development:

There **should** be access to educational experts and evidence demonstrated of the use of such expertise for staff development and for research in the discipline of medical education.

Annex 1

Annotations:

- *Educational expertise* would deal with problems, processes and practice of medical education and would include medical doctors with research experience in medical education, educational psychologists and sociologists etc. It can be provided by an education unit at the institution or be acquired from another national or international institution.
- *Medical education research* investigates the effectiveness of teaching and learning methods, and the wider institutional context.

6.6 EDUCATIONAL EXCHANGES

Basic standard:

The medical school **must** have a policy for collaboration with other educational institutions and for the transfer of educational credits.

Quality development:

Regional and international exchange of academic staff and students **should** be facilitated by the provision of appropriate resources.

Annotations:

- Transfer of *educational credits* can be facilitated through active programme co-ordination between medical schools.
- *Other educational institutions* would include other medical schools or public health schools, other faculties, and institutions for education of other health and health related professions.

7 PROGRAMME EVALUATION

7.1 MECHANISMS FOR PROGRAMME EVALUATION

Basic standard:

The medical school **must** establish a mechanism for programme evaluation that monitors the curriculum and student progress, and ensures that concerns are identified and addressed.

Quality development:

Programme evaluation **should** address the context of the educational process, the specific components of the curriculum and the general outcome.

Annotations:

- *Mechanisms for programme evaluation* would imply the use of valid and reliable methods and requires that basic data about the medical curriculum are available. Involvement of experts in medical education would further broaden the base of evidence for quality of medical education at the institution.
- *Identified concerns* would include problems presented to the curriculum committee.
- *The context of the educational process* would include the organization and resources as well as the learning environment and culture of the medical school.
- *Specific components for programme evaluation* would include course description and student performance,

- *General outcomes* would be measured e.g. by career choice and postgraduate performance.

Annex 1

7.2 TEACHER AND STUDENT FEEDBACK

Basic standard:

Both teacher and student feedback **must** be systematically sought, analysed and responded to.

Quality development:

Teachers and students **should** be actively involved in planning programme evaluation and in using its results for programme development.

7.3 STUDENT PERFORMANCE

Basic standard:

Student performance **must** be analysed in relation to the curriculum and the mission and objectives of the medical school.

Quality development:

Student performance **should** be analysed in relation to student background, conditions and entrance qualifications, and **should** be used to provide feedback to the committees responsible for student selection, curriculum planning and student counselling.

Annotation:

- Measures of *student performance* would include information about average study duration, scores, pass and failure rates at examinations, success and dropout rates, student reports about conditions in their courses, as well as time spent by the students on areas of special interest.

7.4 INVOLVEMENT OF STAKEHOLDERS

Basic standard:

Programme evaluation **must** involve the governance and administration of the medical school, the academic staff and the students.

Quality development:

A wider range of stakeholders **should** have access to results of course and programme evaluation, and their views on the relevance and development of the curriculum should be considered.

Annotation:

- *A wider range of stakeholders* would include educational and health care authorities, representatives of the community, professional organizations and postgraduate educators.

8 GOVERNANCE AND ADMINISTRATION

8.1 GOVERNANCE

Basic standard:

Governance structures and functions of the medical school **must** be defined, including their relationships within the University.

Annex 1

Quality development:

The governance structures **should** set out the committee structure, and reflect representation from academic staff, students and other stakeholders.

Annotations:

- *The committee structure* would include a curriculum committee with the authority to design and manage the medical curriculum.
- *Relationships within the University* and its governance structures should be specified, if the medical school is part of or affiliated to a University.
- *Other stakeholders* would include the health care sector and the public.

8.2 ACADEMIC LEADERSHIP

Basic standard:

The responsibilities of the academic leadership of the medical school for the medical educational programme **must** be clearly stated.

Quality development:

The academic leadership **should** be evaluated at defined intervals with respect to achievement of the mission and objectives of the school.

8.3 EDUCATIONAL BUDGET AND RESOURCE ALLOCATION

Basic standard:

The medical school **must** have a clear line of responsibility and authority for the curriculum and its resourcing, including a dedicated educational budget.

Quality development:

There **should** be sufficient autonomy to direct resources, including remuneration of teaching staff, in an appropriate manner in order to achieve the overall objectives of the school.

Annotation:

- *The educational budget* would depend on the budgetary practice in each institution and country.

8.4 ADMINISTRATIVE STAFF AND MANAGEMENT

Basic standard:

The administrative staff of the medical school **must** be appropriate to support the implementation of the school's educational programme and other activities and to ensure good management and deployment of its resources.

