

FUNCTIONS AND STRUCTURE OF A MEDICAL SCHOOL

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

Liaison Committee on Medical Education

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For further information, contact:

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

Secretariat
Committee on Accreditation of Canadian Medical Schools
Association of Canadian Medical Colleges
774 Echo Drive
Ottawa, Ontario, Canada K1S 5P2
Phone: 613-730-0687 Fax: 613-730-1196

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

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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 those complete and independent medical education programs leading to the M.D. degree that are offered by universities or medical schools chartered in the United States¹. It jointly accredits M.D.-granting programs in Canada¹ in cooperation with the Committee on Accreditation of Canadian Medical Schools (CACMS). By judging the compliance of medical education programs with nationally accepted standards of educational quality, the LCME and CACMS serve the interests of the general public and of the students enrolled in those programs.

To achieve and maintain accreditation, medical education programs leading to the M.D. degree in the U.S. and Canada must meet the standards portrayed in this document. The standards are provided in both a narrative format (Part 1) that illustrates how standards relate to each other, and in a list format (Part 2) that allows the inclusion of explanatory annotations to clarify the operational meaning of standards when necessary.

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 unless there are extraordinary and justifiable circumstances that preclude full compliance.

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 diploma for the latter program must explicitly state the basis of the degree to assure that it will not be confused with the program accredited by the LCME. The LCME, if requested, can provide information and consultation about medical education standards and the process of accreditation for M.D.-granting programs that are offered by institutions located outside the United States and Canada.

Further information about accreditation can be obtained from the LCME or CACMS offices listed inside the cover of this document, or from the LCME web site, www.lcme.org.

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

Part 1: A Narrative Account of Accreditation Standards

Preface: An essential goal of each program of medical education leading to the M.D. degree must be the meeting of standards for accreditation by the LCME. The accreditation process requires educational programs to provide assurances that their graduates exhibit general professional competencies that are appropriate for entry to the next stage of their training, and that serve as the foundation for life-long 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.

I. INSTITUTIONAL SETTING

Each medical school must engage in a planning process that sets the direction for the institution and results in measurable outcomes.²

A. Governance and Administration

A medical school should be part of a not-for-profit university or chartered as a not-for-profit institution by the government of the jurisdiction in which it operates. If not a component of a regionally accredited institution, a U.S. medical school must achieve institutional accreditation from the appropriate regional accrediting body.

The manner in which the medical school is organized, including the responsibilities and privileges of administrative officers, faculty, students and committees must be promulgated in medical school or university bylaws. The governing board responsible for oversight of the medical school must be composed of persons who have no personal or pecuniary interest or other conflict of interest in the operation of the school, its associated hospitals, or any related enterprises. Terms of governing board members should be overlapping and sufficiently long to permit them to gain an understanding of the programs of the medical school. Administrative officers and members of a medical school faculty must be appointed by, or on the authority of, the governing board of the medical school or its parent university.

² Standard adopted March 2003; to take effect July 2004

The chief official of the medical school, who usually holds the title “dean,” must have ready access to the university president or other university official charged with final responsibility for the school, and to other university officials as are necessary to fulfill the responsibilities of the dean’s office. There must be clear understanding of the authority and responsibility for medical school matters among the vice president for health affairs, the dean of the medical school, the faculty, and the directors of the other components of the medical center and university.

The dean must be qualified by education and experience to provide leadership in medical education, scholarly activity, and care of patients. The medical school administration should include such associate or assistant deans, department chairs, leaders of other organizational units, and staff as are necessary to accomplish the missions of the medical school.

B. Academic Environment

A medical school should be a component of a university offering other graduate and professional degree programs that contribute to the academic environment of the medical school. Medical students should learn in clinical environments where graduate and continuing medical education programs are present.³ The program of medical education leading to the M.D. degree must be conducted in an environment that fosters the intellectual challenge and spirit of inquiry appropriate to a community of scholars. Students should have

³ Standard adopted March 2003; to take effect July 2004

the opportunity to participate in research and other scholarly activities of the faculty. All medical school faculty members should work closely together in teaching, research, and health care delivery.

II. EDUCATIONAL PROGRAM FOR THE M.D. DEGREE

A. Educational Objectives

The medical school faculty must define the objectives of its educational program. The objectives and their associated outcomes must address the extent to which students have progressed in developing the competencies that the profession and the public expect of a physician.⁴ The objectives for clinical education must include quantified criteria for the types of patients (real or simulated), the level of student responsibility, and the appropriate clinical settings needed for the objectives to be met. The objectives of the educational program must be made known to all medical students and to the faculty, residents, and others with direct responsibilities for medical student education.

B. Structure

1. General Design. The program of medical education leading to the M.D. degree must include at least 130 weeks of instruction. The medical faculty must design a curriculum that provides a general professional education, and fosters in students the ability to learn through self-directed, independent study throughout their professional lives. The curriculum must incorporate the fundamental principles of medicine and its underlying scientific concepts; allow students to acquire skills of critical judgment based on evidence and experience; and develop students' ability to use principles and skills wisely in solving problems of health and disease. It must include current concepts in the basic and clinical sciences, including therapy and technology, changes in the understanding of disease, and the effect of social needs and

demands on care. There must be comparable educational experiences and equivalent methods of evaluation across all alternative instructional sites within a given discipline. The LCME must be notified of plans for major modification of the curriculum.

2. Content. The curriculum must include behavioral and socioeconomic subjects, in addition to basic science and clinical disciplines. It must include the contemporary content of those disciplines that have been traditionally titled anatomy, biochemistry, genetics, physiology, microbiology and immunology, pathology, pharmacology and therapeutics, and preventive medicine. Instruction within the basic sciences should include laboratory or other practical exercises that entail accurate observations of biomedical phenomena and critical analyses of data.

