

Minimum essential requirements and standards in medical education

ANDRZEJ WOJTCZAK, M. ROY SCHWARZ*

Institute for International Medical Education, White Plains, NY, USA

SUMMARY *Increasing globalization of medicine and worldwide migration of physicians call for urgent definition of a set of global standards and requirements to guide medical education curricula. This article reviews the definition of standards in general, and proposes a definition of standards and global minimum essential requirements for use in medical education. They may serve as a tool for the improvement of quality and international comparisons of basic medical programs. Reviewing the use of medical standards worldwide, the China Medical Board established the Institute for International Medical Education (IIME). The IIME project is aimed at defining 'global minimum essential requirements' comprising sciences basic to medicine, clinical knowledge and skills, professional values, behavior and ethics of universal value. They represent only a portion of requirements since the curriculum of each country and medical school has to address its unique health and social needs. Finally, existing impediments and hesitation in use of international standards in medical education are presented.*

Introduction

On the dawn of a new millennium, the world is facing increasing globalization in different areas of our lives. We are observing an increasing migration of physicians from one country to another, and the rise of the 'global professional' qualified to provide services in any country of the world. This inevitably is giving way to an introduction of internationally accepted definitions, educational standards and requirements and professional values and behavior. However, the content of medical curricula, which is the foundation of undergraduate courses conducted in about 1600 medical schools worldwide, varies from one school to another. Their content is mostly defined in terms of general objectives based on the consensus of academic teachers regarding requirements at the time of the final examinations. This results in a very different level of medical knowledge, skills and behavior acquired by graduates of medical schools from different countries with implications for the quality of healthcare delivered for over six billion inhabitants worldwide.

Consequently, we cannot neglect an urgent need for defining 'global essential requirements and standards' that would specify the 'core' knowledge, skills, competences, attitudes and behavior of universal value to the practice of medicine. They should be incorporated in every medical curriculum as global requirements that would equip graduates, regardless of where they are educated, with similar universal competences, thus securing proper quality of health care.

Globalization and international standards

The global trend is to formulate international standards aimed at improving the quality of life for increasing numbers of people. There are already international standards for financial transactions and telecommunications, enabling people to communicate and transact business with each other. International standards are emerging in such areas as environmental protection and food safety. Standards for data collection are enabling organizations such as the United Nations and the Organization for Economic Cooperation and Development (OECD) to develop common statistical measures and to make comparisons. There are also standards for human rights, bringing the pressure of world opinion onto states that violate generally accepted standards of behavior.

Globalization is helping to produce a new vision of cooperation for common goals and specific advantages without precluding the local culture, language and various requirements responsive to local realities. Thus, the development of common international standards is progressing rapidly, especially in view of such international agreements as the North American Free Trade Agreement (NAFTA, 1993), and the World Trade Organization General Agreement on Trade in Services (GATS, 1994). These agreements are opening doors to global mobility and encouraging the development of common educational standards, mutual recognition, and the liberalization of processes by which professionals are allowed to practice. Although higher education is not mentioned explicitly in NAFTA, it is nevertheless affected by Annex 1210.5, which calls for member countries to encourage the development of mutually acceptable standards for licensing professional service providers, and to provide recommendations on mutual recognition.

Standards: what does it mean?

Standards are developed because without them life would be unpredictable, chaotic and often dangerous. Strict standards are used in the construction of buildings, bridges, highways, and tunnels. Stringent security and maintenance standards are essential in aviation, and pilots are expected to have passed appropriate tests. Proper governmental agencies are expected to develop standards to protect the quality

Correspondence: Professor Andrzej Wojtczak, MD DMSc, Director, Institute for International Medical Education, 106 Corporate Park Drive, Suite 100, White Plains, NY 10604-3817, USA. Tel: 001 914 253 6633; fax: 001 914 253 6644; email: institute@iime.org

*M. Roy Schwarz M. D. - President, China Medical Board of N.Y. 750 Third Ave. New York N.Y. 10017

of drinking water and food. Consumers expect pharmaceutical products to be safe and effective because they are checked against standards. When people see doctors, they expect professional conduct and assume that he or she has met the licensing standards for practicing medicine.

