ACGME Program Requirements for Graduate Medical Education in Medical Biochemical Genetics

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in Medical Biochemical Genetics

One-year Common Program Requirements are in BOLD

Where applicable, text in italics describes the underlying philosophy of the requirements in that section. These philosophic statements are not program requirements and are therefore not citable.

Introduction

Int.A. Residency and fellowship programs are essential dimensions of the transformation of the medical student to the independent practitioner along the continuum of medical education. They are physically, emotionally, and intellectually demanding, and require longitudinally-concentrated effort on the part of the resident or fellow.

The specialty education of physicians to practice independently is experiential, and necessarily occurs within the context of the health care delivery system. Developing the skills, knowledge, and attitudes leading to proficiency in all the domains of clinical competency requires the resident and fellow physician to assume personal responsibility for the care of individual patients. For the resident and fellow, the essential learning activity is interaction with patients under the guidance and supervision of faculty members who give value, context, and meaning to those interactions. As residents and fellows gain experience and demonstrate growth in their ability to care for patients, they assume roles that permit them to exercise those skills with greater independence. This concept—graded and progressive responsibility—is one of the core tenets of American graduate medical education. Supervision in the setting of graduate medical education has the goals of assuring the provision of safe and effective care to the individual patient; assuring each resident’s and fellow’s development of the skills, knowledge, and attitudes required to enter the unsupervised practice of medicine; and establishing a foundation for continued professional growth.

Int.B. Description of the Specialty

Int.B.1. Medical biochemical geneticists are physicians who provide comprehensive diagnostic, management, and genetic counseling services for patients with inborn errors of metabolism. They focus on the treatment of genetic disorders of intermediary metabolism, lysosomal storage diseases, disorders of energy metabolism, and related disorders.

Int.B.2. Medical biochemical geneticists:

Int.B.2.a) diagnose and provide acute management of inborn errors of metabolism;

Int.B.2.b) provide long term management, including nutritional recommendations for chronic management of inborn errors of
metabolism;

Int.B.2.c) provide genetic counseling, including assessment of mode of inheritance, recurrence risk, and information about natural history of disease;

Int.B.2.d) use their knowledge of heterogeneity, variability and natural history of inborn errors of metabolism in patient-care decision making;

Int.B.2.e) elicit and interpret individual and family medical histories;

Int.B.2.f) order and interpret specialized laboratory testing; and,

Int.B.2.g) interact with other health-care professionals, especially nutritionists, in the provision of services for patients with genetic disorders of intermediary metabolism.

Int.C. Program Length

The educational program in medical biochemical genetics must be 12 months in length. (Core)

I. Institutions

I.A. Sponsoring Institution

One sponsoring institution must assume ultimate responsibility for the program, as described in the Institutional Requirements, and this responsibility extends to fellow assignments at all participating sites. (Core)

The sponsoring institution and the program must ensure that the program director has sufficient protected time and financial support for his or her educational and administrative responsibilities to the program. (Core)

I.A.1. Institutions sponsoring medical biochemical genetics programs must also sponsor ACGME-accredited programs in medical genetics and genomics. (Core)

I.A.2. Institutions sponsoring medical biochemical genetics programs should sponsor ACGME-accredited programs in pediatrics and internal medicine. (Detail)

I.B. Participating Sites

I.B.1. There must be a program letter of agreement (PLA) between the program and each participating site providing a required assignment. The PLA must be renewed at least every five years. (Core)

The PLA should:
I.B.1.a) identify the faculty who will assume both educational and supervisory responsibilities for fellows; (Detail)

I.B.1.b) specify their responsibilities for teaching, supervision, and formal evaluation of fellows, as specified later in this document; (Detail)

I.B.1.c) specify the duration and content of the educational experience; and, (Detail)

I.B.1.d) state the policies and procedures that will govern fellow education during the assignment. (Detail)

I.B.2. The program director must submit any additions or deletions of participating sites routinely providing an educational experience, required for all fellows, of one month full time equivalent (FTE) or more through the Accreditation Council for Graduate Medical Education (ACGME) Accreditation Data System (ADS). (Core)

II. Program Personnel and Resources

II.A. Program Director

II.A.1. There must be a single program director with authority and accountability for the operation of the program. The sponsoring institution’s GMEC must approve a change in program director. (Core)

II.A.1.a) The program director must submit this change to the ACGME via the ADS. (Core)

II.A.1.b) There must be policies and procedures to ensure continuity when the program director departs, is on sabbatical, or is unable to meet his or her duties for any other reason. (Core)

II.A.1.c) The program director should continue in his or her position for a length of time adequate to maintain continuity of leadership and program stability. (Detail)

II.A.2. Qualifications of the program director must include:

II.A.2.a) requisite specialty expertise and documented educational and administrative experience acceptable to the Review Committee; (Core)

II.A.2.b) current certification in the subspecialty by the American Board of Medical Genetics and Genomics, or subspecialty qualifications that are acceptable to the Review Committee; and, (Core)

II.A.2.b).(1) The program director must meet the requirements of the American Board of Medical Genetics and Genomics
Maintenance of Certification (MOC). (Core)

II.A.2.c) current medical licensure and appropriate medical staff appointment. (Core)

II.A.3. The program director must administer and maintain an educational environment conducive to educating the fellows in each of the ACGME competency areas. (Core)

The program director must:

II.A.3.a) prepare and submit all information required and requested by the ACGME; (Core)

II.A.3.b) be familiar with and oversee compliance with ACGME and Review Committee policies and procedures as outlined in the ACGME Manual of Policies and Procedures; (Detail)

II.A.3.c) obtain review and approval of the sponsoring institution's GMEC/DIO before submitting information or requests to the ACGME, including: (Core)

II.A.3.c).(1) all applications for ACGME accreditation of new programs; (Detail)

II.A.3.c).(2) changes in fellow complement; (Detail)

II.A.3.c).(3) major changes in program structure or length of training; (Detail)

II.A.3.c).(4) progress reports requested by the Review Committee; (Detail)

II.A.3.c).(5) requests for increases or any change to fellow duty hours; (Detail)

II.A.3.c).(6) voluntary withdrawals of ACGME-accredited programs; (Detail)

II.A.3.c).(7) requests for appeal of an adverse action; and, (Detail)

