

ACGME Program Requirements for Graduate Medical Education in Laboratory Genetics and Genomics

Revision Information

New specialty-specific background and intent following III.A.1.b); effective October 14, 2024

ACGME-approved focused revision: June 12, 2022; effective July 1, 2022

Updated to include revised Common Program Requirements, effective July 1, 2023

Definitions

For more information, see the [ACGME Glossary of Terms](#).

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 with or applying for Osteopathic Recognition, the Osteopathic Recognition Requirements also apply (www.acgme.org/OsteopathicRecognition).

Contents

Introduction	3
Int.A. Definition of Post-Doctoral Education	3
Int.B. Definition of Specialty.....	3
Int.C. Length of Educational Program.....	4
I. Oversight.....	4
I.A. Sponsoring Institution	4
I.B. Participating Sites.....	4
I.C. Workforce Recruitment and Retention.....	6
I.D. Resources	6
I.E. Other Learners and Health Care Personnel.....	7
II. Personnel	7
II.A. Program Director.....	7
II.B. Faculty.....	13
II.C. Program Coordinator	16
II.D. Other Program Personnel.....	17
III. Post-Doctoral Fellow Appointments	17
III.A. Eligibility Requirements	17
III.B. Post-Doctoral Fellow Complement.....	18
III.C. Post-Doctoral Fellow Transfers	18
IV. Educational Program.....	18
IV.A. Educational Components	18
IV.B. ACGME Competencies	19
IV.C. Curriculum Organization and Post-Doctoral Fellow Experiences	26
IV.D. Scholarship.....	29
V. Evaluation.....	30
V.A. Post-Doctoral Fellow Evaluation	30
V.B. Faculty Evaluation.....	34
V.C. Program Evaluation and Improvement	35
VI. The Learning and Working Environment	38
VI.A. Patient Safety, Quality Improvement, Supervision, and Accountability	38
VI.B. Professionalism.....	43
VI.C. Well-Being.....	44
VI.D. Fatigue Mitigation.....	47
VI.E. Clinical Responsibilities, Teamwork, and Transitions of Care	47
VI.F. Clinical Experience and Education.....	48

ACGME Program Requirements for Graduate Medical Education in Laboratory Genetics and Genomics

Common Program Requirements (Post-Doctoral Education Program) 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. Definition of Post-Doctoral Education

Post-doctoral education in a medical-related field is the crucial step of professional development between medical school or graduate school and autonomous contributions to clinical care. It is in this vital phase of the continuum of medical-related education that post-doctoral fellows learn to contribute to optimal patient care under the supervision of faculty members who not only instruct, but serve as role models of excellence, compassion, cultural sensitivity, professionalism, and scholarship.

This education transforms medical students or graduate students into specialists who contribute to the care of the patient, patient's family, and a diverse community; create and integrate new knowledge into practice; and educate future generations of specialists to serve the public. Practice patterns established during post-doctoral education persist many years later.

Post-doctoral education in a medical-related field has as a core tenet the graded authority and responsibility for patient care. The care of patients is undertaken with appropriate faculty supervision and conditional independence, allowing post-doctoral fellows to attain the knowledge, skills, attitudes, judgment, and empathy required for autonomous practice. Post-doctoral education develops specialists who focus on excellence in delivery of safe, equitable, affordable, quality care; and the health of the populations they serve. Post-doctoral education values the strength that a diverse group of specialists brings to medical care, and the importance of inclusive and psychologically safe learning environments.

This education occurs in clinical settings that establish the foundation for practice-based and lifelong learning. The professional development of the specialist, begun in pre-doctoral education, continues through faculty modeling of the effacement of self-interest in a humanistic environment that emphasizes joy in curiosity, problem-solving, academic rigor, and discovery. This transformation is often physically, emotionally, and intellectually demanding and occurs in a variety of clinical learning environments committed to post-doctoral education and the well-being of patients, residents, post-doctoral fellows, fellows, faculty members, students, and all members of the health care team.

Int.B. Definition of Specialty

Laboratory genetics and genomics is a laboratory-based discipline of medical genetics and genomics that focuses on analysis and interpretation of, and communication of results from, assays that identify constitutional/germline and somatic/acquired genetic changes underlying human disease. These include chromosomal aneuploidies, genomic copy number variations, chromosomal rearrangements, changes in DNA sequence, DNA methylation and gene expression. Laboratory genetics and genomics programs provide post-doctoral education in the technical skills and the knowledge necessary to perform and interpret results that impact the diagnosis and management of human genetic diseases. Upon successful completion of such a program, these specialists can function as laboratory directors or technical supervisors of clinical laboratories, and as clinical consultants in the management of patients with a broad range of somatic or inherited disorders.

Int.C. Length of Educational Program

The educational program in laboratory genetics and genomics must be 24 months in length. ^(Core)

I. Oversight

I.A. Sponsoring Institution

The Sponsoring Institution is the organization or entity that assumes the ultimate financial and academic responsibility for a program of post-doctoral education, consistent with the ACGME Institutional Requirements.

When the Sponsoring Institution is not a rotation site for the program, the most commonly utilized site of clinical activity for the program is the primary clinical site.

Background and Intent: Participating sites will reflect the health care needs of the community and the educational needs of the post-doctoral fellows. A wide variety of organizations may provide a robust educational experience and, thus, Sponsoring Institutions and participating sites may encompass inpatient and outpatient settings including, but not limited to a university, a medical school, a teaching hospital, a nursing home, a school of public health, a health department, a public health agency, an organized health care delivery system, a medical examiner's office, an educational consortium, a teaching health center, a physician group practice, federally qualified health center, or an educational foundation.

I.A.1. The program must be sponsored by one ACGME-accredited Sponsoring Institution. ^(Core)

I.B. Participating Sites

A participating site is an organization providing educational experiences or educational assignments/rotations for post-doctoral fellows.

- I.B.1. The program, with approval of its Sponsoring Institution, must designate a primary clinical site. ^(Core)**
- I.B.1.a) Institutions sponsoring laboratory genetics and genomics programs should also sponsor ACGME-accredited programs in medical genetics and genomics. ^(Core)
- I.B.2. There must be a program letter of agreement (PLA) between the program and each participating site that governs the relationship between the program and the participating site providing a required assignment. ^(Core)**
- I.B.2.a) **The PLA must:**
- I.B.2.a).(1) **be renewed at least every 10 years; and, ^(Core)**
- I.B.2.a).(2) **be approved by the designated institutional official (DIO). ^(Core)**
- I.B.3. The program must monitor the clinical learning and working environment at all participating sites. ^(Core)**
- I.B.3.a) **At each participating site there must be one faculty member, designated by the program director as the site director, who is accountable for post-doctoral fellow education at that site, in collaboration with the program director. ^(Core)**

Background and Intent: While all post-doctoral education programs must be sponsored by a single ACGME-accredited Sponsoring Institution, many programs will utilize other clinical settings to provide required or elective training experiences. At times it is appropriate to utilize community sites that are not owned by or affiliated with the Sponsoring Institution. Some of these sites may be remote for geographic, transportation, or communication issues. When utilizing such sites, the program must ensure the quality of the educational experience.

Suggested elements to be considered in PLAs will be found in the Guide to the Common Program Requirements. These include:

- **Identifying the faculty member(s) who will assume educational and supervisory responsibility for post-doctoral fellows**
- **Specifying the responsibilities for teaching, supervision, and formal evaluation of post-doctoral fellows**
- **Specifying the duration and content of the educational experience**
- **Stating the policies and procedures that will govern post-doctoral fellow education during the assignment**

- I.B.4. The program director must submit any additions or deletions of participating sites routinely providing an educational experience, required for all post-doctoral fellows, of one month full time equivalent (FTE) or more through the ACGME's Accreditation Data System (ADS). ^(Core)**

I.C. Workforce Recruitment and Retention

The program, in partnership with its Sponsoring Institution, must engage in practices that focus on mission-driven, ongoing, systematic recruitment and retention of a diverse and inclusive workforce of post-doctoral fellows, residents and fellows (if present), faculty members, senior administrative GME staff members, and other relevant members of its academic community. ^(Core)

Background and Intent: It is expected that the Sponsoring Institution has, and programs implement, policies and procedures related to recruitment and retention of individuals underrepresented in medicine and medical leadership in accordance with the Sponsoring Institution's mission and aims.

I.D. Resources

I.D.1. The program, in partnership with its Sponsoring Institution, must ensure the availability of adequate resources for post-doctoral fellow education. ^(Core)

I.D.1.a) All laboratories affiliated with the program must be Clinical Laboratory Improvement Amendments (CLIA)-certified. ^(Core)

I.D.1.b) Laboratory facilities and resources appropriate for the discipline must be available to post-doctoral fellows at on-site laboratories, including: ^(Core)

I.D.1.b).(1) education facilities, to include office space, meeting rooms, classrooms, and laboratory space; ^(Core)

I.D.1.b).(2) appropriate instrumentation to perform cytogenetic and molecular genetic testing; and, ^(Core)

I.D.1.b).(3) access to computer-based genomic-interpretive tools and systems. ^(Core)

I.D.2. The program, in partnership with its Sponsoring Institution, must ensure healthy and safe learning and working environments that promote post-doctoral fellow well-being and provide for:

I.D.2.a) access to food while on duty; ^(Core)

I.D.2.b) safe, quiet, clean, and private sleep/rest facilities available and accessible for post-doctoral fellows with proximity appropriate for safe patient care; ^(Core)

Background and Intent: Contributions to care of patients within a hospital or health system occur continually through the day and night. Such care requires that post-doctoral fellows function at their peak abilities, which requires the work environment to provide them with the ability to meet their basic needs within proximity of their clinical

responsibilities. Access to food and rest are examples of these basic needs, which must be met while post-doctoral fellows are working. Post-doctoral fellows should have access to refrigeration where food may be stored. Food should be available when post-doctoral fellows are required to be in the hospital overnight. Rest facilities are necessary, even when overnight call is not required, to accommodate the fatigued post-doctoral fellow.

- I.D.2.c) clean and private facilities for lactation that have refrigeration capabilities, with proximity appropriate for safe patient care; (Core)

Background and Intent: Sites must provide private and clean locations where post-doctoral fellows may lactate and store the milk within a refrigerator. These locations should be in close proximity to clinical responsibilities. It would be helpful to have additional support within these locations that may assist the post-doctoral fellow with the continued contributions to care of patients, such as a computer and a phone. While space is important, the time required for lactation is also critical for the well-being of the post-doctoral fellow and the fellow's family, as outlined in VI.C.1.c).(1).

- I.D.2.d) security and safety measures appropriate to the participating site; and, (Core)

- I.D.2.e) accommodations for post-doctoral fellows with disabilities consistent with the Sponsoring Institution's policy. (Core)

- I.D.3. Post-doctoral fellows must have ready access to appropriate reference material in print or electronic format. This must include access to electronic medical literature databases with full text capabilities. (Core)

I.E. Other Learners and Health Care Personnel

The presence of other learners and other health care personnel, including but not limited to post-doctoral fellows from other programs, residents, subspecialty fellows, and advanced practice providers, must not negatively impact the appointed post-doctoral fellows' education. (Core)

Background and Intent: The clinical learning environment has become increasingly complex and often includes care providers, students, and post-graduate residents and fellows from multiple disciplines. The presence of these specialists and their learners enriches the learning environment. Programs have a responsibility to monitor the learning environment to ensure that post-doctoral fellows' education is not compromised by the presence of other providers and learners.