Clinical instruction must cover all organ systems, and include the important aspects of preventive, acute, chronic, continuing, rehabilitative, and end-of-life care. Clinical experience in primary care must be included as part of the curriculum. The curriculum should include clinical experiences in family medicine, internal medicine, obstetrics and gynecology, pediatrics, psychiatry, and surgery. Students' clinical experiences must utilize both outpatient and inpatient settings. Educational opportunities must be available in multidisciplinary content areas, such as emergency medicine and geriatrics, and in the disciplines that support general medical practice, such as diagnostic imaging and clinical pathology. The curriculum must include elective courses to supplement required courses.

There must be specific instruction in communication skills as they relate to physician responsibilities, including communication with patients, families, colleagues, and other health professionals. The curriculum must prepare students for their role in addressing the medical consequences of common societal problems, for example, providing instruction in the diagnosis, prevention, appropriate reporting, and treatment of violence and abuse. The faculty and students must demonstrate an understanding of the

⁴ Standard adopted March 2003; to take effect July 2004

manner in which people of diverse cultures and belief systems perceive health and illness and respond to various symptoms, diseases, and treatments. Medical students must learn to recognize and appropriately address gender and cultural biases in themselves and others, and in the process of health care delivery. A medical school must teach medical ethics and human values, and require its students to exhibit scrupulous ethical principles in caring for patients, and in relating to patients' families and to others involved in patient care.

C. Teaching and Evaluation

Residents who supervise or teach medical students, as well as 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 and be prepared for their roles in teaching and evaluation. Supervision of student learning experiences must be provided throughout required clerkships by members of the medical school's faculty.

The medical school faculty must establish a system for the evaluation of student achievement throughout medical school that employs a variety of measures of knowledge, skills, behaviors, and attitudes. There must be ongoing assessment that assures students have acquired and can demonstrate on direct observation the core clinical skills, behaviors, and attitudes that have been specified in the school's educational objectives. There must be evaluation of problem solving, clinical reasoning, and communication skills.

The faculty of each discipline should set the standards of achievement in that discipline. The directors of all courses and clerkships must design and implement a system of formative and summative evaluation of student achievement in each course and clerkship. Each student should be evaluated early enough during a unit of study to allow time for remediation. Narrative descriptions of student performance and of non-cognitive achievement should be included as part of evaluations in all required courses and

clerkships where teacher-student interaction permits this form of assessment.

D. Curriculum Management

1. Roles and Responsibilities. There must be integrated institutional responsibility for the overall design, management, and evaluation of a coherent and coordinated curriculum. The program's faculty must be responsible for the detailed design and implementation of the components of the curriculum. The objectives, content, and pedagogy of each segment of the curriculum, as well as for the curriculum as a whole, must be subject to periodic review and revision by the faculty.

The chief academic officer must have sufficient resources and authority to fulfill the responsibility for the management and evaluation of the curriculum. The faculty committee responsible for the curriculum must monitor the content provided in each discipline so that the school's educational objectives will be achieved. The committee should give careful attention to the impact on students of the amount of work required, including the frequency of examinations and their scheduling.

2. Geographically Separated Programs. The medical school's chief academic officer must be responsible for the conduct and quality of the educational program and for assuring the adequacy of faculty at all educational sites. The principal academic officer of each geographically remote site must be administratively responsible to the chief academic officer of the medical school conducting the educational program. The faculty in each discipline at all sites must be functionally integrated by appropriate administrative mechanisms.

There must be a single standard for promotion and graduation of students across geographically separate campuses. The parent school must assume ultimate responsibility for the selection and assignment of all medical students when geographically separated campuses are operated. Students assigned to all campuses should receive the same rights and support services. Students

should have the opportunity to move among the component programs of the school.

E. Evaluation of Program Effectiveness

To guide program improvement, medical schools must evaluate the effectiveness of the educational program by documenting the extent to which its objectives have been met. In assessing program quality, schools must consider student evaluations of their courses and teachers, and an appropriate variety of outcome measures. Medical schools must evaluate the performance of their students and graduates in the framework of national norms of accomplishment.

III. MEDICAL STUDENTS

A. Admissions

1. Premedical Requirements. Students preparing to study medicine should acquire a broad education, including the humanities and social sciences. Premedical course requirements should be restricted to those deemed essential preparation for completing the medical school curriculum.

2. Selection. The faculty of each school must develop criteria and procedures for the selection of students that are readily available to potential applicants and to their collegiate advisors. The final responsibility for selecting students to be admitted for medical study must reside with a duly constituted faculty committee.

Each medical school must have a pool of applicants sufficiently large and possessing national level qualifications to fill its entering class. Medical schools must select students who possess the intelligence, integrity, and personal and emotional characteristics necessary for them to become effective physicians. The selection of individual students must not be influenced by any political or financial factors. Each medical school should have policies and practices ensuring the gender, racial, cultural, and economic diversity of its students. Each school must develop and publish technical standards for

admission of handicapped applicants, in accordance with legal requirements.

The institution's catalog or equivalent informational materials must describe the requirements for the M.D. and all associated joint degree programs, provide the most recent academic calendar for each curricular option, and describe all required courses and clerkships offered by the school. The catalog or informational materials must also enumerate the school's criteria for selecting students, and describe the admissions process.

3. Visiting and Transfer Students. Institutional resources to accommodate the requirements of any visiting and transfer students must not significantly diminish the resources available to existing enrolled students. Transfer students must demonstrate achievements in premedical education and medical school comparable to those of students in the class that they join. Prior coursework taken by students who are accepted for transfer or admission to advanced standing must be compatible with the program to be entered. Transfer students should not be accepted into the final year of the program except under rare circumstances.