II.A.3.c).(8) appeal presentations to a Board of Appeal or the ACGME. (Detail)

II.A.3.d) obtain DIO review and co-signature on all program application forms, as well as any correspondence or document submitted to the ACGME that addresses: (Detail)

II.A.3.d).(1) program citations, and/or, (Detail)

II.A.3.d).(2) request for changes in the program that would have
II.B. Faculty

II.B.1. There must be a sufficient number of faculty with documented qualifications to instruct and supervise all fellows. (Core)

II.B.2. The faculty must devote sufficient time to the educational program to fulfill their supervisory and teaching responsibilities and demonstrate a strong interest in the education of fellows. (Core)

II.B.3. The physician faculty must have current certification in the subspecialty by the American Board of Medical Genetics and Genomics, or possess qualifications judged acceptable to the Review Committee. (Core)

II.B.4. The physician faculty must possess current medical licensure and appropriate medical staff appointment. (Core)

II.B.5. Non-physician faculty members must have appropriate qualifications in their respective fields and hold appropriate institutional appointments. (Core)

II.B.6. The members of the faculty must establish and maintain an environment of inquiry and scholarship with an active research component. (Core)

II.B.6.a) Faculty members must regularly participate in organized clinical discussions, rounds, journal clubs, and conferences. (Detail)

II.B.6.b) 50 percent of the faculty must also demonstrate scholarship by one or more of the following: (Core)

II.B.6.b).(1) publication of original research or review articles in peer-reviewed journals, or chapters in textbooks; (Detail)

II.B.6.b).(2) publication or presentation of case reports or clinical series at local, regional, or national professional and scientific society meetings; or, (Detail)

II.B.6.b).(3) participation in national committees or educational organizations. (Detail)

II.B.6.c) Faculty members must encourage and support fellows in scholarly activities. (Core)

II.C. Other Program Personnel

The institution and the program must jointly ensure the availability of all necessary professional, technical, and clerical personnel for the effective administration of the program. (Core)
II.C.1. Fellows must have regular opportunities to work with genetic counselors, nurses, and nutritionists who are involved in the provision of clinical metabolic disease services. *(Core)*

II.D. Resources

The institution and the program must jointly ensure the availability of adequate resources for fellow education, as defined in the specialty program requirements. *(Core)*

II.D.1. Participating sites must have a medical biochemical genetics laboratory which provides an appropriate volume and variety of biochemical genetics-related services and has an adequate number of qualified staff members, which must include a laboratory director certified in biochemical genetics by the American Board of Medical Genetics and Genomics. *(Core)*

II.D.2. Participating sites must provide a sufficient number and variety of inpatients and outpatients to permit fellows to gain experience with the presentation, natural history, and chronic treatment of a wide range of inborn errors of metabolism. *(Core)*

II.D.2.a) Fellows must care for a sufficient number of patients, in both the outpatient and inpatient settings to permit them to develop an understanding of the wide variety of inborn errors of metabolism. *(Core)*

II.D.3. Adequate space and equipment must be available to meet the educational goals of the program. *(Core)*

II.D.3.a) In addition to space for patient care activities, this requires meeting rooms, classrooms, office space, research facilities, and facilities for record storage and retrieval. *(Detail)*

II.D.3.b) Office and laboratory space must be provided for the fellows for both patient-care work and participation in scholarly activities. *(Core)*

II.E. Medical Information Access

Fellows must have ready access to specialty-specific and other appropriate reference material in print or electronic format. Electronic medical literature databases with search capabilities should be available. *(Detail)*

III. Fellow Appointments

III.A. Eligibility Requirements – Fellowship Programs

All required clinical education for entry into ACGME-accredited fellowship programs must be completed in an ACGME-accredited residency program, or in an RCPSC-accredited or CFPC-accredited residency program located
in Canada. (Core)

Prior to appointment in the program, fellows must have successfully completed an ACGME-accredited program, or a Royal College of Physicians and Surgeons of Canada (RCPSC)-accredited program located in Canada, in medical genetics and genomics. (Core)

III.A.1. Fellowship programs must receive verification of each entering fellow’s level of competency in the required field using ACGME or CanMEDS Milestones assessments from the core residency program. (Core)

III.A.2. Fellow Eligibility Exception

A Review Committee may grant the following exception to the fellowship eligibility requirements:

An ACGME-accredited fellowship program may accept an exceptionally qualified applicant**, who does not satisfy the eligibility requirements listed in Sections III.A. and III.A.1., but who does meet all of the following additional qualifications and conditions: (Core)

III.A.2.a) Assessment by the program director and fellowship selection committee of the applicant’s suitability to enter the program, based on prior training and review of the summative evaluations of training in the core specialty; and (Core)

III.A.2.b) Review and approval of the applicant’s exceptional qualifications by the GMEC or a subcommittee of the GMEC; and (Core)

III.A.2.c) Satisfactory completion of the United States Medical Licensing Examination (USMLE) Steps 1, 2, and, if the applicant is eligible, 3, and; (Core)

III.A.2.d) For an international graduate, verification of Educational Commission for Foreign Medical Graduates (ECFMG) certification; and, (Core)

III.A.2.e) Applicants accepted by this exception must complete fellowship Milestones evaluation (for the purposes of establishment of baseline performance by the Clinical Competency Committee), conducted by the receiving fellowship program within six weeks of matriculation. This evaluation may be waived for an applicant who has completed an ACGME International-accredited residency based on the applicant’s Milestones evaluation conducted at the conclusion of the residency program. (Core)

III.A.2.e).(1) If the trainee does not meet the expected level of
Milestones competency following entry into the fellowship program, the trainee must undergo a period of remediation, overseen by the Clinical Competency Committee and monitored by the GMEC or a subcommittee of the GMEC. This period of remediation must not count toward time in fellowship training. (Core)

**An exceptionally qualified applicant has (1) completed a non-ACGME-accredited residency program in the core specialty, and (2) demonstrated clinical excellence, in comparison to peers, throughout training. Additional evidence of exceptional qualifications is required, which may include one of the following: (a) participation in additional clinical or research training in the specialty or subspecialty; (b) demonstrated scholarship in the specialty or subspecialty; (c) demonstrated leadership during or after residency training; (d) completion of an ACGME-International-accredited residency program.**