II. Personnel

II.A. Program Director

II.A.1. There must be one faculty member appointed as program director with authority and accountability for the overall program, including compliance with all applicable program requirements. ^(Core)

II.A.1.a) The Sponsoring Institution's GMEC must approve a change in program director and must verify the program director's licensure and clinical appointment. ^(Core)

II.A.1.a).(1) Final approval of the program director resides with the Review Committee. ^(Core)

Background and Intent: While the ACGME recognizes the value of input from numerous individuals in the management of a post-doctoral education program, a single individual must be designated as program director and have overall responsibility for the post-doctoral education program. The program director's nomination is reviewed and approved by the GMEC.

II.A.1.b) The program must demonstrate retention of the program director for a length of time adequate to maintain continuity of leadership and program stability. ^(Core)

Background and Intent: The success of post-doctoral education programs is generally enhanced by continuity in the program director position. The professional activities required of a program director are unique and complex and take time to master. All programs are encouraged to undertake succession planning to facilitate program stability when there is necessary turnover in the program director position.

II.A.2. The program director and, as applicable, the program's leadership team, must be provided with support adequate for administration of the program based upon its size and configuration. ^(Core)

II.A.2.a) Program leadership, in aggregate, must be provided with support equal to a dedicated minimum of 20 percent time. This may be time spent by the program director only or divided among the program director and one or more associate (or assistant) program directors. Programs with seven or more approved post-doctoral fellow positions must provide a minimum of 20 percent time and an additional two percent time for each approved position. ^(Core)

Specialty-Specific Background and Intent: The additional two percent time is for each approved post-doctoral fellow position in the program, not just the approved post-doctoral fellow positions over seven. For example, a program with an approved complement of seven post-doctoral fellow positions must be provided at least 34 percent time for program leadership. A program approved for 10 post-doctoral fellow positions must be provided with at least 40 percent time for program leadership; and a program approved for 18 post-doctoral fellow positions must be provided with at least 56 percent time for program leadership.

Background and Intent: To achieve successful post-doctoral education, individuals serving as education and administrative leaders of post-doctoral education programs,

as well as those significantly engaged in the education, supervision, evaluation, and mentoring of post-doctoral fellows, must have sufficient dedicated professional time to perform the vital activities required to sustain an accredited program.

The ultimate outcome of post-doctoral education is excellence in post-doctoral fellow education and patient care.

The program director and, as applicable, the program leadership team, devote a portion of their professional effort to the oversight and management of the post-doctoral education program, as defined in II.A.4.-II.A.4.a).(12). Both provision of support for the time required for the leadership effort and flexibility regarding how this support is provided are important. Programs, in partnership with their Sponsoring Institutions, may provide support for this time in a variety of ways. Examples of support may include, but are not limited to, salary support, supplemental compensation, educational value units, or relief of time from other professional duties.

Program directors and, as applicable, members of the program leadership team, who are new to the role may need to devote additional time to program oversight and management initially as they learn and become proficient in administering the program. It is suggested that during this initial period the support described above be increased as needed.

In addition, it is important to remember that the dedicated time and support requirement for ACGME activities is a *minimum*, recognizing that, depending on the unique needs of the program, additional support may be warranted. The need to ensure adequate resources, including adequate support and dedicated time for the program director, is also addressed in Institutional Requirement II.B.1. The amount of support and dedicated time needed for individual programs will vary based on a number of factors and may exceed the minimum specified in the applicable specialty/subspecialty-specific Program Requirements. It is expected that the Sponsoring Institution, in partnership with its accredited programs, will ensure support for program directors to fulfill their program responsibilities effectively.

II.A.3. Qualifications of the program director:

II.A.3.a) must include specialty expertise and at least three years of documented educational and/or administrative experience, or qualifications acceptable to the Review Committee; (Core)

Background and Intent: Leading a program requires knowledge and skills that are established during post-doctoral education and subsequently further developed. The time period from completion of post-doctoral education until assuming the role of program director allows the individual to cultivate leadership abilities while becoming professionally established. The three-year period is intended for the individual's professional maturation.

The broad allowance for educational and/or administrative experience recognizes that strong leaders arise through diverse pathways. These areas of expertise are important when identifying and appointing a program director. The choice of a program director should be informed by the mission of the program and the needs of the community.

In certain circumstances, the program and Sponsoring Institution may propose and the Review Committee may accept a candidate for program director who fulfills these goals but does not meet the three-year minimum.

II.A.3.b) must include current certification in the specialty for which they are the program director by the American Board of Medical Genetics and Genomics (ABMGG) if available for their field of study, or specialty qualifications that are acceptable to the Review Committee; (Core)

[Note that while the Common Program Requirements deem certification by a certifying board of the American Osteopathic Association (AOA) acceptable, there is no AOA board that offers certification in this specialty]

II.A.3.b).(1) The program director must be certified by the ABMGG and actively participating in the ABMGG's Continuing Certification program in the specialty(ies) in which they are certified. (Core)

II.A.3.b).(2) If the program director is certified by the ABMGG in only clinical molecular genetics and genomics or only clinical cytogenetics and genomics, there must be an associate program director with certification in the complementary specialty area, or laboratory genetics and genomics. (Core)

II.A.3.c) must include ongoing contributions to clinical care. (Core)

Background and Intent: A program director is a role model for faculty members and post-doctoral fellows. The program director must participate in contributing to clinical care consistent with the specialty. This activity will allow the program director to role model the Core Competencies for the faculty members and post-doctoral fellows.

II.A.3.d) The program director should be a full-time faculty member, and must be based at the primary clinical site. (Detail)

II.A.4. Program Director Responsibilities

The program director must have responsibility, authority, and accountability for: administration and operations; teaching and scholarly activity; post-doctoral fellow recruitment and selection, evaluation, and promotion of post-doctoral fellows, and disciplinary action; supervision of post-doctoral fellows; and post-doctoral fellow education in the context of contributions to patient care. (Core)

II.A.4.a) The program director must:

II.A.4.a).(1) be a role model of professionalism; (Core)

Background and Intent: The program director, as the leader of the program, must serve as a role model to post-doctoral fellows in addition to fulfilling the technical aspects of the role. As post-doctoral fellows are expected to demonstrate compassion, integrity, and respect for others, they must be able to look to the program director as an exemplar. It is of utmost importance, therefore, that the program director model outstanding professionalism, high quality patient care contributions, educational excellence, and a scholarly approach to work. The program director creates an environment where respectful discussion is welcome, with the goal of continued improvement of the educational experience.

- II.A.4.a).(2)** design and conduct the program in a fashion consistent with the needs of the community, the mission(s) of the Sponsoring Institution, and the mission(s) of the program; ^(Core)

Background and Intent: The mission of institutions participating in post-doctoral education is to improve the health of the public. Each community has health needs that vary based upon location and demographics. Programs must understand the structural and social determinants of health of the populations they serve and incorporate them in the design and implementation of the program curriculum, with the ultimate goal of addressing these needs and eliminating health disparities.

- II.A.4.a).(3)** administer and maintain a learning environment conducive to educating the post-doctoral fellows in each of the ACGME Competency domains; ^(Core)

Background and Intent: The program director may establish a leadership team to assist in the accomplishment of program goals. Post-doctoral education programs can be highly complex. In a complex organization, the leader typically has the ability to delegate authority to others, yet remains accountable. The leadership team may include physician and non-physician personnel with varying levels of education, training, and experience.

- II.A.4.a).(4)** have the authority to approve or remove physicians and non-physicians as faculty members at all participating sites, including the designation of core faculty members, and must develop and oversee a process to evaluate candidates prior to approval; ^(Core)

- II.A.4.a).(5)** have the authority to remove post-doctoral fellows from supervising interactions and/or learning environments that do not meet the standards of the program; ^(Core)

Background and Intent: The program director has the responsibility to ensure that all who educate post-doctoral fellows effectively role model the Core Competencies. Working with a post-doctoral fellow is a privilege that is earned through effective teaching and professional role modeling. This privilege may be removed by the program director when the standards of the clinical learning environment are not met.

There may be faculty in a department who are not part of the educational program, and the program director controls who is teaching the post-doctoral fellows.

II.A.4.a).(6) submit accurate and complete information required and requested by the DIO, GMEC, and ACGME; ^(Core)

Background and Intent: This includes providing information in the form and format requested by the ACGME and obtaining requisite sign-off by the DIO.

II.A.4.a).(7) provide a learning and working environment in which post-doctoral fellows have the opportunity to raise concerns, report mistreatment, and provide feedback in a confidential manner as appropriate, without fear of intimidation or retaliation; ^(Core)

II.A.4.a).(8) ensure the program's compliance with the Sponsoring Institution's policies and procedures related to grievances and due process, including when action is taken to suspend or dismiss, or not to promote or renew the appointment of a post-doctoral fellow; ^(Core)

Background and Intent: A program does not operate independently of its Sponsoring Institution. It is expected that the program director will be aware of the Sponsoring Institution's policies and procedures, and will ensure they are followed by the program's leadership, faculty members, support personnel, and post-doctoral fellows.

II.A.4.a).(9) ensure the program's compliance with the Sponsoring Institution's policies and procedures on employment and non-discrimination; ^(Core)

II.A.4.a).(9).(a) Post-doctoral fellows must not be required to sign a non-competition guarantee or restrictive covenant. ^(Core)

II.A.4.a).(10) document verification of education for all post-doctoral fellows within 30 days of completion of or departure from the program; ^(Core)

II.A.4.a).(11) provide verification of an individual post-doctoral fellow's education upon the post-doctoral fellow's request, within 30 days; and, ^(Core)

Background and Intent: Primary verification of post-doctoral education in a medical-related field is important to credentialing of specialists for further training and practice. Such verification must be accurate and timely. Sponsoring Institution and program policies for record retention are important to facilitate timely documentation of post-doctoral fellows who have previously completed the program. Post-doctoral fellows who leave the program prior to completion also require timely documentation of their summative evaluation.

- II.A.4.a).(12) provide applicants who are offered an interview with information related to their eligibility for the relevant specialty board examination(s). ^(Core)

II.B. Faculty

Faculty members are a foundational element of post-doctoral education – faculty members teach post-doctoral fellows how to contribute to care for patients. Faculty members provide an important bridge allowing post-doctoral fellows to grow and become prepared to provide clinical care, ensuring that patients receive the highest quality of care. They are role models for future generations of specialists by demonstrating compassion, commitment to excellence in teaching and patient care, professionalism, and a dedication to lifelong learning. Faculty members experience the pride and joy of fostering the growth and development of future colleagues. The care they provide is enhanced by the opportunity to teach and model exemplary behavior. By employing a scholarly approach to patient care, faculty members, through the post-doctoral education system, improve the health of the individual and the population.

Faculty members ensure that patients receive the level of care expected from a specialist in the field. They recognize and respond to the needs of the patients, post-doctoral fellows, community, and institution. Faculty members provide appropriate levels of supervision to promote patient safety. Faculty members create an effective learning environment by acting in a professional manner and attending to the well-being of the post-doctoral fellows and themselves.

Background and Intent: “Faculty” refers to the entire teaching force responsible for educating post-doctoral fellows. The term “faculty,” including “core faculty,” does not imply or require an academic appointment.

- II.B.1. There must be a sufficient number of faculty members with competence to instruct and supervise all post-doctoral fellows. ^(Core)

II.B.2. Faculty members must:

- II.B.2.a) be role models of professionalism; ^(Core)
- II.B.2.b) demonstrate commitment to the delivery of safe, equitable, high-quality, cost-effective, patient-centered care; ^(Core)

Background and Intent: Patients have the right to expect quality, cost-effective care with patient safety at its core. The foundation for meeting this expectation is formed during post-doctoral education. Faculty members model these goals and continually strive for improvement in care and cost, embracing a commitment to the care of the patient and the community they serve.