However, the term ‘standard’ means different things to different people, and often is used interchangeably with ‘objectives’, ‘outcomes’ and ‘goals’. Sometimes the word is used as a synonym for doing better in some non-specific way, such as “we should improve our standards”, or “the standards are too low”.

The dictionary definition of ‘*standard*’ refers to “something set up and established by authority, custom or general consent as a model, example or rule for the measure of quantity, weight, extent, value, or quality”. ‘Standard’ is also defined as a “criterion, gauge, yardstick, touchstone” by which judgments or decisions may be made. Thus, the word ‘standard’ refers simultaneously to both ‘model and example’ and ‘criterion or yardstick’ for determining how well one’s performance approximates the designed model. Thus, a standard is both a *goal* (what should be done) and a *measure of progress* toward that goal (how well it was done). Therefore, to be meaningful, a standard should offer a realistic prospect of evaluation to measure whether anyone actually meets it. Without that, it has no practical value.

A standard may be *mandatory* (required by law), *voluntary* (established by professional organizations and available for use), or *de facto* (generally accepted by custom or convention, way of dress, manners or behavior). It can be measured and enforced in a wide variety of ways.

Setting international standards or minimum essential requirements for medical education

The function of any standard is a transmission of information from those who have the knowledge to those who need and can use that knowledge. In the educational system, standards tell students what is expected of them to succeed in school and professional life, and the assessment provides information about how well expectations have been met. Assessment also tells whether graduates truly possess the necessary knowledge and skills to start work or study further.

The first international standard in the field of education was developed in mathematics, where experts had to agree what should be taught and learned in their subject. This helped promote the development of standards in other areas of science. However, medical education is an area that lags behind others in this regard, in spite of the fact that most technical aspects of medicine, many aptitudes of physicians, and the essence of doctor–patient relationship cross national boundaries.

In view of the very different meanings of ‘standard’, the following working definition of medical education standards might be proposed:

Standards in medical education are set up, by consent of experts or by decision of educational authority, as “model designs or formulations” related to different aspects of medical education, and presented in such way to make possible assessment of graduates’ performance in compliance with generally accepted professional requirements.

Three types of interrelated educational standards might be envisaged. First, the *content standards or curriculum standards* describe skills, knowledge, attitudes and values that teachers are supposed to ‘teach’ and students are expected to learn. Second, the *assessment or performance standards* define degrees of attainment of content standards and level of competences in compliance with the professional requirements. Finally, the *process or opportunity-to-learn standards* define the availability of staff and other resources necessary for medical school students to meet the content and performance standards. In other words, the content standards define what is to be taught and learned, and performance standards describe how well it has been learned. The content standards, without performance standards, are meaningless. Similarly, opportunity-to-learn standards cannot stand on their own because without content and performance standards, it is not possible to assess whether the resources are effectively deployed.

The *content standards* of medical education can be defined as ‘*essential (core) requirements*’ that the undergraduate medical curriculum should provide to equip physicians with the knowledge, skills and attitudes necessary to start graduate medical education or specialty training or, in some countries, to practice medicine under specified supervision. From an international perspective, one can speak about the ‘*global minimum essential requirements*’ or, briefly ‘*global minimum essentials*’, which may be defined as follows:

The global minimum essential requirements specify the knowledge, skills and attitudes related to sciences basic to medicine, clinical practice and ethical values, which the medical curriculum should contain to ensure that graduates are prepared to begin further graduate medical education or to start to practice medicine under supervision.

The ‘*global minimum essential requirements*’ may appear similar to a three-tiered cake composed of international, national, and medical school layers. The concept of the ‘global minimum essential’ does not imply uniformity of medical curriculum. Besides universal competences required by physicians throughout the world, there are competences specific to given settings and cultures where the physician will practice. Thus, setting global standards and requirements should not be considered a threat to the fundamental principle that medical education has to address the specific needs in a given social and cultural context. The standards and essential requirements should serve as guidance—not as directives—and there should be enough leeway in their implementation to permit continual revision and improvement.

