WORLD FEDERATION FOR MEDICAL EDUCATION

Basic Medical Education

WFME Global Standards

for

Quality Improvement

The 2015 Revision

WFME Office

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CONTENTS

PREFACE

Starting in 1998, the World Federation for Medical Education (WFME) developed the WFME Trilogy: *Global Standards for Quality Improvement of Medical Education*, covering all three phases of medical education: *Basic (Undergraduate) Medical Education (BME); Postgraduate Medical Education (PME);* and *Continuing Professional Development (CPD) of Medical Doctors*. Preliminary results were presented in 2000 and the Trilogy was published in 2003.

The global standards for medical education have been implemented and used extensively all over the world. They offer medical education institutions and programmes at various stages of development, and with different educational, socio-economic and cultural conditions and different disease patterns, a template for defining institutional, national and regional standards, and a lever for reform programmes.

As a result, valuable experience was gained and fruitful advice and recommendations compiled from the use of the standards in institutional and national medical education reforms, evaluation and accreditation procedures.

From the outset it was decided that the global standards should not be changed too frequently with the risk of creating unnecessary inconvenience among user institutions. However, ten years after publication of the global standards for medical education, the Executive Council of WFME realised the need for a revision taking into account the commentaries received from medical educators, institutions and organisations and the accumulated relevant literature in the field. Therefore, in 2012 the Federation initiated a revision of the Trilogy.

During the revision process, which involved a small working party and a broad international panel of experts, extensive comments and proposals were received, showing a need for a thorough overhaul. The first revision of standards for basic medical education was published in 2012. However, due to the aim of obtaining reasonable harmonisation between the three documents of the WFME Trilogy, and taking into account later received proposals, it was found necessary to produce the present updated edition of the revised document for basic medical education; this revision comprises foremost the introduction and sections of annotations to the standards, whereas the standards themselves have only undergone limited changes. It should also be emphasised that this revised version of the WFME standards for basic medical education respects the original overall principles and structure. The revised version presents much the same standards at two levels of attainment, basic and developmental, as the original 2003 standards document.

WFME is profoundly indebted to all who have contributed to the process of reviewing the global standards. The enthusiasm and readiness to assist encountered in all regions have been overwhelming, thereby signalling that the standards are both desirable and feasible.

The WFME Executive Council trusts that the revised standards document will be useful for everybody involved in basic medical education. The document will be of interest for health authorities, medical associations, medical schools and national and international institutions/organisations dealing with basic medical education in all countries. WFME would advise that trustworthy authorities are established country-wise to oversee the application of the global BME standards.

INTRODUCTION

HISTORY

The improved health of all peoples is the main goal of medical education. This is also the overall mission of the World Federation for Medical Education (WFME), the international body representing all medical teaching institutions, medical teachers and students and medical doctors in all aspects of their education. In keeping with its constitution, WFME undertakes to promote the highest scientific and ethical standards in medical education, and to encourage development of learning methods, new instructional tools, and innovative management of medical education.

Since 1984, WFME has conducted an "International Collaborative Programme for the Reorientation of Medical Education". Cornerstones in this process were the Edinburgh Declaration, 1988, which was adopted by the World Health Assembly, WHA Resolution 42.38, 1989, and the Recommendations of the World Summit on Medical Education, 1993, reflected in WHA Resolution 48.8, Reorientation of Medical Education and Medical Practice for Health for All, 1995.

In compliance with its mandate, WFME launched the programme on global standards in Medical Education in a position paper of 1998. The purpose was to provide a tool for quality improvement of medical education, in a global context, to be applied by institutions responsible for medical education, and in programmes throughout the continuum of medical education.

The WFME programme on global standards in medical education, approved by the World Health Organization (WHO) and the World Medical Association (WMA), had from the very outset three main intentions:

- to stimulate authorities, organisations and institutions having responsibility for medical education to formulate their own plans for change and for quality improvement in accordance with international recommendations;

- to establish a system of national and/or international evaluation, accreditation and recognition of medical educational institutions and programmes to assure minimum quality standards for the programmes; and

- to safeguard practice in medicine and medical manpower utilisation, in the context of increasing internationalisation, by well-defined international standards in medical education.

The WFME global standards embrace all phases of medical education, i.e. basic (undergraduate) medical education, postgraduate medical education and continuing professional development of medical doctors. The trilogy of global standards intends to facilitate the relationship between the stages of medical education.

In developing the Trilogy, WFME appointed three International Task Forces, each comprising a Working Party meeting on a retreat basis, and a broader Panel of Experts that communicated

mainly electronically. Members of the Task Forces were selected on basis of their expertise and with geographical coverage an important consideration. The drafts of the standards documents were discussed frequently and in numerous settings around the world. The many commentaries received were collated and taken into account.

Implementation around the world of the standards programme started immediately after the first presentation in 2000 and the conduct of pilot studies in all 6 WFME Regions. The process of implementation was accelerated after broad international endorsement of the standards at the WFME World Conference *Global Standards in Medical Education for Better Health Care* in Copenhagen 2003.

The global standards, translated into several languages, have been used and have influenced national planning of medical education in many countries.

In the early stages of developing the global standards for medical education, it became clear that specifying global standards in any restricted sense would exert insufficient impact and would have the potential to lower the quality of medical education. The criticism, whether justified or not, has become commonplace that medical education has adjusted slowly and inadequately both to changing conditions in the health care delivery systems, and to the needs and expectations of societies. Thus, a lever for change and reform was incorporated into the standards. This led the WFME standards to being framed to specify attainment at two different levels: (a) basic standards or minimum requirements; and (b) standards for quality development.

That the WFME standards would have the status as an accreditation instrument was considered from the inception. After deliberation, WFME has taken the position that only nationally appointed agencies can be directly responsible for accreditation procedures. However, WFME can have a role in assisting in accreditation processes and globally adopted standards can function as a template for the agencies designated to implement evaluation and accreditation. WFME, in collaboration with WHO, developed guidelines and procedures for accreditation as an activity within the WHO/WFME Partnership of 2004 to improve medical education.

The medical workforce is globally mobile and the WFME standards have a part to play in safeguarding adequate educational grounding of migrating doctors. However, incentives for retaining locally trained doctors in their own countries and regions are equally essential. The WFME standards should not be viewed as encouraging increasing medical mobility and spurring brain drain of doctors from developing countries. The world is characterised by increasing internationalisation, from which the medical workforce is not immune, and compliance with the standards should serve as necessary quality-assuring credentials of medical doctors wherever they are based.

To ensure that the competencies of medical doctors are globally applicable and transferable, readily accessible and transparent documentation of the levels of quality of educational institutions and their programmes is essential. The *Avicenna Directory of Medical Schools,* developed by WFME from 2007 to replace the *WHO World Directory of Medical Schools,* aimed to constitute a roster of medical educational institutions, indicating specifically whether institutions included have attained globally approved standards for medical education programmes. The *New World Directory of Medical Schools*, established in 2012 as a merger of the Avicenna Directory and the International Medical Education Directory (IMED) of the

Foundation for the Advancement of International Medical Education and Research (FAIMER) has continued this line.

FUNDAMENTALS OF BASIC MEDICAL EDUCATION (BME)

The basis of the medical curriculum consists of the fundamental theory and practice of medicine, specifically basic biomedical, behavioural and social sciences, clinical sciences and general clinical skills, including clinical decision skills, communication abilities, interprofessional collaboration, doctors' function in the society and medical ethics. This basis must be addressed by all medical schools aiming to produce safe practitioners of quality. These elements have an important bearing on the concept of global standards in medical education, but such standards do not address details regarding content and quantity. A global set of standards for medical education is not to be equated with a universal core curriculum.

Several reports have described the necessity for radical changes and innovations in the structure and process of medical education at all levels. Such reconstruction is essential to:

- prepare doctors for the needs and expectations of society;
- cope with the explosion in medical scientific knowledge and technology;
- inculcate ability for life-long learning;
- ensure training in the new information technologies;
- adjust medical education to changing conditions in the health care delivery system.

WHO has also advocated the need for change in medical education. It has proposed a series of activities intended to meet the current and future requirements of society, especially underlining the importance of understanding the doctors' function in the society, and the need for continuing education and for inter-professional collaboration.