- II.B.2.c) demonstrate a strong interest in the education of post-doctoral fellows, including devoting sufficient time to the

educational program to fulfill their supervisory and teaching responsibilities; ^(Core)

II.B.2.d) administer and maintain an educational environment conducive to educating post-doctoral fellows; ^(Core)

II.B.2.e) regularly participate in organized clinical discussions, rounds, journal clubs, and conferences; and, ^(Core)

II.B.2.f) pursue faculty development designed to enhance their skills at least annually; ^(Core)

Background and Intent: Faculty development is intended to describe structured programming developed for the purpose of enhancing transference of knowledge, skill, and behavior from the educator to the learner. Faculty development may occur in a variety of configurations (lecture, workshop, etc.) using internal and/or external resources. Programming is typically needs-based (individual or group) and may be specific to the institution or the program. Faculty development programming is to be reported for the post-doctoral education program faculty in the aggregate.

II.B.2.f).(1) as educators and evaluators; ^(Detail)

II.B.2.f).(2) in quality improvement, eliminating health inequities, and patient safety; ^(Detail)

II.B.2.f).(3) in fostering their own and their post-doctoral fellows' well-being; and, ^(Detail)

II.B.2.f).(4) as contributors to patient care based on their practice-based learning and improvement efforts. ^(Detail)

Background and Intent: Practice-based learning serves as the foundation for the practice of medicine. Through a systematic analysis of one's participation in care and review of the literature, one is able to make adjustments that improve patient outcomes and care. Thoughtful consideration to practice-based analysis improves quality of care, as well as patient safety. This allows faculty members to serve as role models for post-doctoral fellows in practice-based learning.

II.B.3. Faculty Qualifications

II.B.3.a) Faculty members must have appropriate qualifications in their field and hold appropriate institutional appointments. ^(Core)

II.B.3.a).(1) Faculty members must have current certification in the discipline by the ABMGG or possess qualifications judged acceptable to the Review Committee. ^(Core)

II.B.3.a).(2) Associate program directors must be actively participating in the ABMGG MOC program in the specialty in which they are certified. ^(Core)

II.B.3.b) Faculty members must:

II.B.3.b).(1) have current certification in the specialty by the American Board of Medical Genetics and Genomics, if available for their field of study, or possess qualifications judged acceptable to the Review Committee. (Core)

[Note that while the Common Program Requirements deem certification by a certifying board of the American Osteopathic Association (AOA) acceptable, there is no AOA board that offers certification in this specialty]

II.B.3.c) Faculty members responsible for post-doctoral fellow education in clinical molecular genetics and genomics must have current ABMGG certification in clinical molecular genetics and genomics or laboratory genetics and genomics. (Core)

II.B.3.d) Faculty members responsible for post-doctoral fellow education in clinical cytogenetics and genomics must have current ABMGG certification in clinical cytogenetics and genomics or laboratory genetics and genomics. (Core)

II.B.4. Core Faculty

Core faculty members must have a significant role in the education and supervision of post-doctoral fellows and must devote a significant portion of their entire effort to post-doctoral fellow education and/or administration, and must, as a component of their activities, teach, evaluate, and provide formative feedback to post-doctoral fellows. (Core)

Background and Intent: Core faculty members are critical to the success of post-doctoral fellow education. They support the program leadership in developing, implementing, and assessing curriculum, mentoring post-doctoral fellows, and assessing post-doctoral fellows' progress toward achievement of competence in and the autonomous practice of the specialty. Core faculty members should be selected for their broad knowledge of and involvement in the program, permitting them to effectively evaluate the program. Core faculty members may also be selected for their specific expertise and unique contribution to the program. Core faculty members are engaged in a broad range of activities, which may vary across programs and specialties. Core faculty members provide clinical teaching and supervision of post-doctoral fellows, and also participate in non-clinical activities related to post-doctoral fellow education and program administration. Examples of these non-clinical activities include, but are not limited to, interviewing and selecting post-doctoral fellow applicants, providing didactic instruction, mentoring post-doctoral fellows, simulation exercises, completing the annual ACGME Faculty Survey, and participating on the program's Clinical Competency Committee, Program Evaluation Committee, and other post-doctoral education committees.

- II.B.4.a) Core faculty members must complete the annual ACGME Faculty Survey.** ^(Core)
- II.B.4.b)** The program must have at least three core faculty members. ^(Core)
- II.C. Program Coordinator**
- II.C.1.** There must be a program coordinator. ^(Core)
- II.C.2.** The program coordinator must be provided with dedicated time and support adequate for administration of the program based upon its size and configuration. ^(Core)
- II.C.2.a)** The program coordinator(s) must be provided with support equal to a dedicated minimum of 30 percent time for administration of the program. Programs with seven or more approved post-doctoral fellow positions must be provided with an additional two percent time for each approved position. ^(Core)

Background and Intent: The requirement does not address the source of funding required to provide the specified salary support.

Each program requires a lead administrative person, frequently referred to as a program coordinator, administrator, or as otherwise titled by the institution. This person will frequently manage the day-to-day operations of the program and serve as an important liaison and facilitator between the learners, faculty and other staff members, and the ACGME. Individuals serving in this role are recognized as program coordinators by the ACGME.

The program coordinator is a key member of the leadership team and is critical to the success of the program. As such, the program coordinator must possess skills in leadership and personnel management appropriate to the complexity of the program. Program coordinators are expected to develop in-depth knowledge of the ACGME and Program Requirements, including policies and procedures. Program coordinators assist the program director in meeting accreditation requirements, educational programming, and support of post-doctoral fellows.

Programs, in partnership with their Sponsoring Institutions, should encourage the professional development of their program coordinators and avail them of opportunities for both professional and personal growth. Programs with fewer post-doctoral fellows may not require a full-time coordinator; one coordinator may support more than one program.

The minimum required dedicated time and support specified in II.C.2.a) is inclusive of activities directly related to administration of the accredited program. It is understood that coordinators often have additional responsibilities, beyond those directly related to program administration, including, but not limited to, departmental administrative responsibilities, medical school clerkships, planning lectures that are not solely intended for the accredited program, and mandatory reporting for entities other than the ACGME. Assignment of these other responsibilities will necessitate consideration of allocation of additional support so as not to preclude the coordinator from devoting

the time specified above solely to administrative activities that support the accredited program.

In addition, it is important to remember that the dedicated time and support requirement for ACGME activities is a minimum, recognizing that, depending on the unique needs of the program, additional support may be warranted. The need to ensure adequate resources, including adequate support and dedicated time for the program coordinator, is also addressed in Institutional Requirement II.B.4. The amount of support and dedicated time needed for individual programs will vary based on a number of factors and may exceed the minimum specified in the applicable specialty/subspecialty-specific Program Requirements. It is expected that the Sponsoring Institution, in partnership with its accredited programs, will ensure support for program coordinators to fulfill their program responsibilities effectively.

II.D. Other Program Personnel

The program, in partnership with its Sponsoring Institution, must jointly ensure the availability of necessary personnel for the effective administration of the program. ^(Core)

Background and Intent: Multiple personnel may be required to effectively administer a program. These may include staff members with clerical skills, project managers, education experts, and staff members to maintain electronic communication for the program. These personnel may support more than one program in more than one discipline.

- II.D.1. Genetic counselors, nurses, dietitians, lab technologists, and other health care professionals who are involved in the provision of clinical and medical genetics and genomics services should be available to collaborate on a regular basis with post-doctoral fellows. ^(Detail)

III. Post-Doctoral Fellow Appointments

III.A. Eligibility Requirements

- III.A.1. An applicant must meet one of the following qualifications to be eligible for appointment to an ACGME-accredited program: ^(Core)

- III.A.1.a) graduation from a medical school in the United States or Canada, accredited by the Liaison Committee on Medical Education (LCME); graduation from a college of osteopathic medicine in the United States, accredited by the American Osteopathic Association Commission on Osteopathic College Accreditation (AOACOCA); or graduation from an accredited doctoral program in a clinically related discipline; or, ^(Core)

- III.A.1.a).(1) Post-doctoral fellows entering laboratory genetics and genomics programs must hold an MD, DO, or PhD (or equivalent) degree. ^(Core)

III.A.1.a).(1).(a)

The PhD (or equivalent) degree must be in either genetics or a related field. (Core)

III.A.1.b)

graduation from a medical school outside of the United States or Canada, and holding a currently valid certificate from the Educational Commission for Foreign Medical Graduates (ECFMG) prior to appointment. (Core)

Specialty-Specific Background and Intent: Laboratory genetics and genomics is a laboratory-based specialty, and fellows in these programs do not have direct patient care responsibilities. Therefore, the Review Committee does not require that applicants who completed medical school outside of the United States obtain ECFMG certification prior to appointment.

III.B. Post-Doctoral Fellow Complement

The program director must not appoint more post-doctoral fellows than approved by the Review Committee. (Core)

Background and Intent: Programs are required to request approval of all complement changes, whether temporary or permanent, by the Review Committee through ADS. Permanent increases require prior approval from the Review Committee and temporary increases may also require approval. Specialty-specific instructions for requesting a complement increase are found in the “Documents and Resources” page of the applicable specialty section of the ACGME website.

III.C. Post-Doctoral Fellow Transfers

The program must obtain verification of previous educational experiences and a summative competency-based performance evaluation prior to acceptance of a transferring post-doctoral fellow, and Milestones evaluations upon matriculation. (Core)

IV. Educational Program

The ACGME accreditation system is designed to encourage excellence and innovation in post-doctoral education regardless of the organizational affiliation, size, or location of the program.

The educational program must support the development of knowledgeable, skillful specialists who contribute to compassionate care.

It is recognized that programs may place different emphasis on research, leadership, public health, etc. It is expected that the program aims will reflect the nuanced program-specific goals for it and its graduates.

IV.A. Educational Components

The curriculum must contain the following educational components:

IV.A.1. a set of program aims consistent with the Sponsoring Institution’s mission, the needs of the community it serves, and the desired distinctive capabilities of its graduates, which must be made available to program applicants, post-doctoral fellows, and faculty members; ^(Core)

IV.A.2. competency-based goals and objectives for each educational experience designed to promote progress on a trajectory to autonomous practice. These must be distributed, reviewed, and available to post-doctoral fellows and faculty members; ^(Core)

Background and Intent: The trajectory to autonomous practice is documented by Milestones evaluations. Milestones are considered formative and should be used to identify learning needs. Milestones data may lead to focused or general curricular revision in any given program or to individualized learning plans for any specific post-doctoral fellow.

IV.A.3. delineation of post-doctoral fellow responsibilities for patient care, progressive responsibility for contributions to patient care, and graded supervision; and, ^(Core)

Background and Intent: These responsibilities may generally be described by year in the program and specifically by Milestones progress as determined by the Clinical Competency Committee. This approach encourages the transition to competency-based education. An advanced learner may be granted more responsibility and a learner needing more time to accomplish a certain task may do so in a focused rather than global manner.

IV.A.4. a broad range of structured didactic activities; and, ^(Core)

IV.A.4.a) Post-doctoral fellows must be provided with protected time to participate in core didactic activities. ^(Core)

Background and Intent: It is intended that post-doctoral fellows will participate in structured didactic activities. It is recognized that there may be circumstances in which this is not possible. Programs should define core didactic activities for which time is protected and the circumstances in which post-doctoral fellows may be excused from these didactic activities. Didactic activities may include, but are not limited to, lectures, conferences, courses, labs, asynchronous learning, simulations, drills, case discussions, grand rounds, didactic teaching, and education in critical appraisal of medical evidence.