The accepting school should verify the credentials of visiting students, formally register and maintain a complete roster of such students, approve their assignments, and provide evaluations to their parent schools. Students visiting from other schools for clinical clerkships and electives must possess qualifications equivalent to students they will join in these experiences.

B. Student Services

1. Academic and Career Counseling. The system of academic advising for students must integrate the efforts of faculty members, course directors, and student affairs officers with the school's counseling and tutorial services. There must be a system to assist students in career choice and application to residency programs, and to guide students in choosing elective courses. If students are permitted to take

electives at other institutions, there should be a system centralized in the dean's office to review students' proposed extramural programs prior to approval and to ensure the return of a performance appraisal by the host program.

The process of applying for residency programs should not disrupt the general medical education of the students. Letters of reference or other credentials should not be provided until the fall of the student's final year.

2. Financial Aid Counseling and Resources.

A medical school must provide students with effective financial aid and debt management counseling. Schools should develop financial aid resources that minimize total student indebtedness. Institutions must have clear and equitable policies for the refund of tuition, fees, and other allowable payments.

3. Health Services and Personal Counseling.

Each school must have an effective system of personal counseling for its students that includes programs to promote the well-being of students and facilitate their adjustment to the physical and emotional demands of medical school. Students must have access to confidential counseling and services from health professionals who have no involvement in the academic evaluation or promotion of students receiving those services. Health insurance must be available to all students and their dependents, and all students must have access to disability insurance and to preventive and therapeutic health services.

Medical schools should follow accepted guidelines in determining appropriate immunizations for medical students. Schools must have policies addressing student exposure to infectious and environmental hazards.

C. The Learning Environment

In the admissions process and throughout medical school, there should be no discrimination on the basis of gender, sexual orientation, age, race, creed, or national origin. Each medical school must define and publicize the standards of conduct for the teacher-learner

relationship, and develop written policies for addressing violations of those standards.

The medical school must publicize to all faculty and students its standards and procedures for the evaluation, advancement, and graduation of its students and for disciplinary action. There must be a fair and formal process for taking any action that adversely affects the status of a student. Student records must be confidential and available only to members of the faculty and administration with a need to know, unless released by the student or as otherwise governed by laws concerning confidentiality. Students must be allowed to review and challenge their records.

Schools should assure that students have adequate study space, lounge areas, and personal lockers or other secure storage facilities.

IV. FACULTY

A. Number, Qualifications, and Functions

The recruitment and development of a medical school's faculty should take into account its mission, the diversity of its student body, and the population that it serves. There must be a sufficient number of faculty members in the subjects basic to medicine and in the clinical disciplines to meet the needs of the educational program and the other missions of the medical school.

Persons appointed to a faculty position must have demonstrated achievements commensurate with their academic rank. Members of the faculty must have the capability and continued commitment to be effective teachers. Faculty members should have a commitment to continuing scholarly productivity characteristic of an institution of higher learning. The medical school faculty must make decisions regarding student admissions, promotion, and graduation, and must provide academic and career counseling for students.

B. Personnel Policies

There must be clear policies for faculty appointment, renewal of appointment, promotion, granting of tenure, and dismissal that involve the faculty, the appropriate department heads, and the dean. A medical school should have policies that deal with circumstances in which the private interests of faculty members or staff may be in conflict with their official responsibilities.

Faculty members should receive written information about their terms of appointment, responsibilities, lines of communication, privileges and benefits, and, if relevant, the policy on practice earnings. They should receive regularly scheduled feedback on their academic performance and their progress toward promotion. Opportunities for professional development must be provided to enhance faculty members' skills and leadership abilities in education and research.

C. Governance

The dean and a committee of the faculty should determine medical school policies. Schools should assure that there are mechanisms for direct faculty involvement in decisions related to the educational program. The full faculty should meet often enough for all faculty members to have the opportunity to participate in the discussion and establishment of medical school policies and practices.

V. EDUCATIONAL RESOURCES

The LCME must be notified of any substantial change in the number of students enrolled or in the resources of the institution, including the faculty, physical facilities, or the budget.

A. Finances

The present and anticipated financial resources of a medical school must be adequate to sustain a sound program of medical education and to accomplish other institutional goals. Pressure for institutional self-financing must not compromise the educational mission of the medical school nor cause it to enroll more

students than its total resources can accommodate.

B. General Facilities

A medical school must have, or be assured use of, buildings and equipment appropriate to achieve its educational and other goals. Appropriate security systems should be in place at all educational sites.

C. Clinical Teaching Facilities

The medical school must have, or be assured use of, appropriate resources for the clinical instruction of its medical students. A hospital or other clinical facility that serves as a major site for medical student education must have appropriate instructional facilities and information resources. Required clerkships should be conducted in health care settings where resident physicians in accredited programs of graduate medical education, under faculty guidance, participate in teaching the students.

There must be written and signed affiliation agreements between the medical school and its clinical affiliates that define, at a minimum, the responsibilities of each party related to the educational program for medical students. In the relationship between the medical school and its clinical affiliates, the educational program for medical students must remain under the control of the school's faculty.

D. Information Resources and Library Services

The medical school must have access to well-maintained library and information facilities, sufficient in size, breadth of holdings, and information technology to support its education and other missions. The library and information services staff must be responsive to the needs of the faculty, residents, and students of the medical school.

Part 2: Standards and Explanatory Annotations

Preface: An essential goal of each program of medical education leading to the M.D. degree must be the meeting of standards for accreditation by the LCME. The accreditation process requires educational programs to provide assurances that their graduates exhibit general professional competencies that are appropriate for entry to the next stage of their training, and that serve as the foundation for life-long 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.

