

FUNCTIONS AND STRUCTURE OF A MEDICAL SCHOOL

Standards for Accreditation of Medical Education Programs Leading to the M.D. Degree

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(For schools with full accreditation surveys in 2012-2013)

Liaison Committee on Medical Education

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Functions and Structure of a Medical School

Introduction

Accreditation is a voluntary, peer-review process designed to attest to the educational quality of new and established educational programs. The Liaison Committee on Medical Education (LCME) accredits complete and independent medical education programs in which medical students are geographically located in the United States or Canada¹ for their education and which are operated by universities or medical schools that are chartered in the United States or Canada. Accreditation of Canadian medical education programs is undertaken in cooperation with the Committee on the Accreditation of Canadian Medical Schools (CACMS). By judging the compliance of medical education programs with nationally accepted standards of educational quality, the LCME and the CACMS serve the interests of the general public and of the medical students enrolled in those programs.

To achieve and maintain accreditation, a medical education program leading to the M.D. degree in the U.S. and Canada must meet the standards contained in this document. The accreditation process requires a medical education program to provide assurances that its graduates exhibit general professional competencies that are appropriate for entry to the next stage of their training and that serve as the foundation for lifelong learning and proficient medical care. While recognizing the existence and appropriateness of diverse institutional missions and educational objectives, the LCME subscribes to the proposition that local circumstances do not justify accreditation of a substandard program of medical education leading to the M.D. degree.

In this document the words “must” and “should” have been chosen with great care. The difference in terminology is slight, but significant. Use of the word “must” indicates that the LCME considers meeting the standard to be absolutely necessary for the achievement and maintenance of accreditation. Use of the word “should” indicates that compliance with the standard is expected in the absence of extraordinary and justifiable circumstances that preclude full compliance. Explanatory annotations that clarify the operational meaning of individual standards are provided.

In addition, an attempt has been made to use consistent language throughout this document. For example, since the LCME is a programmatic rather than an institutional accreditor, the term “medical education program” is used preferentially throughout the document, with the acknowledgement that various accreditation requirements will be carried out by administrators, faculty, and staff of the program and its sponsoring institution(s). Because of differences in the meaning of the term “clerkship” in the U.S. and Canada, the terms “clerkship” and “clerkship rotation” are used consistently to describe for U.S. and Canadian medical schools, respectively, a required clinical experience.

In addition, the use of the terms “assess” and “assessment” is consistently reserved for description of activities related to the assessment of medical student performance, while the use of the terms “evaluate” and “evaluation” is consistently reserved for faculty, resident, course and clerkship/clerkship rotation, and program evaluation.

If a U.S. or Canadian institution that provides an LCME-accredited, M.D.-granting program also offers other medical education programs leading to the M.D. degree that are not accredited by the LCME, the institution must ensure awareness of the difference in accreditation status between the LCME-accredited program and any other M.D.-granting programs. The LCME Secretariat can, upon request, provide information and consultation about medical education standards.

¹ The terms “United States” and “Canada” refer to the geographic locations in which citizens are issued passports by the governments of the United States and Canada, respectively.

Note that periodic revision and amendment of the standards may result in the elimination of certain numbered standards (e.g., there is no longer a standard numbered ED-45) and in the addition of standards that include letters after the numerical prefix (e.g., ED-1-A). The use of letter suffixes is not intended to indicate that such standards are subsidiary to other standards, but simply to indicate their placement with respect to surrounding standards.

Additional information about accreditation can be obtained from the LCME or the CACMS offices listed below or from the LCME Web site (www.lcme.org).

LCME Secretariat
Association of American Medical Colleges
2450 N Street, N.W.
Washington, D.C. 20037
Phone: 202-828-0596 Fax: 202-828-1125

LCME Secretariat
American Medical Association
515 North State Street
Chicago, IL 60610
Phone: 312-464-4933 Fax: 312-464-5830

CACMS Secretariat
Committee on the Accreditation of Canadian Medical Schools
The Association of Faculties of Medicine of Canada
265 Carling Avenue, Suite 800
Ottawa, Ontario, Canada K1S 2E1
Phone: 613-730-0687 Fax: 613-730-1196

**Visit the LCME Web site at:
www.lcme.org**

I. INSTITUTIONAL SETTING

IS-1. An institution that offers a medical education program must engage in a planning process that sets the direction for its program and results in measurable outcomes.

To ensure the ongoing vitality and successful adaptation of its medical education program to the rapidly changing environment of academic medicine, the institution needs to establish periodic or cyclical institutional planning processes and activities. Planning efforts that have proven successful typically involve the definition and periodic reassessment of both short-term and long-term goals for the successful accomplishment of institutional missions. By framing goals in terms of measurable outcomes wherever circumstances permit, the institution can more readily track progress toward their achievement. The manner in which the institution engages in planning will vary according to available resources and local circumstances, but it should be able to document its vision, mission, and goals; evidence indicating their achievement; and strategies for periodic or ongoing reassessment of successes and unmet challenges.

A. Governance and Administration

IS-2. A medical education program should be, or be part of, a not-for-profit institution legally authorized under applicable law to provide medical education leading to the M.D. degree.

IS-3. If a U.S. medical education program is not a component of a regionally accredited institution, the parent institution for the program must achieve institutional accreditation from the appropriate regional accrediting body.

The LCME is recognized by the U.S. Department of Education as an accrediting agency for medical education programs leading to the M.D. degree. Because the LCME is not recognized as an institutional accrediting agency, it lacks standing to accredit stand-alone medical schools as institutions of higher education.

Institutional accreditation is granted by regional accrediting agencies and is required to qualify for federal financial assistance programs authorized under Title IV of the Higher Education Act. Some regional accrediting bodies grant "pre-accreditation" as a first step to achieving full accreditation. In such circumstances the attainment of pre-accreditation status would meet the requirements of this standard.

IS-4. The manner in which an institution that offers a medical education program is organized, including the responsibilities and privileges of administrative officers, faculty, medical students, and committees must be promulgated in programmatic or institutional bylaws.

IS-5. The governing board responsible for oversight of an institution that offers a medical education program must have and follow formal policies and procedures to avoid the impact of conflicts of interest of members in the operation of the institution and its associated clinical facilities and any related enterprises.

There must be formal policies and procedures at the institution to avoid the impact of conflicts of interest (e.g., the requirement that a board member recuse him or herself from any discussion and vote relating to a matter where there is the potential for a conflict of interest to exist). The institution also must provide evidence (e.g., from board minutes, annual signed disclosure

statements from board members) that these policies and procedures actually are being followed. Some conflicts related to personal or pecuniary interests in the operation of the institution may be so pervasive as to preclude service on the governing board.

IS-6. Terms of governing board members of an institution that offers a medical education program should be overlapping and sufficiently long to permit them to gain an understanding of its program.

IS-7. Administrative officers and members of the faculty must be appointed by, or on the authority of, the governing board of the medical education program or its parent institution.