Although accreditation is seen as the golden procedure in evaluating and assuring the quality of medical education programmes, only a minority of the more than 2500 medical schools worldwide are subject to external evaluation and accreditation procedures. Such omission causes major concern when the imperative for reform is amply documented. The rapid increase in the number of new medical schools in the last decades, many established on unacceptable grounds (e.g. some private »for profit« schools), adds to the disquiet.

VALUE OF GLOBAL STANDARDS

A central part of the WFME strategy is to develop global standards and guidelines for medical education, that are supportive of the institutions concerned, their educational programmes, the medical profession, and the individual student and doctor. The global standards constitute a framework, serving as a yardstick against which those responsible for basic medical education can evaluate their own activities and organisations. Moreover, globally accepted standards could be used as a basis for national and regional approval and accreditation of educational programmes.

Equally relevant for global standards is the process of medical education. Desirable practices in educating the basic doctor, incorporating well-recognised and accepted principles of

learning, together with the institutional conditions for educational activities, must form the basis for global standards.

Moreover, quality assurance of medical education must emphasise the need for improvement and provide guidance for achieving it. This will avoid interpretation of standards as a levelling at a lower level of quality among institutions.

Standards are not an »either/or« matter, but a matter of specific conduct and intentional planning. Furthermore, some schools might develop so unique a quality as to go beyond standards achieved by most medical schools. Such qualities might, in the long run, serve as examples for new goal-settings in medical schools.

Standards must be clearly defined, and be meaningful, appropriate, relevant, measurable, achievable and accepted by the users. They must have implications for practice, acknowledge diversity and foster adequate development.

Evaluation based on generally accepted standards is an important incentive for improvement and for raising the quality of medical education, both when reorientation and reform are pursued, and also when continuous development is strived for.

WFME considers that the operation of standards can promote discussion and stimulate development of consensus about objectives, and will help schools to formulate essentials of their educational programmes and to describe the fundamentals of medical education. Standards will broaden opportunities for educational research and development and foster discussion and cooperation across departmental and other boundaries.

The existence of standards will empower educators in their effort to bring about change, and will serve to guide medical students' choices.

For curriculum planners, acceptance of standards will save time and resources. Adoption of standards for evaluation will provide valuable information for providers of funds, politicians and society.

Placing medical education on a basis of shared global standards will facilitate exchange of medical students, and ease the acceptance of medical doctors in countries other than those in which they trained. In consequence, it will diminish the burden of judging the competencies of doctors who have been educated in medical schools in different countries.

Finally, low quality medical schools can be improved by use of a system of evaluation and accreditation based on internationally accepted standards. This is likely to enhance the quality of health care, both nationally and internationally.

PREMISES FOR STANDARDS IN BASIC MEDICAL EDUCATION

The Executive Council of WFME is evidently of the view that global standards for medical education, which have general applicability, can be defined. These definitions take account of the variations in the content, structure, process and outcomes of medical education among countries, due to differences in teaching traditions, culture, socio-economic conditions, the health and disease spectrum, and the different forms of health care delivery systems. Similar

differences can also occur within individual countries. Nevertheless, the scientific basis of medicine and the necessity to base clinical practice on evidence is universal; the task of medical education everywhere, throughout its phases, is the provision of high quality health care. Notwithstanding diversity, there is an increasing degree of convergence of structure, process and product of medical education worldwide.

Global standards for basic medical education, as for other phases of medical education, must be specified, modified or supplemented in accordance with regional, national and institutional needs and priorities. WFME stresses that there can be no benefit in fostering uniformity of educational programmes and learning activities and hereby jeopardising social accountability. Moreover, quality assurance of medical training programmes must give emphasis to improvement, and provide guidance for advancement, instead of simply advocating "fulfilment of standards" as the ultimate goal. It is the prerogative of any national accrediting body to determine the level that will be examined for recognition/accreditation.

In drafting standards for basic medical education, attention was given to the application of general guidelines in quality development of medical education. Therefore, for global standards in basic medical education to be generally accepted, the following premises were adopted:

- Only general aspects of basic medical education and training should be covered.
- Standards should be concerned with broad categories of process, structure, content outcomes/competencies, assessment and learning environment of medical schools.
- Standards should function as a lever for change and reform.
- Standards are intended not only to set minimum global requirements but also to encourage quality development beyond the levels specified.
- Standards should be formulated in such a way that they acknowledge regional and national differences in the educational programme, and allow for different local, national and regional profiles and developments, respecting reasonable autonomy of the medical school.
- Compliance with standards must be a matter for each community, country or region.
- Use of a common set of global standards does not imply or require equivalence of programme content and outcomes of basic medical education, but deviations should be clearly described and motivated.
- Standards should acknowledge the dynamic nature of programme development.
- Standards should be formulated as a tool which authorities, organisations and institutions responsible for basic medical education can use as a model for their own programme development.
- Standards should not be used to rank education programmes.
- Standards should be further developed through broad international discussion and consensus.
- The value of the standards must be tested in evaluation studies in each region.
- Standards must be clearly defined, and be meaningful, appropriate, relevant, measurable, achievable and accepted by the users. They must have implications for practice, recognise diversity and foster adequate development.
- Standards must be formulated in collaboration with stakeholders.

USE OF STANDARDS

It should be emphasised that, in working with the standards for purposes of programme development or evaluation, the principles underlying each standard are the essential points. Over-attention to details should not obscure the need to apply the *basic standards*, and the desirability of working towards the *standards for quality development*. WFME wants to stress that all details in the standards document should not necessarily be fulfilled by every medical school.

WFME holds that the set of standards, offering as it does a developmental perspective from attainment of basic to quality development levels, can be used globally as a tool for quality assurance and development of basic medical education in the following ways:

- ***Medical school self – evaluation of the institution and its programme***
  The primary intention of the WFME in introducing an instrument for quality improvement is to provide a new framework against which authorities, organisations and institutions with responsibility for basic medical education can measure themselves in voluntary self-evaluation and self-improvement processes. The set of standards can thus be considered as a self-study manual.

- ***External evaluation or peer review***
  The process of institutional self-evaluation described can be further enhanced and Objectivity promoted by inclusion of evaluation and counselling from external l peer review committees.

- ***Combination of self-evaluation of institution and programme and external evaluation or peer review***.
  WFME considers such a combination to be the most valuable method.

- ***Approval and accreditation***
  Depending on local needs and traditions, the standards can also be used by national or regional authorities/agencies dealing with approval and accreditation of medical schools.

PROCESS AND PRINCIPLES OF REVISION

It was decided that the WFME Standards should remain formulated as a combination of process, structure, content, outcomes/competencies, assessment and learning environment standards.

The plan used for the 2012 revision of the basic medical education standards document comprised:

Phase I: Production of a draft by a small working party of persons associated with the WFME office.

Phase II: Gathering of comments and proposals for amendments and additions from a broad international panel of experts representing all six WFME Regions

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Phase III: Presentation of the amended document for further comments from the main partners of WFME, including the members of the WFME Executive Council.

In this work the original premises for standards in basic medical education were followed, but it was realised that a system should be introduced to allow clearer presentation of standards. Annotations should provide clarification and exemplification based on accumulated experiences in using the standards. Formulations should be harmonised between the three sets of WFME global standards, which was also the reason for the 2015 update.

General principles underpinning the standards were not changed during the revision of the standards, e.g. using two levels of attainment, i.e. basic standards and standards for quality development, and not only minimum requirements. The dividing line between basic standards and standards for quality development was considered and changed in some cases in accordance with international developments in requirements to medical education. The number of areas and subareas is basically the same, but composite standards have been split to increase the overview of standards content. The sequence of standards is in some cases changed. A numbering system has been introduced, thereby facilitating references to and communication about the standards.

It was regarded desirable to clearly place and define the responsibility for fulfilment of the standards. We have chosen the concept of the **medical school** as the frame of reference, and all standards are now explicitly directed to the medical school through its authoritative bodies as being responsible for action.

The classification of standards has been kept close to the original, but minor reformulation of some areas and standards was needed to clarify the content. Repetition and overlap have been reduced. Several standards specify that implementation rather than just the simple formulation of the policy is required.