Some of the present-day art and science of medicine is essential for medical practice, and as such will certainly endure the fast progress in science and technology, being of universal value and application. Such essential elements should be incorporated into every medical curriculum. These international standards should be used as a starting point when building up national or medical school standards specific to local needs. Whether standards are international or national, teachers should adapt and modify them to take advantage of current events. The faculty of each medical school, working with the school’s dean, is responsible for determining the learning objectives and specifying the

curriculum for the school's educational program including the methods of assessment of students to demonstrate the acquired professional competences. The provision for special study modules may create diversity between medical schools and between individual graduates. The medical schools should follow the motto *'think globally and act locally.'*

However, standards alone are not likely to change anyone's behavior and expectations. Whether developed at the international or national level, standards must be linked to student tests; for the standards to matter to teachers and students, the tests must be based on the standards. If the two are linked, both teachers and students will know what the test is likely to cover, and both will know that what is taught counts. When a nation announces standards but continues to use old tests, then of course the new standards will be ignored. If the standards form the basis for the nation's testing program, they will not be ignored.

If national standards meet global standards, then all schools of medicine which are accredited by the national organization would be accepted as meeting the global standards of the future global accrediting system.

Medical standards in use: the world's overview

In the United States, the National Board of Medical Examiners (NBME) was established in 1915. With its central office located in Philadelphia, the NBME guarantees equal standards for medical doctors graduating from all 125 medical schools, and assures portability of qualifications within the United States. That examination is a prerequisite for licensure in the 50 states and recently also for foreign medical graduates. Graduates from medical schools outside the United States, Canada and Puerto Rico are recognized by the Educational Commission for Foreign Medical Graduates (ECFMG), and its certificate allows foreign graduates to work as members of the US medical profession. Since 1993, the Federation of State Medical Boards and the National Board of Medical Examiners have established a new single, three-step examination for medical licensure. It is designed to assess a physician's ability to apply knowledge, concepts, and principles that are important in health and diseases which constitute the basis of patient care.

In Mexico, the National Committee on Accreditation has recently begun the process of accreditation in a few medical schools with support of the US Liaison Committee on Medical Education.

In Europe, medical education has been challenged by political changes brought about by the Maastricht Agreement (1993) and the establishment of the European Union (UE) free labor market agreements. These resulted in the increased migration of doctors between the member states. However, the first agreement on mobility of medical doctors was established in 1965 between five Nordic countries. In June 1975, the European Economic Community, now the European Union, issued a Directive on the free movement of medical doctors and the initial recognition of their diplomas and certificates. This directive has opened up a free movement of medical doctors primarily between nine states. In 1992, EFTA countries were also included and presently free movement is taking place among 18 member states. This political decision was based on the assumption of comparability of standards of medical education in the member countries. Therefore, the specified requirements

were very formal and requested only a minimum of 6 years' duration or 5500 hours of basic and clinical sciences and training during the undergraduate curriculum at the medical school. Established in 1975, the Advisory Committee on Medical Training (ACMT) has been entrusted with the task of ensuring high standards of medical education in the member states. It has produced a number of reports and recommendations. Without any administrative power, but using indirect influence, they have contributed to diminishing the traditional differences between Northern and Southern Europe and to improving the quality of medical education.

In view of the forthcoming challenge of integration of new members from Central and Eastern Europe into the European Union requirements, interest in the introduction of mutual requirements and standards in medical education with attempts at the accreditation of medical programs may grow.

In Great Britain, the report of the Education Committee of the General Medical Council issued in December 1993 made an attempt to reduce curriculum overload by revising the standards of undergraduate medical education, and indicated how most effectively to revise the medical curriculum framework. The report recommended that medical schools should move away from the traditional, all-embracing curriculum and strive towards a more modern twofold approach. Undergraduate students must adhere to a rigorously defined 'core curriculum' which defines the requirements needed to equip them with the essential skills that must be met before assuming the responsibilities of a pre-registration doctor. Students are given the opportunity to pursue 'special study modules' in areas of particular interest to them. The core and special study modules are strictly assessed.

In Australia, the Accreditation Committee of the Australian Medical Council (AMC), established in 1985, has been entrusted with developing criteria for accreditation and all matters related to assessment and accreditation of the medical schools. Since 1991, the Australian Health Ministry requires that all medical practitioners in Australia receive unconditional registration in any state or territory of the Commonwealth, if graduated from an Australian or New Zealand medical school, or to hold a certificate of the Australian Medical Council. Prior to the establishment of the Accreditation Committee, medical education recommendations of the General Medical Council of the UK were used.