IS-8. The chief official of a medical education program, who usually holds the title "dean," must have ready access to the university president or other official of the parent institution who is charged with final responsibility for the program and to other institutional officials as are necessary to fulfill the responsibilities of the dean's office.

IS-9. There must be clear understanding of the authority and responsibility for matters related to the medical education program among the vice president for health affairs, the chief official of the medical education program, the faculty, and the directors of the other components of the medical center and the parent institution.

IS-10. The chief official of a medical education program must be qualified by education and experience to provide leadership in medical education, scholarly activity, and patient care.

IS-11. The administration of an institution that offers a medical education program should include such associate or assistant deans, department chairs, leaders of other organizational units, and staff as are necessary to accomplish its mission(s).

There should not be excessive turnover or long-standing vacancies in the leadership of the institution. Areas that commonly require administrative support include admissions, student affairs, academic affairs, educational affairs/curriculum, faculty affairs, graduate education, continuing education, relationships with clinical affiliates, research, business and planning, and fund-raising.

B. Academic Environment

IS-12. Medical students should have opportunities to learn in academic environments that permit interaction with students enrolled in other health professions, graduate, and professional degree programs and in clinical environments that provide opportunities for interaction with physicians in graduate medical education and continuing medical education programs.

These academic, graduate medical education, and continuing medical education programs should contribute to the learning environment of the medical education program. Periodic and formal review of these programs culminating in their accreditation by the appropriate accrediting bodies would provide evidence of their adherence to high standards of quality in education, research, and scholarship. Whenever appropriate, medical students would be able to participate in selected activities associated with these programs in order to facilitate achievement of their personal and professional goals.

IS-13. A medical education program must be conducted in an environment that fosters the intellectual challenge and spirit of inquiry appropriate to a community of scholars.

IS-14. An institution that offers a medical education program should make available sufficient opportunities for medical students to participate in research and other scholarly activities of its faculty and encourage and support medical student participation.

The institution is expected to provide an appropriate number and variety of research opportunities to accommodate those medical students desiring to participate. To encourage medical student participation, the institution could, for example, provide information about available opportunities, offer elective credit for research, hold research days, or include research as a required part of the curriculum. Support for medical student participation could include offering or providing information about financial support for student research (e.g., stipends).

IS-14-A. An institution that offers a medical education program should make available sufficient opportunities for medical students to participate in service-learning activities and should encourage and support medical student participation.

"Service-learning" is defined as a structured learning experience that combines community service with preparation and reflection. Medical students engaged in service-learning provide community service in response to community-identified concerns and learn about the context in which service is provided, the connection between their service and their academic coursework, and their roles as citizens and professionals.

"Sufficient opportunities" means that medical students who wish to participate in a service-learning activity will have the opportunity to do so. To encourage medical student participation, institutions could, for example, develop opportunities in conjunction with relevant communities or partnerships, provide information about available opportunities, offer elective credit for participation, or hold public presentations or public forums. Support for medical student participation could include offering or providing information about financial and social support for medical student service-learning (e.g., stipends, faculty preceptors, community partnerships).

IS-15. *Currently, there is no standard IS-15.*

IS-16. An institution that offers a medical education program must have policies and practices to achieve appropriate diversity among its students, faculty, staff, and other members of its academic community, and must engage in ongoing, systematic, and focused efforts to attract and retain students, faculty, staff, and others from demographically diverse backgrounds.

The LCME and the CACMS believe that aspiring future physicians will be best prepared for medical practice in a diverse society if they learn in an environment characterized by, and supportive of, diversity and inclusion. Such an environment will facilitate physician training in:

- *Basic principles of culturally competent health care.*
- *Recognition of health care disparities and the development of solutions to such burdens.*
- *The importance of meeting the health care needs of medically underserved populations.*
- *The development of core professional attributes (e.g., altruism, social accountability) needed to provide effective care in a multidimensionally diverse society.*

The institution should articulate its expectations regarding diversity across its academic community in the context of local and national responsibilities, and regularly assess how well such expectations are being achieved. The institution should consider in its planning elements of diversity including, but not limited to, gender, racial, cultural, and economic factors. The

institution should establish focused, significant, and sustained programs to recruit and retain suitably diverse students, faculty members, staff, and others.

II. EDUCATIONAL PROGRAM FOR THE M.D. DEGREE

A. Educational Objectives

ED-1. The faculty of an institution that offers a medical education program must define the objectives of its program. The objectives must serve as guides for establishing curriculum content and provide the basis for evaluating the effectiveness of the program.

Objectives for the medical education program as a whole serve as statements of what students are expected to learn or accomplish during the course of the program.

It is expected that the objectives of the medical education program will be formally adopted by the curriculum governance process and the faculty (as a whole or through its recognized representatives). Among those who should also exhibit familiarity with these objectives are the dean and the academic leadership of clinical affiliates who share in the responsibility for delivering the program.

ED-1-A. The objectives of a medical education program must be stated in outcome-based terms that allow assessment of student progress in developing the competencies that the profession and the public expect of a physician.

The objectives of the medical education program are statements of the items of knowledge, skills, behaviors, and attitudes that medical students are expected to exhibit as evidence of their achievement.

The educational objectives, along with their associated outcome measures, should reflect whether and how well graduates are developing these competencies as a basis for the next stage of their training.

There are several widely recognized definitions of the knowledge, skills, behaviors, and attitudinal attributes appropriate for a physician, including those described in the AAMC's Medical School Objectives Project, the general competencies of physicians resulting from the collaborative efforts of the Accreditation Council for Graduate Medical Education (ACGME) and the American Board of Medical Specialties (ABMS), and the physician roles summarized in the CanMEDS 2005 report of the Royal College of Physicians and Surgeons of Canada.

ED-2. An institution that offers a medical education program must have in place a system with central oversight to ensure that the faculty define the types of patients and clinical conditions that medical students must encounter, the appropriate clinical setting for the educational experiences, and the expected level of medical student responsibility. The faculty must monitor medical student experiences and modify them as necessary to ensure that the objectives of the medical education program are met.

The institution that offers a medical education program is required to establish a system to specify the types of patients or clinical conditions that medical students must encounter and to monitor and verify the medical students' experiences with patients so as to remedy any identified gaps. The system must ensure that all medical students have the required experiences. For example, if a medical student does not encounter patients with a particular clinical condition

(e.g., because it is seasonal), the medical student should be able to remedy the gap by a simulated experience (e.g., a standardized patient experience, an online or paper case) or in another clerkship (or, in Canada, clerkship rotation).

When clerkships/clerkship rotations in a given discipline are provided at multiple instructional sites, compliance with this standard (ED-2) may be linked to compliance with standard ED-8, which requires that the medical education program demonstrate comparability of educational experiences across instructional sites.

ED-3. The objectives of a medical education program must be made known to all medical students and to the faculty, residents, and others with direct responsibilities for medical student education and assessment.

B. Structure

1. General Design

ED-4. A medical education program must include at least 130 weeks of instruction.

ED-5. The curriculum of a medical education program must provide a general professional education and prepare medical students for entry into graduate medical education.