III.A.3. The Review Committee for Medical Genetics and Genomics does not allow exceptions to the Eligibility Requirements for Fellowship Programs in Section III.A. (Core)

III.B. Number of Fellows
The program’s educational resources must be adequate to support the number of fellows appointed to the program. (Core)

III.B.1. The program director may not appoint more fellows than approved by the Review Committee, unless otherwise stated in the specialty-specific requirements. (Core)

III.B.2. Programs must develop an active plan for recruitment of fellows. (Core)

IV. Educational Program
IV.A. The curriculum must contain the following educational components:

IV.A.1. Skills and competencies the fellow will be able to demonstrate at the conclusion of the program. The program must distribute these skills and competencies to fellows and faculty at least annually, in either written or electronic form. (Core)

IV.A.2. ACGME Competencies
The program must integrate the following ACGME competencies into the curriculum: (Core)

IV.A.2.a) Patient Care and Procedural Skills
IV.A.2.a).(1) Fellows must be able to provide patient care that is compassionate, appropriate, and effective for the
treatment of health problems and the promotion of health.  

**IV.A.2.a).(2)** Fellows must be able to competently perform all medical, diagnostic, and surgical procedures considered essential for the area of practice. Fellows:  

**IV.A.2.a).(2).(a)** must demonstrate competence in gathering essential and accurate information about the patient using the following clinical skills:  

- **IV.A.2.a).(2).(a).(i)** medical interviewing, including the taking and interpretation of a complete family history (to include construction of a pedigree);  
- **IV.A.2.a).(2).(a).(ii)** physical examination; and,  
- **IV.A.2.a).(2).(a).(iii)** diagnostic studies, including the interpretation of laboratory data generated from biochemical and molecular genetic analyses.  

**IV.A.2.a).(2).(b)** must demonstrate competence in making informed decisions about diagnostic and therapeutic interventions based on patient and family information and preferences, up-to-date scientific evidence, and clinical judgment by:  

- **IV.A.2.a).(2).(b).(i)** demonstrating effective and appropriate clinical problem-solving skills;  
- **IV.A.2.a).(2).(b).(ii)** understanding the limits of one’s knowledge and expertise; and,  
- **IV.A.2.a).(2).(b).(iii)** appropriate use of consultants and referrals.  

**IV.A.2.a).(2).(c)** must demonstrate competence in developing and carrying out patient management plans, including description of medication, dietary supplements, and other dietary plans.  

**IV.A.2.b)** Medical Knowledge  

Fellows must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care. Fellows:
IV.A.2.b).(1) must demonstrate competence in their knowledge of inborn errors of metabolism (IEM), including:

IV.A.2.b).(1).(a) the genetic basis of disease and their patterns of inheritance; (Outcome)

IV.A.2.b).(1).(b) the principles of diagnosis based on appropriate use of clinical laboratory testing; (Outcome)

IV.A.2.b).(1).(c) the molecular and metabolic mechanisms of disease; (Outcome)

IV.A.2.b).(1).(d) the rational principles of treatment based on knowledge of the mechanisms of disease to include:

IV.A.2.b).(1).(d).(i) management of acute metabolic crises; (Outcome)

IV.A.2.b).(1).(d).(ii) long term care with emphasis on reduction of metabolic injury and nutritional imbalances; (Outcome)

IV.A.2.b).(1).(d).(iii) enzyme replacement and organ transplant therapies; and, (Outcome)

IV.A.2.b).(1).(d).(iv) newborn screening for metabolic disorders. (Outcome)

IV.A.2.b).(1).(e) the genetic epidemiology of inborn errors of metabolism and the application of that knowledge to newborn screening; (Outcome)

IV.A.2.b).(1).(f) principles of operation in clinical biochemical genetics diagnostic laboratories; and, (Outcome)

IV.A.2.b).(1).(g) the limits of current knowledge about IEM and the general strategies for biomedical research on these disorders. (Outcome)

IV.A.2.c) Practice-based Learning and Improvement

Fellows are expected to develop skills and habits to be able to meet the following goals:

IV.A.2.c).(1) systematically analyze practice using quality improvement methods, and implement changes with the goal of practice improvement; (Outcome)

IV.A.2.c).(2) locate, appraise, and assimilate evidence from scientific studies related to their patients’ health
IV.A.2.c).(3) identify strengths, deficiencies, and limits in one’s own knowledge and expertise; (Outcome)

IV.A.2.c).(4) set learning and improvement goals; (Outcome)

IV.A.2.c).(5) identify and perform appropriate learning activities; (Outcome)

IV.A.2.c).(6) incorporate formative evaluation feedback into daily practice; (Outcome)

IV.A.2.c).(7) use information technology to optimize learning; (Outcome)

IV.A.2.c).(8) participate in the education of patients, families, students, residents, and other health professionals; (Outcome)

IV.A.2.c).(9) critically evaluate the published medical literature on IEM in books, journals, and public databases; (Outcome)

IV.A.2.c).(10) appropriately use external consultation through professional associations; (Outcome)

IV.A.2.c).(11) regularly review diagnostic and treatment guidelines; and, (Outcome)

IV.A.2.c).(12) apply principles of clinical research on diagnosis, treatment, and outcomes. (Outcome)

IV.A.2.d) Interpersonal and Communication Skills

Fellows must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals. (Outcome)

Fellows are expected to develop skills and habits to be able to meet the following goals:

IV.A.2.d).(1) communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds; (Outcome)

IV.A.2.d).(2) communicate effectively with physicians, other health professionals, and health-related agencies; (Outcome)

IV.A.2.d).(3) work effectively as a member or leader of a health care team or other professional group; (Outcome)

IV.A.2.d).(4) act in a consultative role to other physicians and health professionals; (Outcome)
IV.A.2.d).(5) maintain comprehensive and timely medical records; (Outcome)

IV.A.2.d).(6) counsel families about the genetic basis of IEM, including availability of diagnostic, carrier, and pre-symptomatic genetic testing; (Outcome)

IV.A.2.d).(7) teach caregivers about long-term monitoring and treatment of IEM, with special emphasis on nutrition; (Outcome)

IV.A.2.d).(8) teach patients and families about lifelong care of their condition, especially nutritional support and interventions; (Outcome)

