



**TOWARDS THE
ASSESSMENT OF
QUALITY IN MEDICAL
EDUCATION**

Towards the assessment of quality in medical education

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Towards the assessment of quality in medical education

Reference points are needed to guide the important changes that medical education must undergo to meet the present and future needs of the health care system and society's expectations regarding medical care and medical practice. Recommendations for reorienting medical education towards greater social relevance and efficiency in the learning process and for making medical schools more accountable for the improvement of health care delivery must be supported by indicators and criteria for planning and assessment. This document proposes areas from which indicators should be drawn and suggests how to use them in self-assessment. A great deal of action research must be consistently carried out in the future in collaboration with policy-makers in health care and medical educators and practitioners in order to define quality medical education and identify ways to measure it, in response to specific needs of different national contexts.

A. Quality assurance in medical education

The process of quality assurance in medical education is intended to ensure that future physicians attain adequate standards of education and professional training. The effective application of this process, the evaluation of medical education, requires clear understanding of the goals of university-based professional education as well as of the context of its application in each instance. That is, at an institutional level, assuring quality medical education depends very much on the values that are attached to "good" medical education as well as on the mandate of that institution. Quality assurance thus encourages contemplation of the "ideal" as well as acknowledging reality.

Traditional goals of the university have been defined as the "methodical discovery and teaching of truths about serious and important things".¹ In its document **Changing medical education: an agenda for action**,² the World Health Organization (WHO) suggests a coordinated series of activities intended to facilitate change in medical education to meet the current and future requirements of society. The

¹Shils, E. The academic ethic. Chicago, University of Chicago Press, 1983.

²Changing medical education: an agenda for action. Geneva, World Health Organization, 1991 (unpublished document WHO/EDUC/91.200).

university's ultimate educational goal is presented as preparing people to function properly in society. In the professional context, this requires an understanding of the circumstances in which future graduates will function. By extension, it may also suggest the responsibility to positively influence these circumstances.

New exigencies in health care suggest that reforms in medical education should also be seen in the context of a need for interprofessional collaboration³ and for continuing education.⁴

In our search for appropriate medical education to serve the present and future needs of society, we have all recognized the limitations of focusing on curriculum revision and improving learning processes. The interdependency of health care systems and medical education is well known, however, and it is felt that to be successful any fundamental changes in medical education should take this reality into

³Learning together to work together for health. Report of a WHO Study Group on Multiprofessional Education of Health Personnel: the Team Approach. Geneva, World Health Organization, 1988 (World Health Organization Technical Report Series No. 769).

⁴Systems of continuing education: priority to district health personnel. Report of a WHO Expert Committee. Geneva, World Health Organization, 1990 (World Health Organization Technical Report Series No. 803).

account. The quality of medical education depends very much on the active participation of the medical school in health development, as well as on its continued acknowledgment of the traditional values of the university.

Although mandates of medical schools may vary from place to place and time to time, medical schools, if they are to become more responsive to the needs of society, should embrace the following principles:

1. active participation in improving the quality and coverage of care;
2. guarantees of the relevance of education and research to priority health needs;
3. a constant endeavour to develop, apply and disseminate effective learning processes in health science;
4. firm involvement in quality assurance of health care and assessment of technology.

These principles should influence the setting of standards in medical education, guide the development of approaches to evaluating medical education, and serve as the goals of strategies for change.

B. Contexts of evaluation

Quality assurance is a process that can take place at various levels: one medical school can implement a system of quality assurance on its own to monitor its educational performance; all medical schools in a country may decide collectively to develop a system of quality assurance; a government may decide to make quality assurance a requirement for medical schools; and international institutions such as the WHO may promote quality assurance to raise standards of medical education. The level at which a quality assurance system is adopted will influence the way it is implemented.

The following features are common to evaluation at all levels:

1. the adoption of a quality assurance system;
2. a data collection facility;
3. a data analysis and reporting facility;
4. a body to decide on improvements.

This document contains information on how to design a quality assurance system. Since quality assurance systems require the commitment of human and other resources, the ultimate goal of the undertaking should be clearly understood: **improvement of current performance in medical education.** Collecting data only, without deciding how to deal with the findings, would be costly and would yield few results. The responsibility for data collection and analysis should be given to a clearly defined group. A task force of administrators and educators could be set up for this purpose.