ED-5-A. A medical education program must include instructional opportunities for active learning and independent study to foster the skills necessary for lifelong learning.

It is expected that the methods of instruction and assessment used in courses and clerkships (or, in Canada, clerkship rotations) will provide medical students with opportunities to develop lifelong learning skills. These skills include self-assessment on learning needs; the independent identification, analysis, and synthesis of relevant information; and the appraisal of the credibility of information sources. Medical students should receive explicit experiences in using these skills, and they should be assessed and receive feedback on their performance.

ED-6. The curriculum of a medical education program must incorporate the fundamental principles of medicine and its underlying scientific concepts; allow medical students to acquire skills of critical judgment based on evidence and experience; and develop medical students' ability to use principles and skills wisely in solving problems of health and disease.

ED-7. The curriculum of a medical education program must include current concepts in the basic and clinical sciences, including therapy and technology, changes in the understanding of disease, and the effects of social needs and demands on care.

ED-8. The curriculum of a medical education program must include comparable educational experiences and equivalent methods of assessment across all instructional sites within a given discipline.

Compliance with this standard requires that the educational experiences at all instructional sites be designed to achieve the same educational objectives. Course or clerkship (or, in Canada, clerkship rotation) length must be identical, unless a compelling reason exists for varying the length of the experience. The instruments and criteria used for medical student assessment, as well as the policies for the determination of grades, should be the same at all instructional sites. The faculty who teach at all instructional sites should be sufficiently knowledgeable in the subject

matter to provide effective instruction and have a clear understanding of the objectives of the educational experience and the assessment methods used to determine achievement of those objectives. Opportunities to enhance teaching and assessment skills should be available for faculty at all instructional sites.

Although the types and frequency of problems or clinical conditions seen at each instructional site may vary, each course or clerkship/rotation must identify any core experiences needed to achieve its objectives and ensure that students receive sufficient exposure to such experiences. Similarly, although the proportion of time spent in inpatient and ambulatory settings may vary according to local circumstances, in such cases the course or clerkship/rotation director must ensure that limitations in learning environments do not impede the accomplishment of objectives.

To facilitate the comparability of educational experiences and the equivalency of assessment methods, the course or clerkship/rotation director should orient all participants, both faculty and students, to the educational objectives and grading system used. This orientation can be accomplished through regularly scheduled meetings between the director of the course or clerkship/rotation and the directors at the various instructional sites that are used.

The course and clerkship/rotation leadership should review medical students' evaluations of their experiences at all instructional sites to identify any persistent variations in educational experiences or assessment methods.

ED-9. A medical education program must notify the LCME and the CACMS, when applicable, of its plans for any major modification of its curriculum.

The notification should include the explicitly-defined goals of the change, the plans for implementation, and the methods that will be used to evaluate the results. Planning for curriculum change should consider the incremental resources that will be required, including physical facilities and space, faculty and resident effort, library facilities and operations, information management needs, and computer hardware.

In view of the increasing pace of discovery of new knowledge and technology in medicine, the LCME and the CACMS encourage experimentation that will increase the efficiency and effectiveness of medical education.

2. Content

ED-10. The curriculum of a medical education program must include behavioral and socioeconomic subjects in addition to basic science and clinical disciplines.

Lists of subjects widely recognized as important components of the general professional education of a physician are included in the medical education database that is completed in preparation for full accreditation surveys and in the LCME Part II Annual Medical School Questionnaire. Depth of coverage of the individual topics will depend on the medical education program's educational goals and objectives.

ED-11. The curriculum of a medical education program must include content from the biomedical sciences that supports students' mastery of the contemporary scientific knowledge, concepts, and methods fundamental to acquiring and applying science to the health of individuals and populations and to the contemporary practice of medicine.

It is expected that the curriculum will be guided by clinically-relevant biomedical content from, among others, the disciplines that have been traditionally titled anatomy, biochemistry, genetics, immunology, microbiology, pathology, pharmacology, physiology, and public health sciences.

ED-12. The curriculum of a medical education program should include laboratory or other practical opportunities for the direct application of the scientific method, accurate observation of biomedical phenomena, and critical analysis of data.

Opportunities in the curriculum could include hands-on or simulated (e.g., computer-based) exercises in which medical students either collect or use data to test and/or verify hypotheses or to address questions about biomedical principles and/or phenomena. The medical education program should be able to identify the location in the curriculum where such exercises occur, the specific intent of the exercises, and how the exercises contribute to the objectives of the course and the ability to collect, analyze, and interpret data.

ED-13. The curriculum of a medical education program must cover all organ systems, and include the important aspects of preventive, acute, chronic, continuing, rehabilitative, and end-of-life care.

ED-14. The curriculum of a medical education program must include clinical experience in primary care.

ED-15. The curriculum of a medical education program must prepare students to enter any field of graduate medical education and include content and clinical experiences related to each phase of the human life cycle that will prepare students to recognize wellness, determinants of health, and opportunities for health promotion; recognize and interpret symptoms and signs of disease; develop differential diagnoses and treatment plans; and assist patients in addressing health-related issues involving all organ systems.

It is expected that the curriculum will be guided by the contemporary content from and the clinical experiences associated with, among others, the disciplines and related subspecialties that have traditionally been titled family medicine, internal medicine, obstetrics and gynecology, pediatrics, preventive medicine, psychiatry, and surgery.

ED-16. The clinical experiences provided to medical students by a medical education program must utilize both outpatient and inpatient settings.

ED-17. Educational opportunities must be available in a medical education program in multidisciplinary content areas (e.g., emergency medicine, geriatrics) and in the disciplines that support general medical practice (e.g., diagnostic imaging, clinical pathology).

ED-17-A. The curriculum of a medical education program must introduce medical students to the basic scientific and ethical principles of clinical and translational research, including the ways in which such research is conducted, evaluated, explained to patients, and applied to patient care.

The faculty of the medical education program should develop explicit learning objectives (knowledge, skills, behaviors, and attitudes) to meet the requirements of this standard. One example of relevant objectives is contained in Report IV of the AAMC's Medical School Objectives Project (Contemporary Issues in Medicine: Basic Science and Clinical Research).

There are several ways in which the medical education program can meet the requirements of this standard. They range from separate required coursework in the subject to the establishment of appropriate learning objectives and instructional activities within existing patient-focused courses or clerkships (or, in Canada, clerkship rotations) (e.g., discussing the application of new knowledge from clinical research in bedside teaching activities, offering mentored projects, or conducting journal club sessions in which medical students explore the development or application of clinical and translational research).

ED-18. The curriculum of a medical education program must include elective opportunities to supplement required courses and clerkships (or, in Canada, clerkship rotations).

Although electives permit medical students to gain exposure to and deepen their understanding of medical specialties reflecting their career interests, they should also provide opportunities for medical students to pursue individual academic interests.

ED-19. The curriculum of a medical education program must include specific instruction in communication skills as they relate to physician responsibilities, including communication with patients and their families, colleagues, and other health professionals.