I. INSTITUTIONAL SETTING

IS-1 Each medical school must engage in a planning process that sets the direction for the institution and results in measurable outcomes. [standard adopted March 2002; to take effect July 2004]

[annotation adopted June 2003] To assure ongoing vitality and successful adaptation to the rapidly changing environment of academic medicine, schools need to establish periodic or cyclical institutional planning processes and activities. Planning efforts that have proven successful in medical schools and other professional or business milieus typically involve the definition and periodic reassessment of both short-term and long-range goals for the successful accomplishment of institutional missions. By framing goals in terms of measurable outcomes wherever circumstances permit, a school can more readily track progress towards their achievement. The manner in which a school engages in institutional planning will vary according to available resources and local circumstances, but all schools should be able to document their 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 school should be part of a not-for-profit university or chartered as a not-for-profit institution by the government of the jurisdiction in which it operates.

Accreditation will be conferred only on those programs that are legally authorized under applicable law to provide a program of education beyond secondary education.

IS-3 If not a component of a regionally accredited institution, a U.S. medical school 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 educational programs, specifically for the accreditation of 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 the medical school is organized, including the responsibilities and privileges of administrative officers, faculty, students and committees must be promulgated in medical school or university bylaws.
- IS-5 The governing board responsible for oversight of the medical school must be composed of persons who have no personal or pecuniary interest or other conflict of interest in the operation of the school, its associated hospitals, or any related enterprises.
- IS-6 Terms of governing board members should be overlapping and sufficiently long to permit them to gain an understanding of the programs of the medical school.
- IS-7 Administrative officers and members of a medical school faculty must be appointed by, or on the authority of, the governing board of the medical school or its parent university.
- IS-8 The chief official of the medical school, who usually holds the title “dean,” must have ready access to the university president or other university official charged with final responsibility for the school, and to other university 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 medical school matters among the vice president for health affairs, the dean of the medical school, the faculty, and the directors of the other components of the medical center and university.
- IS-10 The dean must be qualified by education and experience to provide leadership in medical education, scholarly activity, and care of patients.
- IS-11 The medical school administration should include such associate or assistant deans, department chairs, leaders of other organizational units, and staff as are necessary to accomplish the missions of the medical school. [technical change approved June 2002]

There should not be excessive turnover or long-standing vacancies in medical school leadership. Medical school leaders include the dean, vice/associate deans, department chairs, and others where a vacancy could negatively impact institutional stability, especially planning for or implementing the educational program. Areas that commonly require administrative support include admissions, student affairs, academic affairs, faculty affairs, graduate education, continuing education, hospital relationships, research, business and planning, and fund raising.

B. Academic Environment

- IS-12 A medical school should be a component of a university offering other graduate and professional degree programs that contribute to the academic environment of the medical school.

There should be regular and formal review of all graduate and professional programs in which medical school faculty participate, to foster adherence to high standards of quality in education, research, and scholarship, and to facilitate the progress and achievement of the trainees.

- IS-12-A Medical students should learn in clinical environments where graduate and continuing medical education programs are present. [standard adopted March 2003; to take effect July 2004]

In order to link medical student education to the later stages of the medical education continuum, medical students should spend time in settings where graduate and continuing medical education programs are present. It is expected that medical students will participate, where appropriate, in the activities associated with these programs. The graduate and continuing medical education programs at training sites where medical students are located should be accredited by the appropriate accrediting bodies.

- IS-13 The program of medical education leading to the M.D. degree must be conducted in an environment that fosters the intellectual challenge and spirit of inquiry appropriate to a community of scholars.
- IS-14 Students should have the opportunity to participate in research and other scholarly activities of the faculty.
- IS-15 All medical school faculty members should work closely together in teaching, research, and health care delivery.

Because the education of both medical students and graduate physicians requires an academic environment that provides close interaction among faculty members, those skilled in teaching and research in the basic sciences must maintain awareness of the relevance of their disciplines to clinical problems. Conversely, clinicians must maintain awareness of the contributions that basic sciences bring to the understanding of clinical problems. These reciprocal obligations emphasize the importance of collegiality among medical school faculty across disciplinary boundaries and throughout the continuum of medical education.

II. EDUCATIONAL PROGRAM FOR THE M.D. DEGREE

A. Educational Objectives

- ED-1 The medical school faculty must define the objectives of its educational program.

Educational objectives are statements of the items of knowledge, skills, behaviors, and attitudes that students are expected to exhibit as evidence of their achievement. They are not statements of mission or broad institutional purpose, such as education, research, health care, or community service. Educational objectives state what students are expected to learn, not what is to be taught.

Student achievement of these objectives must be documented by specific and measurable outcomes (e.g., measures of basic science grounding in the clinical years, USMLE results, performance of graduates in residency training, performance on licensing examinations, etc.). National norms should be used for comparison whenever available.

ED-1-A The objectives and their associated outcomes must address the extent to which students have progressed in developing the competencies that the profession and the public expect of a physician. [standard adopted March 2003; to take effect July 2004]

There are several widely recognized definitions of the characteristics appropriate for a competent physician, including the physician attributes described in the AAMC's Medical School Objectives Project, the general competencies of physicians resulting from the collaborative efforts of the ACGME and ABMS, and the physician roles summarized in the CanMEDS 2000 report of the Royal College of Physicians and Surgeons of Canada. To comply with this standard, a school should be able to demonstrate how its institutional learning objectives facilitate the development of such general attributes of physicians. A school may establish other objectives appropriate to its particular missions and context.

ED-2 The objectives for clinical education must include quantified criteria for the types of patients (real or simulated), the level of student responsibility, and the appropriate clinical settings needed for the objectives to be met.