IV.A.2.d).(9) oversee team management of patients through on-call responsibilities and sign-outs; (Outcome)

IV.A.2.d).(10) oversee operation of a treatment team, including nursing, nutrition, and medical trainees; and, (Outcome)

IV.A.2.d).(11) counsel and educate patients and their families. (Outcome)

IV.A.2.e) Professionalism

Fellows must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles. (Outcome)

Fellows are expected to demonstrate:

IV.A.2.e).(1) compassion, integrity, and respect for others; (Outcome)

IV.A.2.e).(2) responsiveness to patient needs that supersedes self-interest; (Outcome)

IV.A.2.e).(3) respect for patient privacy and autonomy; (Outcome)

IV.A.2.e).(4) accountability to patients, society, and the profession; and, (Outcome)

IV.A.2.e).(5) sensitivity and responsiveness to a diverse patient population, including to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation. (Outcome)

IV.A.2.f) Systems-based Practice

Fellows must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care. (Outcome)
Fellows are expected to develop skills and habits to be able to meet the following goals:

IV.A.2.f).(1) work effectively in various health care delivery settings and systems relevant to their clinical specialty; (Outcome)

IV.A.2.f).(2) coordinate patient care within the health care system relevant to their clinical specialty; (Outcome)

IV.A.2.f).(3) incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population-based care as appropriate; (Outcome)

IV.A.2.f).(4) advocate for quality patient care and optimal patient care systems; (Outcome)

IV.A.2.f).(5) work in interprofessional teams to enhance patient safety and improve patient care quality; (Outcome)

IV.A.2.f).(6) participate in identifying system errors and implementing potential systems solutions; (Outcome)

IV.A.2.f).(7) utilize state resources in newborn screening for IEM; (Outcome)

IV.A.2.f).(8) utilize local, national, and international resources for specialized laboratory testing; (Outcome)

IV.A.2.f).(9) work with other caregivers and health care providers to establish medical insurance coverage for specialized formulas and nutritional supplements; and, (Outcome)

IV.A.2.f).(10) manage variability in access to genetic testing and therapies for IEM. (Outcome)

IV.A.3. Curriculum Organization and Resident Experiences

IV.A.3.a) The 12 months of medical biochemical genetics education must include 11 months of broad-based, clinically-oriented medical biochemical genetics activities and one month of activities in a medical biochemical genetics diagnostic laboratory. (Core)

IV.A.3.b) The program must possess a well-organized and effective curriculum, both didactic and clinical. (Core)

IV.A.3.c) The curriculum must provide fellows with direct experience in progressive responsibility for patient management. (Core)

IV.A.3.d) The fellowship must be organized to provide a well-structured, integrated, and progressive educational experience in medical
biochemical genetics. \((\text{Core})\)

IV.A.3.e) Fellows must have the opportunity to develop the abilities to diagnose IEM, counsel patients, and manage the broad range of clinical problems that are encompassed by biochemical genetics. \((\text{Core})\)

IV.A.3.f) As medical biochemical genetics increasingly involves diagnosis and long-term management of adults, fellows must be competent to work with patients of all ages. \((\text{Core})\)

IV.A.3.g) Programs must provide:

IV.A.3.g).(1) clinical teaching conferences for the fellows. \((\text{Core})\)

IV.A.3.g).(1).(a) Attendance by the fellows and the faculty members must be documented. \((\text{Detail})\)

IV.A.3.g).(1).(b) These conferences must be distinct from the basic science lectures and didactic sessions. \((\text{Detail})\)

IV.A.3.g).(2) structured education, including formal coursework in the basic sciences and clinical areas pertinent to biochemical genetics, to include

IV.A.3.g).(2).(a) population and newborn screening; \((\text{Core})\)

IV.A.3.g).(2).(b) disorders of amino acid metabolism; \((\text{Core})\)

IV.A.3.g).(2).(c) disorders of fatty acid oxidation; \((\text{Core})\)

IV.A.3.g).(2).(d) mitochondrial disorders; \((\text{Core})\)

IV.A.3.g).(2).(e) galactosemia; \((\text{Core})\)

IV.A.3.g).(2).(f) glycogen storage diseases; \((\text{Core})\)

IV.A.3.g).(2).(g) lysosomal storage diseases and lipidoses; \((\text{Core})\)

IV.A.3.g).(2).(h) peroxisomal disorders and other IEM; \((\text{Core})\)

IV.A.3.g).(2).(i) acute management of IEM; \((\text{Core})\)

IV.A.3.g).(2).(j) enzyme replacement therapy; \((\text{Core})\)

IV.A.3.g).(2).(k) long term nutritional management; and, \((\text{Core})\)

IV.A.3.g).(2).(l) molecular diagnosis. \((\text{Core})\)

IV.A.3.g).(3) mentored clinical education in the practice of biochemical genetics in both outpatient and inpatient settings; \((\text{Core})\)
IV.A.3.g).(4) basic instruction in medical biochemical genetic laboratory testing; (Core)

IV.A.3.g).(5) basic instruction in clinical research; and, (Core)

IV.A.3.g).(6) advanced instruction in the interpretation of biochemical laboratory test results. (Core)

IV.A.3.h) Fellows must spend a minimum of four continuous weeks in the laboratory so that they will be able to develop their abilities to understand an appropriate variety of laboratory methods. (Core)

IV.A.3.h).(1) Fellows' education must include participation in the working conferences of laboratories, as well as ongoing discussion of laboratory data during other clinical conferences. (Core)

IV.A.3.h).(2) The medical biochemical genetics laboratory must be an integral component of each program. (Core)

IV.A.3.i) Fellows must participate formally, through lectures or other didactic sessions, in the equivalent of a one-semester graduate-level course in biochemical genetics. (Core)

IV.B. Fellows' Scholarly Activities

IV.B.1. The curriculum must advance fellows' knowledge of the basic principles of research, including how research is conducted, evaluated, explained to patients, and applied to patient care. (Core)

IV.B.2. Fellows must participate in scholarly activity. (Core)

IV.B.3. The Sponsoring Institution and program must allocate adequate educational resources to facilitate fellow involvement in scholarly activities. (Core)

V. Evaluation

V.A. Fellow Evaluation

V.A.1. The program director must appoint the Clinical Competency Committee. (Core)

V.A.1.a) At a minimum the Clinical Competency Committee must be composed of three members of the program faculty. (Core)

V.A.1.a).(1) The program director may appoint additional members of the Clinical Competency Committee.