ED-20. The curriculum of a medical education program must prepare medical students for their role in addressing the medical consequences of common societal problems (e.g., provide instruction in the diagnosis, prevention, appropriate reporting, and treatment of violence and abuse).

ED-21. The faculty and medical students of a medical education program must demonstrate an understanding of the manner in which people of diverse cultures and belief systems perceive health and illness and respond to various symptoms, diseases, and treatments.

Instruction in the medical education program should stress the need for medical students to be concerned with the total medical needs of their patients and the effects that social and cultural circumstances have on patients' health. To demonstrate compliance with this standard, the medical education program should be able to document objectives relating to the development of skills in cultural competence, indicate the location in the curriculum where medical students are exposed to such material, and demonstrate the extent to which the objectives are being achieved.

ED-22. Medical students in a medical education program must learn to recognize and appropriately address gender and cultural biases in themselves, in others, and in the process of health care delivery.

The objectives for instruction in the medical education program should include medical student understanding of demographic influences on health care quality and effectiveness (e.g., racial and ethnic disparities in the diagnosis and treatment of diseases). The objectives should also address the need for self-awareness among medical students regarding any personal biases in their approach to health care delivery.

ED-23. A medical education program must include instruction in medical ethics and human values and require its medical students to exhibit scrupulous ethical principles in caring for patients and in relating to patients' families and to others involved in patient care.

The medical education program should ensure that medical students receive instruction in appropriate medical ethics, human values, and communication skills before engaging in patient care activities. As students take on increasingly more active roles in patient care during their

progression through the curriculum, adherence to ethical principles should be observed, assessed, and reinforced through formal instructional efforts.

In medical student-patient interactions, there should be a means for identifying possible breaches of ethics in patient care, either through faculty or resident observation of the encounter, patient reporting, or some other appropriate method.

The phrase "scrupulous ethical principles" implies characteristics that include honesty, integrity, maintenance of confidentiality, and respect for patients, patients' families, other students, and other health professionals. The program's educational objectives may identify additional dimensions of ethical behavior to be exhibited in patient care settings.

C. Teaching and Evaluation

ED-24. At an institution offering a medical education program, residents who supervise or teach medical students and graduate students and postdoctoral fellows in the biomedical sciences who serve as teachers or teaching assistants must be familiar with the educational objectives of the course or clerkship (or, in Canada, clerkship rotation) and be prepared for their roles in teaching and assessment.

The minimum expectations for achieving compliance with this standard are that: (a) residents and other instructors who do not hold faculty ranks (e.g., graduate students and postdoctoral fellows) receive a copy of the course or clerkship/rotation objectives and clear guidance from the course or clerkship/rotation director about their roles in teaching and assessing medical students and (b) the institution and/or its relevant departments provide resources (e.g., workshops, resource materials) to enhance the teaching and assessment skills of residents and other non-faculty instructors. There should be central monitoring of the level of residents' and other instructors' participation in activities to enhance their teaching and assessment skills.

There should be formal evaluation of the teaching and assessment skills of residents and other non-faculty instructors, with opportunities provided for remediation if their performance is inadequate. Evaluation methods could include direct observation by faculty, feedback from medical students through course and clerkship/rotation evaluations or focus groups, or any other suitable method.

ED-25. Supervision of medical student learning experiences at an institution that offers a medical education program must be provided throughout required clerkships (or, in Canada, clerkship rotations) by members of the institution's faculty.

ED-26. A medical education program must have a system in place for the assessment of medical student achievement throughout the program that employs a variety of measures of knowledge, skills, behaviors, and attitudes.

Assessments of medical student performance should measure the retention of factual knowledge; the development of the skills, behaviors, and attitudes needed in subsequent medical training and practice; and the ability to use data appropriately for solving problems commonly encountered in medical practice. The system of assessment, including the format and frequency of examinations, should support the goals, objectives, processes, and expected outcomes of the curriculum.

ED-27. A medical education program must include ongoing assessment activities that ensure that medical students have acquired and can demonstrate on direct observation the core clinical skills, behaviors, and attitudes that have been specified in the program's educational objectives.

ED-28. A medical education program must include ongoing assessment of medical students' problem solving, clinical reasoning, decision making, and communication skills.

ED-29. The faculty of each discipline should set standards of achievement in that discipline and contribute to the setting of such standards in interdisciplinary and interprofessional learning experiences, as appropriate.

ED-30. The directors of all courses and clerkships (or, in Canada, clerkship rotations) in a medical education program must design and implement a system of fair and timely formative and summative assessment of medical student achievement in each course and clerkship/clerkship rotation.

Faculty of the medical education program directly responsible for the assessment of medical student performance should understand the uses and limitations of various test formats, the purposes and benefits of criterion-referenced vs. norm-referenced grading, reliability and validity issues, formative vs. summative assessment, and other factors associated with effective educational assessment.

In addition, the chief academic officer, curriculum leaders, and faculty of the medical education program should understand, or have access to individuals who are knowledgeable about, methods for measuring medical student performance. The medical education program should provide opportunities for faculty members to develop their skills in such methods.

An important element of the medical education program's system of assessment should be to ensure the timeliness with which medical students are informed about their final performance in courses and clerkships/clerkship rotations. In general, final grades should be available within four to six weeks of the end of a course or clerkship/clerkship rotation.

ED-31. Each medical student in a medical education program should be assessed and provided with formal feedback early enough during each required course or clerkship (or, in Canada, clerkship rotation) to allow sufficient time for remediation.

Although a course or clerkship/clerkship rotation that is short in duration (e.g., less than four weeks) may not have sufficient time to provide a structured formative assessment, it should provide alternate means (e.g., self-testing, teacher consultation) that will allow medical students to measure their progress in learning.

ED-32. A narrative description of medical student performance in a medical education program, including non-cognitive achievement, should be included as a component of the assessment in each required course and clerkship (or, in Canada, clerkship rotation) whenever teacher-student interaction permits this form of assessment.

D. Curriculum Management

1. Roles and Responsibilities

ED-33. There must be integrated institutional responsibility in a medical education program for the overall design, management, and evaluation of a coherent and coordinated curriculum.

The phrase "integrated institutional responsibility" implies that an institutional body (commonly a curriculum committee) will oversee the medical education program as a whole. An effective central curriculum authority will exhibit the following characteristics:

- *Faculty, medical student, and administrative participation.*
- *Expertise in curricular design, pedagogy, and evaluation methods.*
- *Empowerment, through bylaws or decanal mandate, to work in the best interests of the institution without regard for parochial or political influences or departmental pressures.*

The phrase "coherent and coordinated curriculum" implies that the medical education program as a whole will be designed to achieve its overall educational objectives. Evidence of coherence and coordination includes the following characteristics:

- *Logical sequencing of the various segments of the curriculum.*
- *Content that is coordinated and integrated within and across the academic periods of study (i.e., horizontal and vertical integration).*
- *Methods of pedagogy and medical student assessment that are appropriate for the achievement of the program's educational objectives.*

Curriculum management signifies leading, directing, coordinating, controlling, planning, evaluating, and reporting. Evidence of effective curriculum management includes the following characteristics:

- *Evaluation of program effectiveness by outcomes analysis, using national norms of accomplishment as a frame of reference.*
- *Monitoring of content and workload in each discipline, including the identification of omissions and unplanned redundancies.*
- *Review of the stated objectives of each individual course and clerkship (or, in Canada, clerkship rotation), as well as the methods of pedagogy and medical student assessment, to ensure congruence with programmatic educational objectives.*

Minutes of the curriculum committee meetings and reports to the faculty governance and deans should document that such activities take place and should report on the committee's findings and recommendations.