Each course or clerkship that requires physical or simulated patient interactions should specify the numbers and kinds of patients that students must see in order to achieve the objectives of the learning experience. They should also specify the extent of student interaction with patients and the venue(s) in which the interactions will occur. A corollary requirement of this standard is that courses and clerkships will monitor and verify, by appropriate means, the number and variety of patient encounters in which students participate, so that adjustments in the criteria can be made if necessary without sacrificing educational quality.

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

Among those who should exhibit familiarity with the overall objectives for the education of medical students are the dean and the academic leadership of clinical affiliates where the educational program takes place.

B. Structure

1. General Design

ED-4 The program of medical education leading to the M.D. degree must include at least 130 weeks of instruction.

ED-5 The medical faculty must design a curriculum that provides a general professional education, and fosters in students the ability to learn through self-directed, independent study throughout their professional lives.

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

- ED-7 It must include current concepts in the basic and clinical sciences, including therapy and technology, changes in the understanding of disease, and the effect of social needs and demands on care.
- ED-8 There must be comparable educational experiences and equivalent methods of evaluation across all alternative instructional sites within a given discipline.

Compliance with this standard requires that educational experiences given at alternative sites be designed to achieve the same educational objectives. Course duration or clerkship length must be identical, unless a compelling reason exists for varying the length of the experience. The instruments and criteria used for student evaluation, as well as policies for the determination of grades, should be the same at all alternative sites. The faculty who teach at various sites should be sufficiently knowledgeable in the subject matter to provide effective instruction, with a clear understanding of the objectives of the educational experience and the evaluation methods used to determine achievement of those objectives. Opportunities to enhance teaching and evaluation skills should be available for faculty at all instructional sites.

While the types and frequency of problems or clinical conditions seen at alternate sites may vary, each course or clerkship must identify any core experiences needed to achieve its objectives, and assure that students received sufficient exposure to such experiences. Likewise, the proportion of time spent in inpatient and ambulatory settings may vary according to local circumstance, but in such cases the course or clerkship director must assure that limitations in learning environments do not impede the accomplishment of objectives.

To facilitate comparability of educational experiences and equivalency of evaluation methods, the course or clerkship director should orient all participants, both teachers and learners, about the educational objectives and grading system used. This can be accomplished through regularly scheduled meetings between the director of the course or clerkship and the directors of the various sites that are used.

The course/clerkship leadership should review student evaluations of their experiences at alternative sites to identify any persistent variations in educational experiences or evaluation methods.

- ED-9 The LCME must be notified of plans for major modification of the curriculum.

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/resident effort, demands on 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 encourages experimentation that will increase the efficiency and effectiveness of medical education.

2. Content

- ED-10 The curriculum 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 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 school's educational goals and objectives.

- ED-11 It must include the contemporary content of those disciplines that have been traditionally titled anatomy, biochemistry, genetics, physiology, microbiology and immunology, pathology, pharmacology and therapeutics, and preventive medicine.
- ED-12 Instruction within the basic sciences should include laboratory or other practical exercises that entail accurate observations of biomedical phenomena and critical analyses of data.
- ED-13 Clinical instruction must cover all organ systems, and include the important aspects of preventive, acute, chronic, continuing, rehabilitative, and end-of-life care.
- ED-14 Clinical experience in primary care must be included as part of the curriculum.
- ED-15 The curriculum should include clinical experiences in family medicine, internal medicine, obstetrics and gynecology, pediatrics, psychiatry, and surgery.
- Schools that do not require clinical experience in one or another of these disciplines must ensure that their students possess the knowledge and clinical abilities to enter any field of graduate medical education.
- ED-16 Students' clinical experiences must utilize both outpatient and inpatient settings.
- ED-17 Educational opportunities must be available in multidisciplinary content areas, such as emergency medicine and geriatrics, and in the disciplines that support general medical practice, such as diagnostic imaging and clinical pathology.
- ED-18 The curriculum must include elective courses to supplement required courses.
- While electives permit students to gain exposure to and deepen their understanding of medical specialties reflecting their career interests, they should also provide opportunities for students to pursue individual academic interests.
- ED-19 There must be specific instruction in communication skills as they relate to physician responsibilities, including communication with patients, families, colleagues, and other health professionals.
- ED-20 The curriculum must prepare students for their role in addressing the medical consequences of common societal problems, for example, providing instruction in the diagnosis, prevention, appropriate reporting, and treatment of violence and abuse.

- ED-21 The faculty and students 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.

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

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

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

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

Each school should assure that 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 and evaluated, and reinforced through formal instructional efforts.

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

"Scrupulous ethical principles" imply characteristics like honesty, integrity, maintenance of confidentiality, and respect for patients, patients' families, other students, and other health professionals. The school's educational objectives may identify additional dimensions of ethical behavior to be exhibited in patient care settings.

C. Teaching and Evaluation

- ED-24 Residents who supervise or teach medical students, as well as 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 and be prepared for their roles in teaching and evaluation.

- ED-25 Supervision of student learning experiences must be provided throughout required clerkships by members of the medical school's faculty.

ED-26 The medical school faculty must establish a system for the evaluation of student achievement throughout medical school that employs a variety of measures of knowledge, skills, behaviors, and attitudes.

Evaluation of student performance should measure not only retention of factual knowledge, but also 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 LCME urges schools to develop a system of evaluation that fosters self-initiated learning by students and disapproves of the use of frequent tests which condition students to memorize details for short-term retention only.

ED-27 There must be ongoing assessment that assures students have acquired and can demonstrate on direct observation the core clinical skills, behaviors, and attitudes that have been specified in the school's educational objectives.

ED-28 There must be evaluation of problem solving, clinical reasoning, and communication skills.

ED-29 The faculty of each discipline should set the standards of achievement in that discipline.

ED-30 The directors of all courses and clerkships must design and implement a system of formative and summative evaluation of student achievement in each course and clerkship.