IV.A.5. formal educational activities that promote patient safety-related goals, tools, and techniques. ^(Core)

IV.B. ACGME Competencies

Background and Intent: The Competencies provide a conceptual framework describing the required domains for a trusted specialist to enter autonomous practice. These Competencies are core to the practice of all specialists, although the specifics are

further defined by each specialty. The developmental trajectories in each of the Competencies are articulated through the Milestones for each specialty.

IV.B.1. The program must integrate the following ACGME Competencies into the curriculum:

IV.B.1.a) Professionalism

Post-doctoral fellows must demonstrate a commitment to professionalism and an adherence to ethical principles. (Core)

IV.B.1.a).(1) Post-doctoral fellows must demonstrate competence in:

IV.B.1.a).(1).(a) compassion, integrity, and respect for others; (Core)

IV.B.1.a).(1).(b) responsiveness to patient care needs that supersedes self-interest;

IV.B.1.a).(1).(c) cultural humility; (Core)

IV.B.1.a).(1).(d) respect for patient privacy and autonomy; (Core)

IV.B.1.a).(1).(e) accountability to patients, society, and the profession; (Core)

IV.B.1.a).(1).(f) respect and responsiveness to diverse patient populations, including but not limited to diversity in gender, age, culture, race, religion, disabilities, national origin, socioeconomic status, and sexual orientation; (Core)

IV.B.1.a).(1).(g) ability to recognize and develop a plan for one's own personal and professional well-being; and, (Core)

IV.B.1.a).(1).(h) appropriately disclosing and addressing conflict or duality of interest. (Core)

Background and Intent: This includes the recognition that under certain circumstances, the interests of the patient may be best served by transitioning care to another practitioner. Examples include fatigue, conflict or duality of interest, not connecting well with a patient, or when another specialist would be better for the situation based on skill set or knowledge base.

IV.B.1.b) Patient Care and Procedural Skills

Background and Intent: Quality patient care is safe, effective, timely, efficient, patient-centered, equitable, and designed to improve population health, while reducing per

capita costs. In addition, there should be a focus on improving the learner's well-being as a means to improve patient care and reduce burnout among residents, post-doctoral fellows, fellows, and practicing specialists.

IV.B.1.b).(1)

Post-doctoral fellows must be able to contribute to patient care in a way that is patient- and family-centered, compassionate, equitable, appropriate, and effective for the treatment of health problems and the promotion of health. (Core)

IV.B.1.b).(1).(a)

Post-doctoral fellows must demonstrate:

IV.B.1.b).(1).(a).(i)

competence in pre-analytic laboratory skills, including collection of appropriate specimen types; (Core)

IV.B.1.b).(1).(a).(ii)

competence in analytic laboratory skills used for various specimen types: (Core)

IV.B.1.b).(1).(a).(iii)

application of bioinformatics tools for interpretation of clinical results, including: (Core)

IV.B.1.b).(1).(a).(iii).(a)

use of acceptable nomenclature and practice guidelines for chromosomal and genomic variant classification; and, (Core)

IV.B.1.b).(1).(a).(iii).(b)

understanding of the application of bioinformatics pipelines and database resources for analysis and interpretation of chromosome analysis and genomic sequence data. (Core)

IV.B.1.b).(1).(a).(iv)

cell culture, slide preparation, and karyotyping; (Core)

IV.B.1.b).(1).(a).(v)

fluorescence in situ hybridization (FISH) techniques; (Core)

IV.B.1.b).(1).(a).(vi)

principles and techniques for manual and automated techniques for nucleic acid isolation; (Core)

IV.B.1.b).(1).(a).(vii)

microarray analysis and subsequent data processing; (Core)

IV.B.1.b).(1).(a).(viii)

polymerase chain reaction (PCR), including real-time and multiplex triplet repeat primed,

	digital droplet, and size analysis of nucleic acids; (Core)
IV.B.1.b).(1).(a).(ix)	targeted variant analysis and gene variant detection using Sanger sequencing, next-generation sequencing, and identity testing; (Core)
IV.B.1.b).(1).(a).(x)	competence in post-analytic reporting skills; and, (Core)
IV.B.1.b).(1).(a).(xi)	knowledge of quality control, quality management, quality improvement, and quality assurance. (Core)
IV.B.1.b).(2)	Post-doctoral fellows must be able to perform all procedures considered essential for the area of practice. (Core)
IV.B.1.c)	Medical Knowledge
	Post-doctoral fellows must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, including scientific inquiry, as well as the application of this knowledge in their contributions to patient care. (Core)
IV.B.1.c).(1)	Post-doctoral fellows must demonstrate:
IV.B.1.c).(1).(a)	knowledge and use of scientific evidence, current medical information, and practice standards for the purpose of patient care, including: (Core)
IV.B.1.c).(1).(a).(i)	evaluation of results from molecular and cytogenetics-based genomics laboratories; (Core)
IV.B.1.c).(1).(a).(ii)	quantitative risk assessment; and, (Core)
IV.B.1.c).(1).(a).(iii)	application of bioinformatics. (Core)
IV.B.1.c).(1).(b)	competence in their knowledge of:
IV.B.1.c).(1).(b).(i)	Mendelian and non-Mendelian genetics; (Core)
IV.B.1.c).(1).(b).(ii)	population and quantitative genetics; and, (Core)
IV.B.1.c).(1).(b).(iii)	genomics. (Core)

- IV.B.1.c).(1).(c) knowledge of general principles of cell and molecular biology, as it relates to the field of medical genetics and genomics; and, ^(Core)
- IV.B.1.c).(1).(d) knowledge of principles of cytogenetics and clinical molecular genetics as they relate to the field of laboratory genetics and genomics. ^(Core)

IV.B.1.d) Practice-based Learning and Improvement

Post-doctoral fellows must demonstrate the ability to investigate and evaluate their contributions to the care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and lifelong learning. ^(Core)

- IV.B.1.d).(1) Post-doctoral fellows must demonstrate competence in:**
- IV.B.1.d).(1).(a) identifying strengths, deficiencies, and limits in one's knowledge and expertise; ^(Core)**
- IV.B.1.d).(1).(b) setting learning and improvement goals; ^(Core)**
- IV.B.1.d).(1).(c) identifying and performing appropriate learning activities; ^(Core)**
- IV.B.1.d).(1).(d) systematically analyzing their contributions to care using quality improvement methods, including activities aimed at reducing health care disparities, and implementing changes with the goal of practice improvement; ^(Core)**
- IV.B.1.d).(1).(e) incorporating feedback and formative evaluation into daily practice; and, ^(Core)**
- IV.B.1.d).(1).(f) locating, appraising, and assimilating evidence from scientific studies related to their patients' health problems. ^(Core)**

IV.B.1.e) Interpersonal and Communication Skills

Post-doctoral fellows must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals. ^(Core)

- IV.B.1.e).(1) Post-doctoral fellows must demonstrate competence in:**

- IV.B.1.e).(1).(a)** communicating effectively with patients and patients' families, as appropriate, across a broad range of socioeconomic circumstances, cultural backgrounds, and language capabilities, learning to engage interpretive services as required to provide appropriate care to each patient; ^(Core)
- IV.B.1.e).(1).(b)** communicating effectively with physicians, other health professionals, and health-related agencies; ^(Core)
- IV.B.1.e).(1).(c)** working effectively as a member or leader of a health care team or other professional group; ^(Core)
- IV.B.1.e).(1).(d)** educating patients, patients' families, students, and other health professionals; ^(Core)
- IV.B.1.e).(1).(e)** acting in a consultative role to other physicians and health professionals; and, ^(Core)
- IV.B.1.e).(1).(f)** maintaining comprehensive, timely, and legible health care records, if applicable. ^(Core)
- IV.B.1.e).(2)** Post-doctoral fellows must generate comprehensive and timely laboratory reports. ^(Core)

IV.B.1.f)

Systems-based Practice

Post-doctoral fellows must demonstrate an awareness of and responsiveness to the larger context and system of health care, including the structural and social determinants of health, as well as the ability to effectively collaborate with other providers and use resources to provide optimal health care. ^(Core)

Background and Intent: Medical practice occurs in the context of an increasingly complex clinical care environment where optimal patient care requires attention to compliance with external and internal administrative and regulatory requirements.

- IV.B.1.f).(1)** Post-doctoral fellows must demonstrate competence in:
- IV.B.1.f).(1).(a)** working effectively in various health care delivery settings and systems relevant to their clinical specialty; ^(Core)
- IV.B.1.f).(1).(a).(i)** Post-doctoral fellows must:

IV.B.1.f).(1).(a).(i).(a)	actively participate in interactions with external regulatory agencies, including any inspections of the labs during their training; (Core)
IV.B.1.f).(1).(a).(i).(b)	demonstrate knowledge of the function and interaction of laboratory information systems, electronic health records, and billing systems; and, (Core)
IV.B.1.f).(1).(a).(i).(c)	demonstrate expertise in their knowledge of basic economic and business principles needed to function effectively in the practice setting. (Core)
IV.B.1.f).(1).(b)	helping to coordinate patient care across the health care continuum and beyond as relevant to their specialty; (Core)

Background and Intent: Every patient deserves to be treated as a whole person. Therefore it is recognized that any one component of the health care system does not meet the totality of the patient's needs. An appropriate transition plan requires coordination and forethought by an interdisciplinary team. The patient benefits from proper care and the system benefits from proper use of resources.

IV.B.1.f).(1).(c)	advocating for quality patient care and optimal patient care systems; (Core)
IV.B.1.f).(1).(d)	participating in identifying system errors and implementing potential systems solutions; (Core)
IV.B.1.f).(1).(e)	incorporating considerations of value, equity, cost awareness, delivery and payment, and risk-benefit analysis in patient and/or population-based care as appropriate; (Core)
IV.B.1.f).(1).(f)	understanding health care finances and its impact on individual patients' health decisions; and, (Core)
IV.B.1.f).(1).(g)	using tools and techniques that promote patient safety and disclosure of patient safety events (real or simulated). (Detail)
IV.B.1.f).(1).(h)	participating in external quality assurance activities; and, (Core)
IV.B.1.f).(1).(i)	participating in laboratory quality management including quality control and quality assurance. (Core)

IV.B.1.f).(2) **Post-doctoral fellows must learn to advocate for patients within the health care system, directly or through collaboration with other providers, to achieve the patient's and patient's family's care goals. (Core)**

IV.C. Curriculum Organization and Post-Doctoral Fellow Experiences

IV.C.1. The curriculum must be structured to optimize post-doctoral fellow educational experiences, the length of the experiences, and the supervisory continuity. These educational experiences include an appropriate blend of supervised patient care responsibilities, clinical teaching, and didactic educational events. (Core)

IV.C.1.a) The program must ensure:

IV.C.1.a).(1) adequate supervision during times of transition and hand-offs; (Core)

IV.C.1.a).(2) continuity of supervision at all participating sites; and, (Core)

IV.C.1.a).(3) exposure to and sufficient time in specialty clinics for residents. (Core)

Background and Intent: In some specialties, frequent rotational transitions, inadequate continuity of faculty member supervision, and dispersed patient care locations within the hospital or medical system, have adversely affected optimal post-doctoral fellow education and effective team-based care. The need for collaborative patient care continuity varies from specialty to specialty and by clinical situation, and may be addressed by the individual Review Committee.