To provide a basis for comparison of quality of medical education between various schools, standard procedures must be used. This means deciding what data should be collected and how they will be gathered and reported. The decision-making bodies in the school (council, board, or curriculum committee) should be involved from the outset and should review the outcome.

An **institutional self-study** is a central feature of quality assurance systems. Self-study is an analysis by members of a college's academic community of the resources available to a college (school) of medicine and of the effectiveness of its educational programmes. In a self-study, the faculty, administrative officers, students, members of the governing body, and alumni of the college evaluate

the existing status of accomplishment and construct a statement of their collective expectations of the institution for the future.⁵

A self-study may take place as part of a school's accreditation process. Systematic accreditation of medical schools is carried out "to certify the maintenance of minimum standards of education throughout the geographic area defined by the scope of responsibility of the accrediting agency" in order to serve "the interests of the general public and of the students enrolled", in Canada by the Committee on Accreditation of Canadian Medical Schools (CACMS) and in the United States by the Liaison Committee on Medical Education (LCME). In both countries accreditation is voluntary and is carried out at the request of institutions. In general in both countries, however, medical licensure laws require that physicians be graduates of accredited medical schools.

⁵The Liaison Committee on Medical Education and Committee on Accreditation of Canadian Medical Schools. Functions and structure of a medical school: standards for accreditation of medical education programs leading to the M.D. degree. Chicago and Washington, D.C., Association of American Medical Colleges and the American Medical Association, 1985.

The accreditation process is both evaluative and formative. Since full or provisional accreditation are awarded, as well, the process and results of institutional self-study and the recommendations of the LCME/CACMS committee can have profound effects on a school's development.

In the accreditation process the criteria, standards and procedures are clearly defined, and considerable expertise relating to all aspects of the process have been developed. At the other end of the spectrum and for a variety of reasons (e.g., perceived programme weaknesses, changes in leadership, changes in institutional mission), many medical schools carry out periodic ad hoc curriculum renewal or evaluation exercises. Interestingly, although the validity of the accreditation process has been accepted both by medical schools and by physician licensing bodies, there is little evidence to suggest that the expertise related to accreditation has been exploited in the more prevalent and less formal ad hoc medical curriculum renewal and evaluation exercises.

C. Purposes of this document

This document is intended to provide **guidelines to assist in institutional self-study of medical education:**

1. to serve evaluative and/or formative objectives;
2. that may be administered locally, nationally and/or internationally;
3. whose level of approach may range from the relatively superficial (administration of a survey) to an in-depth study based on detailed information collected by a specially constituted committee;
4. where results for an institution would be viewed relative to its own mission and circumstances but with reference to criteria and standards of quality reflecting a national and/or international (e.g., European) consensus.

Specifically, this document is intended to fulfil the following purposes:

1. to identify the areas institutional self-study should address;
2. to suggest how an institutional self-study may examine these areas;
3. to provide examples of a general directive, as well as specific questions that address the areas of concern;
4. to outline action for future progress in defining and assessing quality medical education.

D. Areas to be addressed in an institutional self-study

Information should be collected that relates to:

1. The institution and its mandate

- the institutional mission or mandate
- objectives for medical education
- institutional governance, organization and administration

2. Students

- applications
- selection/admissions
- enrollment
- geographic (regional) representation
- quality (e.g., academic standing relative to national population of medical students or to students attracted to other professions)
- attrition
- career distribution of graduates

3. Curriculum

Design and development

- relevance to current and anticipated needs of society
- coherence
- comprehensiveness
- adequacy (Are national and local expectations achieved?)
- curricular model

Content

- emphases, e.g.:
 - basic science/clinical
 - didactic/practical
 - community-based/hospital-based
 - preventive/curative/rehabilitative
 - primary/secondary/tertiary
 - research/independent study
 - extent of integration
 - amount of elective time
- attention to new topics (e.g., medical ethics, health economics, clinical epidemiology, gerontology/geriatrics, health education)
- student workload (e.g., scheduled/unscheduled time)