V.A.1.a).(1).(a) These additional members must be physician
faculty members from the same program or other programs, or other health professionals who have extensive contact and experience with the program’s fellows in patient care and other health care settings. (Core)

V.A.1.a).(1).(b) Chief residents who have completed core residency programs in their specialty and are eligible for specialty board certification may be members of the Clinical Competency Committee. (Core)

V.A.1.b) There must be a written description of the responsibilities of the Clinical Competency Committee. (Core)

V.A.1.b).(1) The Clinical Competency Committee should:

V.A.1.b).(1).(a) review all fellow evaluations semi-annually; (Core)

V.A.1.b).(1).(b) prepare and ensure the reporting of Milestones evaluations of each fellow semi-annually to ACGME; and, (Core)

V.A.1.b).(1).(c) advise the program director regarding fellow progress, including promotion, remediation, and dismissal. (Detail)

V.A.2. Formative Evaluation

V.A.2.a) The faculty must evaluate fellow performance in a timely manner. (Core)

V.A.2.b) The program must:

V.A.2.b).(1) provide objective assessments of competence in patient care and procedural skills, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice based on the specialty-specific Milestones; (Core)

V.A.2.b).(2) use multiple evaluators (e.g., faculty, peers, patients, self, and other professional staff); and, (Detail)

V.A.2.b).(3) provide each fellow with documented semiannual evaluation of performance with feedback. (Core)

V.A.2.c) The evaluations of fellow performance must be accessible for review by the fellow, in accordance with institutional policy. (Detail)
V.A.3. Summative Evaluation

V.A.3.a) The specialty-specific Milestones must be used as one of the tools to ensure fellows are able to practice core professional activities without supervision upon completion of the program. (Core)

V.A.3.b) The program director must provide a summative evaluation for each fellow upon completion of the program. (Core)

This evaluation must:

V.A.3.b).(1) become part of the fellow’s permanent record maintained by the institution, and must be accessible for review by the fellow in accordance with institutional policy; (Detail)

V.A.3.b).(2) document the fellow’s performance during their education; and, (Detail)

V.A.3.b).(3) verify that the fellow has demonstrated sufficient competence to enter practice without direct supervision. (Detail)

V.B. Faculty Evaluation

V.B.1. At least annually, the program must evaluate faculty performance as it relates to the educational program. (Core)

V.B.2. These evaluations should include a review of the faculty’s clinical teaching abilities, commitment to the educational program, clinical knowledge, professionalism, and scholarly activities. (Detail)

V.B.3. These evaluations must include at least annual written confidential evaluations by the fellows. (Core)

V.C. Program Evaluation and Improvement

V.C.1. The program director must appoint the Program Evaluation Committee (PEC). (Core)

V.C.1.a) The Program Evaluation Committee:

V.C.1.a).(1) must be composed of at least two program faculty members and should include at least one fellow; (Core)

V.C.1.a).(2) must have a written description of its responsibilities; and, (Core)

V.C.1.a).(3) should participate actively in:
V.C.1.a).(3).(a) planning, developing, implementing, and evaluating educational activities of the program; (Detail)

V.C.1.a).(3).(b) reviewing and making recommendations for revision of competency-based curriculum goals and objectives; (Detail)

V.C.1.a).(3).(c) addressing areas of non-compliance with ACGME standards; and, (Detail)

V.C.1.a).(3).(d) reviewing the program annually using evaluations of faculty, fellows, and others, as specified below. (Detail)

V.C.2. The program, through the PEC, must document formal, systematic evaluation of the curriculum at least annually, and is responsible for rendering a written, annual program evaluation. (Core)

The program must monitor and track each of the following areas:

V.C.2.a) fellow performance; (Core)

V.C.2.b) faculty development; (Core)

V.C.2.c) progress on the previous year’s action plan(s); and, (Core)

V.C.2.d) graduate performance, including performance of program graduates on the certification examinations. (Core)

V.C.2.d).(1) At least 75 percent of a program’s graduates from the preceding six years taking the American Board of Medical Genetics and Genomics clinical biochemical genetics certifying examination must pass on the first attempt. (Outcome)

V.C.3. The PEC must prepare a written plan of action to document initiatives to improve performance in one or more of the areas listed in section V.C.2., as well as delineate how they will be measured and monitored. (Core)

V.C.3.a) The action plan should be reviewed and approved by the teaching faculty and documented in meeting minutes. (Detail)

VI. The Learning and Working Environment

Fellowship education must occur in the context of a learning and working environment that emphasizes the following principles:

- Excellence in the safety and quality of care rendered to patients by fellows today
• Excellence in the safety and quality of care rendered to patients by today’s fellows in their future practice

• Excellence in professionalism through faculty modeling of:
  o the effacement of self-interest in a humanistic environment that supports the professional development of physicians
  o the joy of curiosity, problem-solving, intellectual rigor, and discovery

• Commitment to the well-being of the students, residents/fellows, faculty members, and all members of the health care team

VI.A. Patient Safety, Quality Improvement, Supervision, and Accountability

VI.A.1. Patient Safety and Quality Improvement

All physicians share responsibility for promoting patient safety and enhancing quality of patient care. Graduate medical education must prepare fellows to provide the highest level of clinical care with continuous focus on the safety, individual needs, and humanity of their patients. It is the right of each patient to be cared for by fellows who are appropriately supervised; possess the requisite knowledge, skills, and abilities; understand the limits of their knowledge and experience; and seek assistance as required to provide optimal patient care.

Fellows must demonstrate the ability to analyze the care they provide, understand their roles within health care teams, and play an active role in system improvement processes. Graduating fellows will apply these skills to critique their future unsupervised practice and effect quality improvement measures.

It is necessary for fellows and faculty members to consistently work in a well-coordinated manner with other health care professionals to achieve organizational patient safety goals.

VI.A.1.a) Patient Safety

VI.A.1.a).(1) Culture of Safety

A culture of safety requires continuous identification of vulnerabilities and a willingness to transparently deal with them. An effective organization has formal mechanisms to assess the knowledge, skills, and attitudes of its personnel toward safety in order to identify areas for improvement.