ED-34. The faculty of a medical education program must be responsible for the detailed design and implementation of the components of the curriculum.

Faculty members' responsibilities for the medical education program include, at a minimum, the development of specific course or clerkship (or, in Canada, clerkship rotation) objectives, selection of pedagogical and assessment methods appropriate for the achievement of those

objectives, ongoing review and updating of content, and evaluation of course, clerkship/clerkship rotation, and teacher quality.

ED-35. The objectives, content, and pedagogy of each segment of a medical education program's curriculum, as well as of the curriculum as a whole, must be designed by and subject to periodic review and revision by the program's faculty.

ED-36. The chief academic officer of a medical education program must have sufficient resources and authority to fulfill his or her responsibility for the management and evaluation of the curriculum.

The dean often serves as the chief academic officer, with ultimate individual responsibility for the design and management of the medical education program as a whole. He or she may, however, delegate operational responsibility for curriculum oversight to a vice dean or associate dean.

Examples of the kinds of resources needed by the chief academic officer to ensure effective delivery of the medical education program include:

- *Adequate numbers of teachers who have the time and training necessary to achieve the medical education program's objectives.*
- *Appropriate teaching space for the methods of pedagogy employed in the medical education program.*
- *Appropriate educational infrastructure (e.g., computers, audiovisual aids, laboratories).*
- *Adequate educational support services (e.g., examination grading, classroom scheduling, faculty training in methods of teaching and assessment).*
- *Adequate support and services for the efforts of the curriculum management body and for any interdisciplinary teaching efforts that are not supported at a departmental level.*

The chief academic officer must have explicit authority to ensure the implementation and management of the medical education program and to facilitate change when modifications to the curriculum are determined to be necessary.

ED-37. A faculty committee of a medical education program must be responsible for monitoring the curriculum, including the content taught in each discipline, so that the program's educational objectives will be achieved.

The committee, working in conjunction with the chief academic officer, should ensure that each academic period of the curriculum maintains common standards for content. Such standards should address the depth and breadth of knowledge required for a general professional education, the currency and relevance of content, and the extent of redundancy needed to reinforce learning of complex topics. The final year should complement and supplement the curriculum so that each medical student will acquire appropriate competence in general medical care regardless of subsequent career specialty.

ED-38. The committee responsible for the curriculum at a medical education program, along with the program's administration and leadership, must develop and implement policies regarding the amount of time medical students spend in required activities, including the total number of hours medical students are required to spend in clinical and educational activities during clinical clerkships (or, in Canada, clerkship rotations).

Attention should be paid to the time commitment required of medical students, especially during the clinical years. Medical students' hours should be set after taking into account the effects of fatigue and sleep deprivation on learning, clinical activities, and health and safety.

ED-39. The chief academic officer of a medical education program must be responsible for the conduct and quality of the educational program and for ensuring the adequacy of faculty at all instructional sites.

ED-40. The principal academic officers at each instructional site of a medical education program must be administratively responsible to the program's chief academic officer.

ED-41. The faculty in each discipline at all instructional sites of a medical education program must be functionally integrated by appropriate administrative mechanisms.

The medical education program should be able to demonstrate the means by which faculty at each instructional site participate in and are held accountable for medical student education that is consistent with the objectives and performance expectations established by the course or clerkship (or, in Canada, clerkship rotation) leadership. Mechanisms to achieve functional integration may include regular meetings or electronic communication, periodic visits to all instructional sites by the course or clerkship rotation leadership, and sharing of student assessment data, course or clerkship/clerkship rotation evaluation data, and other types of feedback regarding faculty performance of their educational responsibilities.

ED-42. A medical education program must have a single standard for the promotion and graduation of medical students across all instructional sites.

ED-43. A medical education program must assume ultimate responsibility for the selection and assignment of all medical students to all instructional sites or educational tracks. There must be a process whereby a medical student with an appropriate rationale can request an alternative assignment when circumstances allow for it.

A medical education program having multiple instructional sites or distinct educational tracks is responsible for determining the specific instructional site or track for each medical student. That responsibility should not preclude medical students from obtaining alternative assignments if appropriate reasons are given (e.g., demonstrable economic or personal hardship) and if the educational activities and resources involved allow for such reassignment. It is understood, however, that movement among campuses may not be possible (e.g., because the instructional sites may offer different curricular tracks).

ED-44. In a medical education program, medical students assigned to each instructional site should have the same rights and receive the same support services.

ED-45. *Currently, there is no standard ED-45.*

E. Evaluation of Program Effectiveness

ED-46. A medical education program must collect and use a variety of outcome data, including national norms of accomplishment, to demonstrate the extent to which its educational objectives are being met.

The medical education program should collect outcome data on medical student performance, both during program enrollment and after program completion, appropriate to document the achievement of the program's educational objectives. The kinds of outcome data that could serve this purpose include performance on national licensure examinations, performance in courses and clerkships (or, in Canada, clerkship rotations) and other internal measures related to educational program objectives, academic progress and program completion rates, acceptance into residency programs, and assessments by graduates and residency directors of graduates' preparation in areas related to medical education program objectives, including the professional behavior of its graduates.

ED-47. In evaluating program quality, a medical education program must consider medical student evaluations of their courses, clerkships (or, in Canada, clerkship rotations), and teachers, as well as a variety of other measures.

It is expected that the medical education program will have a formal process to collect and use information from medical students on the quality of courses and clerkships/clerkship rotations. The process could include such measures as questionnaires (written or online), other structured data collection tools, focus groups, peer review, and external evaluation.

III. MEDICAL STUDENTS

A. Admissions

1. Premedical Requirements

MS-1. Through its requirements for admission, a medical education program should encourage potential applicants to acquire a broad undergraduate education, including study of the humanities, the natural sciences, and the social sciences.

Ordinarily, four years of undergraduate education are necessary to prepare for entrance into an M.D. degree program. However, some special programs (e.g., combined baccalaureate-M.D. programs) may permit a reduction in this time period. A broad-based undergraduate education is increasingly important for the development of physician competencies outside of the scientific knowledge domain.

MS-2. A medical education program should restrict its premedical course requirements to those deemed essential preparation for successful completion of its curriculum.

2. Selection

MS-3. The faculty of an institution that offers a medical education program must develop criteria, policies, and procedures for the selection of medical students that are readily available to potential and current applicants and their collegiate advisors.