- curriculum administration/evaluation (supporting infrastructure, student participation)
- teaching methods
- learning settings
- student assessments and grading systems
- student satisfaction
- faculty satisfaction

Evaluation

- curriculum review
- quality of professional performance of graduates

4. Resources

- faculty
- administrative staff
- physical plant
- finances
- hospital/clinical (teaching facilities/resources)
- library (e.g., holdings and accessibility)
- computer facilities/services
- teaching laboratory (and related facilities/services)

- student administration/support facilities (supporting infrastructure)
 - educational development/research/services, teacher training
- 5. Collaboration with other institutions on medical education**
- other medical schools (nationally, internationally)
 - government agencies responsible for planning and providing higher education
 - private institutions interested in health professions education/health care delivery
- 6. Collaboration on health care development**
- with agencies responsible for providing health care in the community
 - with government agencies responsible for planning, providing and assessing health care

This list is intended to be representative but not necessarily exhaustive. Furthermore, it is anticipated that each item addresses a domain of concerns that may be explored at varying levels of detail.

E. Examples of survey questions

The following groups of questions could be used specifically to assess the quality of medical education at an institution.

● **Sample questions for assessing the quality of entering medical students**

During the academic year 19../19..:

1. How many applications were there for positions in the entering class?
2. Is the faculty of the medical school satisfied with the quality of applicants?
3. Which of the following are used in the selection process (rate the items you select in order of importance):
 - past academic achievement (e.g., secondary-school grades)
 - the results of special entrance examinations
 - interviews
 - letters of recommendation

- autobiographical essays
 - work history
 - other (specify)
4. How many students were accepted into the entering class?
 5. How many offers of acceptance were required to fill the entering class?
 6. How many students in the entering class were from:
 - the local region?
 - elsewhere in the province/state?
 - elsewhere in the country (outside the institution's province/state)?
 - an industrialized country?
 - a developing country?
 7. Does the student selection process favour students from a particular geographic region?

8. Is the faculty of the medical school satisfied with the quality of students in the entering class?
9. Does the institution have a student recruitment programme?

● **Sample questions for assessing the objectives of the curriculum**

During the academic year 19../19..:

1. Is there a written statement of the institutional mission?
2. If this statement exists:
 - Does it explicitly refer to the educational responsibilities of the institution?
 - Does it explicitly refer to the social responsibilities of the institution?
 - Has it been widely distributed?
 - Does the faculty support it?
 - Do the students support it?
 - Does the community support it?

3. Is there a written statement of the educational goals of the institution?
4. If this statement exists:
 - Is it consistent with the overall mission of the institution?
 - Has it been widely distributed?
 - Does the faculty support it?
 - Do the students support it?
 - Does the community support it?
5. To what extent are the following emphasized in the curriculum:
 - prevention and primary care
 - secondary and tertiary care and curative medicine
 - care of the elderly and the chronically ill
 - care of acutely ill patients
 - social and behavioural aspects of health

- the scientific basis of medicine
 - principles of clinical epidemiology and clinical decision-making
 - the learning of interpersonal skills
 - major local and regional health-related issues
6. The curriculum provides significant educational experiences at which of the following sites?
- hospitals (secondary and tertiary care)
 - outpatient clinics
 - emergency clinics
 - community health centres
 - physicians' offices
 - occupational/industrial health facilities
 - patients' homes
 - homes for the aged

- chronic-care facilities
7. To what extent does your institution prepare students to acquire skills and techniques in the following areas:
 - prevention and health promotion
 - teamwork
 - organization and management
 - community action and involvement
 8. To what extent does your institution prepare students to work in multiprofessional teams?
 9. To what extent does the curriculum provide for self-study and elective educational experiences?

● **Sample questions for assessing collaboration on medical education**

1. Does your institution collaborate on medical education with other institutions in the country?
2. Does your institution collaborate on medical education with institutions in other countries or

with international agencies, such as the WHO and the Network of Community Oriented Educational Institutions for the Health Sciences?