IV.C.2. A program in laboratory genetics and genomics must provide the necessary formal education and clinical laboratory-based experience to allow post-doctoral fellows to develop the knowledge, skills, and professional attitudes required for the practice in the field. (Core)

IV.C.2.a) The 24 months of laboratory genetics and genomics training must include:

IV.C.2.a).(1) a two-week rotation in clinical biochemical genetics; (Core)

IV.C.2.a).(2) didactic course work and other educational opportunities; (Core)

IV.C.2.a).(3) eight months of constitutional/germline testing, including exposure to: (Core)

IV.C.2.a).(3).(a) prenatal/carrier testing and non-invasive prenatal testing; and, (Core)

- IV.C.2.a).(3).(b) postnatal (perinatal, pediatric, and adult non-obstetric) testing. (Core)
- IV.C.2.a).(4) eight months of experience in cancer testing with a focus on somatic analysis; and, (Core)
- IV.C.2.a).(5) 40 hours (the equivalent of 10 half days) in genetics and genomics clinics to gain clinical exposure. (Core)
- IV.C.2.b) Time spent in a specific clinical area of concentration must not exceed six months. (Core)
- IV.C.2.b).(1) Content of this concentration area must be determined with the program director no later than the beginning of the post-doctoral fellow's final year in the program, and must include a documented, structured, written plan based on the post-doctoral fellow's career goals. (Core)
- IV.C.2.c) Post-doctoral education must be integrated across cytogenetics and molecular genetics throughout the program. (Core)
- IV.C.2.d) Development of clinical laboratory methods or tests should be a component of training. (Detail)
- IV.C.3. Direct Patient Experience in Medical Genetics and Genomics
- IV.C.3.a) Post-doctoral fellows must have direct exposure to the clinical evaluation of patients, medical decision making, and genetic counseling. (Core)
- IV.C.3.a).(1) Post-doctoral fellows must participate in a minimum of 10 patient case conferences and the equivalent of 10 half-day clinics (i.e., 40 hours). (Core)
- IV.C.3.a).(2) Exposure to pre-conception/prenatal, neonatal/perinatal, pediatric, and adult non-obstetric patients with a variety of clinical indications should be included in the clinic experience. (Core)
- IV.C.4. Didactic Education
- The didactic curriculum must include:
- IV.C.4.a) clinical teaching conferences, to include formal sessions on clinical laboratory topics, medical genetics and genomics rounds, journal clubs, and follow-up conferences for genetic clinics; and, (Core)
- IV.C.4.b) lectures or other didactic sessions, on the following topics including: (Core)

- IV.C.4.b).(1) basic mechanisms of inheritance, including sex chromosomes, autosomes, and mitochondrial DNA; (Core)
- IV.C.4.b).(2) basic molecular biology techniques pertinent to clinical testing; (Core)
- IV.C.4.b).(3) Bayesian analysis and other methods of genetic risk assessment; (Core)
- IV.C.4.b).(4) behavior of genes in a population, including Hardy Weinberg equilibria of alleles; (Core)
- IV.C.4.b).(5) bioinformatic approaches to interpreting molecular test results, including methods to assign causation to novel findings; (Core)
- IV.C.4.b).(6) the cell cycle and molecular genetics of cancer; (Core)
- IV.C.4.b).(7) DNA, RNA, and protein chemistry, including DNA repair; (Core)
- IV.C.4.b).(8) gene expression and mechanisms of regulation of genes and genomes, including epigenetic regulation; (Core)
- IV.C.4.b).(9) genetic counseling; (Core)
- IV.C.4.b).(10) genetic linkage, mapping, and association studies; (Core)
- IV.C.4.b).(11) human embryology and development; (Core)
- IV.C.4.b).(12) inheritance of complex traits and genetic variation; (Core)
- IV.C.4.b).(13) mechanisms of chromosomal rearrangement; (Core)
- IV.C.4.b).(14) molecular organization of the genome, including molecular evolution mechanisms; (Core)
- IV.C.4.b).(15) principles of biochemical genetics and metabolism; and, (Core)
- IV.C.4.b).(16) principles of replication, recombination, and segregation of alleles during meiosis. (Core)
- IV.C.5. Research seminars should be provided as part of the educational experience. (Core)
- IV.C.6. Other Educational Opportunities
- Post-doctoral fellows should participate in a minimum of 20 hours over a period of 24 months in other educational opportunities, such as seminars,

journal clubs, rotations in a clinical chemistry laboratory, topics of which should broadly relate to medical genetics and genomics. ^(Detail)

IV.D. Scholarship

Medicine is both an art and a science. This requires the ability to think critically, evaluate the literature, appropriately assimilate new knowledge, and practice lifelong learning. The program and faculty must create an environment that fosters the acquisition of such skills through post-doctoral fellow participation in scholarly activities. Scholarly activities may include discovery, integration, application, and teaching.

The ACGME recognizes the diversity of post-doctoral education programs and anticipates that programs prepare specialists for a variety of roles, including contributors to clinical care, scientists, and educators. It is expected that the program's scholarship will reflect its mission(s) and aims, and the needs of the community it serves. For example, some programs may concentrate their scholarly activity on quality improvement, population health, and/or teaching, while other programs might choose to utilize more classic forms of biomedical research as the focus for scholarship.

IV.D.1. Program Responsibilities

- IV.D.1.a)** The program must demonstrate evidence of scholarly activities consistent with its mission(s) and aims. ^(Core)
- IV.D.1.b)** The program, in partnership with its Sponsoring Institution, must allocate adequate resources to facilitate post-doctoral fellow and faculty involvement in scholarly activities. ^(Core)
- IV.D.1.c)** The program must advance post-doctoral fellows' knowledge and practice of the scholarly approach to evidence-based contributions to patient care. ^(Core)

IV.D.2. Faculty Scholarly Activity

- IV.D.2.a)** Among their scholarly activity, programs must demonstrate accomplishments in at least three of the following domains: ^(Core)

- Research in basic science, education, translational science, patient care, or population health
- Peer-reviewed grants
- Quality improvement and/or patient safety initiatives
- Systematic reviews, meta-analyses, review articles, chapters in medical textbooks, or case reports
- Creation of curricula, evaluation tools, didactic educational activities, or electronic educational materials

- Contribution to professional committees, educational organizations, or editorial boards
- Innovations in education

IV.D.2.b)

The program must demonstrate dissemination of scholarly activity within and external to the program by the following methods:

Background and Intent: For the purposes of education, metrics of scholarly activity represent one of the surrogates for the program's effectiveness in the creation of an environment of inquiry that advances the post-doctoral fellows' scholarly approach to their contributions to patient care. The Review Committee will evaluate the dissemination of scholarship for the program as a whole, not for individual faculty members, for a five-year interval, for both core and non-core faculty members, with the goal of assessing the effectiveness of the creation of such an environment. The ACGME recognizes that there may be differences in scholarship requirements between different specialties and between programs in the same specialty or field.

IV.D.2.b).(1)

faculty participation in grand rounds, posters, workshops, quality improvement presentations, podium presentations, grant leadership, non-peer-reviewed print/electronic resources, articles or publications, book chapters, textbooks, webinars, service on professional committees, or serving as a journal reviewer, journal editorial board member, or editor. (Outcome)

IV.D.3.

Post-Doctoral Fellow Scholarly Activity

IV.D.3.a)

Post-doctoral fellows must participate in scholarship. (Core)

IV.D.3.a).(1)

Each post-doctoral fellow must demonstrate scholarship through at least one scientific presentation, abstract, or publication. (Core)

V. Evaluation

V.A.

Post-Doctoral Fellow Evaluation

V.A.1.

Feedback and Evaluation

Background and Intent: Feedback is ongoing information provided regarding aspects of one's performance, knowledge, or understanding. The faculty empower post-doctoral fellows to provide much of that feedback themselves in a spirit of continuous learning and self-reflection. Feedback from faculty members in the context of routine clinical care should be frequent, and need not always be formally documented.

Formative and summative evaluation have distinct definitions. Formative evaluation is *monitoring post-doctoral fellow learning* and providing ongoing feedback that can be used by post-doctoral fellows to improve their learning in the context of provision of

patient care or other educational opportunities. More specifically, formative evaluations help:

- post-doctoral fellows identify their strengths and weaknesses and target areas that need work
- program directors and faculty members recognize where post-doctoral fellows are struggling and address problems immediately

Summative evaluation is *evaluating a post-doctoral fellow's learning* by comparing the post-doctoral fellows against the goals and objectives of the rotation and program, respectively. Summative evaluation is utilized to make decisions about promotion to the next level of training, or program completion.

End-of-rotation and end-of-year evaluations have both summative and formative components. Information from a summative evaluation can be used formatively when post-doctoral fellows or faculty members use it to guide their efforts and activities in subsequent rotations and to successfully complete the post-doctoral education program.

Feedback, formative evaluation, and summative evaluation compare intentions with accomplishments, enabling the transformation of a neophyte specialist to one with growing expertise.

V.A.1.a) Faculty members must directly observe, evaluate, and frequently provide feedback on post-doctoral fellow performance during each rotation or similar educational assignment. ^(Core)

Background and Intent: Faculty members should provide feedback frequently throughout the course of each rotation. Post-doctoral fellows require feedback from faculty members to reinforce well-performed duties and tasks, as well as to correct deficiencies. This feedback will allow for the development of the learner as they strive to achieve the Milestones. More frequent feedback is strongly encouraged for post-doctoral fellows who have deficiencies that may result in a poor final rotation evaluation.

V.A.1.b) Evaluation must be documented at the completion of the assignment. ^(Core)

V.A.1.b).(1) For block rotations of greater than three months in duration, evaluation must be documented at least every three months. ^(Core)

V.A.1.b).(2) Longitudinal experiences must be evaluated at least every three months and at completion. ^(Core)

V.A.1.c) The program must provide an objective performance evaluation based on the Competencies and the specialty-specific Milestones, and must: ^(Core)

- V.A.1.c).(1)** use multiple evaluators (e.g., faculty members, peers, patients, self, and other professional staff members); and, ^(Core)
- V.A.1.c).(2)** provide that information to the Clinical Competency Committee for its synthesis of progressive post-doctoral fellow performance and improvement toward unsupervised practice. ^(Core)
- V.A.1.d)** The program director or their designee, with input from the Clinical Competency Committee, must:
- V.A.1.d).(1)** meet with and review with each post-doctoral fellow their documented semi-annual evaluation of performance, including progress along the specialty-specific Milestones; ^(Core)
- V.A.1.d).(2)** assist post-doctoral fellows in developing individualized learning plans to capitalize on their strengths and identify areas for growth; and, ^(Core)
- V.A.1.d).(3)** develop plans for post-doctoral fellows failing to progress, following institutional policies and procedures. ^(Core)

Background and Intent: Learning is an active process that requires effort from the teacher and the learner. Faculty members evaluate a post-doctoral fellow's performance at least at the end of each assignment. The program director or their designee will review those evaluations, including their progress on the Milestones, at a minimum of every six months. Post-doctoral fellows should be encouraged to reflect upon the evaluation, using the information to reinforce well-performed tasks or knowledge or to modify deficiencies in knowledge or practice. Working together with the faculty members, post-doctoral fellows should develop an individualized learning plan.

Post-doctoral fellows who are experiencing difficulties with achieving progress along the Milestones may require intervention to address specific deficiencies. Such intervention, documented in an individual remediation plan developed by the program director or a faculty mentor and the post-doctoral fellow, will take a variety of forms based on the specific learning needs of the post-doctoral fellow. However, the ACGME recognizes that there are situations which require more significant intervention that may alter the time course of post-doctoral fellow progression. To ensure due process, it is essential that the program director follow institutional policies and procedures.