Those directly responsible for the evaluation of 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, etc. Courses or clerkships that are extremely short in duration may not have sufficient time to provide structured activities for formative evaluation, but should provide some alternate means (such as self-testing or teacher consultation) that will allow students to measure their progress in learning.

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

ED-31 Each student should be evaluated early enough during a unit of study to allow time for remediation.

ED-32 Narrative descriptions of student performance and of non-cognitive achievement should be included as part of evaluations in all required courses and clerkships where teacher-student interaction permits this form of assessment.

D. Curriculum Management

1. Roles and Responsibilities

ED-33 There must be integrated institutional responsibility 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 educational program as a whole. An effective central curriculum authority will exhibit:

- Faculty, 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 program as a whole will be designed to achieve the school’s overall educational objectives.

Evidence of coherence and coordination includes:

- Logical sequencing of the various segments of the curriculum.
- Content that is coordinated and integrated within and across the academic periods of study (horizontal and vertical integration).
- Methods of pedagogy and student evaluation that are appropriate for the achievement of the school’s educational objectives.

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

- 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 unwanted redundancies.
- Review of the stated objectives of individual courses and clerkships, as well as methods of pedagogy and student evaluation, to assure congruence with institutional 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 show the committee’s findings and recommendations.

ED-34 The program’s faculty must be responsible for the detailed design and implementation of the components of the curriculum.

Such responsibilities include, at a minimum, the development of specific course or clerkship objectives, selection of pedagogical and evaluation methods appropriate for the achievement of those objectives, ongoing review and updating of content, and assessment of course and teacher quality.

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

ED-36 The chief academic officer must have sufficient resources and authority to fulfill the 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 educational program as a whole. He or she may, however, delegate operational responsibility for curriculum oversight to a vice dean or associate dean.

The kinds of resources needed by the chief academic officer to assure effective delivery of the educational program include:

- Adequate numbers of teachers who have the time and training necessary to achieve the program's objectives.
- Appropriate teaching space for the methods of pedagogy employed in the educational program.
- Appropriate educational infrastructure (computers, audiovisual aids, laboratories, etc.).
- Educational support services, such as examination grading, classroom scheduling, and faculty training in methods of teaching and evaluation.
- 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 educational program, and to facilitate change when modifications to the curriculum are determined to be necessary.

ED-37 The faculty committee responsible for the curriculum must monitor the content provided in each discipline so that the school's educational objectives will be achieved.

The committee, working in conjunction with the chief academic officer, should assure 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, 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 student will acquire appropriate competence in general medical care regardless of subsequent career specialty.

ED-38 The committee should give careful attention to the impact on students of the amount of work required, including the frequency of examinations and their scheduling.

2. Geographically Separated Programs

ED-39 The medical school's chief academic officer must be responsible for the conduct and quality of the educational program and for assuring the adequacy of faculty at all educational sites.

ED-40 The principal academic officer of each geographically remote site must be administratively responsible to the chief academic officer of the medical school conducting the educational program.

ED-41 The faculty in each discipline at all sites must be functionally integrated by appropriate administrative mechanisms.

Schools should be able to demonstrate the means by which faculty at dispersed sites participate in and are held accountable for medical student education that is consistent with the objectives and performance expectations established by course or clerkship leadership. Mechanisms to achieve functional integration may include regular meetings or electronic communication, periodic visits to all sites by course or clerkship leadership, and sharing of course or clerkship

evaluation data and other types of feedback regarding faculty performance of their educational responsibilities.

ED-42 There must be a single standard for promotion and graduation of students across geographically separate campuses.

ED-43 The parent school must assume ultimate responsibility for the selection and assignment of all medical students when geographically separated campuses are operated.

ED-44 Students assigned to all campuses should receive the same rights and support services.

ED-45 Students should have the opportunity to move among the component programs of the school.

E. Evaluation of Program Effectiveness

ED-46 To guide program improvement, medical schools must evaluate the effectiveness of the educational program by documenting the extent to which its objectives have been met.

ED-47 In assessing program quality, schools must consider student evaluations of their courses and teachers, and an appropriate variety of outcome measures.

Among the kinds of outcome measures that serve this purpose are data on student performance, academic progress and program completion rates, acceptance into residency programs, postgraduate performance, and practice characteristics of graduates.

ED-48 Medical schools must evaluate the performance of their students and graduates in the framework of national norms of accomplishment.

III. MEDICAL STUDENTS

A. Admissions

1. Premedical Requirements

MS-1 Students preparing to study medicine should acquire a broad education, including the humanities and social sciences.

Ordinarily, four years of undergraduate education are necessary to prepare for entrance into medical school; however, special programs (e.g., combined baccalaureate-M.D. programs) may allow this to be reduced. General education that includes the social sciences, history, arts, and languages is increasingly important for the development of physician competencies outside of the scientific knowledge domain.

MS-2 Premedical course requirements should be restricted to those deemed essential preparation for completing the medical school curriculum.

2. Selection

MS-3 The faculty of each school must develop criteria and procedures for the selection of students that are readily available to potential applicants and to their collegiate advisors.

MS-4 The final responsibility for selecting students to be admitted for medical study must reside with a duly constituted faculty committee.

Persons or groups external to the medical school may assist in the evaluation of applicants but should not have decision-making authority.

MS-5 Each medical school must have a pool of applicants sufficiently large and possessing national level qualifications to fill its entering class.

The size of the entering class and of the medical student body as a whole should be determined not only by the number of qualified applicants, but also the adequacy of critical resources:

- Finances.
- Size of the faculty and the variety of academic fields they represent.
- Library and information systems resources.
- Number and size of classrooms, student laboratories, and clinical training sites.
- Patient numbers and variety.
- Student services.
- Instructional equipment.
- Space for the faculty.