VI.A.1.a).(1).(a) The program, its faculty, residents, and fellows must actively participate in patient safety
systems and contribute to a culture of safety. (Core)

VI.A.1.a).(1).(b) The program must have a structure that promotes safe, interprofessional, team-based care. (Core)

VI.A.1.a).(2) Education on Patient Safety

Programs must provide formal educational activities that promote patient safety-related goals, tools, and techniques. (Core)

VI.A.1.a).(3) Patient Safety Events

Reporting, investigation, and follow-up of adverse events, near misses, and unsafe conditions are pivotal mechanisms for improving patient safety, and are essential for the success of any patient safety program. Feedback and experiential learning are essential to developing true competence in the ability to identify causes and institute sustainable systems-based changes to ameliorate patient safety vulnerabilities.

VI.A.1.a).(3).(a) Residents, fellows, faculty members, and other clinical staff members must:

VI.A.1.a).(3).(a).(i) know their responsibilities in reporting patient safety events at the clinical site; (Core)

VI.A.1.a).(3).(a).(ii) know how to report patient safety events, including near misses, at the clinical site; and, (Core)

VI.A.1.a).(3).(a).(iii) be provided with summary information of their institution’s patient safety reports. (Core)

VI.A.1.a).(3).(b) Fellows must participate as team members in real and/or simulated interprofessional clinical patient safety activities, such as root cause analyses or other activities that include analysis, as well as formulation and implementation of actions. (Core)

VI.A.1.a).(4) Fellow Education and Experience in Disclosure of Adverse Events

Patient-centered care requires patients, and when
appropriate families, to be apprised of clinical situations that affect them, including adverse events. This is an important skill for faculty physicians to model, and for fellows to develop and apply.

VI.A.1.a).(4).(a) All fellows must receive training in how to disclose adverse events to patients and families. (Core)

VI.A.1.a).(4).(b) Fellows should have the opportunity to participate in the disclosure of patient safety events, real or simulated. (Detail)

VI.A.1.b) Quality Improvement

VI.A.1.b).(1) Education in Quality Improvement

A cohesive model of health care includes quality-related goals, tools, and techniques that are necessary in order for health care professionals to achieve quality improvement goals.

VI.A.1.b).(1).(a) Fellows must receive training and experience in quality improvement processes, including an understanding of health care disparities. (Core)

VI.A.1.b).(2) Quality Metrics

Access to data is essential to prioritizing activities for care improvement and evaluating success of improvement efforts.

VI.A.1.b).(2).(a) Fellows and faculty members must receive data on quality metrics and benchmarks related to their patient populations. (Core)

VI.A.1.b).(3) Engagement in Quality Improvement Activities

Experiential learning is essential to developing the ability to identify and institute sustainable systems-based changes to improve patient care.

VI.A.1.b).(3).(a) Fellows must have the opportunity to participate in interprofessional quality improvement activities. (Core)

VI.A.1.b).(3).(a).(i) This should include activities aimed at reducing health care disparities. (Detail)

VI.A.2. Supervision and Accountability
VI.A.2.a) Although the attending physician is ultimately responsible for the care of the patient, every physician shares in the responsibility and accountability for their efforts in the provision of care. Effective programs, in partnership with their Sponsoring Institutions, define, widely communicate, and monitor a structured chain of responsibility and accountability as it relates to the supervision of all patient care.

Supervision in the setting of graduate medical education provides safe and effective care to patients; ensures each fellow’s development of the skills, knowledge, and attitudes required to enter the unsupervised practice of medicine; and establishes a foundation for continued professional growth.

VI.A.2.a).(1) Each patient must have an identifiable and appropriately-credentialed and privileged attending physician (or licensed independent practitioner as specified by the applicable Review Committee) who is responsible and accountable for the patient’s care. (Core)

Licensed independent practitioners who have primary responsibility for patient care must be physicians. (Core)

VI.A.2.a).(1).(a) This information must be available to fellows, faculty members, other members of the health care team, and patients. (Core)

VI.A.2.a).(1).(b) Fellows and faculty members must inform each patient of their respective roles in that patient’s care when providing direct patient care. (Core)

VI.A.2.b) Supervision may be exercised through a variety of methods. For many aspects of patient care, the supervising physician may be a more advanced fellow. Other portions of care provided by the fellow can be adequately supervised by the immediate availability of the supervising faculty member or fellow physician, either on site or by means of telephonic and/or electronic modalities. Some activities require the physical presence of the supervising faculty member. In some circumstances, supervision may include post-hoc review of fellow-delivered care with feedback.

VI.A.2.b).(1) The program must demonstrate that the appropriate level of supervision in place for all fellows is based on each fellow’s level of training and ability, as well as patient complexity and acuity. Supervision may be exercised through a variety of methods, as appropriate to the situation. (Core)
VI.A.2.c) Levels of Supervision

To promote oversight of fellow supervision while providing for graded authority and responsibility, the program must use the following classification of supervision: (Core)

VI.A.2.c).(1) Direct Supervision – the supervising physician is physically present with the fellow and patient. (Core)

VI.A.2.c).(2) Indirect Supervision:

VI.A.2.c).(2).(a) with Direct Supervision immediately available – the supervising physician is physically within the hospital or other site of patient care, and is immediately available to provide Direct Supervision. (Core)

VI.A.2.c).(2).(b) with Direct Supervision available – the supervising physician is not physically present within the hospital or other site of patient care, but is immediately available by means of telephonic and/or electronic modalities, and is available to provide Direct Supervision. (Core)

VI.A.2.c).(3) Oversight – the supervising physician is available to provide review of procedures/encounters with feedback provided after care is delivered. (Core)

VI.A.2.d) The privilege of progressive authority and responsibility, conditional independence, and a supervisory role in patient care delegated to each fellow must be assigned by the program director and faculty members. (Core)

VI.A.2.d).(1) The program director must evaluate each fellow’s abilities based on specific criteria, guided by the Milestones. (Core)

VI.A.2.d).(2) Faculty members functioning as supervising physicians must delegate portions of care to fellows based on the needs of the patient and the skills of each fellow. (Core)

VI.A.2.d).(3) Fellows should serve in a supervisory role to residents or junior fellows in recognition of their progress toward independence, based on the needs of each patient and the skills of the individual resident or fellow. (Detail)