In Latin America, since the 1960s, the 'Alliance for Progress' has fostered collaboration between South and North American medical institutions with an impact on the improvement of medical education. A new immigration law introduced in the United States in 1977 created major obstacles to the influx of medical students from Latin America. Today, the quality of medical education in Latin American countries varies from excellent to poor. The Pan American Federation of Association of Medical Schools (PAFAMS), established in 1962, and the National Associations of Medical Schools have made attempts to develop accreditation standards for Latin American states. With the advent of MERCOSUL (cooperation among Brazil, Paraguay, Uruguay, and Argentina), physicians are being trained more according to the standards developed at least for South America.

In Asia, the situation differs from country to country. In

China, there is recognition of the necessity to modernize medical education; however, only a few medical universities have adopted innovations in the form of pilot projects and most medical schools continue a 'teacher-centered' curriculum. Very recently, an effort has been made to modernize the medical education process, and the national accreditation system for medical school programs has been introduced. In Malaysia, there are attempts to develop an accreditation system of medical schools based on the experiences of the United States Liaison Committee on Medical Education.

The World Federation for Medical Education (WFME), from its inception, has been involved in the improvement of medical education. Recently, it has begun the effort of developing globally accepted international standards to be used for the assessment of medical schools. A meeting of a group of international experts in medical education took place in Copenhagen in October 1999, and the report of this Working Group on defined 'International Standards in Basic Medical Education' is to be published soon. The World Federation plans to organize a series of conferences and workshops devoted to the implementation of these standards as a tool for international assessment and accreditation of medical schools.

The Institute for International Medical Education (IIME), established in 1999 by the China Medical Board of New York, has undertaken the task of providing leadership in defining 'global minimum essential requirements' of undergraduate medical programs. The project consists of three phases. Phase I started immediately with the creation of the Institute. Information on various aspects of medical education has been collected, and a Core Committee has been established consisting of experienced experts in international medical education, to begin the process of defining 'global minimum essential requirements' that every medical school should provide. These 'essentials' include the sciences basic to medicine, clinical knowledge and skills, and professional values, behavior and ethics of universal significance. They represent only a portion of the educational content of the medical curriculum since each country, region and medical school will have unique needs and requirements that the curriculum must also address. How these are taught or conveyed may differ with each medical school. Once a consensus is reached, these 'essentials' will be tested in several selected medical schools (Phase II). With successful employment and lessons learned, the process used in the first two phases will be modified (Phase III) and offered to the global academic community for further testing as a tool for improving the quality of medical education and of health-care. It may provide an acceptable basis to be used for the process of international evaluation and accreditation of medical programs.

The IIME Core Committee is further guided by a Steering Committee consisting of eight senior education and health policy experts with broad national and international experience. In addition, further oversight is provided through an Advisory Committee composed of 14 presidents or senior representatives from major international educational organizations interested and active in medical education. The Advisory Committee will provide an important forum for information exchange, advice and assistance to avoid duplication of similar efforts by different

institutions. Thus, setting the 'global minimum essential requirements' should not be considered a threat to the fundamental principle that medical education has to address the specific needs in a given social and cultural context where the physician is educated and will practice.

All of the above mentioned events and activities indicate a growing awareness of the process of globalization of medical education. Also in the circle of world medical experts, there is a rapidly growing understanding of the urgent need for the development of 'global minimum essential requirements and standards' in medical education that may be tested and available worldwide.

Hesitations and impediments

Much anxiety surrounds the misconception that 'international standard' in medical education equals uniformity or a common curriculum. It is quite clear that no one in the academic world would accept any compulsory compliance with rigid rules. The basic issue is to identify what is global and what is local, clearly stating the difference between globalization and uniformity.

Some global issues can be immediately identified as common ground. Obviously, the scientific basis of disease processes, the human genome, the molecular basis of disease, population (public) health, principles for practice of medicine, professional behavior and ethics or the development of habits using knowledge to produce more knowledge are truly global. The exchange of medical information is already global through the Internet, which makes all information available to the entire world. Other global issues have to be formulated after screening out curricula of medical schools around the world to evaluate the outcomes by the quality of medical care delivered.