Class size considerations should also include:

- The need to share resources to educate graduate students or other students within the university.
- The size and variety of programs of graduate medical education.
- Responsibilities for continuing education, patient care, and research.

MS-6 Medical schools must select students who possess the intelligence, integrity, and personal and emotional characteristics necessary for them to become effective physicians.

MS-7 The selection of individual students must not be influenced by any political or financial factors.

MS-8 Each medical school should have policies and practices ensuring the gender, racial, cultural, and economic diversity of its students.

The standard requires that each school's student body exhibit diversity in the dimensions noted. The extent of diversity needed will depend on the school's missions, goals, and educational objectives, expectations of the community in which it operates, and its implied or explicit social contract at the local, state, and national levels.

MS-9 Each school must develop and publish technical standards for admission of handicapped applicants, in accordance with legal requirements.

MS-10 The institution's catalog or equivalent informational materials must describe the requirements for the M.D. and all associated joint degree programs, provide the most recent academic calendar for each curricular option, and describe all required courses and clerkships offered by the school.

A medical school's publications, advertising, and student recruitment should present a balanced and accurate representation of the mission and objectives of the program.

MS-11 The catalog or informational materials must also enumerate the school's criteria for selecting students, and describe the admissions process.

3. Visiting and Transfer Students

MS-12 Institutional resources to accommodate the requirements of any visiting and transfer students must not significantly diminish the resources available to existing enrolled students.

MS-13 Transfer students must demonstrate achievements in premedical education and medical school comparable to those of students in the class that they join.

MS-14 Prior coursework taken by students who are accepted for transfer or admission to advanced standing must be compatible with the program to be entered.

MS-15 Transfer students should not be accepted into the final year of the program except under rare circumstances.

MS-16 The accepting school should verify the credentials of visiting students, formally register and maintain a complete roster of such students, approve their assignments, and provide evaluations to their parent schools.

Registration of visiting students allows the school accepting them to establish protocols or requirements for health records, immunizations, exposure to infectious agents or environmental hazards, insurance, and liability protection comparable to those of their own enrolled students.

MS-17 Students visiting from other schools for clinical clerkships and electives must possess qualifications equivalent to students they will join in these experiences.

B. Student Services

1. Academic and Career Counseling

MS-18 The system of academic advising for students must integrate the efforts of faculty members, course directors, and student affairs officers with the school's counseling and tutorial services.

MS-19 There must be a system to assist students in career choice and application to residency programs, and to guide students in choosing elective courses.

MS-20 If students are permitted to take electives at other institutions, there should be a system centralized in the dean's office to review students' proposed extramural programs prior to approval and to ensure the return of a performance appraisal by the host program.

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

Students should not be exempted from any required educational experiences or assessment exercises in order to pursue other activities intended to enhance their likelihood of obtaining a desired residency position.

MS-22 Letters of reference or other credentials should not be provided until the fall of the student's final year.

2. Financial Aid Counseling and Resources

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

In providing financial aid services and debt management counseling, schools should pay close attention and alert students to the impact of non-educational debt on their cumulative indebtedness.

MS-24 Schools should develop financial aid resources that minimize total student indebtedness.

MS-25 Institutions must have clear and equitable policies for the refund of tuition, fees, and other allowable payments.

3. Health Services and Personal Counseling

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

MS-27 Students must have access to confidential counseling and services from health professionals who have no involvement in the academic evaluation or promotion of students receiving those services.

MS-28 Health insurance must be available to all students and their dependents, and all students must have access to disability insurance and to preventive and therapeutic health services.

MS-29 Medical schools should follow accepted guidelines in determining appropriate immunizations for medical students.

Medical schools in the U.S. should follow guidelines issued by the Centers for Disease Control and Prevention, along with those of relevant state agencies. Canadian schools should follow guidelines of the Laboratory Center for Disease Control and relevant provincial agencies.

MS-30 Schools must have policies addressing student exposure to infectious and environmental hazards.

The policies should include 1) education of students about methods of prevention; 2) the procedures for care and treatment after exposure, including definition of financial responsibility; and 3) the effects of infectious and environmental disease or disability on student learning activities. All registered

students (including visiting students) need to be informed of these policies before undertaking any educational activities that would place them at risk.

C. The Learning Environment

MS-31 In the admissions process and throughout medical school, there should be no discrimination on the basis of gender, sexual orientation, age, race, creed, or national origin.

MS-32 Each medical school must define and publicize the standards of conduct for the teacher-learner relationship, and develop written policies for addressing violations of those standards.

The standards of conduct need not be unique to the school but may originate from other sources such as the parent university. Mechanisms for reporting violations of these standards -- such as incidents of harassment or abuse -- should assure that they can be registered and investigated without fear of retaliation.

The policies also should specify mechanisms for the prompt handling of such complaints, and support educational activities aimed at preventing inappropriate behavior.

MS-33 The medical school must publicize to all faculty and students its standards and procedures for the evaluation, advancement, and graduation of its students and for disciplinary action.

MS-34 There must be a fair and formal process for taking any action that adversely affects the status of a student.

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

MS-35 Student records must be confidential and available only to members of the faculty and administration with a need to know, unless released by the student or as otherwise governed by laws concerning confidentiality.

MS-36 Students must be allowed to review and challenge their records.

MS-37 Schools should assure that students have adequate study space, lounge areas, and personal lockers or other secure storage facilities.

IV. FACULTY

A. Number, Qualifications, and Functions

FA-1 The recruitment and development of a medical school's faculty should take into account its mission, the diversity of its student body, and the population that it serves.

FA-2 There must be a sufficient number of faculty members in the subjects basic to medicine and in the clinical disciplines to meet the needs of the educational program and the other missions of the medical school.