The revised set of WFME standards appears to be somewhat more detailed. However, this is more a result of the above described editorial revision.

To aid better understanding, the number of annotations was significantly expanded. The intention is to clarify the meaning of the standards, primarily by explanation and

exemplification of e.g. activities and conditions, taking into account social and cultural differences. This should also facilitate the planning of data collection for self-evaluation studies and external evaluations and provide a more secure basis for translations.

THE WFME GLOBAL STANDARDS FOR QUALITY IMPROVEMENT OF BASIC MEDICAL EDUCATION

DEFINITIONS

In the standards document the term **medical school** refers to the educational organisation providing a basic (undergraduate) programme in medicine and is synonymous with medical faculty, medical college, medical academy or medical university. The medical school can be part of or affiliated to a university or can be an independent institution at equal level.

The WFME recommends the following set of global standards in basic medical education. The set of standards are structured according to **9 areas** with a total of **35 sub-areas**, being aware of the complex interaction and links between them.

AREAS are defined as broad components in the process, structure, content, outcomes/competencies, assessment and learning environment of basic medical education and cover:

1. Mission and outcomes
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:

Basic standard.
This means that the standard in principle 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. Fulfilment of - or initiatives to fulfil - some or all of such standards should be documented by medical schools. Fulfilment of these standards will vary with the stage of development of the medical schools, available resources and educational policy and other local conditions influencing relevance, priorities and possibilities. 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. No new requirements are introduced in the annotations.

The listing of examples in annotations are in some cases exhaustive, in others not. It should also be noted, that a medical school will rarely use and possess all the characteristics mentioned in examples.

THE STANDARDS

The 2015 revision of the WFME global standards for quality improvement of Basic Medical Education, comprising altogether 106 basic standards, 90 quality development standards and 127 annotations, are presented in the following section.

1. MISSION AND OUTCOMES

1.1 MISSION

Basic standards:
The medical school **must**

- state its mission. (B 1.1.1)
- make it known to its constituency and the health sector it serves. (B 1.1.2)
- in its mission outline the aims and the educational strategy resulting in a medical doctor
  - competent at a basic level. (B 1.1.3)
  - with an appropriate foundation for future career in any branch of medicine. (B 1.1.4)
  - capable of undertaking the roles of doctors as defined by the health sector. (B 1.1.5)
  - prepared and ready for postgraduate medical education. (B 1.1.6)
  - committed to life-long learning. (B 1.1.7)
- consider that the mission encompasses the health needs of the community, the needs of the health care delivery system and other aspects of social accountability. (B 1.1.8)

Quality development standards:
The medical school **should** ensure that the mission encompasses

- medical research attainment. (Q 1.1.1)
- aspects of global health. (Q 1.1.2)

Annotations:

- *Mission* provides the overarching frame to which all other aspects of the educational institution and its programme have to be related. Mission statement would include general and specific issues relevant to institutional, national, regional and global policy and needs. Mission in this document includes the institutions' vision.
- *Medical school* in this document is the educational organisation providing a basic (undergraduate) programme in medicine and is synonymous with medical faculty, medical college, medical academy or medical university. The medical school can be part of or affiliated to a university or can be an independent institution of equal level. It normally also encompasses research and clinical service functions, and would also provide educational programmes for other phases of medical education and for other health professions. Medical schools would include university hospitals and other affiliated clinical facilities.
- *Constituency* would include the leadership, staff and students of the medical school as well as other stakeholders, cf. 1.4 annotation.
- *Health sector* would include the health care delivery system, whether public or private, and medical research institutions.
- *Basic level* of medical education is in most countries identical to undergraduate medical education starting on the basis of completed secondary school education. In other countries or schools it starts after completion of a non-medical undergraduate degree.
- *Any branch of medicine* refers to all types of medical practice, administrative medicine and medical research.

- *Postgraduate medical education* would include preregistration education (leading to right to independent practice), vocational/professional education, specialist/ subspecialist education and other formalised education programmes for defined expert functions.
- *Life-long learning* is the professional responsibility to keep up to date in knowledge and skills through appraisal, audit, reflection or recognised continuing professional development (CPD)/continuing medical education (CME) activities. CPD includes all activities that doctors undertake, formally and informally, to maintain, update, develop and enhance their knowledge, skills and attitudes in response to the needs of their patients. CPD is a broader concept than CME, which describes continuing education in the knowledge and skills of medical practice.
- *Encompassing the health needs of the community* would imply interaction with the local community, especially the health and health related sectors, and adjustment of the curriculum to demonstrate attention to and knowledge about health problems of the community.
- *Social accountability* would include willingness and ability to respond to the needs of society, of patients and the health and health related sectors and to contribute to the national and international development of medicine by fostering competencies in health care, medical education and medical research. This would be based on the school's own principles and in respect of the autonomy of universities.
  Social accountability is sometimes used synonymously with social responsibility and social responsiveness. In matters outside its control, the medical school would still demonstrate social accountability through advocacy and by explaining relationships and drawing attention to consequences of the policy.
- *Medical research* encompasses scientific research in basic biomedical, clinical, behavioural and social sciences and is described in 6.4.
- *Aspects of global health* would include awareness of major international health problems, also of health consequences of inequality and injustice.

1.2 INSTITUTIONAL AUTONOMY AND ACADEMIC FREEDOM

Basic standards:
The medical school **must** have institutional autonomy to

- formulate and implement policies for which its faculty/academic staff and administration are responsible, especially regarding
  - design of the curriculum. (B 1.2.1)
  - use of the allocated resources necessary for implementation of the curriculum. (B 1.2.2)

Quality development standards:
The medical school **should** ensure academic freedom for its staff and students

- in addressing the actual curriculum. (Q 1.2.1)
- in exploring the use of new research results to illustrate specific subjects without expanding the curriculum. (Q 1.2.2)

Annotations:

- *Institutional autonomy* would include appropriate independence from government and other counterparts (regional and local authorities, religious communities, private co-operations, the professions, unions and other interest groups) to be able to make decisions about key areas such as design of curriculum (cf. 2.1 and 2.6), assessments (cf. 3.1), students admission (cf. 4.1 and 4.2), staff recruitment/selection (cf. 5.1) and employment conditions (cf.5.2), research (cf. 6.4) and resource allocation (cf. 8.3).
- *Academic freedom* would include appropriate freedom of expression, freedom of inquiry and publication for staff and students.
- *Addressing the actual curriculum* would allow staff and students to draw upon different perspectives in description and analysis of medical issues, basic as well as clinical.
- *Curriculum,* cf. 2.1, annotation.

1.3 EDUCATIONAL OUTCOMES

Basic standards:
The medical school **must**

- define the intended educational outcomes that students should exhibit upon graduation in relation to
  - their achievements at a basic level regarding knowledge, skills, and attitudes. (B 1.3.1)
  - appropriate foundation for future career in any branch of medicine. (B 1.3.2)
  - their future roles in the health sector. (B 1.3.3)
  - their subsequent postgraduate training. (B 1.3.4)
  - their commitment to and skills in life-long learning. (B 1.3.5)
  - the health needs of the community, the needs of the health care delivery system and other aspects of social accountability. (B 1.3.6)
- ensure appropriate student conduct with respect to fellow students, faculty members, other health care personnel, patients and their relatives. (B 1.3.7)
- make the intended educational outcomes publicly known. (B 1.3.8)

Quality development standards:
The medical school **should**

- specify and co-ordinate the linkage of acquired outcomes by graduation with acquired outcomes in postgraduate training. (Q 1.3.1)
- specify intended outcomes of student engagement in medical research. (Q 1.3.2)
- draw attention to global health related intended outcomes. (Q 1.3.3)

Annotations:

- *Educational outcomes* or learning outcomes/competencies refer to statements of knowledge, skills and attitude that students demonstrate at the end of a period of learning. Outcomes might be either intended or acquired. Educational/learning objectives are often described in terms of intended outcomes.
  Outcomes within medicine and medical practice - to be specified by the medical school - would include documented knowledge and understanding of (a) the basic biomedical sciences, (b) the behavioural and social sciences, including public health and population medicine, (c) medical ethics, human rights and medical jurisprudence

relevant to the practice of medicine, (d) the clinical sciences, including clinical skills with respect to diagnostic procedures, practical procedures, communication skills, treatment and prevention of disease, health promotion, rehabilitation, clinical reasoning and problem solving; and (e) the ability to undertake life-long learning and demonstrate professionalism in connection with the different roles of the doctor, also in relation to the medical profession.
The characteristics and achievements the students display upon graduation can e.g. be categorised in terms of the doctor as (a) scholar and scientist, (b) practitioner, (c) communicator, (d) teacher, (e) manager and (f) a professional.

