



**Accreditation Council for
Graduate Medical Education**

ACGME Program Requirements for Graduate Medical Education in Diagnostic Radiology

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Common Program Requirements are in **BOLD**

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

Introduction

Int.A. Residency is an essential dimension of the transformation of the medical student to the independent practitioner along the continuum of medical education. It is physically, emotionally, and intellectually demanding, and requires longitudinally-concentrated effort on the part of the resident.

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

Int.B. Definition and Scope of the Specialty

Diagnostic radiology encompasses image-based diagnosis and image-guided therapeutic techniques, and includes but is not limited to: computed tomography (CT); interventional procedures; magnetic resonance imaging (MRI); medical physics; nuclear radiology and molecular imaging; radiography/fluoroscopy; ultrasonography; and radiology quality and safety.

Diagnostic radiology educational content includes, but is not limited to, diagnostic imaging and related image-guided interventions in the following 10 categories: breast; cardiac; gastrointestinal; musculoskeletal; neurologic; pediatric; reproductive and endocrine; thoracic; urinary; and vascular.

Int.C. The educational program in diagnostic radiology must be 48 months in length.
(Core)

I. Institutions

I.A. Sponsoring Institution

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

(Core)

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

- I.A.1. There must be support for at least one associate/assistant program director for programs with resident complements of 32 or more. (Core)
- I.A.2. The program director and, if applicable, the associate/assistant program director(s), must be provided appropriate protected time to fulfill the responsibilities essential to meeting the educational goals of the program. (Core)

This protected time must total at least:

- I.A.2.a) 0.3 full-time equivalent (FTE) for programs approved for eight to 15 residents; (Core)
- I.A.2.b) 0.4 FTE for programs approved for 16 to 23 residents; (Core)
- I.A.2.c) 0.5 FTE for programs approved for 24 to 31 residents; (Core)
- I.A.2.d) 0.6 FTE for programs approved for 32 to 39 residents; (Core)
- I.A.2.e) 0.7 FTE for programs approved for 40 to 47 residents; (Core)
- I.A.2.f) 0.8 FTE for programs approved for 48 to 55 residents; (Core)
- I.A.2.g) 0.9 FTE for programs approved for 56 to 63 residents; (Core)
- I.A.2.h) 1.0 FTE for programs approved for 64 to 71 residents; and, (Core)
- I.A.2.i) 1.1 FTE for programs approved for 72 or more residents. (Core)

- I.A.3. The program must have a dedicated residency program coordinator who must be provided sufficient time and support to fulfill the responsibilities essential to meeting the educational goals and administrative duties of the program. (Core)

This support must be provided as follows:

- I.A.3.a) Programs approved for eight to 24 residents must have at least 1.0 FTE program coordinator support. (Core)

I.A.3.b) Programs approved for 25 to 39 residents must have at least 1.50 FTE program coordinator support. ^(Core)

I.A.3.c) Programs approved for 40 or more residents must have at least 2.0 FTE program coordinator support. ^(Core)

I.B. Participating Sites

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

The PLA should:

I.B.1.a) identify the faculty who will assume both educational and supervisory responsibilities for residents; ^(Detail)

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

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

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

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

I.B.3. Diagnostic radiology education should occur in environments with other residents and/or fellows from other specialties at the Sponsoring Institution and/or participating sites to facilitate the interchange of knowledge and experience among the residents. ^(Detail)

I.B.4. Programs with multiple participating sites must ensure the provision of a cohesive educational experience. ^(Core)

I.B.5. Each participating site must offer meaningful educational opportunities that enrich the overall program. ^(Core)