- V.A.1.e)** At least annually, there must be a summative evaluation of each post-doctoral fellow that includes their readiness to progress to the next year of the program, if applicable. ^(Core)
- V.A.1.f)** The evaluations of a post-doctoral fellow's performance must be accessible for review by the post-doctoral fellow. ^(Core)

V.A.2. Final Evaluation

V.A.2.a) The program director must provide a final evaluation for each post-doctoral fellow upon completion of the program. ^(Core)

V.A.2.a).(1) The specialty-specific Milestones, and, when applicable, the specialty-specific Case Logs, must be used as tools to ensure post-doctoral fellows are able to engage in autonomous practice upon completion of the program. ^(Core)

V.A.2.a).(2) The final evaluation must:

V.A.2.a).(2).(a) become part of the post-doctoral fellow's permanent record maintained by the institution, and must be accessible for review by the post-doctoral fellow in accordance with institutional policy; ^(Core)

V.A.2.a).(2).(b) verify that the post-doctoral fellow has demonstrated the knowledge, skills, and behaviors necessary to enter autonomous practice; and, ^(Core)

V.A.2.a).(2).(c) be shared with the post-doctoral fellow upon completion of the program. ^(Core)

V.A.3. A Clinical Competency Committee must be appointed by the program director. ^(Core)

V.A.3.a) At a minimum, the Clinical Competency Committee must include three members of the program faculty, at least one of whom is a core faculty member. ^(Core)

V.A.3.a).(1) Additional members must be faculty members from the same program or other programs, or other health professionals who have extensive contact and experience with the program's post-doctoral fellows. ^(Core)

Background and Intent: The requirements regarding the Clinical Competency Committee do not preclude or limit a program director's participation on the Clinical Competency Committee. The intent is to leave flexibility for each program to decide the best structure for its own circumstances, but a program should consider: its program director's other roles as post-doctoral fellow advocate, advisor, and confidante; the impact of the program director's presence on the other Clinical Competency Committee members' discussions and decisions; the size of the program faculty; and other program-relevant factors. Inclusivity is an important consideration in the appointment of Clinical Competency Committee members, ensuring diverse participation to achieve fair evaluation. The program director has final responsibility for post-doctoral fellow evaluation and promotion decisions.

The program faculty may include more than the physician faculty members, such as other physicians and non-physicians who teach and evaluate the program's post-doctoral fellows. There may be additional members of the Clinical Competency Committee. Chief residents who have completed core residency programs in their specialty may be members of the Clinical Competency Committee.

V.A.3.b) The Clinical Competency Committee must:

V.A.3.b).(1) review all post-doctoral fellow evaluations at least semi-annually; (Core)

V.A.3.b).(2) determine each post-doctoral fellow's progress on achievement of the specialty-specific Milestones; and, (Core)

V.A.3.b).(3) meet prior to the post-doctoral fellows' semi-annual evaluations and advise the program director regarding each post-doctoral fellow's progress. (Core)

V.B. Faculty Evaluation

V.B.1. The program must have a process to evaluate each faculty member's performance as it relates to the educational program at least annually. (Core)

Background and Intent: The program director is responsible for the educational program and for all educators. While the term "faculty" may be applied to specialists within a given institution for other reasons, it is applied to post-doctoral education program faculty members only through approval by a program director. The development of the faculty improves the education, clinical, and research aspects of a program. Faculty members have a strong commitment to the post-doctoral fellow and desire to provide optimal education and work opportunities. Faculty members must be provided feedback on their contribution to the mission of the program. All faculty members who interact with post-doctoral fellows desire feedback on their education, clinical care, and research. If a faculty member does not interact with post-doctoral fellows, feedback is not required. With regard to the diverse operating environments and configurations, the program director may need to work with others to determine the effectiveness of the program's faculty performance with regard to their role in the educational program. All teaching faculty members should have their educational efforts evaluated by the post-doctoral fellows in a confidential and anonymous manner. Other aspects for the feedback may include research or clinical productivity, review of patient outcomes, or peer review of scholarly activity. The process should reflect the local environment and identify the necessary information. The feedback from the various sources should be summarized and provided to the faculty on an annual basis by a member of the leadership team of the program.

V.B.1.a) This evaluation must include a review of the faculty member's clinical teaching abilities, engagement with the educational program, participation in faculty development related to their

skills as an educator and clinical specialist, professionalism, and scholarly activities. (Core)

V.B.1.b) This evaluation must include written, confidential evaluations by the post-doctoral fellows. (Core)

V.B.2. Faculty members must receive feedback on their evaluations at least annually. (Core)

V.B.3. Results of the faculty educational evaluations should be incorporated into program-wide faculty development plans. (Core)

Background and Intent: The quality of the faculty's teaching and clinical care is a determinant of the quality of the program and the quality of the post-doctoral fellows' future contributions to clinical care. Therefore, the program has the responsibility to evaluate and improve the program faculty members' teaching, scholarship, professionalism, and quality care contributions. This section mandates annual review of the program's faculty members for this purpose, and can be used as input into the Annual Program Evaluation.

V.C. Program Evaluation and Improvement

V.C.1. The program director must appoint the Program Evaluation Committee to conduct and document the Annual Program Evaluation as part of the program's continuous improvement process. (Core)

V.C.1.a) The Program Evaluation Committee must be composed of at least two program faculty members, at least one of whom is a core faculty member, and at least one post-doctoral fellow. (Core)

V.C.1.b) Program Evaluation Committee responsibilities must include:

V.C.1.b).(1) review of the program's self-determined goals and progress toward meeting them; (Core)

V.C.1.b).(2) guiding ongoing program improvement, including development of new goals, based upon outcomes; and, (Core)

V.C.1.b).(3) review of the current operating environment to identify strengths, challenges, opportunities, and threats as related to the program's mission and aims. (Core)

Background and Intent: To achieve its mission and educate and train quality specialists, a program must evaluate its performance and plan for improvement in the Annual Program Evaluation. Performance of post-doctoral fellows and faculty members is a reflection of program quality, and can use metrics that reflect the goals that a program has set for itself. The Program Evaluation Committee utilizes outcome parameters and other data to assess the program's progress toward achievement of its

goals and aims. The Program Evaluation Committee advises the program director through program oversight.

- V.C.1.c) The Program Evaluation Committee should consider the outcomes from prior Annual Program Evaluation(s), aggregate fellow and faculty written evaluations of the program, and other relevant data in its assessment of the program. (Core)

Background and Intent: Other data to be considered for assessment include:

- Curriculum
- ACGME letters of notification, including citations, Areas for Improvement, and comments
- Quality and safety of patient care
- Aggregate post-doctoral fellow and faculty well-being; recruitment and retention; workforce diversity, including post-doctoral education staff and other relevant academic community members; engagement in quality improvement and patient safety; and scholarly activity
- ACGME Post-Doctoral Fellow and Faculty Survey results
- Aggregate post-doctoral fellow Milestones evaluations, and achievement on in-training examinations (where applicable), board pass and certification rates, and graduate performance
- Aggregate faculty evaluation and professional development

- V.C.1.d) The Program Evaluation Committee must evaluate the program's mission and aims, strengths, areas for improvement, and threats. (Core)

- V.C.1.e) The Annual Program Evaluation, including the action plan, must be distributed to and discussed with the post-doctoral fellows and members of the teaching faculty, and be submitted to the DIO. (Core)

- V.C.2. The program must complete a Self-Study and submit it to the DIO. (Core)

Background and Intent: Outcomes of the documented Annual Program Evaluation can be integrated into the accreditation Self-Study process. The accreditation Self-Study is an objective, comprehensive evaluation of the post-doctoral education program, with the aim of improving it. Underlying the accreditation Self-Study is this longitudinal evaluation of the program and its learning environment, facilitated through sequential Annual Program Evaluations that focus on the required components, with an emphasis on program strengths and self-identified areas for improvement. Details regarding the timing and expectations for the accreditation Self-Study are provided in the *ACGME Manual of Policies and Procedures*. Additionally, a description of the [accreditation Self-Study process](#) is available on the ACGME website.

- V.C.3. *One goal of ACGME-accredited education is to educate specialists who seek and achieve board certification. One measure of the*

effectiveness of the educational program is the ultimate certifying exam pass rate.

The program director should encourage all eligible program graduates to take the certifying examination offered by the applicable American Board of Medical Specialties (ABMS) member board or American Osteopathic Association (AOA) certifying board.

- V.C.3.a)** For specialties in which the ABMS member board and/or AOA certifying board offer(s) an annual written exam, in the preceding three years, the program's aggregate pass rate of those taking the examination for the first time must be higher than the bottom fifth percentile of programs in that specialty.
(Outcome)
- V.C.3.b)** For specialties in which the ABMS member board and/or AOA certifying board offer(s) a biennial written exam, in the preceding six years, the program's aggregate pass rate of those taking the examination for the first time must be higher than the bottom fifth percentile of programs in that specialty.
(Outcome)
- V.C.3.c)** For specialties in which the ABMS member board and/or AOA certifying board offer(s) an annual oral exam, in the preceding three years, the program's aggregate pass rate of those taking the examination for the first time must be higher than the bottom fifth percentile of programs in that specialty.
(Outcome)
- V.C.3.d)** For specialties in which the ABMS member board and/or AOA certifying board offer(s) a biennial oral exam, in the preceding six years, the program's aggregate pass rate of those taking the examination for the first time must be higher than the bottom fifth percentile of programs in that specialty.
(Outcome)
- V.C.3.e)** For each of the exams referenced in V.C.3.a)-d), any program whose graduates over the time period specified in the requirement have achieved an 80 percent pass rate will have met this requirement, no matter the percentile rank of the program for pass rate in that specialty.
(Outcome)

Background and Intent: Setting a single standard for pass rate that works across specialties is not supportable based on the heterogeneity of the psychometrics of different examinations. By using a percentile rank, the performance of the lower five percent (fifth percentile) of programs can be identified and set on a path to curricular and test preparation reform.

There are specialties where there is a very high board pass rate that could leave successful programs in the bottom five percent (fifth percentile) despite admirable performance. These high-performing programs should not be cited, and V.C.3.e) is designed to address this.

V.C.3.f)

Programs must report, in ADS, board certification status annually for the cohort of board-eligible post-doctoral fellows that graduated seven years earlier. ^(Core)

Background and Intent: It is essential that post-doctoral education programs demonstrate knowledge and skill transfer to their post-doctoral fellows. One measure of that is the qualifying or initial certification exam pass rate. Another important parameter of the success of the program is the ultimate board certification rate of its graduates. Graduates are eligible for up to seven years from post-doctoral education program graduation for initial certification. The ACGME will calculate a rolling three-year average of the ultimate board certification rate at seven years post-graduation, and the Review Committees will monitor it.

The Review Committees will track the rolling seven-year certification rate as an indicator of program quality. Programs are encouraged to monitor their graduates' performance on board certification examinations.

In the future, the ACGME may establish parameters related to ultimate board certification rates.

VI. The Learning and Working Environment

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

- *Excellence in the safety and quality of contributions to care of patients by post-doctoral fellows today*
- *Excellence in the safety and quality of care rendered to patients by today's post-doctoral fellows in their future practice*
- *Excellence in professionalism*
- *Appreciation for the privilege of providing care for patients*
- *Commitment to the well-being of the students, post-doctoral 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

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, post-doctoral fellows, residents, and fellows must actively participate in patient safety systems and contribute to a culture of safety. ^(Core)

VI.A.1.a).(2)

Patient Safety Events

Reporting, investigation, and follow-up of safety 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).(2).(a)

Post-doctoral fellows, residents, fellows, faculty members, and other clinical staff members must:

VI.A.1.a).(2).(a).(i)

know their responsibilities in reporting patient safety events and unsafe conditions at the clinical site, including how to report such events; and, ^(Core)

VI.A.1.a).(2).(a).(ii)

be provided with summary information of their institution's patient safety reports. ^(Core)

VI.A.1.a).(2).(b)

Post-doctoral fellows must participate as team members in real and/or simulated interprofessional clinical patient safety and quality improvement 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).(3)

Quality Metrics

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

VI.A.1.a).(3).(a)

Post-doctoral fellows and faculty members must receive data on quality metrics and

benchmarks related to their patient populations.
(Core)

VI.A.2. Supervision and Accountability

VI.A.2.a) *Although the attending specialist is ultimately responsible for the care of the patient, every specialist 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 contributions to patient care.*

Supervision in the setting of post-doctoral education provides safe and effective contributions to care of patients; ensures each post-doctoral fellow's development of the skills, knowledge, and attitudes required to enter the unsupervised participation in care; and establishes a foundation for continued professional growth.