- *Appropriate student conduct* would presuppose a written code of conduct.

1.4 PARTICIPATION IN FORMULATION OF MISSION AND OUTCOMES

Basic standard:
The medical school **must**

- ensure that its principal stakeholders participate in formulating the mission and intended educational outcomes. (B 1.4.1)

Quality development standard:
The medical school **should**

- ensure that the formulation of its mission and intended educational outcomes is based also on input from other stakeholders. (Q 1.4.1)

Annotations:

- *Principal stakeholders* would include the dean, the faculty board/council, the curriculum committee, representatives of staff and students, the university leadership and administration, relevant governmental authorities and regulatory bodies.
- *Other stakeholders* would include representatives of other health professions, patients, the community and public (e.g. users of the health care delivery systems, including patient organisations). Other stakeholders would also include other representatives of academic and administrative staff, education and health care authorities, professional organisations, medical scientific societies and postgraduate medical educators.

2. EDUCATIONAL PROGRAMME

2.1 FRAMEWORK OF THE PROGRAMME

Basic standards:
The medical school **must**

- define the overall curriculum. (B 2.1.1)
- use a curriculum and instructional/learning methods that stimulate, prepare and support students to take responsibility for their learning process. (B 2.1.2)
- ensure that the curriculum is delivered in accordance with principles of equality. (B 2.1.3)

Quality development standard:
The medical school **should**

- ensure that the curriculum prepares the students for life-long learning. (Q 2.1.1)

Annotations:

- *Framework of the programme* in this document is used synonymously with curriculum.
- *Overall curriculum* in this document refers to the specification of the educational programme, including a statement of the intended educational outcomes (cf.1.3), the content/syllabus (cf. 2.2-2.6), learning experiences and processes of the programme. The curriculum should set out what knowledge, skills, and attitudes the student will achieve. Also, the curriculum would include a description of the planned instructional and learning methods and assessment methods (cf. 3.1).
  Curriculum description would sometimes include models based on disciplines, organ systems, clinical problems/tasks or disease patterns as well as models based on modular or spiral design.
  The curriculum would be based on contemporary learning principles.
- *Instructional/ learning methods* would encompass lectures, small-group teaching, problem-based or case-based learning, peer assisted learning, practicals, laboratory exercises, bed-side teaching, clinical demonstrations, clinical skills laboratory training, field exercises in the community and web-based instruction.
- *Principles of equality* mean equal treatment of staff and students irrespective of gender, ethnicity, religion, sexual orientation, socio-economic status, and taking into account physical capabilities.

2.2 SCIENTIFIC METHOD

Basic standards:
The medical school **must**

- throughout the curriculum teach
  - the principles of scientific method, including analytical and critical thinking. (B 2.2.1)
  - medical research methods. (B 2.2.2)
  - evidence-based medicine. (B 2.2.3)

Quality development standard:
The medical school **should**

- in the curriculum include elements of original or advanced research. (Q 2.2.1)

Annotations:

- To *teach the principles of scientific method, medical research methods and evidence-based medicine* requires scientific competencies of teachers. This training would be a compulsory part of the curriculum and would include that medical students conduct or participate in minor research projects.
- *Evidence-based medicine* means medicine founded on documentation, trials and accepted scientific results.
- *Elements of original or advanced research* would include obligatory or elective analytic and experimental studies, thereby fostering the ability to participate in the scientific development of medicine as professionals and colleagues.

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2.3 BASIC BIOMEDICAL SCIENCES

Basic standards:
The medical school **must**

- in the curriculum identify and incorporate the contributions of the basic biomedical sciences to create understanding of
  - scientific knowledge fundamental to acquiring and applying clinical science. (B 2.3.1)
  - concepts and methods fundamental to acquiring and applying clinical science. (B 2.3.2)

Quality development standards:
The medical school **should**

- in the curriculum adjust and modify the contributions of the biomedical sciences to the
  - scientific, technological and clinical developments. (Q 2.3.1)
  - current and anticipated needs of the society and the health care system. (Q 2.3.2)

Annotation:

- *The basic biomedical sciences* would - depending on local needs, interests and traditions - include anatomy, biochemistry, biophysics, cell biology, genetics, immunology, microbiology (including bacteriology, parasitology and virology), molecular biology, pathology, pharmacology and physiology.

2.4 BEHAVIOURAL AND SOCIAL SCIENCES, MEDICAL ETHICS AND JURISPRUDENCE

Basic standards:
The medical school **must**

- in the curriculum identify and incorporate the contributions of the:
  - behavioural sciences. (B 2.4.1)
  - social sciences. (B 2.4.2)
  - medical ethics. (B 2.4.3)

- medical jurisprudence. (B 2.4.4)

Quality development standards:
The medical school **should**

- in the curriculum adjust and modify the contributions of the behavioural and social sciences as well as medical ethics and medical jurisprudence to
  - scientific, technological and clinical developments. (Q 2.4.1)
  - current and anticipated needs of the society and the health care system. (Q 2.4.2)
  - changing demographic and cultural contexts. (Q 2.4.3)

Annotations:

- *Behavioural and social sciences* would - depending on local needs, interests and traditions - include biostatistics, community medicine, epidemiology, global health, hygiene, medical anthropology, medical psychology, medical sociology, public health and social medicine.
- *Medical ethics* deals with moral issues in medical practice such as values, rights and responsibilities related to physician behavior and decision making.
- *Medical jurisprudence* deals with the laws and other regulations of the health care delivery system, of the profession and medical practice, including the regulations of production and use of pharmaceuticals and medical technologies (devices, instruments, etc.).
- The *behavioural and social sciences, medical ethics and medical jurisprudence* would 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 as well as knowledge about the national health care system and patients' rights. This would enable analysis of health needs of the community and society, effective communication, clinical decision making and ethical practices.

2.5 CLINICAL SCIENCES AND SKILLS

Basic standards:
The medical school **must**

- in the curriculum identify and incorporate the contributions of the clinical sciences to ensure that students
  - acquire sufficient knowledge and clinical and professional skills to assume appropriate responsibility after graduation. (B 2.5.1)
  - spend a reasonable part of the programme in planned contact with patients in relevant clinical settings. (B 2.5.2)
  - experience health promotion and preventive medicine. (B 2.5.3)
- specify the amount of time spent in training in major clinical disciplines. (B 2.5.4)
- organise clinical training with appropriate attention to patient safety. (B 2.5.5)

Quality development standards:
The medical school **should**

- in the curriculum adjust and modify the contributions of the clinical sciences to the
  - scientific, technological and clinical developments. (Q 2.5.1)

    - current and anticipated needs of the society and the health care system. (Q 2.5.2)
- ensure that every student has early patient contact gradually including participation in patient care. (Q 2.5.3)
- structure the different components of clinical skills training according to the stage of the study programme. (Q 2.5.4)

Annotations:

- *The clinical sciences* would - depending on local needs, interests and traditions - include anaesthetics, dermatology, diagnostic radiology, emergency medicine, general practice/family medicine, geriatrics, gynaecology & obstetrics, internal medicine (with subspecialities), laboratory medicine, medical technology, neurology, neurosurgery, oncology & radiotherapy, ophthalmology, orthopaedic surgery, oto-rhino-laryngology, paediatrics, palliative care, physiotherapy, rehabilitation medicine, psychiatry, surgery (with subspecialities) and venereology (sexually transmitted diseases). Clinical sciences would also include a final module preparing for pre-registration-training/internship.
- *Clinical skills* include history taking, physical examination, communication skills, procedures and investigations, emergency practices, and prescription and treatment practices.
- *Professional skills* would include patient management skills, team-work/team leadership skills and inter-professional training.
- *Appropriate clinical responsibility* would include activities related to health promotion, disease prevention and patient care.
- *A reasonable part* would mean about one third of the programme.
- *Planned contact with patients* would imply consideration of purpose and frequency sufficient to put their learning into context.
- *Time spent in training* includes clinical rotations and clerkships.
- *Major clinical disciplines* would include internal medicine (with subspecialities), surgery (with subspecialities), psychiatry, general practice/family medicine, gynaecology & obstetrics and paediatrics.
- *Patient safety* would require supervision of clinical activities conducted by students.
- *Early patient contact* would partly take place in primary care settings and would primarily include history taking, physical examination and communication.
- *Participation in patient care* would include responsibility under supervision for parts of investigations and/or treatment to patients, which could take place in relevant community settings.