II. Program Personnel and Resources

II.A. Program Director

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

- II.A.1.a) The program director must submit this change to the ACGME via the ADS.** ^(Core)
- II.A.1.b) In addition to program administration, the program director should maintain an active practice in radiology. ^(Detail)
- II.A.2. The program director should continue in his or her position for a length of time adequate to maintain continuity of leadership and program stability.** ^(Detail)
- II.A.3. Qualifications of the program director must include:**
- II.A.3.a) requisite specialty expertise and documented educational and administrative experience acceptable to the Review Committee;** ^(Core)
- II.A.3.b) current certification in the specialty by the American Board of Radiology (ABR), or specialty qualifications that are acceptable to the Review Committee;** ^(Core)
- II.A.3.b).(1) Current certification in diagnostic radiology by the American Osteopathic Board of Radiology (AOBR) is acceptable to the Review Committee. ^(Core)
- II.A.3.c) current medical licensure and appropriate medical staff appointment; and,** ^(Core)
- II.A.3.d) at least three years' experience as a faculty member in an ACGME-accredited program. ^(Core)
- II.A.4. The program director must administer and maintain an educational environment conducive to educating the residents in each of the ACGME competency areas.** ^(Core)
- The program director must:**
- II.A.4.a) oversee and ensure the quality of didactic and clinical education in all sites that participate in the program;** ^(Core)
- II.A.4.b) approve a local director at each participating site who is accountable for resident education;** ^(Core)
- II.A.4.c) approve the selection of program faculty as appropriate;** ^(Core)
- II.A.4.d) evaluate program faculty;** ^(Core)
- II.A.4.e) approve the continued participation of program faculty based on evaluation;** ^(Core)
- II.A.4.f) monitor resident supervision at all participating sites;** ^(Core)

- II.A.4.g)** prepare and submit all information required and requested by the ACGME. ^(Core)
- II.A.4.g).(1)** This includes but is not limited to the program application forms and annual program updates to the ADS, and ensure that the information submitted is accurate and complete. ^(Core)
- II.A.4.h)** ensure compliance with grievance and due process procedures as set forth in the Institutional Requirements and implemented by the sponsoring institution; ^(Detail)
- II.A.4.i)** provide verification of residency education for all residents, including those who leave the program prior to completion; ^(Detail)
- II.A.4.j)** implement policies and procedures consistent with the institutional and program requirements for resident duty hours and the working environment, including moonlighting, ^(Core)
- and, to that end, must:
- II.A.4.j).(1)** distribute these policies and procedures to the residents and faculty; ^(Detail)
- II.A.4.j).(2)** monitor resident duty hours, according to sponsoring institutional policies, with a frequency sufficient to ensure compliance with ACGME requirements; ^(Core)
- II.A.4.j).(3)** adjust schedules as necessary to mitigate excessive service demands and/or fatigue; and, ^(Detail)
- II.A.4.j).(4)** if applicable, monitor the demands of at-home call and adjust schedules as necessary to mitigate excessive service demands and/or fatigue. ^(Detail)
- II.A.4.k)** monitor the need for and ensure the provision of back up support systems when patient care responsibilities are unusually difficult or prolonged; ^(Detail)
- II.A.4.l)** comply with the sponsoring institution's written policies and procedures, including those specified in the Institutional Requirements, for selection, evaluation and promotion of residents, disciplinary action, and supervision of residents; ^(Detail)
- II.A.4.m)** be familiar with and comply with ACGME and Review Committee policies and procedures as outlined in the ACGME Manual of Policies and Procedures; ^(Detail)

- II.A.4.n) obtain review and approval of the sponsoring institution's GMC/DIO before submitting information or requests to the ACGME, including:** ^(Core)
- II.A.4.n).(1) all applications for ACGME accreditation of new programs;** ^(Detail)
- II.A.4.n).(2) changes in resident complement;** ^(Detail)
- II.A.4.n).(3) major changes in program structure or length of training;** ^(Detail)
- II.A.4.n).(4) progress reports requested by the Review Committee;** ^(Detail)
- II.A.4.n).(5) requests for increases or any change to resident duty hours;** ^(Detail)
- II.A.4.n).(6) voluntary withdrawals of ACGME-accredited programs;** ^(Detail)
- II.A.4.n).(7) requests for appeal of an adverse action; and,** ^(Detail)
- II.A.4.n).(8) appeal presentations to a Board of Appeal or the ACGME.** ^(Detail)
- II.A.4.o) obtain DIO review and co-signature on all program application forms, as well as any correspondence or document submitted to the ACGME that addresses:** ^(Detail)
- II.A.4.o).(1) program citations, and/or,** ^(Detail)
- II.A.4.o).(2) request for changes in the program that would have significant impact, including financial, on the program or institution.** ^(Detail)
- II.A.4.p) review resident procedural experiences at least annually to ensure complete and accurate tracking in the ACGME Case Log System throughout all 48 months of residency;** ^(Core)
- II.A.4.q) participate in faculty development activities facilitated by GME organizations and/or meetings;** ^(Detail)
- II.A.4.r) if applicable, meet at least semi-annually with the program director of the ACGME-accredited interventional radiology program to ensure a cohesive educational experience for all diagnostic radiology and interventional radiology residents; and,** ^(Core)
- II.A.4.s) adhere to all guidelines for Early Specialization in Interventional Radiology, if applicable.** ^(Core)