Quality development:

The management **should** include a programme of quality assurance and the management should submit itself to regular review.

8.5 INTERACTION WITH HEALTH SECTOR

Basic standard:

The medical school **must** have a constructive interaction with the health and health-related sectors of society and government.

Annex 1

Quality development:

The collaboration with partners of the health sector **should** be formalised.

Annotations:

- *The health sector* would include the health care delivery system, whether public or private, medical research institutions etc.
- *The health-related sector* would depending on issues and local organization include institutions and regulating bodies with implications for health promotion and disease prevention (e.g. with environmental, nutritional and social responsibilities).

9 CONTINUOUS RENEWAL

Basic standard:

The medical school **must** as a dynamic institution initiate procedures for regular reviewing and updating of its structure and functions and **must** rectify documented deficiencies.

Quality development:

The process of renewal **should** be based on prospective studies and analyses and **should** lead to the revisions of the policies and practices of the medical school in accordance with past experience, present activities and future perspectives. In so doing it **should** address the following issues:

- *Adaptation of the mission and objectives of the medical school to the scientific, socio-economic and cultural development of the society.*
- *Modification of the required competencies of the graduating students in accordance with documented needs of the environment graduates will enter. The modification shall include the clinical skills and public health training and involvement in patient care appropriate to responsibilities encountered upon graduation.*
- *Adaptation of the curricular model and instructional methods to ensure that these are appropriate and relevant.*
- *Adjustment of curricular elements and their relationships in keeping with developments in the biomedical sciences, the behavioural sciences, the social sciences, the clinical sciences, and changes in the demographic profile and health/disease pattern of the population, and socio-economic and cultural conditions. The adjustment shall assure that new relevant knowledge, concepts and methods are included and outdated ones discarded.*
- *Development of assessment principles, and the methods and the number of examinations according to changes in educational objectives and learning goals and methods.*
- *Adaptation of student recruitment policy and selection methods to changing expectations and circumstances, human resource needs, changes in the premedical education system and the requirements of the educational programme.*
- *Adaptation of recruitment and staffing policy regarding the academic staff according to changing needs of the medical school.*
- *Updating of educational resources according to changing needs of the medical school, i.e. the student intake, size and profile of academic staff, the educational programme and contemporary educational principles.*

Annex 1

- *Refinement of programme monitoring and evaluation.*
- *Development of the organizational structure and management principles in order to cope with changing circumstances and needs of the medical school and, over time, accommodating to the interests of the different groups of stakeholders*

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ANNEX 2

GUIDELINE FOR COLLECTING DATA

This questionnaire is provided as a guide to assist medical schools to review their medical course.

AREA 1. MISSION AND OBJECTIVES

Criterion A: Statements of Mission and Objectives

Basic Provide a copy of the published general mission and objectives of the medical school. The detailed goals and objectives of the medical course should be described below under Criterion D.

Quality Provide references to other published mission and objective statements that refer to these areas.

Criterion B: Participation in Formulation of Mission and Objectives

Basic Who are the school's major stakeholders? How has the school involved its stakeholders in formulating the mission and objective statements?

Quality What groups other than the above major stakeholders does the school consult? How does the school consult and involve these groups in ongoing refinement to the mission and objectives statements?

Criterion C: Policy on Academic Independence

Basic Provide copies of institutional and government policies that confer responsibility for the curriculum and allocation of resources.

Quality What policies and practices does the medical school have that ensure teaching by individual staff and by departments appropriately

addresses the design of the curriculum. How is this evaluated and, if necessary redressed? What is the medical schools process for reviewing resource allocation as the curriculum evolves?

Criterion D: Definition of Educational Outcomes

Basic What are the broad competencies (knowledge, skills and attitudes) required of students at graduation? How do these relate to the existing and emergent needs of the society in which the students will practise?

Quality How does the medical school measure the competencies of its graduates? How does the school feed back this information into course development?

Annex 2

AREA 2. EDUCATIONAL PROGRAMME AND PRINCIPLES

Criterion A: Curriculum Models and Instructional Methods

Basic What are the principles guiding the design of the curriculum and the types of teaching and learning methods used to deliver it?

Quality How will these methods will encourage students to take active responsibility for their learning and the evidence that these methods prepare students for life long learning.

Criterion B: Scientific Foundation

Basic Which components of the curriculum inculcate the principles of scientific and evidence based medicine and enable analytical and critical thinking?

Quality What specific opportunities are there for students to acquire scientific training?