2.6 PROGRAMME STRUCTURE, COMPOSITION AND DURATION

Basic standard:
The medical school **must**

- describe the content, extent and sequencing of courses and other curricular elements to ensure appropriate coordination between basic biomedical, behavioural and social and clinical subjects. (B 2.6.1)

Quality development standards:
The medical school **should** in the curriculum

- ensure horizontal integration of associated sciences, disciplines and subjects. (Q 2.6.1)

- ensure vertical integration of the clinical sciences with the basic biomedical and the behavioural and social sciences. (Q 2.6.2)
- allow optional (elective) content and define the balance between the core and optional content as part of the educational programme. (Q 2.6.3)
- describe the interface with complementary medicine. (Q 2.6.4)

Annotations:

- Examples of *horizontal* (concurrent) *integration* would be integrating basic sciences such as anatomy, biochemistry and physiology or integrating disciplines of medicine and surgery such as medical and surgical gastroenterology or nephrology and urology.
- Examples of *vertical* (sequential) integration would be integrating metabolic disorders and biochemistry or cardiology and cardio-vascular physiology.
- *Core and optional (elective) content* refers to a curriculum model with a combination of compulsory elements and electives or special options.
- *Complementary medicine* would include unorthodox, traditional or alternative practices.

2.7 PROGRAMME MANAGEMENT

Basic standards:
The medical school **must**

- have a curriculum committee, which under the governance of the academic leadership (the dean) has the responsibility and authority for planning and implementing the curriculum to secure its intended educational outcomes. (B 2.7.1)
- in its curriculum committee ensure representation of staff and students. (B 2.7.2)

Quality development standards:
The medical school **should**

- through its curriculum committee plan and implement innovations in the curriculum. (Q 2.7.1)
- in its curriculum committee include representatives of other stakeholders. (Q 2.7.2)

Annotations:

- *The authority of the curriculum committee* would include authority 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. The curriculum committee would allocate the granted resources for planning and implementing methods of teaching and learning, assessment of students and course evaluation (cf. 8.3).
- *Other stakeholders*, cf. 1.4, annotation.

2.8 LINKAGE WITH MEDICAL PRACTICE AND THE HEALTH SECTOR

Basic standard:
The medical school **must**

- ensure operational linkage between the educational programme and the subsequent stages of education or practice after graduation. (B 2.8.1)

Quality development standards:
The medical school **should**

- ensure that the curriculum committee
  - seeks input from the environment in which graduates will be expected to work, and modifies the programme accordingly. (Q 2.8.1)
  - considers programme modification in response to opinions in the community and society. (Q 2.8.2)

Annotations:

- The *operational linkage* implies identifying health problems and defining required educational outcomes. This requires clear definition and description of the elements of the educational programmes and their interrelations in the various stages of training and practice, paying attention to the local, national, regional and global context. It would include mutual feedback to and from the health sector and participation of teachers and students in activities of the health team. Operational linkage also implies constructive dialogue with potential employers of the graduates as basis for career guidance.
- *Subsequent stages of education* would include postgraduate medical education (pre-registration education, vocational/professional education and specialist/subspecialist or expert education, cf. 1.1, annotation) and continuing professional development (CPD)/continuing medical education (CME).

3. ASSESSMENT OF STUDENTS

3.1 ASSESSMENT METHODS

Basic standards:
The medical school **must**

- define, state and publish the principles, methods and practices used for assessment of its students, including the criteria for setting pass marks, grade boundaries and number of allowed retakes. (B 3.1.1)
- ensure that assessments cover knowledge, skills and attitudes. (B 3.1.2)
- use a wide range of assessment methods and formats according to their "assessment utility". (B 3.1.3)
- ensure that methods and results of assessments avoid conflicts of interest. (B 3.1.4)
- ensure that assessments are open to scrutiny by external expertise. (B 3.1.5)
- use a system of appeal of assessment results. (B 3.1.6)

Quality development standards:
The medical school **should**

- evaluate and document the reliability and validity of assessment methods. (Q 3.1.1)
- incorporate new assessment methods where appropriate. (Q 3.1.2)
- encourage the use of external examiners. (Q 3.1.3)

Annotations:

- *Assessment methods* used would include consideration of the balance between formative and summative assessment, the number of examinations and other tests, the balance between different types of examinations (written and oral), the use of normative and criterion-referenced judgements, and the use of personal portfolio and log-books and special types of examinations, e.g. objective structured clinical examinations (OSCE) and mini clinical evaluation exercise (MiniCEX). It would also include systems to detect and prevent plagiarism.
- *"Assessment utility"* is a term combining validity, reliability, educational impact, acceptability and efficiency of the assessment methods and formats.
- *Evaluate and document the reliability and validity of assessment methods* would require an appropriate quality assurance process of assessment practices.
- *Use of external examiners* may increase fairness, quality and transparency of assessments.

3.2 RELATION BETWEEN ASSESSMENT AND LEARNING

Basic standards:
The medical school **must**

- use assessment principles, methods and practices that
  - are clearly compatible with intended educational outcomes and instructional methods. (B 3.2.1)
  - ensure that the intended educational outcomes are met by the students. (B 3.2.2)

- promote student learning. (B 3.2.3)
- provide an appropriate balance of formative and summative assessment to guide both learning and decisions about academic progress. (B 3.2.4)

Quality development standards:
The medical school **should**

- adjust the number and nature of examinations of curricular elements to encourage both acquisition of the knowledge base and integrated learning. (Q 3.2.1)
- ensure timely, specific, constructive and fair feedback to students on basis of assessment results. (Q 3.2.2)

Annotations:

- *Assessment principles, methods and practices* refer to assessment of student achievement and would include assessment in all domains: knowledge, skills and attitudes.
- *Decisions about academic progress* would require rules of progression and their relationship to the assessment process.
- *Adjustment of number and nature of examinations* would include consideration of avoiding negative effects on learning. This would also imply avoiding the need for students to learn and recall excessive amounts of information and curriculum overload.
- *Encouragement of integrated learning* would include consideration of using integrated assessment, while ensuring reasonable tests of knowledge of individual disciplines or subject areas.

4. STUDENTS

4.1 ADMISSION POLICY AND SELECTION

Basic standards:
The medical school **must**

- formulate and implement an admission policy based on principles of objectivity, including a clear statement on the process of selection of students. (B 4.1.1)
- have a policy and implement a practice for admission of disabled students. (B 4.1.2)
- have a policy and implement a practice for transfer of students from other national or international programmes and institutions. (B 4.1.3)

Quality development standards:
The medical school **should**

- state the relationship between selection and the mission of the school, the educational programme and desired qualities of graduates. (Q 4.1.1)
- periodically review the admission policy. (Q 4.1.2)
- use a system for appeal of admission decisions. (Q 4.1.3)

Annotations:

- *Admission policy* would imply adherence to possible national regulation as well as adjustments to local circumstances. If the medical school does not control admission policy, it would demonstrate responsibility by explaining relationships and drawing attention to consequences, e.g. imbalance between intake and teaching capacity.
- The *statement on process of selection of students* would include both rationale and methods of selection such as secondary school results, other relevant academic or educational experiences, entrance examinations and interviews, including evaluation of motivation to become doctors. Selection would also take into account the need for variations related to diversity of medical practice.
- *Policy and practice for admission of disabled students* will have to be in accordance with national law and regulations.
- *Transfer of students* would include medical students from other medical schools and students from other study programmes.
- *Periodically review the admission policy* would be based on relevant societal and professional data, to comply with the health needs of the community and society, and would include consideration of intake according to gender, ethnicity and other social requirements (socio-cultural and linguistic characteristics of the population), including the potential need of a special recruitment, admission and induction policy for underprivileged students and minorities.