3. To what extent is there collaboration between your institution and the following:
 - community representatives on medical education
 - local and regional health care providers on medical education
 - government agencies that provide health care
 - government agencies that plan and provide higher education
 - private organizations interested in health professions education and providing health care

4. Do faculty members at your institution serve as members of the organizations and agencies in item 3?

● **Sample questions for assessing the role of your school in organizing health care**

1. To what extent does your institution help organize community-based regional and national health programmes?
2. To what extent does your institution contribute to improving the health of groups at risk in the local community and/or in society at large?
3. To what extent does your school study and develop alternatives for delivering health services?
4. To what extent are medical students encouraged to participate in the types of activities listed above, either as core curriculum activities or elective experiences?

F. The process of self-study

Data relating to many of the items (e.g., student demographics) are probably collected routinely at most schools and can be obtained from institutional publications. Other items may require information not normally gathered, such as opinions of the effects and quality of education and training experiences. This information may be collected by survey and/or other more in-depth approaches, such as interviews.

Several constituencies should normally be sampled. These include: administrators; department chairmen; teachers; students; recent graduates; and possibly employers, or those supervising recent graduates; and consumers of health services, or community representatives. The information required, the sources of information, and the methods employed to collect it will depend on the unique characteristics and situation of the institution and the objectives of the self-study.

The development of surveys or other information-gathering procedures is important to the process, as is identifying the constituencies to be sampled. Care and thoroughness in participant sampling and in administering the surveys and interviews are also essential. These procedures, as well as the analyses of results, require appropriate expertise. Comparison of the results to an institution's mission and to generally accepted standards of quality for medical education will provide valid indicators of a medical education programme's major areas of strength and weakness.

The following are examples of more general statements to guide information-gathering (using surveys, interviews, etc.) relating to the areas treated above. Those responsible for the institutional self-study will use information-gathering approaches appropriate to the situation and resources. For example, interviewers guided by this statement may ask several questions similar to those in the survey; other questions will be more probing, and concerned with details and nuances not appropriate to a survey but nevertheless relevant and important.⁶

Quality of medical students

Considering the mission of the medical college (school), its stated objectives and its constituency, critically review the process of selection of medical students and the results of that process. Suggest realistic improvements, citing the need for additional resources, changes in policy, organization, administration, etc. Have faculty members observed any recent decline in the quality of students enrolled?

⁶Several of the items in this section have been taken from the Liaison Committee on Medical Education and the Committee on Accreditation of Canadian Medical Schools, Institutional self-study analysis of a college of medicine. Chicago and Washington, D.C., Association of American Medical Colleges and the American Medical Association, 1985.

Objectives of the curriculum

Are the emphases of your curriculum consistent with the mission of your institution? Critically review evidence suggesting that your faculty and students and the health care providers in the community and region understand and support the orientation and emphases of your curriculum.

Does your curriculum deal adequately with general maintenance of health and specific prevention of disease, or are most of the time and attention given to therapy of disease and repair of trauma? Recommend changes if indicated.

Evaluate the extent to which your curriculum provides practical experiences for students at places where health care is normally administered, locally and in the region. Evaluate the extent to which your curriculum addresses local and regional health problems. Recommend changes if indicated.

Review the special experiences or courses provided in your curriculum that expand the student's awareness of the full spectrum of medicine.

Collaboration with other institutions on medical education

Summarize and evaluate your institution's activities that encourage the exchange of medical education information among medical institutions in the country, with institutions in other countries, and with international organizations involved with medical education.

Summarize and evaluate your institution's collaboration on medical education with community and governmental organizations and agencies, with local and regional health care providers, and with private organizations interested in medical education.

The role of your school in organizing health care

Summarize and evaluate your institution's involvement in organizing health care at the community, regional and national levels.