In determining the number of faculty needed for the educational program, medical schools should consider that faculty may have educational and other responsibilities in academic programs besides medicine. In the clinical sciences, the number and kind of faculty appointed should also relate to the amount of patient care activities required to conduct meaningful clinical teaching across the continuum of medical education.

- FA-3 Persons appointed to a faculty position must have demonstrated achievements commensurate with their academic rank.
- FA-4 Members of the faculty must have the capability and continued commitment to be effective teachers.

Effective teaching requires knowledge of the discipline and an understanding of curriculum design and development, curriculum 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, curriculum development, program evaluation, and student evaluation. Such expertise may be supplied by an office of medical education or by faculty/staff members with backgrounds in educational science.

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

Community physicians appointed to the faculty, on a part-time basis or as volunteers, should be effective teachers, serve as role models for students, and provide insight into contemporary methods of providing patient care.

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

- Documented participation of the faculty in professional development activities related specifically to teaching and evaluation.
 - Attendance at regional or national meetings on educational affairs.
 - Evidence that faculty members' knowledge of their discipline is current.
- FA-5 Faculty members should have a commitment to continuing scholarly productivity characteristic of an institution of higher learning.
- FA-6 The medical school faculty must make decisions regarding student admissions, promotion, and graduation, and must provide academic and career counseling for students.

B. Personnel Policies

- FA-7 There must be clear policies 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 school should have policies that deal with circumstances in which the private interests of faculty members or staff may be in conflict with their official responsibilities.

FA-9 Faculty members should receive written information about their terms of appointment, responsibilities, lines of communication, privileges and benefits, and, if relevant, the policy on practice earnings.

FA-10 They should receive regularly scheduled feedback on their academic performance and their progress toward promotion.

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

FA-11 Opportunities for professional development must be provided to enhance faculty members' skills and leadership abilities in education and research.

C. Governance

FA-12 The dean and a committee of the faculty should determine medical school policies.

This committee, which typically consists of the heads of major departments, may be organized in any manner that brings reasonable and appropriate faculty influence into the governance and policymaking processes of the medical school.

FA-13 Schools should assure that there are mechanisms for direct faculty involvement in decisions related to the educational program.

Important areas where 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 specific to the school. 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 The full faculty should meet often enough for all faculty members to have the opportunity to participate in the discussion and establishment of medical school policies and practices.

V. EDUCATIONAL RESOURCES

ER-1 The LCME must be notified of any substantial change in the number of students enrolled or in the resources of the institution, including the faculty, physical facilities or the budget.

A. Finances

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

The costs of conducting an accredited program leading to the M.D. degree should be supported from diverse sources, such as income from tuition, endowments, earnings by the faculty, support from the parent university, annual

gifts, grants from organizations and individuals, and appropriations by government. Evidence for compliance with this standard will include documentation of adequate financial reserves to maintain the educational program in the event of unexpected revenue losses, and demonstration of effective fiscal management of the medical school budget.

- ER-3 Pressure for institutional self-financing must not compromise the educational mission of the medical school nor cause it to enroll more students than its total resources can accommodate.

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

B. General Facilities

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

The medical school facilities should include offices for faculty, administrators, and support staff; laboratories and other space appropriate for the conduct of research; 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 student use, including student study space; space for library and information access; and space for the humane care of animals when animals are used in teaching or research.

- ER-5 Appropriate security systems should be in place at all educational sites.

C. Clinical Teaching Facilities

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

Clinical resources should be sufficient to ensure breadth and quality of ambulatory and bedside teaching. They include adequate numbers and types of patients (acuity, case mix, age, gender, etc.) as well as physical resources.

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

Appropriate instructional facilities include areas for individual student study, for conferences, and for large group presentations (lectures). Sufficient information resources, including library holdings and access to other library systems, must either be present in the facility or readily available in the immediate vicinity. A sufficient number of computers are needed 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 student use.

- ER-8 Required clerkships should be conducted in health care settings where resident physicians in accredited programs of graduate medical education, under faculty guidance, participate in teaching the students.

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

- ER-9 There must be written and signed affiliation agreements between the medical school and 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. Additionally, affiliation agreements may be warranted with other clinical sites that have a significant role in the clinical education program.

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

- The assurance of student and faculty access to appropriate resources for medical student education.
- The primacy of the medical school over academic affairs and the education/evaluation of students.
- The role of the medical school in appointment/assignment of faculty members with responsibility for medical student teaching.
- Specification of the responsibility for treatment and follow-up when students are exposed to infectious or environmental hazards or other occupational injuries.

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

The LCME should be advised of anticipated changes in affiliation status of a program's clinical facilities.

- ER-10 In the relationship between the medical school and its clinical affiliates, the educational program for medical students must remain under the control of the school's faculty.

Regardless of the location where clinical instruction occurs, department heads and faculty must have authority consistent with their responsibility for the instruction and evaluation 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 medical school faculty and residents.

D. Information Resources and Library Services

- ER-11 The medical school must have access to well-maintained library and information facilities, sufficient in size, breadth of holdings, and information technology to support its education and other missions.

There should be physical or electronic access to leading biomedical, clinical, and other relevant periodicals, the current numbers of which should be readily available. The library and other learning resource centers must be equipped to

allow students to access information electronically, as well as to use self-instructional materials.

ER-12 The library and information services staff must be responsive to the needs of the faculty, residents and students of the medical school.

A professional staff should supervise the library and information services, and provide instruction in their use. The library and information services staff should be familiar with current regional and national information resources and data systems, and with contemporary information technology.

Both school officials and library/information services staff should facilitate access of faculty, residents, and medical students to information resources, addressing their needs for information during extended hours and at dispersed sites.