MS-4. The final responsibility for accepting students to a medical school must rest with a formally constituted medical school admission committee. The authority and composition of the committee and the rules for its operation, including voting privileges and the definition of a quorum, must be specified in bylaws or other medical school policies. Faculty members must constitute the majority of voting members at all meetings.

The composition of the medical school admission committee typically reflects the school's mission. The committee may include individuals other than faculty members, including community members and medical students. While individuals other than faculty members may hold voting privileges, they will not, in aggregate, constitute a majority of voting members at any meeting.

MS-5. A medical education program must have a sufficiently large pool of applicants who possess national level qualifications to fill its entering class.

MS-6. A medical education program must select for admission medical students who possess the intelligence, integrity, and personal and emotional characteristics necessary for them to become effective physicians.

MS-7. At a medical education program, the selection of individual medical students for admission must not be influenced by any political or financial factors.

MS-8. A medical education program must develop programs or partnerships aimed at broadening diversity among qualified applicants for medical school admission.

Because graduates of U.S. and Canadian medical schools may practice anywhere in their respective countries, it is expected that an institution that offers a medical education program will recognize its collective responsibility for contributing to the diversity of the profession as a whole. To that end, a medical education program should work within its own institutions and/or collaborate with other institutions to make admission to medical education programs more accessible to potential applicants of diverse backgrounds. Institutions can accomplish that aim through a variety of approaches, including, but not limited to, the development and institutionalization of pipeline programs, collaborations with institutions and organizations that serve students from disadvantaged backgrounds, community service activities that heighten awareness of and interest in the profession, and academic enrichment programs for applicants who may not have taken traditional pre-medical coursework.

MS-9. A medical education program must develop and publish technical standards for the admission, retention, and graduation of applicants or students with disabilities, in accordance with legal requirements.

MS-10. A medical education program's catalog and other informational, advertising, and recruitment materials must present a balanced and accurate representation of the mission and objectives of the program, state the requirements for the M.D. degree and all associated joint degree programs, provide the most recent academic calendar for each curricular option, and describe all required courses and clerkships (or, in Canada, clerkship rotations) offered by the program.

MS-11. A medical education program's catalog or other informational materials must enumerate the program's criteria for selecting students for admission and describe the application and admission processes.

3. Visiting and Transfer Students

MS-12. The resources used by an institution that offers a medical education program to accommodate the requirements of any visiting and transfer medical students must not significantly diminish the resources available to already enrolled medical students.

MS-13. A medical education program must ensure that any potential transfer student demonstrates academic achievements and other relevant characteristics comparable to those of the medical students in the class that he or she would join.

MS-14. A medical education program must ensure that prior coursework taken by a medical student who is accepted for transfer or admission with advanced standing is compatible with the coursework at the level of the program to be entered.

MS-15. A medical education program should accept a transfer medical student into the final year of a medical education program only in rare and extraordinary personal or educational circumstances.

MS-16. A medical education program should verify the credentials of each visiting medical student, maintain a complete roster of visiting students, approve each visiting student's assignments, and provide a performance assessment for each visiting student.

The institution that offers a medical education program is expected to establish protocols or requirements for health records, immunizations, exposure to infectious agents or environmental hazards, insurance, and liability protection comparable to those for its enrolled medical students.

MS-17. A medical education program must ensure that any medical student visiting for clinical clerkship rotations and electives demonstrates qualifications comparable to those of the medical students he or she would join in those experiences.

B. Medical Student Services

1. Academic and Career Counseling

MS-18. A medical education program must have an effective system of academic advising for medical students that integrates the efforts of faculty members, course directors, and student affairs officers with its counseling and tutorial services.

There should be formal mechanisms at the medical education program for medical student mentoring and advocacy at each instructional site. The roles of various participants in the advisory system should be defined and disseminated to all medical students. A medical student should have the option of obtaining advice about academic issues or academic counseling from individuals who have no role in making promotion or assessment decisions about him or her.

MS-19. A medical education program must have an effective system in place to assist medical students in choosing elective courses, evaluating career options, and applying to residency programs.

MS-20. If a medical student at a medical education program is permitted to take electives at another medical education program or institution, there should be a centralized system in the dean's office at the home program to review the proposed extramural electives prior to approval and to ensure the return of a performance assessment by the host program.

MS-21. The process at a medical education program of applying for residency programs should not disrupt the general medical education of its medical students.

A medical education program will develop policies and procedures to minimize the disruption of any required educational or assessment activities of its medical students during the residency application, interview, and match processes.

MS-22. A medical education program should not provide a Medical Student Performance Evaluation/Dean's Letter required for the residency application of a medical student until November 1 of the student's final year.

2. Financial Aid Counseling and Resources

MS-23. A medical education program must provide its medical students with effective financial aid and debt management counseling.

In providing financial aid services and debt management counseling, the medical education program should alert medical students to the impact of noneducational debt on students' cumulative indebtedness.

MS-24. A medical education program should have mechanisms in place to minimize the impact of direct educational expenses on medical student indebtedness.

As key indicators of the medical education program's compliance with this standard, the LCME and the CACMS consider average medical student debt, including the debt of current students and graduates and trends over the past several years; the total number of medical students with scholarship support and average scholarship support per student; the percentage of total financial need supported by institutional and external grants and scholarships; and the presence of activities at the programmatic or institutional levels to enhance scholarship support for medical students. In addition, the LCME and the CACMS will consider the entire range of other activities in which the program could engage (e.g., limiting tuition increases, supporting students in acquiring external financial aid).

MS-25. An institution that offers a medical education program must have clear and equitable policies for the refund of a medical student's tuition, fees, and other allowable payments.

"Other allowable payments" may include payments made for health insurance, disability insurance, a parking permit, student housing, and other similar services for which a student may no longer be eligible following withdrawal.

3. Health Services and Personal Counseling

MS-26. A medical education program must have an effective system of personal counseling for its medical students that includes programs to promote the well-being of medical students and facilitate their adjustment to the physical and emotional demands of medical education.

MS-27. A medical education program must provide medical students with access to diagnostic, preventive, and therapeutic health services.

Medical students should have timely access to needed preventive, diagnostic, and therapeutic medical and mental health services at sites in reasonable proximity to the locations of their required educational experiences. Students should be supplied with information about where and how to access health services at all instructional sites where required training occurs. Students with school-sponsored health insurance policies should also be informed about coverage for necessary services. A medical education program should have policies and/or practices that permit students to be excused from class or clinical activities to seek needed care.

MS-27-A. The health professionals at a medical education program who provide psychiatric/psychological counseling or other sensitive health services to a medical student must have no involvement in the academic assessment or promotion of the medical student receiving those services.

MS-28. A medical education program must make health insurance available to each medical student and his or her dependents and provide each medical student with access to disability insurance.

MS-29. A medical education program should follow accepted guidelines in determining immunizations requirements for its medical students.

A medical education program in the U.S. should follow guidelines issued by the Centers for Disease Control and Prevention, along with those of relevant state agencies. A medical education program in Canada should follow the guidelines of the Laboratory Center for Disease Control and relevant provincial agencies.