VI.A.2.e) Programs must set guidelines for circumstances and events in which fellows must communicate with the supervising faculty member(s). (Core)
VI.A.2.e).(1) Each fellow must know the limits of their scope of authority, and the circumstances under which the fellow is permitted to act with conditional independence. (Outcome)

VI.A.2.f) Faculty supervision assignments must be of sufficient duration to assess the knowledge and skills of each fellow and to delegate to the fellow the appropriate level of patient care authority and responsibility. (Core)

VI.B. Professionalism

VI.B.1. Programs, in partnership with their Sponsoring Institutions, must educate fellows and faculty members concerning the professional responsibilities of physicians, including their obligation to be appropriately rested and fit to provide the care required by their patients. (Core)

VI.B.2. The learning objectives of the program must:

VI.B.2.a) be accomplished through an appropriate blend of supervised patient care responsibilities, clinical teaching, and didactic educational events; (Core)

VI.B.2.b) be accomplished without excessive reliance on fellows to fulfill non-physician obligations; and, (Core)

VI.B.2.c) ensure manageable patient care responsibilities. (Core)

VI.B.3. The program director, in partnership with the Sponsoring Institution, must provide a culture of professionalism that supports patient safety and personal responsibility. (Core)

VI.B.4. Fellows and faculty members must demonstrate an understanding of their personal role in the:

VI.B.4.a) provision of patient- and family-centered care; (Outcome)

VI.B.4.b) safety and welfare of patients entrusted to their care, including the ability to report unsafe conditions and adverse events; (Outcome)

VI.B.4.c) assurance of their fitness for work, including: (Outcome)

VI.B.4.c).(1) management of their time before, during, and after clinical assignments; and, (Outcome)

VI.B.4.c).(2) recognition of impairment, including from illness, fatigue, and substance use, in themselves, their peers, and other members of the health care team. (Outcome)
VI.B.4.d) commitment to lifelong learning; (Outcome)

VI.B.4.e) monitoring of their patient care performance improvement indicators; and, (Outcome)

VI.B.4.f) accurate reporting of clinical and educational work hours, patient outcomes, and clinical experience data. (Outcome)

VI.B.5. All fellows and faculty members must demonstrate responsiveness to patient needs that supersedes self-interest. This includes the recognition that under certain circumstances, the best interests of the patient may be served by transitioning that patient’s care to another qualified and rested provider. (Outcome)

VI.B.6. Programs must provide a professional, respectful, and civil environment that is free from mistreatment, abuse, or coercion of students, residents/fellows, faculty, and staff. Programs, in partnership with their Sponsoring Institutions, should have a process for education of fellows and faculty regarding unprofessional behavior and a confidential process for reporting, investigating, and addressing such concerns. (Core)

VI.C. Well-Being

In the current health care environment, fellows and faculty members are at increased risk for burnout and depression. Psychological, emotional, and physical well-being are critical in the development of the competent, caring, and resilient physician. Self-care is an important component of professionalism; it is also a skill that must be learned and nurtured in the context of other aspects of fellowship training. Programs, in partnership with their Sponsoring Institutions, have the same responsibility to address well-being as they do to evaluate other aspects of fellow competence.

VI.C.1. This responsibility must include:

VI.C.1.a) efforts to enhance the meaning that each fellow finds in the experience of being a physician, including protecting time with patients, minimizing non-physician obligations, providing administrative support, promoting progressive autonomy and flexibility, and enhancing professional relationships; (Core)

VI.C.1.b) attention to scheduling, work intensity, and work compression that impacts fellow well-being; (Core)

VI.C.1.c) evaluating workplace safety data and addressing the safety of fellows and faculty members; (Core)

VI.C.1.d) policies and programs that encourage optimal fellow and faculty member well-being; and, (Core)
VI.C.1.d).(1) Fellows must be given the opportunity to attend medical, mental health, and dental care appointments, including those scheduled during their working hours. (Core)

VI.C.1.e) attention to fellow and faculty member burnout, depression, and substance abuse. The program, in partnership with its Sponsoring Institution, must educate faculty members and fellows in identification of the symptoms of burnout, depression, and substance abuse, including means to assist those who experience these conditions. Fellows and faculty members must also be educated to recognize those symptoms in themselves and how to seek appropriate care. The program, in partnership with its Sponsoring Institution, must: (Core)

VI.C.1.e).(1) encourage fellows and faculty members to alert the program director or other designated personnel or programs when they are concerned that another resident, fellow, or faculty member may be displaying signs of burnout, depression, substance abuse, suicidal ideation, or potential for violence; (Core)

VI.C.1.e).(2) provide access to appropriate tools for self-screening; and, (Core)

VI.C.1.e).(3) provide access to confidential, affordable mental health assessment, counseling, and treatment, including access to urgent and emergent care 24 hours a day, seven days a week. (Core)

VI.C.2. There are circumstances in which fellows may be unable to attend work, including but not limited to fatigue, illness, and family emergencies. Each program must have policies and procedures in place that ensure coverage of patient care in the event that a fellow may be unable to perform their patient care responsibilities. These policies must be implemented without fear of negative consequences for the fellow who is unable to provide the clinical work. (Core)

VI.D. Fatigue Mitigation

VI.D.1. Programs must:

VI.D.1.a) educate all faculty members and fellows to recognize the signs of fatigue and sleep deprivation; (Core)

VI.D.1.b) educate all faculty members and fellows in alertness management and fatigue mitigation processes; and, (Core)
VI.D.1.c) encourage fellows to use fatigue mitigation processes to manage the potential negative effects of fatigue on patient care and learning. (Detail)

VI.D.2. Each program must ensure continuity of patient care, consistent with the program’s policies and procedures referenced in VI.C.2, in the event that a fellow may be unable to perform their patient care responsibilities due to excessive fatigue. (Core)

VI.D.3. The program, in partnership with its Sponsoring Institution, must ensure adequate sleep facilities and safe transportation options for fellows who may be too fatigued to safely return home. (Core)

VI.E. Clinical Responsibilities, Teamwork, and Transitions of Care

VI.E.1. Clinical Responsibilities

The clinical responsibilities for each fellow must be based on PGY level, patient safety, fellow ability, severity and complexity of patient illness/condition, and available support services. (Core)