G. Future action

This section outlines future action in **defining and assessing quality medical education.**

1. Elaboration of indicators:

Lists of specific indicators (questions) and criteria for assessment should be developed for each area under study. The activities proposed are:

- forming study groups
- identifying expert advisors

2. Development of a tool for the self-assessment of quality medical education:

The list of indicators, together with the proposed process for its use, should be reviewed by experts and potential users. The activities proposed are:

- consultation of experts for comments and suggestions
- preparation of a proposal for field-testing

3. **Field-testing of the tool:**

The tool for self-assessment of quality of medical education should be tested in a selected number of medical schools worldwide. The activities proposed are:

- selection of medical schools and presentation of a proposal for field-testing
- validation of the tool on the basis of the field-testing results

4. **Situation analysis of the assessment of quality medical education:**

Surveys should be conducted in countries or in larger geographical areas to ascertain the existence of current and planned mechanisms for assessing quality medical education. The activities proposed are:

- planning and organizing national and international surveys
- literature reviews

5. International collaboration and exchange of information:

National and international agencies interested in the assessment of quality medical education may exchange information and plan joint projects. The activities proposed are:

- organization of joint working groups on specific topics
- meetings to seek consensus

6. Research on the evaluation of quality medical education:

Research could be pursued in the following areas: refinement of the assessment tool, process development and practical guidelines for use, mechanisms for the improvement of medical education and development of strategies of exchange based on evaluation results. The activity proposed is:

- publication of noteworthy research findings

H. Conclusion

The assessment of quality medical education is beginning to interest policy-makers in education and health, training institutions, professional associations, and consumers. Considerable work is required to define concepts and methods and to disseminate them at the institutional and national levels worldwide.

This is a new field for conceptual and applied research that should lead to a better understanding of why and how physicians should be trained to optimally contribute to health development for individuals and the society at large.

Appendix

**Assessment of quality medical education
Forte dei Marmi, Italy
11-14 June 1991**

The World Health Organization (WHO) has produced a document, **Changing medical education: an agenda for action**,¹ that discusses a series of activities intended to lead to the adaptation of medical education to meet current and future requirements of society.

The proposed agenda consists of the following components:

1. setting standards and developing tools for assessment of the quality of medical education
2. strategies for change
3. follow-up through monitoring

¹Changing medical education: an agenda for action. Geneva, World Health Organization, 1991 (unpublished document WHO/EDUC/91.200).

At a meeting at Forte dei Marmi, Italy, 11-14 June 1991, sponsored jointly by WHO and the Smith-Kline Foundation (Milan, Italy) and attended by Italian medical school deans and medical educators, the first of these items was addressed. Specifically, the objectives of the meeting were as follows:

1. to propose a list of indicators of quality of medical education
2. to suggest practical assessment approaches that would reflect these indicators of quality
3. to recommend ways and means to facilitate the use of these assessment approaches in the Italian medical education context

A document entitled Performance indicators for medical education: a review of the literature² was prepared and circulated in advance of the meeting. Included was an early draft of "A self-assessment tool for measuring the quality of medical education" (a survey) that the Italian participants were asked to administer to persons in their respective institutions. Reactions to these materials and the results of the survey were major features of the meeting.

²Schmidt, H.G., Boelen, C., and Stultiens, L.G.H. Performance indicators for medical education. Maastricht and Geneva, the Network of Community-Oriented Institutions for the Health Sciences, 1991.

A detailed report of the meeting has been prepared.³ Of particular relevance to this document are the following general observations:

1. All participants agreed on the need for standardized systematic approaches for the evaluation of medical education in Italy.
2. The contexts of evaluation can range from institutional self-assessments for improvement to formal accreditation.
3. The consensus was that comparisons between schools were inappropriate. Each school should be viewed relative to its own mission and its own circumstances, but with reference to criteria and standards reflecting a national (and/or European) consensus.
4. Evaluation criteria and standards should avoid particular orientations or biases "indicative of certain curricular philosophies".

³Report of the meeting on assessment of quality medical education, Forte dei Marmi, Italy, 11-14 June 1991. Geneva, World Health Organization, 1991 (unpublished document).

5. At a practical level, there was clear understanding of the complexity and high costs of developing and implementing an evaluation scheme at a national level.

Whereas the Forte dei Marmi meeting was intended to help resolve issues specific to the Italian context, the involvement of WHO/Geneva highlighted the importance of generalizing the meeting's results beyond this context.

A full report of the meeting can be obtained from WHO headquarters, Division of Development of Human Resources for Health, 1211 Geneva 27, Switzerland, or from the Smith-Kline Foundation; 59, Corso Magenta; 20123 Milan, Italy.