MS-30. A medical education program must have policies that effectively address medical student exposure to infectious and environmental hazards.

The medical education program's policies regarding medical student exposure to infectious and environmental hazards should include: 1) the education of medical students about methods of prevention; 2) the procedures for care and treatment after exposure, including a definition of financial responsibility; and 3) the effects of infectious and environmental disease or disability on medical student learning activities. All registered students (including visiting students) should be informed of these policies before undertaking any educational activities that would place them at risk.

C. The Learning Environment

MS-31. In a medical education program, there should be no discrimination on the basis of age, creed, gender identity, national origin, race, sex, or sexual orientation in any of the program's activities.

MS-31-A: A medical education program must ensure that its learning environment promotes the development of explicit and appropriate professional attributes in its medical students (i.e., attitudes, behaviors, and identity).

The medical education program, including its faculty, staff, medical students, residents, and affiliated instructional sites, shares responsibility for creating an appropriate learning environment. The learning environment includes both formal learning activities and the attitudes, values, and informal "lessons" conveyed by individuals who interact with the medical student. These mutual obligations should be reflected in agreements (e.g., affiliation agreements) at the institutional and/or departmental levels.

It is expected that a medical education program will define the professional attributes it wishes its medical students to develop in the context of the program's mission and the community in which it operates. Such attributes should also be promulgated to the faculty and staff of the medical education program. As part of their formal training, medical students should learn the importance of demonstrating the attributes of a professional and understand the balance of privileges and obligations that the public and the profession expect of a physician. Examples of professional attributes are available from such resources as the American Board of Internal Medicine's Project Professionalism or the AAMC's Medical School Objectives Project.

The medical education program and its faculty, staff, medical students, and residents should also regularly evaluate the learning environment to identify positive and negative influences on the maintenance of professional standards and conduct and develop appropriate strategies to enhance the positive and mitigate the negative influences. The program should have suitable mechanisms available to identify and promptly correct recurring violations of professional standards.

MS-32. A medical education program must define and publicize the standards of conduct for the faculty-student relationship and develop written policies for addressing violations of those standards.

The standards of conduct need not be unique to the medical education program; they may originate from other sources (e.g., the parent institution). Mechanisms for reporting violations of these standards (e.g., incidents of harassment or abuse) should ensure that the violations can be registered and investigated without fear of retaliation.

The medical education program's policies also should specify mechanisms for the prompt handling of such complaints and support educational activities aimed at preventing inappropriate behavior.

MS-33. A medical education program must publicize to all faculty and medical students its standards and procedures for the assessment, advancement, and graduation of its medical students and for disciplinary action.

MS-34. A medical education program must have a fair and formal process in place for taking any action that may affect the status of a medical student.

The medical education program's process should include timely notice of the impending action, disclosure of the evidence on which the action would be based, an opportunity for the medical student to respond, and an opportunity to appeal any adverse decision related to promotion, graduation, or dismissal.

MS-35. Medical student educational records at a medical education program must be confidential and made available only to those members of the faculty and administration with a need to know, unless released by the medical student or as otherwise governed by laws concerning confidentiality.

MS-36. A medical student enrolled in a medical education program must be allowed to review and challenge his or her records if he or she considers the information contained therein to be inaccurate, misleading, or inappropriate.

MS-37. A medical education program should ensure that its medical students have adequate study space, lounge areas, and personal lockers or other secure storage facilities at each instructional site.

IV. FACULTY

A. Number, Qualifications, and Functions

FA-1. *There is currently no standard FA-1.*

FA-2. A medical education program must have a sufficient number of faculty members in the subjects basic to medicine and in the clinical disciplines to meet the needs and missions of the program.

In determining the number of faculty needed for the medical education program, the program should consider the other responsibilities that its faculty may have in other academic programs and in patient care activities required to conduct meaningful clinical teaching across the continuum of medical education.

FA-3. A person appointed to a faculty position in a medical education program must have demonstrated achievements commensurate with his or her academic rank.

FA-4. A member of the faculty in a medical education program must have the capability and continued commitment to be an effective teacher.

Effective teaching requires knowledge of the discipline and an understanding of curricular design and development, curricular evaluation, and methods of instruction. Faculty members involved in teaching, course planning, and curricular evaluation should possess or have ready access to expertise in teaching methods, curricular development, program evaluation, and medical student assessment. Such expertise may be supplied by an office of medical education or by faculty and staff members with backgrounds in educational science.

Faculty involved in the development and implementation of a course, clerkship (or, in Canada, clerkship rotation), or larger curricular unit should be able to design the learning activities and corresponding student assessment and program evaluation methods in a manner consistent with sound educational principles and the institution's stated educational objectives.

A community physician appointed to the faculty of a medical education program, on a part-time basis or as a volunteer, should be an effective teacher, serve as a role model for medical students, and provide insight into contemporary methods of providing patient care.

Among the types of evidence indicating compliance with this standard are the following:

- *Documented participation of the faculty member in professional development activities related specifically to teaching and assessment.*
- *Attendance at regional or national meetings on educational affairs.*
- *Evidence that the faculty member's knowledge of his or her discipline is current.*

FA-5. A faculty member in a medical education program should have a commitment to continuing scholarly productivity that is characteristic of an institution of higher learning.

FA-6. The faculty of a medical education program must make decisions regarding the admission, promotion, and graduation of its medical students and must provide academic and career counseling for medical students.

B. Personnel Policies

FA-7. There must be clear policies in place at a medical education program for faculty appointment, renewal of appointment, promotion, granting of tenure, and dismissal that involve the faculty, the appropriate department heads, and the dean.

FA-8. A medical education program should have policies in place that deal with circumstances in which the private interests of a faculty or staff member may be in conflict with his or her official institutional or programmatic responsibilities.

FA-9. A medical education program should provide each faculty member with written information about his or her term of appointment, responsibilities, lines of communication, privileges and benefits, and, if relevant, the policy on practice earnings.

FA-10. A faculty member of a medical education program should receive regularly scheduled feedback on his or her academic performance and progress toward promotion and, when applicable, tenure.

Feedback should be provided by departmental leadership or, if relevant, by other programmatic or institutional leadership.

FA-11. A medical education program must provide opportunities for professional development to each faculty member to enhance his or her skills and leadership abilities in education and research.

C. Governance

FA-12. At a medical education program, the dean and a committee of the faculty should determine policies for the program.

The committee that, with the dean, determines policies for the medical education program typically consists of the heads of major departments and may be organized in any manner that brings reasonable and appropriate faculty influence into the governance and policymaking processes of the program.

FA-13. A medical education program should ensure that there are mechanisms in place for direct faculty involvement in decisions related to the program.

Important areas in which direct faculty involvement is expected include admissions, curriculum development and evaluation, and student promotions. Faculty members also should be involved in decisions about any other mission-critical areas. Strategies for assuring direct faculty participation may include peer selection or other mechanisms that bring a broad faculty perspective to the decision-making process, independent of departmental or central administration points of view. The quality of an educational program may be enhanced by the participation of volunteer faculty in faculty governance, especially in defining educational goals and objectives.