VI.A.2.a).(1) Post-doctoral fellows and faculty members must ensure patients are informed of the specialist involved in their care, and of their respective roles in contributing to patient care. (Core)

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

Background and Intent: Each patient will 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.

VI.A.2.a).(2) The program must demonstrate that the appropriate level of supervision in place for all post-doctoral fellows is based on each post-doctoral 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)

Background and Intent: Appropriate supervision is essential for patient safety and high-quality teaching. Supervision is also contextual. There is tremendous diversity of post-doctoral fellow-patient interactions, training locations, and post-doctoral fellow skills and abilities, even at the same level of the educational program. The degree of supervision for a post-doctoral fellow is expected to evolve progressively as the post-doctoral fellow gains more experience, even with the same patient condition or procedure. The level of supervision for each post-doctoral fellow is commensurate with that post-doctoral fellow's level of independence in practice; this level of

supervision may be enhanced based on factors such as patient safety, complexity, acuity, urgency, risk of serious safety events, or other pertinent variables.

VI.A.2.b)

Levels of Supervision

To promote appropriate post-doctoral fellow supervision while providing for graded authority and responsibility, the program must use the following classification of supervision:

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

Direct Supervision:

VI.A.2.b).(1).(a)

the supervising specialist is physically present with the post-doctoral fellow during the key portions of the interactions around patient care; or,

VI.A.2.b).(1).(a).(i)

Post-doctoral fellows must initially be supervised directly, only as described in VI.A.2.b).(1).(a). ^(Core)

VI.A.2.b).(1).(a).(ii)

Hands-on wet lab work performed by post-doctoral fellows must be done under direct supervision where the supervising specialist is physically present. ^(Core)

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

the supervising specialist and/or patient is not physically present with the post-doctoral fellow and the supervising specialist is concurrently monitoring the patient care through appropriate telecommunication technology.

VI.A.2.b).(1).(b).(i)

Direct supervision through appropriate telecommunication technology must be limited to:

VI.A.2.b).(1).(b).(i).(a)

discussions with faculty members, staff members, and other health care professionals regarding report interpretations; ^(Core)

VI.A.2.b).(1).(b).(i).(b)

clinic appointments held via telehealth methods; and, ^(Core)

VI.A.2.b).(1).(b).(i).(c)

remotely viewing laboratory data in the course of interpreting results and issuing reports. ^(Core)

VI.A.2.b).(2)

Indirect Supervision: the supervising specialist is not providing physical or concurrent visual or audio supervision but is immediately available to the post-

doctoral fellow for guidance and is available to provide appropriate direct supervision.

VI.A.2.b).(3)

Oversight – the supervising specialist is available to provide review of post-doctoral fellow involvement in procedures/encounters, with feedback provided after care is delivered.

VI.A.2.c)

The program must define when physical presence of a supervising specialist is required. (Core)

VI.A.2.d)

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

VI.A.2.d).(1)

The program director must evaluate each post-doctoral fellow's abilities based on specific criteria, guided by the Milestones. (Core)

VI.A.2.d).(2)

Faculty members functioning as supervising specialists must delegate portions of care involvement to post-doctoral fellows based on contributions to care needed and the skills of each post-doctoral fellow. (Core)

VI.A.2.d).(3)

Senior post-doctoral fellows should serve in a supervisory role to junior post-doctoral fellows in recognition of their progress toward independence, based on the contributions to care needed for each patient and the skills of the individual post-doctoral fellow or fellow. (Detail)

VI.A.2.e)

Programs must set guidelines for circumstances and events in which post-doctoral fellows must communicate with the supervising faculty member(s). (Core)

VI.A.2.e).(1)

Each post-doctoral fellow must know the limits of their scope of authority, and the circumstances under which the post-doctoral fellow is permitted to act with conditional independence. (Outcome)

Background and Intent: The ACGME Glossary of Terms defines conditional independence as: Graded, progressive responsibility for patient care with defined oversight.
--

VI.A.2.f)

Faculty supervision assignments must be of sufficient duration to assess the knowledge and skills of each post-doctoral fellow and to delegate to the post-doctoral fellow the appropriate level of involvement in patient care authority and responsibility. (Core)

VI.B. Professionalism

- VI.B.1. Programs, in partnership with their Sponsoring Institutions, must educate post-doctoral fellows and faculty members concerning the professional and ethical responsibilities of specialists, including but not limited to their obligation to be appropriately rested and fit to provide the care required by their patients. ^(Core)**

Background and Intent: This requirement emphasizes the professional responsibility of post-doctoral fellows and faculty members to arrive for work adequately rested and ready to contribute to the care of patients. It is also the responsibility of post-doctoral fellows, faculty members, and other members of the care team to be observant, to intervene, and/or to escalate their concern about post-doctoral fellow and faculty member fitness for work, depending on the situation, and in accordance with institutional policies. This includes recognition of impairment, including from illness, fatigue, and substance use, in themselves, their peers, and other members of the health care team, and 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 practitioner.

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

- VI.B.2.a) be accomplished without excessive reliance on post-doctoral fellows to fulfill non-specialist obligations; ^(Core)**

Background and Intent: Routine reliance on post-doctoral fellows to fulfill non-specialist obligations increases work compression for post-doctoral fellows and does not provide an optimal educational experience. Non-specialist obligations are those duties which in most institutions are performed by nursing and allied health professionals, transport services, or clerical staff. Examples of such obligations include transport of patients from the wards or units for procedures elsewhere in the hospital; routine blood drawing for laboratory tests; routine monitoring of patients when off the ward; and clerical duties, such as scheduling. While it is understood that post-doctoral fellows may be expected to do any of these things on occasion when the need arises, these activities should not be performed by post-doctoral fellows routinely and must be kept to a minimum to optimize post-doctoral fellow education.

- VI.B.2.b) ensure manageable patient care responsibilities; and, ^(Core)**

Background and Intent: The Common Program Requirements do not define "manageable patient care responsibilities" as this is variable by specialty/subspecialty. Review Committees will provide further detail regarding patient care responsibilities in the applicable specialty- and subspecialty-specific Program Requirements and accompanying FAQs. However, all programs, regardless of specialty/subspecialty, should carefully assess how the assignment of contributions to patient care responsibilities can affect work compression, especially at the entry level.

- VI.B.2.c) include efforts to enhance the meaning that each post-doctoral fellow finds in the experience of being a specialist,**

including protecting time with patients, providing administrative support, promoting progressive independence and flexibility, and enhancing professional relationships; (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)

Background and Intent: The accurate reporting of clinical and educational work hours, patient outcomes, and clinical experience data are the responsibility of the post-doctoral fellows and faculty.

- VI.B.4. Post-doctoral fellows and faculty members must demonstrate an understanding of their personal role in the safety and welfare of patients entrusted to their care, including the ability to report unsafe conditions and safety events. (Core)

- VI.B.5. Programs, in partnership with their Sponsoring Institutions, must provide a professional, equitable, respectful, and civil environment that is psychologically safe and that is free from discrimination, sexual and other forms of harassment, mistreatment, abuse, or coercion of students, post-doctoral fellows, faculty, and staff. (Core)

Background and Intent: Psychological safety is defined as an environment of trust and respect that allows individuals to feel able to ask for help, admit mistakes, raise concerns, suggest ideas, and challenge ways of working and the ideas of others on the team, including the ideas of those in authority, without fear of humiliation, and the knowledge that mistakes will be handled justly and fairly.

The ACGME is unable to adjudicate disputes between individuals, including residents, faculty members, and staff members. However, information that suggests a pattern of behavior that violates the requirement above will trigger a careful review and, if deemed appropriate, action by the Review Committee and/or ACGME, in accordance with ACGME Policies and Procedures.

- VI.B.6. Programs, in partnership with their Sponsoring Institutions, should have a process for education of post-doctoral fellows and faculty regarding unprofessional behavior and a confidential process for reporting, investigating, and addressing such concerns. (Core)

VI.C. Well-Being

Psychological, emotional, and physical well-being are critical in the development of the competent, caring, and resilient specialist and require proactive attention to life inside and outside of medicine. Well-being requires that specialists retain the joy in medicine while managing their own real-life stresses. Self-care and responsibility to support other members of the health care team are important components of professionalism; they are also skills that must be modeled, learned, and nurtured in the context of other aspects of post-doctoral education.

Post-doctoral fellows and faculty members are at risk for burnout and depression. Programs, in partnership with their Sponsoring Institutions, have the same responsibility to address well-being as other aspects of post-doctoral fellow competence. Specialists and all members of the health care team share responsibility for the well-being of each other. A positive culture in a clinical learning environment models constructive behaviors, and prepares post-doctoral fellows with the skills and attitudes needed to thrive throughout their careers.

VI.C.1. The responsibility of the program, in partnership with the Sponsoring Institution, must include:

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

VI.C.1.b) evaluating workplace safety data and addressing the safety of post-doctoral fellows and faculty members; (Core)

Background and Intent: This requirement emphasizes the responsibility shared by the Sponsoring Institution and its programs to gather information and utilize systems that monitor and enhance post-doctoral fellow and faculty member safety, including physical safety. Issues to be addressed include, but are not limited to, monitoring of workplace injuries, physical or emotional violence, vehicle collisions, and emotional well-being after safety events.

VI.C.1.c) policies and programs that encourage optimal post-doctoral fellow and faculty member well-being; and, (Core)

Background and Intent: Well-being includes having time away from work to engage with family and friends, as well as to attend to personal needs and to one's own health, including adequate rest, healthy diet, and regular exercise. The intent of this requirement is to ensure that post-doctoral fellows have the opportunity to access medical and dental care, including mental health care, at times that are appropriate to their individual circumstances. Post-doctoral fellows must be provided with time away from the program as needed to access care, including appointments scheduled during their working hours.

VI.C.1.c).(1) Post-doctoral 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.d) education of post-doctoral fellows and faculty members in:

VI.C.1.d).(1) identification of the symptoms of burnout, depression, and substance use disorders, suicidal ideation, or potential for violence, including means to assist those who experience these conditions; (Core)

VI.C.1.d).(2) recognition of these symptoms in themselves and how to seek appropriate care; and, ^(Core)

VI.C.1.d).(3) access to appropriate tools for self-screening. ^(Core)

Background and Intent: Programs and Sponsoring Institutions are encouraged to review materials in order to create systems for identification of burnout, depression, and substance use disorder. Materials and more information are available in Learn at ACGME (<https://dl.acgme.org/pages/well-being-tools-resources>).

Individuals experiencing burnout, depression, a substance use disorder, and/or suicidal ideation are often reluctant to reach out for help due to the stigma associated with these conditions and may be concerned that seeking help may have a negative impact on their career. Recognizing that specialists are at increased risk in these areas, it is essential that post-doctoral fellows and faculty members are able to report their concerns when another post-doctoral fellow or faculty member displays signs of any of these conditions, so that the program director or other designated personnel, such as the department chair, may assess the situation and intervene as necessary to facilitate access to appropriate care. Post-doctoral fellows and faculty members must know which personnel, in addition to the program director, have been designated with this responsibility; those personnel and the program director should be familiar with the institution's impaired specialist policy and any employee health, employee assistance, and/or wellness/well-being programs within the institution. In cases of specialist impairment, the program director or designated personnel should follow the policies of their institution for reporting.