Many educators negatively associate standards with standardized multiple-choice tests. However, standardized tests are only one of many other means of measuring progress toward external standards such as practical examination of performance or practical demonstrations of competences that have been acquired during studies.

The most controversial issue regarding standards is how they are going to be developed and enforced and by whom; will such standards be mandatory, voluntary, or *de facto*? There is fairly general agreement that content and performance standards should be voluntary and not mandatory, and that they should be created by professional associations of teachers and scholars, free of political interference.

However, the greatest impediments are the disparate resources available in different parts of the world, and the different cultural context in which medicine is to be practiced. Therefore, it is important to try to indicate what should be considered global and what local, where the commonality lies, and what is already global in medical education. It is clear that the process of globalization of medical education will be incremental, long and arduous. It is also clear that as the different stakeholders in medical education have varying expectations, the development of international essential requirements and standards is a matter of the negotiations necessary to reach consensus. This also will require time.

Thus, we can no longer ignore the urgent need for the development of international essential requirements and standards in education. If we do not proceed with a constructive approach guided by the knowledge and experience of

medical education experts from around the world, administrative approaches may begin to dominate with possible inconsistencies and inadequacies in meeting educational and changing societal needs. The very promising news is that many top medical educators are ready to contribute to this dialogue, believing that the outcomes could be most rewarding.

Notes on contributor

Dr. Andrzej Wojtczak is Director of the Institute for International Medical Education in New York and Professor in the School of Public Health and Social Medicine in Warsaw, and visiting Professor Kwansei Gakuin University, Sanda, Hyogo, Japan. Previously, he was Director of the WHO Research Centre for Health in Kobe, Japan and held the position of AMEE President.

Dr. M. Roy Schwarz is President of the China Medical Board of New York Inc., and Professor at the University of Washington and University of California at San Diego. Previously he was Dean and Vice Chancellor for Academic Affairs at the University of Colorado School of Medicine, and Senior Vice President of Medical Education and Science at the American Medical Association.

Bibliography

ACCREDITATION AND THE LIAISON COMMITTEE ON MEDICAL EDUCATION (1998) *Functions and Structure of a Medical School*.

AUSTRALIAN MEDICAL COUNCIL (1992) *The Assessment and Accreditation of Medical Schools*. Document published by Australian Medical Council.

EDUCATION COMMITTEE OF THE GENERAL MEDICAL COUNCIL (1993) *Tomorrow's Doctors: Recommendations on Undergraduate Medical Education* (London, GMC).

EXECUTIVE COUNCIL OF THE WORLD FEDERATION FOR MEDICAL EDUCATION (1998) *International Standards in Medical Education; Assessment and Accreditation of Medical Schools*, a position paper.

HAMILTON, J. (1994) Establishing Standards and Measurement Methods, WHO/ECFMG Conference, Geneva, Switzerland.

HENRY, R. (1997) Undergraduate programme objectives: the basis for learning and assessing by domain, in: R. Henry, K. Byrne & C. Engel (Eds) *Imperatives in Medical Education: The Newcastle Approach*, pp. 18–23.

KARLE, H. & NYSTRUP, J. (1996) *Evaluation of Medical Specialist Training, Assessment of Individuals and Accreditation of Institutions*, (Association for Medical Education in Europe, Occasional Paper No. 1 (Dundee, AMEE).

MEDICAL SCHOOL OBJECTIVES WRITING GROUP (1999) Learning objectives for medical student education— guidelines for medical schools: report I of the Medical School Objectives Project, *Academic Medicine*, 74 (1), p.13.

RAVITCH, D. (1995) *National Standards in American Education: A Citizen's Guide* (Washington, DC, The Brookings Institution).

ROYAL COLLEGE OF PHYSICIANS AND SURGEONS OF CANADA (1996) Skills for the new millennium: report of the societal needs working group, CanMEDS 2000 Project.

SCHWARZ, M.R. (1998) On moving towards international standards in health professions education, *Changing Medical Education and Medical Practice*. World Health Organization. Geneva.

STOBO, J.D. & BLANK, L.L. (1998) *Project Professionalism: Staying Ahead of the Wave* (Philadelphia, American Board of Internal Medicine).