II.B. Faculty

II.B.1. At each participating site, there must be a sufficient number of faculty with documented qualifications to instruct and supervise all residents at that location. ^(Core)

The faculty must:

II.B.1.a) devote sufficient time to the educational program to fulfill their supervisory and teaching responsibilities; and to demonstrate a strong interest in the education of residents, and ^(Core)

II.B.1.b) administer and maintain an educational environment conducive to educating residents in each of the ACGME competency areas. ^(Core)

II.B.1.b).(1) Faculty members must review all resident interpreted studies. ^(Core)

II.B.1.b).(1).(a) Faculty members should sign and verify these reports within 24 hours. ^(Detail)

II.B.1.b).(2) Faculty members must always be available when residents are on call after hours, on weekends, or on holidays. ^(Core)

II.B.2. The physician faculty must have current certification in the specialty by the American Board of Radiology, or possess qualifications judged acceptable to the Review Committee. ^(Core)

II.B.2.a) Other faculty qualifications acceptable to the Review Committee include certification by other American Board of Medical Specialties (ABMS) member boards, the AOBMR, or other American Osteopathic Association (AOA) certifying boards. ^(Core)

II.B.2.b) There must be at least eight core physician faculty members. ^(Core)

II.B.2.b).(1) There must be a core physician faculty member in each of the following practice domains:

II.B.2.b).(1).(a) abdominal (gastrointestinal and genitourinary) radiology; ^(Core)

II.B.2.b).(1).(b) breast radiology; ^(Core)

II.B.2.b).(1).(c) cardiothoracic (cardiac and thoracic) radiology; ^(Core)

II.B.2.b).(1).(d) interventional radiology; ^(Core)

II.B.2.b).(1).(e) musculoskeletal radiology; ^(Core)

- II.B.2.b).(1).(f) neuroradiology; ^(Core)
- II.B.2.b).(1).(g) nuclear radiology and molecular imaging; and, ^(Core)
- II.B.2.b).(1).(h) pediatric radiology. ^(Core)
- II.B.2.b).(2) Each core faculty member must be responsible for the educational content of his or her respective practice domain, and must organize conferences that cover topics in that domain. ^(Core)
- II.B.2.b).(3) Core faculty members must not have primary responsibility for the educational content of more than one practice domain, but may have clinical responsibilities and/or teaching responsibilities in multiple practice domains. ^(Core)
- II.B.2.b).(4) Core faculty members must devote at least 0.50 percent FTE in their practice domain. ^(Core)
- II.B.2.b).(5) Each core faculty member must demonstrate a commitment to his or her practice domain. ^(Core)
- II.B.2.b).(5).(a) Such commitment should be demonstrated by any two of the following: ^(Detail)
- II.B.2.b).(5).(a).(i) specialty/subspecialty certification in the practice domain, fellowship training, or three years of practice in the domain; ^(Detail)
- II.B.2.b).(5).(a).(ii) active participation in specialty/subspecialty societies, including CME activities in the practice domain; ^(Detail)
- II.B.2.b).(5).(a).(iii) publications or presentations in the specialty/subspecialty practice domain; or, ^(Detail)
- II.B.2.b).(5).(a).(iv) participation in Maintenance of Certification with emphasis on the specialty/subspecialty practice domain. ^(Detail)
- II.B.2.c) In addition to the practice domains, there should be designated physician faculty members with expertise in and responsibility for developing didactic content in the following educational content areas:
- II.B.2.c).(1) CT; ^(Detail)
- II.B.2.c).(2) MRI; ^(Detail)