FA-14. A medical education program must establish mechanisms to provide all faculty members with the opportunity to participate in the discussion and establishment of policies and procedures for the program, as appropriate.

Participation by all faculty members in the discussion and establishment of policies and procedures for the program may be facilitated, for example, by:

- *Ease of access to committee meeting agendas and minutes;*
- *Program-wide dissemination of draft policies and procedures for faculty members' review;*
- *Provision of opportunities for faculty members to comment on draft policies and procedures to program leaders prior to their finalization and implementation; or*
- *Faculty meetings.*

V. EDUCATIONAL RESOURCES

ER-1. A medical education program must notify the LCME and the CACMS, when applicable, of any substantial change in the number of enrolled medical students or in the resources available to the institution, including the faculty, physical facilities, or finances.

If the medical education program plans to increase its entering medical student enrollment above the threshold of 10% or 15 medical students in one year, or 20% in three years, the program is required to provide prior notification to the LCME and the CACMS, when applicable. Notification to the LCME must occur by January 1st of the year preceding expansion; notification to the CACMS must occur by September 1st of the year preceding the planned expansion. This notification is required for a medical education program planning to increase class size on its main campus and/or in existing functionally separate campuses (without any expansion in the curriculum years that the functionally separate campus covers).

A medical education program that plans to start a new functionally separate campus or to expand an existing functionally separate campus (e.g., from a one-year or two-year program to a four-year program) is required to provide notification of the plans to the LCME and to the CACMS, when applicable, by January 1st of the year preceding the planned creation or expansion of the functionally separate campus.

A. Finances

ER-2. The present and anticipated financial resources of a medical education program must be adequate to sustain a sound program of medical education and to accomplish other programmatic and institutional goals.

The costs of conducting an accredited educational program leading to the M.D. degree should be supported from diverse sources (e.g., income from tuition, endowments, earnings by the faculty, support from the parent institution, annual gifts, grants from organizations and individuals, appropriations by government). Evidence for compliance with this standard will include documentation of adequate financial reserves to maintain the medical education program in the event of unexpected revenue losses and demonstration of effective fiscal management of the medical education program's budget.

ER-3. Pressure for institutional self-financing must not compromise the educational mission of the medical education program or cause it to enroll more medical students than its total resources can accommodate.

Reliance on medical student tuition should not be so great that the quality of the medical education program is compromised by the need to enroll or retain inappropriate numbers of medical students or medical students whose qualifications are substandard.

B. General Facilities

ER-4. A medical education program must have, or be assured the use of, buildings and equipment appropriate to achieve its educational and other goals.

The facilities of the medical education program should include offices for faculty, administrators, and support staff; laboratories and other space appropriate for the conduct of research; medical student classrooms and laboratories; lecture hall(s) sufficiently large to accommodate a full year's class and any other students taking the same courses; space for medical student use, including medical student study space; space and equipment for library and information access; and space for the humane care of animals when animals are used in teaching or research.

ER-5. A medical education program should have appropriate security systems in place at all instructional sites.

C. Clinical Teaching Facilities

ER-6. A medical education program must have, or be assured the use of, appropriate resources for the clinical instruction of its medical students.

The clinical resources at the medical education program should be sufficient to ensure the breadth and quality of ambulatory and inpatient teaching. These resources include adequate numbers and types of patients (e.g., acuity, case mix, age, gender) and physical resources.

ER-7. Each hospital or other clinical facility of a medical education program that serves as a major instructional site for medical student education must have appropriate instructional facilities and information resources.

Appropriate instructional facilities at each hospital or other clinical facility include areas for individual medical student study, conferences, and large group presentations (e.g., lectures). Sufficient information resources, including library holdings and access to other library systems, must either be present in the hospital or other clinical facility or readily available in the immediate vicinity. A sufficient number of computers must be readily available that allow access to the Internet and to other educational software. Call rooms and lockers, or other secure space to store personal belongings, should be available for medical student use.

ER-8. Required clerkships (or, in Canada, clerkship rotations) at a medical education program should be conducted in health care settings in which resident physicians in accredited programs of graduate medical education, under faculty guidance, participate in teaching the medical students.

It is understood that, at some medical education programs, there may not be resident physicians at some community hospitals or community clinics or the offices of community-based physicians. In those cases, medical students must be adequately supervised by attending physicians.

ER-9. A medical education program must have written and signed affiliation agreements in place with its clinical affiliates that define, at a minimum, the responsibilities of each party related to the educational program for medical students.

Written agreements are necessary with hospitals that are used regularly as inpatient sites for core clinical clerkships (or, in Canada, clerkship rotations). Additionally, affiliation agreements may be warranted with other instructional sites that have a significant role in the clinical education program.

Affiliation agreements should address, at a minimum, the following topics:

- *The assurance of medical student and faculty access to appropriate resources for medical student education.*
- *The primacy of the medical education program over academic affairs and the education/assessment of medical students.*
- *The role of the medical education program in the appointment and assignment of faculty members with responsibility for medical student teaching.*
- *Specification of the responsibility for treatment and follow-up when a medical student is exposed to an infectious or environmental hazard or other occupational injury.*

If department heads of the medical education program are not also the clinical service chiefs at affiliated institutions, the affiliation agreement must confirm the authority of the department head to ensure faculty and medical student access to appropriate resources for medical student education.

The medical education program should advise the LCME and the CACMS, when applicable, of anticipated changes in affiliation status of the program's clinical facilities.

ER-10. In the relationship between a medical education program and its clinical affiliates, the educational program for medical students must remain under the control of the program's faculty at each instructional site.

Regardless of the location in which clinical instruction occurs, department heads and faculty of the medical education program must have authority consistent with their responsibility for the instruction and assessment of medical students.

The responsibility of the clinical facility for patient care should not diminish or preclude opportunities for medical students to undertake patient care duties under the appropriate supervision of the medical education program's faculty and residents.

D. Library Services and Information Resources

ER-11. An institution that provides a medical education program must provide ready access to well-maintained library facilities sufficient in size, breadth of holdings, and technology to support its educational and other missions.

Students, faculty, and others associated with an institution that provides a medical education program should have physical or electronic access to the current and prior volumes of leading biomedical, clinical, and other relevant periodicals, self-instructional materials, and any other information resources required to support the institution's missions, including the educational program.

ER-12. The library services at an institution that provides a medical education program must be supervised by a professional staff that is responsive to the needs of the students, faculty, and others associated with the institution.

The library staff serving an institution that provides a medical education program should be familiar with current regional and national information resources and data systems.

ER-13. An institution that provides a medical education program must provide access to well-maintained information technology resources sufficient in scope and expertise to support its educational and other missions.

ER-14. The information technology staff serving an institution that provides a medical education program must be responsive to the needs of the medical students, faculty, and others associated with the institution.

The information services staff should facilitate the timely access of medical students, faculty, and others associated with the institution at each instructional site to information resources required by the curriculum and other missions of the institution and have sufficient expertise to facilitate their use.