4.2 STUDENT INTAKE

Basic standard:
The medical school **must**

- define the size of student intake and relate it to its capacity at all stages of the programme. (B 4.2.1)

Quality development standard:
The medical school **should**

- periodically review the size and nature of student intake in consultation with other stakeholders and regulate it to meet the health needs of the community and society. (Q 4.2.1)

Annotations:

- Decisions on *student intake* would imply necessary adjustment to national requirements for medical workforce. If the medical school does not control student intake, it would demonstrate responsibility by explaining relationships and drawing attention to consequences, e.g. imbalance between intake and teaching capacity.
- *Other stakeholders*, cf. 1.4, annotations.
- *The health needs of the community and society* would include consideration of intake according to gender, ethnicity and other social requirements (socio-cultural and linguistic characteristics of the population), including the potential need of a special recruitment, admission and induction policy for underprivileged students and minorities. Forecasting the health needs of the community and society for trained physicians includes estimation of various market and demographic forces as well as the scientific development and migration patterns of physicians.

4.3 STUDENT COUNSELLING AND SUPPORT

Basic standards:
The medical school and/or the university **must**

- have a system for academic counselling of its student population. (B 4.3.1)
- offer a programme of student support, addressing social, financial and personal needs. (B 4.3.2)
- allocate resources for student support. (B 4.3.3)
- ensure confidentiality in relation to counselling and support. (B 4.3.4)

Quality development standards:
The medical school **should**

- provide academic counselling that
  - is based on monitoring of student progress. **(**Q 4.3.1)
  - includes career guidance and planning. (Q 4.3.2)

Annotations:

- *Academic counselling* would include questions related to choice of electives, residence preparation and career guidance. Organisation of the counselling would include appointing academic mentors for individual students or small groups of students.
- *Addressing social, financial and personal needs* would mean professional support in relation to social and personal problems and events, health problems and financial matters, and would include access to health clinics, immunisation programmes and health/disability insurance as well as financial aid services in forms of bursaries, scholarships and loans.

4.4 STUDENT REPRESENTATION

Basic standards:
The medical school **must**

- formulate and implement a policy on student representation and appropriate participation in
  - mission statement. (B 4.4.1)
  - design of the programme. (B 4.4.2)
  - management of the programme. (B 4.4.3)
  - evaluation of the programme. (B 4.4.4)
  - other matters relevant to students. (B 4.4.5)

Quality development standard:
The medical school **should**

- encourage and facilitate student activities and student organisations. (Q 4.4.1)

Annotations:

- *Student representation* would include student self governance and representation on the curriculum committee, other educational committees, scientific and other relevant bodies as well as social activities and local health care projects (cf. B 2.7.2).
- To *facilitate student activities* would include consideration of providing technical and financial support to student organisations.

5. ACADEMIC STAFF/FACULTY

5.1 RECRUITMENT AND SELECTION POLICY

Basic standards:
The medical school **must**

- formulate and implement a staff recruitment and selection policy which
  - outline the type, responsibilities and balance of the academic staff/faculty of the basic biomedical sciences, the behavioural and social sciences and the clinical sciences required to deliver the curriculum adequately, including the balance between medical and non-medical academic staff, the balance between full-time and part-time academic staff, and the balance between academic and non-academic staff. (B 5.1.1)
  - address criteria for scientific, educational and clinical merit, including the balance between teaching, research and service functions. (B 5.1.2)
  - specify and monitor the responsibilities of its academic staff/faculty of the basic biomedical sciences, the behavioural and social sciences and the clinical sciences. (B 5.1.3)

Quality development standards:
The medical school **should**

- in its policy for staff recruitment and selection take into account criteria such as
  - relationship to its mission, including significant local issues. (Q 5.1.1)
  - economic considerations. (Q 5.1.2)

Annotations:

- The *staff recruitment and selection policy* would include ensuring a sufficient number of highly qualified basic biomedical scientists, behavioural and social scientists and clinicians to deliver the curriculum and a sufficient number of high quality researchers in relevant disciplines or subjects.
- *Balance of academic staff/faculty* would include staff with joint responsibilities in the basic biomedical, the behavioural and social and clinical sciences in the university and health care facilities, and teachers with dual appointments.
- *Balance between medical and non-medical staff* would imply consideration of sufficient medical orientation of the qualifications of non-medically educated staff.
- *Merit* would be measured by formal qualifications, professional experience, research output, teaching awards and peer recognition.
- *Service functions* would include clinical duties in the health care delivery system, as well as participation in governance and management.
- *Significant local issues* would include gender, ethnicity, religion, language and other items of relevance to the school and the curriculum.
- *Economic considerations* would include taking into account institutional conditions for staff funding and efficient use of resources.

5.2 STAFF ACTIVITY AND STAFF DEVELOPMENT

Basic standards:
The medical school **must**

- formulate and implement a staff activity and development policy which
  - allow a balance of capacity between teaching, research and service functions. (B 5.2.1)
  - ensure recognition of meritorious academic activities, with appropriate emphasis on teaching, research and service qualifications. (B 5.2.2)
  - ensure that clinical service functions and research are used in teaching and learning. (B 5.2.3)
  - ensure sufficient knowledge by individual staff members of the total curriculum. (B 5.2.4)
  - include teacher training, development, support and appraisal. (B 5.2.5)

Quality development standards:
The medical school **should**

- take into account teacher-student ratios relevant to the various curricular components. (Q 5.2.1)
- design and implement a staff promotion policy. (Q 5.2.2)

Annotations:

- The *balance of capacity between teaching, research and service functions* would include provision of protected time for each function, taking into account the needs of the medical school and professional qualifications of the teachers.
- *Recognition of meritorious academic activities* would be through rewards, promotion and/or remuneration.
- *Sufficient knowledge of the total curriculum* would include knowledge about instructional/learning methods and overall curriculum content in other disciplines and subject areas with the purpose of fostering cooperation and integration.
- *Teacher training, development, support and appraisal* would involve all teachers, not only new teachers, and also include teachers employed by hospitals and clinics.

6. EDUCATIONAL RESOURCES

6.1 PHYSICAL FACILITIES

Basic standards:
The medical school **must**

- have sufficient physical facilities for staff and students to ensure that the curriculum can be delivered adequately. (B 6.1.1)
- ensure a learning environment, which is safe for staff, students, patients and their relatives. (B 6.1.2)

Quality development standard:
The medical school **should**

- improve the learning environment by regularly updating and modifying or extending the physical facilities to match developments in educational practices. (Q 6.1.1)

Annotations:

- *Physical facilities* would include lecture halls, class, group and tutorial rooms, teaching and research laboratories, clinical skills laboratories, offices, libraries, information technology facilities and student amenities such as adequate study space, lounges, transportation facilities, catering, student housing, on-call accommodation, personal storage lockers, sports and recreational facilities.
- *A safe learning environment* would include provision of necessary information and protection from harmful substances, specimens and organisms, laboratory safety regulations and safety equipment.

6.2 CLINICAL TRAINING RESOURCES

Basic standards:
The medical school **must**

- ensure necessary resources for giving the students adequate clinical experience, including sufficient
  - number and categories of patients. (B 6.2.1)
  - clinical training facilities. (B 6.2.2)
  - supervision of their clinical practice. (B 6.2.3)

Quality development standard:
The medical school **should**

- evaluate, adapt and improve the facilities for clinical training to meet the needs of the population it serves. (Q 6.2.1)

Annotations:

- *Patients* may include validated simulation using standardised patients or other techniques, where appropriate, to complement, but not substitute clinical training.
- *Clinical training facilities* would include hospitals (adequate mix of primary, secondary and tertiary), sufficient patient wards and diagnostic departments,

laboratories, ambulatory services (including primary care), clinics, primary health care settings, health care centres and other community health care settings as well as skills laboratories, allowing clinical training to be organised using an appropriate mix of clinical settings and rotations throughout all main disciplines.

- *Evaluate* would include evaluation of appropriateness and quality for medical training programmes in terms of settings, equipment and number and categories of patients, as well as health practices, supervision and administration.