Criterion C: Role of Basic Sciences

Basic What basic biomedical sciences contribute to the medical course? How is their contribution integrated with clinical sciences at the different stages of the curriculum?

Quality What is the process by which the medical school adapts the curricular contributions of the various basic sciences to developments in the science, practice and delivery of health care?

Criterion D: Role of Behavioural and Social Sciences and Medical Ethics

Basic How does the curriculum provide for contributions of behavioural sciences, the social sciences and medical ethics?

Quality What is the process by which the medical school adapts the curricular contributions of the behavioural sciences, the social sciences and medical ethics to developments in the science, practice and delivery of health care?

Criterion E: Role of Clinical Sciences and Skills

Basic What are the specific objectives (knowledge, skills and attitudes) specified to ensure clinical competence on graduation? What are the specific clinical disciplines and forms of practice (inpatient/ambulatory health care, hospital/community, rural/urban, specialist/general) in which this experience is to be acquired?

Quality What specific opportunities are there for early and ongoing direct participation in patient care and for working with other health professionals?

Annex 2

Criterion F: Curriculum Structure, Composition and Duration

Basic For the core curriculum, provide a summary in terms of topics/subjects taught, length (hours/weeks), by Semester/Year. Provide a brief synopsis of individual topics. Indicate where health promotion, preventive medicine and unorthodox medical practice are dealt with.

For optional subjects provide a similar summary.

Quality What policies guide integration of the curriculum? What mechanisms exist to ensure that it occurs?

Criterion G: Programme management

Basic What are the terms of reference and composition of the curriculum committee? Specifically, what authority does the committee to resolve conflicts of educational principle and to determine the contributions of specific disciplines to the medical course? How are its decisions implemented?

Quality What is the medical school's mechanism for introducing teaching and learning, evaluation and curriculum innovations? Does the medical school have a medical education unit for these purposes? If so, what is its scope?

Criterion H: Linkage with Medical Practice

Basic What links exist between the basic medical program and the next stage of training for practice? What specific transition programs occur in the final year of the course? Are there reciprocal representations between the committees responsible for the basic medical phase and the subsequent phase?

Quality How does the curriculum committee obtain the participation of health services in effecting the transition between the basic medical program and the next stage of training? How does it evaluate the effectiveness of its program?

AREA 3. ASSESSMENT OF EDUCATIONAL OUTCOMES

Criterion A: Assessment Methodology

Basic What committee is responsible for assessment policy? What are its terms of reference, composition and authority? Provide the general policy on assessment including the documents provided to students that specify timing, weighting and criteria for progression.

Quality How does the medical school monitor the reliability and validity of assessments? How are new assessment methods introduced? How are internal assessments validated against external standards?

Criterion B: Relation between Assessment and Learning

Basic How are assessment practices made compatible with educational objectives and learning methods?

Annex 2

Quality How does the medical school monitor assessment to reduce curriculum overload and encourage integration?

AREA 4. STUDENTS

Criterion A: Recruitment and Admission Policy

Basic What are the academic criteria for admission to the medical course? Are there additional requirements at institutional or government level?

Quality How do the methods used to select students test their suitability and capability to practise in diverse areas of medicine? How do they comply with the social responsibilities and health needs?

Criterion B: Methods of Selection

Basic What body is responsible for selection policy? What methods does it use?

Quality How does the selection committee evaluate the outcome of its policies on subsequent educational achievement? What mechanisms exist for appeal?

Criterion C: Student Intake

Basic What quotas exist and how are they determined?

Quality What mechanisms exist for adjusting the quotas?

Criterion D: Student Support and Counselling

Basic What student support programs are available through the medical school? What other programs can students access?

Quality What mechanisms exist to identify students in need of pastoral and/or academic support?

Criterion E: Student Representation

Basic What is the medical school's policy on student contribution to curriculum matters? How have students contributed to the development of this policy?

Quality What practical measures does the medical school have for encouraging student participation and self-government?

AREA 5. ACADEMIC STAFF/FACULTY

Criterion A: Recruitment Policy

Basic What policies does the medical school have for ensuring that the staffing profile matches the range and balance of teaching skills required to deliver the curriculum? What are the requirements related to the qualifications for appointment? Are there institutional or government policies or requirements that affect the medical school's staffing decisions? How frequently does the medical school review its priority list for staffing?

Quality How does the medical school propose to improve its recruitment of staff to meet its objectives?

Criterion B: Staffing Policy

Basic What is the medical school policy for ensuring that teaching, research and service contributions are appropriately recognised and rewarded? Are there additional institutional or government policies?