- II.B.2.c).(3) radiography/fluoroscopy; ^(Detail)
- II.B.2.c).(4) reproductive/endocrine imaging; ^(Detail)
- II.B.2.c).(5) ultrasonography; and, ^(Detail)
- II.B.2.c).(6) vascular imaging. ^(Detail)
- II.B.2.d) There should be physician faculty, non-physician faculty, or other staff members available to the program, within the institution, with expertise in quality, safety, and informatics. ^(Detail)
- II.B.2.d).(1) These faculty or staff members should develop didactic content related to their area of expertise. ^(Detail)
- II.B.3. The physician faculty must possess current medical licensure and appropriate medical staff appointment. ^(Core)**
- II.B.4. The nonphysician faculty must have appropriate qualifications in their field and hold appropriate institutional appointments. ^(Core)**
- II.B.5. The faculty must establish and maintain an environment of inquiry and scholarship with an active research component. ^(Core)**
- II.B.5.a) The faculty must regularly participate in organized clinical discussions, rounds, journal clubs, and conferences. ^(Detail)**
- II.B.5.b) Some members of the faculty should also demonstrate scholarship by one or more of the following:**
- II.B.5.b).(1) peer-reviewed funding; ^(Detail)**
- II.B.5.b).(2) publication of original research or review articles in peer reviewed journals, or chapters in textbooks; ^(Detail)**
- II.B.5.b).(3) publication or presentation of case reports or clinical series at local, regional, or national professional and scientific society meetings; or, ^(Detail)**
- II.B.5.b).(4) participation in national committees or educational organizations. ^(Detail)**
- II.B.5.c) Faculty should encourage and support residents in scholarly activities. ^(Core)**
- II.C. Other Program Personnel**
- The institution and the program must jointly ensure the availability of all necessary professional, technical, and clerical personnel for the effective administration of the program. ^(Core)**

II.D. Resources

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

- II.D.1. The program must provide adequate space, necessary equipment, and modern facilities to ensure an effective educational experience for residents in all of the specialty/subspecialty rotations in diagnostic radiology. ^(Core)
- II.D.2. The program must ensure a sufficient volume and variety of pediatric and adult patients for residents to gain experience in the full spectrum of radiological examinations, procedures, and interpretations. ^(Core)
- II.D.2.a) The program must have at least 7,000 radiological examinations per year per resident in both the diagnostic radiology program and in the PGY-2-4 years of the integrated interventional radiology program, if applicable. ^(Core)

II.E. Medical Information Access

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

III. Resident Appointments

III.A. Eligibility Criteria

The program director must comply with the criteria for resident eligibility as specified in the Institutional Requirements. ^(Core)

III.A.1. Eligibility Requirements – Residency Programs

- III.A.1.a) **All prerequisite post-graduate clinical education required for initial entry or transfer into ACGME-accredited residency programs must be completed in ACGME-accredited residency programs, or in Royal College of Physicians and Surgeons of Canada (RCPSC)-accredited or College of Family Physicians of Canada (CFPC)-accredited residency programs located in Canada. Residency programs must receive verification of each applicant's level of competency in the required clinical field using ACGME or CanMEDS Milestones assessments from the prior training program.** ^(Core)

III.A.1.a).(1) Prerequisite Training

To be eligible for appointment to the program, residents must have successfully completed a prerequisite year of

direct patient care in a program accredited by the ACGME, RCPSC, or CFPC in emergency medicine, family medicine, internal medicine, neurology, obstetrics and gynecology, pediatrics, surgery or surgical specialties, the transitional year, or any combination of these. ^(Core)

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

During the prerequisite year, elective rotations in diagnostic radiology or interventional radiology must only occur in radiology departments with an ACGME-accredited diagnostic radiology or interventional radiology residency program, or an RCPSC-accredited diagnostic radiology residency program, and must not exceed a combined total of two months. ^(Core)

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

The program director must verify that residents accepted into the program have successfully completed a prerequisite year. ^(Core)