6.3 INFORMATION TECHNOLOGY

Basic standards:
The medical school **must**

- formulate and implement a policy which addresses effective and ethical use and evaluation of appropriate information and communication technology. (B 6.3.1)
- ensure access to web-based or other electronic media. (B 6.3.2.)

Quality development standards:
The medical school **should**

- enable teachers and students to use existing and exploit appropriate new information and communication technology for
  - independent learning. (Q 6.3.1)
  - accessing information. (Q 6.3.2)
  - managing patients. (Q 6.3.3)
  - working in health care delivery systems. (Q 6.3.4)
- optimise student access to relevant patient data and health care information systems. (Q 6.3.5)

Annotations:

- *Effective and ethical use of information and communication technology* would include use of computers, cell/mobile telephones, internal and external networks and other means as well as coordination with library services. The policy would include common access to all educational items through a learning management system. Information and communication technology would be useful for preparing students for evidence-based medicine and life-long learning through continuing professional development (CPD).
- *Ethical use* refers to the challenges for both physician and patient privacy and confidentiality following the advancement of technology in medical education and health care. Appropriate safeguards would be included in relevant policy to promote the safety of physicians and patients while empowering them to use new tools.

6.4 MEDICAL RESEARCH AND SCHOLARSHIP

Basic standards:
The medical school **must**

- use medical research and scholarship as a basis for the educational curriculum. (B 6.4.1)

- formulate and implement a policy that fosters the relationship between medical research and education. (B 6.4.2)
- describe the research facilities and priorities at the institution. (B 6.4.3)

Quality development standards:
The medical school **should**

- ensure that interaction between medical research and education
  - influences current teaching. (Q 6.4.1)
  - encourages and prepares students to engage in medical research and development. (Q 6.4.2)

Annotation:

- *Medical research and scholarship* encompasses scientific research in basic biomedical, clinical, behavioural and social sciences. Medical scholarship means the academic attainment of advanced medical knowledge and inquiry.
  The medical research basis of the curriculum would be ensured by research activities within the medical school itself or its affiliated institutions and/or by the scholarship and scientific competencies of the teaching staff.
  Influences on current teaching would facilitate learning of scientific methods and evidence-based medicine (cf. 2.2).

6.5 EDUCATIONAL EXPERTISE

Basic standards:
The medical school **must**

- have access to educational expertise where required. (B 6.5.1)
- formulate and implement a policy on the use of educational expertise in
  - curriculum development. (B 6.5.2)
  - development of teaching and assessment methods. (B 6.5.3)

Quality development standards:
The medical school **should**

- demonstrate evidence of the use of in-house or external educational expertise in staff development. (Q 6.5.1)
- pay attention to current expertise in educational evaluation and in research in the discipline of medical education. (Q 6.5.2)
- allow staff to pursue educational research interest. (Q 6.5.3)

Annotations:

- *Educational expertise* would deal with processes, practice and problems of medical education and would include medical doctors with research experience in medical education, educational psychologists and sociologists. It can be provided by an education development unit or a team of interested and experienced teachers at the institution or be acquired from another national or international institution.
- *Research in the discipline of medical education* investigates theoretical, practical and social issues in medical education.

6.6 EDUCATIONAL EXCHANGES

Basic standards:
The medical school **must**

- formulate and implement a policy for
  - national and international collaboration with other educational institutions, including staff and student mobility. (B 6.6.1)
  - transfer of educational credits. (B 6.6.2)

Quality development standards:
The medical school **should**

- facilitate regional and international exchange of staff and students by providing appropriate resources. (Q 6.6.1)
- ensure that exchange is purposefully organised, taking into account the needs of staff and students, and respecting ethical principles. (Q 6.6.2)

Annotations:

- *Other educational institutions* would include other medical schools as well as other faculties and institutions for health education, such as schools for public health, dentistry, pharmacy and veterinary medicine.
- A *policy for transfer of educational credits* would imply consideration of limits to the proportion of the study programme which can be transferred from other institutions. Transfer of educational credits would be facilitated by establishing agreements on mutual recognition of educational elements and through active programme coordination between medical schools. It would also be facilitated by use of a transparent system of credit units and by flexible interpretation of course requirements.
- *Staff* would include academic, administrative and technical staff.

7. PROGRAMME EVALUATION

7.1 MECHANISMS FOR PROGRAMME MONITORING AND EVALUATION

Basic standards:
The medical school **must**

- have a programme of routine curriculum monitoring of processes and outcomes. (B 7.1.1)
- establish and apply a mechanism for programme evaluation that
  - addresses the curriculum and its main components. (B 7.1.2)
  - addresses student progress. (B 7.1.3)
  - identifies and addresses concerns. (B 7.1.4)
- ensure that relevant results of evaluation influence the curriculum. (B 7.1.5)

Quality development standards:
The medical school **should**

- periodically evaluate the programme by comprehensively addressing
  - the context of the educational process. (Q 7.1.1)
  - the specific components of the curriculum. (Q 7.1.2)
  - the long-term acquired outcomes. (Q 7.1.3)
  - its social accountability (Q 7.1.4)

Annotations:

- *Programme monitoring* would imply the routine collection of data about key aspects of the curriculum for the purpose of ensuring that the educational process is on track and for identifying any areas in need of intervention. The collection of data is often part of the administrative procedures in connection with admission of students, assessment and graduation.
- *Programme evaluation* is the process of systematic gathering of information to judge the effectiveness and adequacy of the institution and its programme. It would imply the use of reliable and valid methods of data collection and analysis for the purpose of demonstrating the qualities of the educational programme or core aspects of the programme in relation to the mission and the curriculum, including the intended educational outcomes. Involvement of external reviewers from other institutions and experts in medical education would further broaden the base of experience for quality improvement of medical education at the institution.
- *Main components of the curriculum* would include the curriculum model (cf. B 2.1.1), curriculum structure, composition and duration (cf. 2.6) and the use of core and optional parts (cf. Q 2.6.3).
- *Identified concerns* would include insufficient fulfilment of intended educational outcomes. It would use measures of and information about educational outcomes, including identified weaknesses and problems, as feedback for interventions and plans for corrective action, programme development and curricular improvements; this requires safe and supporting environment for feedback by teachers and students.
- *The context of the educational process* would include the organisation and resources as well as the learning environment and culture of the medical school.

- *Specific components of the curriculum* would include course description, teaching and learning methods, clinical rotations and assessment methods.
- *Social accountability,* cf. 1.1, annotation.

7.2 TEACHER AND STUDENT FEEDBACK

Basic standard:
The medical school **must**
- systematically seek, analyse and respond to teacher and student feedback. (B 7.2.1)

Quality development standard:
The medical school **should**
- use feedback results for programme development. (Q 7.2.1)

Annotation:
- *Feedback* would include students' reports and other information about the processes and products of the educational programmes. It would also include information about malpractice or inappropriate conduct by teachers or students with or without legal consequences.

7.3 PERFORMANCE OF STUDENTS AND GRADUATES

Basic standards:
The medical school **must**
- analyse performance of cohorts of students and graduates in relation to
  - mission and intended educational outcomes. (B 7.3.1)
  - curriculum. (B 7.3.2)
  - provision of resources. (B 7.3.3)

Quality development standards:
The medical school **should**
- analyse performance of cohorts of students and graduates in relation to student
  - background and conditions. (Q 7.3.1)
  - entrance qualifications. (Q 7.3.2)
- use the analysis of student performance to provide feedback to the committees responsible for
  - student selection. (Q 7.3.3)
  - curriculum planning. (Q 7.3.4)
  - student counselling. (Q 7.3.5)

Annotations:
- Measures and analysis of *performance of cohorts of students* would include information about actual study duration, examination scores, pass and failure rates, success and dropout rates and reasons, student reports about conditions in their courses, as well as time spent by them on areas of special interest, including optional components. It would also include interviews of students frequently repeating courses, and exit interviews with students who leave the programme.

- Measures of *performance of cohorts of graduates* would include information on results at national license examinations, career choice and postgraduate performance, and would, while avoiding the risk of programme uniformity, provide a basis for curriculum improvement.
- *Student background and conditions* would include social, economic and cultural circumstances.