Quality What staff development programs exist or are proposed to enable teachers to upgrade their skills and to obtain appraisals of their teaching performance? How is participation in staff development programs encouraged?

AREA 6. EDUCATIONAL RESOURCES

Criterion A: Physical Facilities

Basic Provide a brief description of each of the physical facilities available for the delivery of the non-clinical components of the curriculum. How does the medical school review the adequacy of the educational resources? What mechanisms exist for gathering feedback from students and staff on the facilities? What authority does the medical school have to direct resources to respond to deficiencies?

Quality Indicate what plans exist for improving these facilities.

Criterion B: Facilities for Clinical Training

Basic Provide a brief description of the facilities available for clinical training in hospitals, ambulatory services, community clinics and primary health care settings. How does the medical school review the adequacy of the facilities and patients available for clinical teaching? What mechanisms exist to deal with deficiencies?

Quality How is the medical school adjusting and expanding its use of clinical training facilities including skills, laboratories and affiliated institutions?

Annex 2

Criterion C: Information Technology and Networking

Basic What policies does the medical school have for the use of information technology in its teaching program? What committee or body is responsible for formulating the medical school's policies? Are there additional institutional policies? What authority does the medical school have to direct resources to the use of information and communication technology?

Quality How is the medical school enhancing delivery of the curriculum by electronic methods?

Criterion D: Research Attainment

Basic Provide a brief description of the research facilities and major research programs of the school.

Quality How does the school foster interaction between its research and education activities?

Criterion E: Medical Education Expertise

Basic What policies does the medical school have to ensure that its education methodologies are appropriate for the delivery of the curriculum?

Quality Does the medical school have access to an expert medical education unit and how does it operate?

Criterion F: Exchange with Other Educational Institutions

Basic What policies does the medical school have for collaborating with other educational institutions? Provide a summary of the existing collaborative links with other institutions and describe the nature of those links, student exchanges, staff exchanges, and research. What is the medical school's policy on the transfer of educational credit?

Quality Describe any activities directed towards regional and international so-operation with other medical schools.

AREA 7. MONITORING AND EVALUATION OF PROGRAMMES AND COURSES

Criterion A: Mechanisms for Programme Evaluation

Basic How does the medical school evaluate its program? Is there a group that independently monitors performance and outcomes data and ensures that identified concerns are addressed by the appropriate body? What evaluation data is being collected?

Quality Describe how evaluation activities are being enhanced to cover all components of the medical education program.

Criterion B: Student and Teacher Opinion

Basic How does the medical school sample the opinions of staff and students about its educational program?

Quality How does the medical school encourage individual staff and students to participate in its evaluation activities?

Criterion C: Student Performance

Basic What statistical data on student performance is collected and analysed?

Quality What individual student parameters are monitored in relation to performance during the course and how is this fed back into curriculum planning?

Criterion D: Feedback of Evaluation Information

Basic How is information gathered from program evaluation to modify the curriculum?

Quality What steps are being taken to ensure that there is an evidence-based approach to the enhancement of the quality of the medical education program?

Criterion E: Involvement of Stakeholders

Basic To what extent are the principal stakeholders within the medical school involved in program evaluation? How does the medical school communicate the outcomes of program evaluation to stakeholders?

Quality To what extent are the principal external stakeholders of the medical school involved in the evaluation of its program?

AREA 8. GOVERNANCE AND ADMINISTRATION

Criterion A: Organisational Structure refer to Criterion 2G

Criterion B: Educational Budget and Resource Allocation refer to Criterion 2C

Criterion C: Academic Leadership

Basic Describe the academic management structure of the medical school indicating the line of responsibility for individual areas of the medical program.

Quality How is the performance of the academic leadership of the school appraised?

Annex 2

Criterion D: Administrative Staff and Management

Basic What administrative support functions are provided by staff of the school? Describe the administrative staffing structure to support these functions.

Quality Does the administrative and management component of the medical school have a quality assurance program and how is it reviewed?

Criterion E: Interaction with Health Sector

Basic Describe the relationships between the medical school and the health services with which it interacts.

Quality What formal mechanisms exist to ensure that the medical school interacts constructively with the health sector?

AREA 9. CONTINUOUS RENEWAL OF THE MEDICAL SCHOOL

Basic How frequently does the medical school review its mission, structures and activities? What processes does it use for review?

Quality Describe recent and projected activities undertaken to ensure that the medical school remains responsive to its changing environment.