VI.E.2. Teamwork

Fellows must care for patients in an environment that maximizes communication. This must include the opportunity to work as a member of effective interprofessional teams that are appropriate to the delivery of care in the specialty and larger health system. (Core)

VI.E.3. Transitions of Care

VI.E.3.a) Programs must design clinical assignments to optimize transitions in patient care, including their safety, frequency, and structure. (Core)

VI.E.3.b) Programs, in partnership with their Sponsoring Institutions, must ensure and monitor effective, structured hand-over processes to facilitate both continuity of care and patient safety. (Core)

VI.E.3.c) Programs must ensure that fellows are competent in communicating with team members in the hand-over process. (Outcome)

VI.E.3.d) Programs and clinical sites must maintain and communicate schedules of attending physicians and fellows currently responsible for care. (Core)

VI.E.3.e) Each program must ensure continuity of patient care, consistent with the program’s policies and procedures referenced in VI.C.2, in the event that a fellow may be unable to perform their patient care responsibilities due to excessive
fatigue or illness, or family emergency. (Core)

VI.F. Clinical Experience and Education

Programs, in partnership with their Sponsoring Institutions, must design an effective program structure that is configured to provide fellows with educational and clinical experience opportunities, as well as reasonable opportunities for rest and personal activities.

VI.F.1. Maximum Hours of Clinical and Educational Work per Week

Clinical and educational work hours must be limited to no more than 80 hours per week, averaged over a four-week period, inclusive of all in-house clinical and educational activities, clinical work done from home, and all moonlighting. (Core)

VI.F.2. Mandatory Time Free of Clinical Work and Education

VI.F.2.a) The program must design an effective program structure that is configured to provide fellows with educational opportunities, as well as reasonable opportunities for rest and personal well-being. (Core)

VI.F.2.b) Fellows should have eight hours off between scheduled clinical work and education periods. (Detail)

VI.F.2.b).(1) There may be circumstances when fellows choose to stay to care for their patients or return to the hospital with fewer than eight hours free of clinical experience and education. This must occur within the context of the 80-hour and the one-day-off-in-seven requirements. (Detail)

VI.F.2.c) Fellows must have at least 14 hours free of clinical work and education after 24 hours of in-house call. (Core)

VI.F.2.d) Fellows must be scheduled for a minimum of one day in seven free of clinical work and required education (when averaged over four weeks). At-home call cannot be assigned on these free days. (Core)

VI.F.3. Maximum Clinical Work and Education Period Length

VI.F.3.a) Clinical and educational work periods for fellows must not exceed 24 hours of continuous scheduled clinical assignments. (Core)

VI.F.3.a).(1) Up to four hours of additional time may be used for activities related to patient safety, such as providing effective transitions of care, and/or fellow education. (Core)
VI.F.3.a).(1).(a) Additional patient care responsibilities must not be assigned to a fellow during this time. (Core)

VI.F.4. Clinical and Educational Work Hour Exceptions

VI.F.4.a) In rare circumstances, after handing off all other responsibilities, a fellow, on their own initiative, may elect to remain or return to the clinical site in the following circumstances:

VI.F.4.a).(1) to continue to provide care to a single severely ill or unstable patient; (Detail)

VI.F.4.a).(2) humanistic attention to the needs of a patient or family; or, (Detail)

VI.F.4.a).(3) to attend unique educational events. (Detail)

VI.F.4.b) These additional hours of care or education will be counted toward the 80-hour weekly limit. (Detail)

VI.F.4.c) A Review Committee may grant rotation-specific exceptions for up to 10 percent or a maximum of 88 clinical and educational work hours to individual programs based on a sound educational rationale.

The Review Committee for Medical Genetics and Genomics will not consider requests for exceptions to the 80-hour limit to the residents' work week.

VI.F.4.c).(1) In preparing a request for an exception, the program director must follow the clinical and educational work hour exception policy from the ACGME Manual of Policies and Procedures. (Core)

VI.F.4.c).(2) Prior to submitting the request to the Review Committee, the program director must obtain approval from the Sponsoring Institution's GMEC and DIO. (Core)

VI.F.5. Moonlighting

VI.F.5.a) Moonlighting must not interfere with the ability of the fellow to achieve the goals and objectives of the educational program, and must not interfere with the fellow’s fitness for work nor compromise patient safety. (Core)

VI.F.5.b) Time spent by fellows in internal and external moonlighting (as defined in the ACGME Glossary of Terms) must be counted toward the 80-hour maximum weekly limit. (Core)
VI.F.6. In-House Night Float

Night float must occur within the context of the 80-hour and one-day-off-in-seven requirements. (Core)

VI.F.7. Maximum In-House On-Call Frequency

Fellows must be scheduled for in-house call no more frequently than every third night (when averaged over a four-week period). (Core)

VI.F.8. At-Home Call

VI.F.8.a) Time spent on patient care activities by fellows on at-home call must count toward the 80-hour maximum weekly limit. The frequency of at-home call is not subject to the every-third-night limitation, but must satisfy the requirement for one day in seven free of clinical work and education, when averaged over four weeks. (Core)

VI.F.8.a).(1) At-home call must not be so frequent or taxing as to preclude rest or reasonable personal time for each fellow. (Core)

VI.F.8.b) Fellows are permitted to return to the hospital while on at-home call to provide direct care for new or established patients. These hours of inpatient patient care must be included in the 80-hour maximum weekly limit. (Detail)

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*Core Requirements:* Statements that define structure, resource, or process elements essential to every graduate medical educational program.

Detail Requirements: Statements that describe a specific structure, resource, or process, for achieving compliance with a Core Requirement. Programs and sponsoring institutions in substantial compliance with the Outcome Requirements may utilize alternative or innovative approaches to meet Core Requirements.

Outcome Requirements: Statements that specify expected measurable or observable attributes (knowledge, abilities, skills, or attitudes) of residents or fellows at key stages of their graduate medical education.

Osteopathic Recognition
For programs seeking Osteopathic Recognition for the entire program, or for a track within the program, the Osteopathic Recognition Requirements are also applicable.
(http://www.acgme.org/Portals/0/PFAssets/ProgramRequirements/Osteopathic_Recognition_Requirements.pdf)