7.4 INVOLVEMENT OF STAKEHOLDERS

Basic standard:
The medical school **must**

- in its programme monitoring and evaluation activities involve its principal stakeholders. (B 7.4.1)

Quality development standards:
The medical school **should**

- for other stakeholders
  - allow access to results of course and programme evaluation. (Q 7.4.1)
  - seek their feedback on the performance of graduates. (Q 7.4.2)
  - seek their feedback on the curriculum. (Q 7.4.3)

Annotations:

- *Principal stakeholders*, cf. 1.4, annotation.
- *Other stakeholders*, cf. 1.4, annotation.

8. GOVERNANCE AND ADMINISTRATION

8.1 GOVERNANCE

Basic standard:
The medical school **must**

- define its governance structures and functions including their relationships within the university. (B 8.1.1)

Quality development standards:
The medical school **should**

- in its governance structures set out the committee structure, and reflect representation from
  - principal stakeholders. (Q 8.1.1)
  - other stakeholders. (Q 8.1.2)
- ensure transparency of the work of governance and its decisions. (Q 8.1.3)

Annotations:

- *Governance* means the act and/or the structure of governing the medical school. Governance is primarily concerned with policy making, the processes of establishing general institutional and programme policies and also with control of the implementation of the policies. The institutional and programme policies would normally encompass decisions on the mission of the medical school, the curriculum, admission policy, staff recruitment and selection policy and decisions on interaction and linkage with medical practice and the health sector as well as other external relations.
- *Relationships within the university* of its governance structures would be specified, for example if the medical school is part of or affiliated to a university.
- *The committee structure*, which includes a curriculum committee, would define lines of responsibility, cf. B 2.7.1.
- *Principal stakeholders*, cf. 1.4, annotation.
- *Other stakeholders*, cf. 1.4, annotation.
- *Transparency* would be obtained by newsletters, web-information or disclosure of minutes.

8.2 ACADEMIC LEADERSHIP

Basic standard:
The medical school **must**

- describe the responsibilities of its academic leadership for definition and management of the medical educational programme. (B 8.2.1)

Quality development standard:
The medical school **should**

- periodically evaluate its academic leadership in relation to achievement of its mission and intended educational outcomes. (Q 8.2.1)

Annotation:

- *Academic leadership* refers to the positions and persons within the governance and management structures being responsible for decisions on academic matters in teaching, research and service and would include dean, deputy dean, vice deans, provost, heads of departments, course leaders, directors of research institutes and centres as well as chairs of standing committees (e.g. for student selection, curriculum planning and student counselling).

8.3 EDUCATIONAL BUDGET AND RESOURCE ALLOCATION

Basic standards:
The medical school **must**

- have a clear line of responsibility and authority for resourcing the curriculum, including a dedicated educational budget. (B 8.3.1)
- allocate the resources necessary for the implementation of the curriculum and distribute the educational resources in relation to educational needs. (B 8.3.2)

Quality development standards:
The medical school **should**

- have autonomy to direct resources, including teaching staff remuneration, in an appropriate manner in order to achieve its intended educational outcomes. (Q 8.3.1)
- in distribution of resources take into account the developments in medical sciences and the health needs of the society. (Q 8.3.2)

Annotations:

- *The educational budget* would depend on the budgetary practice in each institution and country and would be linked to a transparent budgetary plan for the medical school.
- *Resource allocation* presupposes institutional autonomy, cf. 1.2, annotations.
- Regarding *educational budget and resource allocation* for student support and student organisations, cf. B 4.3.3 and 4.4, annotation.

8.4 ADMINISTRATION AND MANAGEMENT

Basic standards:
The medical school **must**

- have an administrative and professional staff that is appropriate to
  - support implementation of its educational programme and related activities. (B 8.4.1)
  - ensure good management and resource deployment. (B 8.4.2)

Quality development standard:
The medical school **should**

- formulate and implement an internal programme for quality assurance of the management including regular review. (Q 8.4.1)

Annotations:

- *Management* means the act and/or the structure concerned primarily with the implementation of the institutional and programme policies including the economic and organisational implications i.e. the actual allocation and use of resources within the medical school.
  Implementation of the institutional and programme policies would involve carrying into effect the policies and plans regarding mission, the curriculum, admission, staff recruitment and external relations.
- *Administrative and professional staff* in this document refers to the positions and persons within the governance and management structures being responsible for the administrative support to policy making and implementation of policies and plans and would - depending on the organisational structure of the administration - include head and staff in the dean's office or secretariat, heads of financial administration, staff of the budget and accounting offices, officers and staff in the admissions office and heads and staff of the departments for planning, personnel and IT.
- *Appropriateness of the administrative staff* means size and composition according to qualifications.
- *Internal programme of quality assurance* would include consideration of the need for improvements and review of the management.

8.5 INTERACTION WITH HEALTH SECTOR

Basic standard:
The medical school **must**

- have constructive interaction with the health and health related sectors of society and government. (B 8.5.1)

Quality development standard:
The medical school **should**

- formalise its collaboration, including engagement of staff and students, with partners in the health sector. (Q 8.5.1)

Annotations:

- *Constructive interaction* would imply exchange of information, collaboration, and organisational initiatives. This would facilitate provision of medical doctors with the qualifications needed by society.
- *The health sector* would include the health care delivery system, whether public or private, and medical research institutions.
- *The health-related sector* would - depending on issues and local organisation - include institutions and regulating bodies with implications for health promotion and disease prevention (e.g. with environmental, nutritional and social responsibilities).
- To *formalise collaboration* would mean entering into formal agreements, stating content and forms of collaboration, and/or establishing joint contact and coordination committees as well as joint projects.

9. CONTINUOUS RENEWAL

Basic standards:
The medical school **must** as a dynamic and socially accountable institution

- initiate procedures for regularly reviewing and updating the process, structure, content, outcomes/competencies, assessment and learning environment of the programme. (B 9.0.1)
- rectify documented deficiencies. (B 9.0.2)
- allocate resources for continuous renewal. (B 9.0.3)

Quality development standards:
The medical school **should**

- base the process of renewal on prospective studies and analyses and on results of local evaluation and the medical education literature. (Q 9.0.1)
- ensure that the process of renewal and restructuring leads to the revision of its policies and practices in accordance with past experience, present activities and future perspectives. (Q 9.0.2)
- address the following issues in its process of renewal:
  - adaptation of mission statement to the scientific, socio-economic and cultural development of the society. (Q 9.0.3) (cf. 1.1)
  - modification of the intended educational outcomes of the graduating students in accordance with documented needs of the environment they will enter. The modification might include clinical skills, public health training and involvement in patient care appropriate to responsibilities encountered upon graduation. (Q 9.0.4) (cf. 1.3)
  - adaptation of the curriculum model and instructional methods to ensure that these are appropriate and relevant. (Q 9.0.5) (cf. 2.1)
  - adjustment of curricular elements and their relationships in keeping with developments in the basic biomedical, clinical, behavioural and social sciences, changes in the demographic profile and health/disease pattern of the population, and socioeconomic and cultural conditions. The adjustment would ensure that new relevant knowledge, concepts and methods are included and outdated ones discarded. (Q 9.0.6) (cf. 2.2 - 2.6)
  - development of assessment principles, and the methods and the number of examinations according to changes in intended educational outcomes and instructional methods. (Q 9.0.7) (cf. 3.1 and 3.2)
  - adaptation of student recruitment policy, selection methods and student intake to changing expectations and circumstances, human resource needs, changes in the premedical education system and the requirements of the educational programme. (Q 9.0.8) (cf. 4.1 and 4.2)
  - adaptation of academic staff recruitment and development policy according to changing needs. (Q 9.0.9) (cf. 5.1 and 5.2)
  - updating of educational resources according to changing needs, i.e. the student intake, size and profile of academic staff, and the educational programme. (Q 9.0.10) (cf. 6.1 - 6.3)
  - refinement of the process of programme monitoring and evaluation. (Q 9.0.11) (cf. 7.1 – 7.4)

- development of the organisational structure and of governance and management to cope with changing circumstances and needs and, over time, accommodating the interests of the different groups of stakeholders. (Q 9.0.12) (cf. 8.1 – 8.5)

Annotation:

- *Prospective studies* would include research and studies to collect and generate data and evidence on country-specific experiences with best practice.

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