VI.C.1.e) providing 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)

Background and Intent: The intent of this requirement is to ensure that post-doctoral fellows have immediate access at all times to a mental health professional (psychiatrist, psychologist, Licensed Clinical Social Worker, Primary Mental Health Nurse Practitioner, or Licensed Professional Counselor) for urgent or emergent mental health issues. In-person, telemedicine, or telephonic means may be utilized to satisfy this requirement. Care in the Emergency Department may be necessary in some cases, but not as the primary or sole means to meet the requirement.

The reference to affordable counseling is intended to require that financial cost not be a barrier to obtaining care.

VI.C.2. There are circumstances in which post-doctoral fellows may be unable to attend work, including but not limited to fatigue, illness, family emergencies, and medical, parental, or caregiver leave. Each program must allow an appropriate length of absence for post-doctoral fellows unable to perform their patient care responsibilities. ^(Core)

VI.C.2.a) The program must have policies and procedures in place to ensure coverage of their contributions to patient care and ensure continuity of patient care. ^(Core)

VI.C.2.b) These policies must be implemented without fear of negative consequences for the post-doctoral fellow who is or was unable to provide the clinical work. ^(Core)

Background and Intent: Post-doctoral fellows may need to extend their length of training depending on length of absence and specialty board eligibility requirements. Teammates should assist colleagues in need and equitably reintegrate them upon return.

VI.D. Fatigue Mitigation

VI.D.1. Programs must educate all post-doctoral fellows and faculty members in recognition of the signs of fatigue and sleep deprivation, alertness management, and fatigue mitigation processes. ^(Detail)

Background and Intent: Contributing to medical care is physically and mentally demanding. Night shifts, even for those who have had enough rest, cause fatigue. Experiencing fatigue in a supervised environment during training prepares post-doctoral fellows for managing fatigue in practice. It is expected that programs adopt fatigue mitigation processes and ensure that there are no negative consequences and/or stigma for using fatigue mitigation strategies.

Strategies that may be used include, but are not limited to, strategic napping; the judicious use of caffeine; availability of other caregivers; time management to maximize sleep off-duty; learning to recognize the signs of fatigue, and self-monitoring performance and/or asking others to monitor performance; remaining active to promote alertness; maintaining a healthy diet; using relaxation techniques to fall asleep; maintaining a consistent sleep routine; exercising regularly; increasing sleep time before and after call; and ensuring sufficient sleep recovery periods.

VI.D.2. The program, in partnership with its Sponsoring Institution, must ensure adequate sleep facilities and safe transportation options for post-doctoral 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 care contributions for each post-doctoral fellow must be based on PGY level, patient safety, post-doctoral fellow ability, severity and complexity of patient illness/condition, and available support services. ^(Core)

Background and Intent: The changing clinical care environment of medicine has meant that work compression due to high complexity has increased stress on post-doctoral fellows. Faculty members and program directors need to make sure post-doctoral fellows function in an environment that allows them to safely contribute to patient care and have a sense of post-doctoral fellow well-being. It is an essential responsibility of the program director to monitor post-doctoral fellow workload. Workload should be distributed among the post-doctoral fellow team and interdisciplinary teams to minimize work compression.

VI.E.2. Teamwork

Post-doctoral fellows must contribute to care for patients in an environment that maximizes communication and promotes safe, interprofessional, team-based care in the specialty and larger health system. *(Core)*

Background and Intent: Effective programs will have a structure that promotes safe, interprofessional, team-based care. Optimal patient safety occurs in the setting of a coordinated interprofessional learning and working environment.

VI.E.3. Transitions of Care

VI.E.3.a) Programs must design clinical assignments to optimize transitions in patient care involvement, 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-off processes to facilitate both continuity of care and patient safety. *(Core)*

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

VI.F. Clinical Experience and Education

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

Background and Intent: The terms “clinical experience and education,” “clinical and educational work,” and “clinical and educational work hours” replace the terms “duty hours,” “duty periods,” and “duty.” These terms are used in response to concerns that the previous use of the term “duty” in reference to number of hours worked may have led some to conclude that post-doctoral fellows’ duty to “clock out” on time superseded their duty to their patients.

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)

Background and Intent: Programs and post-doctoral fellows have a shared responsibility to ensure that the 80-hour maximum weekly limit is not exceeded. While the requirement has been written with the intent of allowing post-doctoral fellows to remain beyond their scheduled work periods to contribute to patient care or participate in an educational activity, these additional hours must be accounted for in the allocated 80 hours when averaged over four weeks.

Work from Home

While the requirement specifies that clinical work done from home must be counted toward the 80-hour maximum weekly limit, the expectation remains that scheduling be structured so that post-doctoral fellows are able to complete most work on site during scheduled clinical work hours without requiring them to take work home. The requirements acknowledge the changing landscape of medicine, including electronic health records, and the resulting increase in the amount of work post-doctoral fellows choose to do from home. The requirement provides flexibility for post-doctoral fellows to do this while ensuring that the time spent by post-doctoral fellows completing clinical work from home is accomplished within the 80-hour weekly maximum. Types of work from home that must be counted include using an electronic health record and taking calls from home. Reading done in preparation for the following day's cases, studying, and research done from home do not count toward the 80 hours. Post-doctoral fellow decisions to leave the hospital before their clinical work has been completed and to finish that work later from home should be made in consultation with the post-doctoral fellow's supervisor. In such circumstances, post-doctoral fellows should be mindful of their professional responsibility to complete work in a timely manner and to maintain patient confidentiality.

Post-doctoral fellows are to track the time they spend on clinical contributions from home and to report that time to the program. Decisions regarding whether to report infrequent phone calls of very short duration will be left to the individual post-doctoral fellow. Programs will need to factor in time post-doctoral fellows are spending on clinical work at home when schedules are developed to ensure that post-doctoral fellows are not working in excess of 80 hours per week, averaged over four weeks. There is no requirement that programs assume responsibility for documenting this time. Rather, the program's responsibility is ensuring that post-doctoral fellows report their time from home and that schedules are structured to ensure that post-doctoral fellows are not working in excess of 80 hours per week, averaged over four weeks.

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

VI.F.2.a) Post-doctoral fellows should have eight hours off between scheduled clinical work and education periods. ^(Detail)

Background and Intent: There may be circumstances when post-doctoral fellows choose to stay to contribute to the care of patients or return to the hospital with fewer

than eight hours free of clinical experience and education. This occurs within the context of the 80-hour and the one-day-off-in-seven requirements. While it is expected that post-doctoral fellow schedules will be structured to ensure that post-doctoral fellows are provided with a minimum of eight hours off between scheduled work periods, it is recognized that post-doctoral fellows may choose to remain beyond their scheduled time, or return to the clinical site during this time-off period, to care for a patient. The requirement preserves the flexibility for post-doctoral fellows to make those choices. It is also noted that the 80-hour weekly limit (averaged over four weeks) is a deterrent for scheduling fewer than eight hours off between clinical and education work periods, as it would be difficult for a program to design a schedule that provides fewer than eight hours off without violating the 80-hour rule.

- VI.F.2.b)** **Post-doctoral fellows must have at least 14 hours free of clinical work and education after 24 hours of in-house call.**
(Core)

Background and Intent: Post-doctoral fellows have a responsibility to return to work rested, and thus are expected to use this time away from work to get adequate rest. In support of this goal, post-doctoral fellows are encouraged to prioritize sleep over other discretionary activities.

- VI.F.2.c)** **Post-doctoral 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)

Background and Intent: The requirement provides flexibility for programs to distribute days off in a manner that meets program and post-doctoral fellow needs. It is strongly recommended that post-doctoral fellows' preference regarding how their days off are distributed be considered as schedules are developed. It is desirable that days off be distributed throughout the month, but some post-doctoral fellows may prefer to group their days off to have a "golden weekend," meaning a consecutive Saturday and Sunday free from work. The requirement for one free day in seven should not be interpreted as precluding a golden weekend. Where feasible, schedules may be designed to provide post-doctoral fellows with a weekend, or two consecutive days, free of work. The applicable Review Committee will evaluate the number of consecutive days of work and determine whether they meet educational objectives. Programs are encouraged to distribute days off in a fashion that optimizes post-doctoral fellow well-being, and educational and personal goals. It is noted that a day off is defined in the ACGME Glossary of Terms as "one (1) continuous 24-hour period free from all administrative, clinical, and educational activities."

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

- VI.F.3.a)** **Clinical and educational work periods for post-doctoral 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 post-doctoral fellow education. Additional patient care responsibilities must not be assigned to a post-doctoral fellow during this time. ^(Core)

Background and Intent: The additional time referenced in VI.F.3.a).(1) should not be used for contributions to the care of new patients. It is essential that the post-doctoral fellow continue to function as a member of the team in an environment where other members of the team can assess post-doctoral fellow fatigue, and that supervision for post-call post-doctoral fellows is provided. This 24 hours and up to an additional four hours must occur within the context of 80-hour weekly limit, averaged over four weeks.

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

VI.F.4.a) In rare circumstances, after handing off all other responsibilities, a post-doctoral fellow, on their own initiative, may elect to remain or return to the clinical site in the following circumstances: to continue to help provide care to a single severely ill or unstable patient; to give humanistic attention to the needs of a patient or patient's family; or to attend unique educational events. ^(Detail)

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

Background and Intent: This requirement is intended to provide post-doctoral fellows with some control over their schedules by providing the flexibility to voluntarily remain beyond the scheduled responsibilities under the circumstances described above. It is important to note that a post-doctoral fellow may remain to attend a conference, or return for a conference later in the day, only if the decision is made voluntarily. Post-doctoral fellows must not be required to stay. Programs allowing post-doctoral fellows to remain or return beyond the scheduled work and clinical education period must ensure that the decision to remain is initiated by the post-doctoral fellow and that post-doctoral fellows are not coerced. This additional time must be counted toward the 80-hour maximum weekly limit.

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 a post-doctoral fellow's work week.

VI.F.5. Moonlighting

VI.F.5.a) Moonlighting must not interfere with the ability of the post-doctoral fellow to achieve the goals and objectives of the educational program, and must not interfere with the post-

doctoral fellow's fitness for work nor compromise patient safety. (Core)

VI.F.5.b) Time spent by post-doctoral 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.5.c) PGY-1 post-doctoral fellows are not permitted to moonlight. (Core)

Background and Intent: For additional clarification of the expectations related to moonlighting, please refer to the Common Program Requirement FAQs (available at <http://www.acgme.org/What-We-Do/Accreditation/Common-Program-Requirements>).

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

Post-doctoral 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 post-doctoral 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 post-doctoral fellow. (Core)

Background and Intent: As noted in VI.F.1., clinical work done from home when a post-doctoral fellow is taking at-home call must count toward the 80-hour maximum weekly limit. This acknowledges the often significant amount of time post-doctoral fellows devote to clinical activities when taking at-home call, and ensures that taking at-home call does not result in post-doctoral fellows routinely working more than 80 hours per week. At-home call activities that must be counted include responding to phone calls and other forms of communication, as well as documentation, such as entering notes in an electronic health record. Activities such as reading about the next day's case, studying, or research activities do not count toward the 80-hour weekly limit.

In their evaluation of post-doctoral education programs, Review Committees will look at the overall impact of at-home call on post-doctoral fellow rest and personal time.