III.A.1.b)

A physician who has completed a residency program that was not accredited by ACGME, RCPSC, or CFPC may enter an ACGME-accredited residency program in the same specialty at the PGY-1 level and, at the discretion of the program director at the ACGME-accredited program may be advanced to the PGY-2 level based on ACGME Milestones assessments at the ACGME-accredited program. This provision applies only to entry into residency in those specialties for which an initial clinical year is not required for entry. ^(Core)

III.A.1.c)

A Review Committee may grant the exception to the eligibility requirements specified in Section III.A.2.b) for residency programs that require completion of a prerequisite residency program prior to admission. ^(Core)

III.A.1.d)

Review Committees will grant no other exceptions to these eligibility requirements for residency education. ^(Core)

III.A.2.

Eligibility Requirements – Fellowship Programs

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

III.A.2.a)

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

III.A.2.b)

Fellow Eligibility Exception

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

An ACGME-accredited fellowship program may accept an exceptionally qualified applicant, who does not satisfy the eligibility requirements listed in Sections III.A.2. and III.A.2.a), but who does meet all of the following additional qualifications and conditions: ^(Core)**

- III.A.2.b).(1) Assessment by the program director and fellowship selection committee of the applicant's suitability to enter the program, based on prior training and review of the summative evaluations of training in the core specialty; and ^(Core)**
- III.A.2.b).(2) Review and approval of the applicant's exceptional qualifications by the GMEC or a subcommittee of the GMEC; and ^(Core)**
- III.A.2.b).(3) Satisfactory completion of the United States Medical Licensing Examination (USMLE) Steps 1, 2, and, if the applicant is eligible, 3, and; ^(Core)**
- III.A.2.b).(4) For an international graduate, verification of Educational Commission for Foreign Medical Graduates (ECFMG) certification; and, ^(Core)**
- III.A.2.b).(5) Applicants accepted by this exception must complete fellowship Milestones evaluation (for the purposes of establishment of baseline performance by the Clinical Competency Committee), conducted by the receiving fellowship program within six weeks of matriculation. This evaluation may be waived for an applicant who has completed an ACGME International-accredited residency based on the applicant's Milestones evaluation conducted at the conclusion of the residency program. ^(Core)**
- III.A.2.b).(5).(a) If the trainee does not meet the expected level of Milestones competency following entry into the fellowship program, the trainee must undergo a period of remediation, overseen by the Clinical Competency Committee and monitored by the GMEC or a subcommittee of the GMEC. This period of remediation must not count toward time in fellowship training. ^(Core)**

**** An exceptionally qualified applicant has (1) completed a non-ACGME-accredited residency program in the core specialty, and (2) demonstrated clinical excellence, in**

comparison to peers, throughout training. Additional evidence of exceptional qualifications is required, which may include one of the following: (a) participation in additional clinical or research training in the specialty or subspecialty; (b) demonstrated scholarship in the specialty or subspecialty; (c) demonstrated leadership during or after residency training; (d) completion of an ACGME-International-accredited residency program.

III.B. Number of Residents

The program's educational resources must be adequate to support the number of residents appointed to the program. ^(Core)

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

III.B.2. The program must appoint a minimum of eight residents. ^(Core)

III.B.3. Prior approval by the Review Committee must be obtained for a change in the approved resident complement. ^(Core)

III.C. Resident Transfers

III.C.1. Before accepting a resident who is transferring from another program, the program director must obtain written or electronic verification of previous educational experiences and a summative competency-based performance evaluation of the transferring resident. ^(Detail)

III.C.2. A program director must provide timely verification of residency education and summative performance evaluations for residents who may leave the program prior to completion. ^(Detail)

III.C.3. The program director must conduct a Milestones assessment of a resident's clinical competence within three months of transfer into the program. ^(Core)

III.C.4. Resident transfers from ACGME-accredited integrated interventional radiology programs into diagnostic radiology programs must be limited to transfers within the same Sponsoring Institution and must meet the following qualifications for transfer: ^(Core)

III.C.4.a) Transfers into the PGY-3 or PGY-4 level must be from the equivalent level in the integrated interventional radiology program. ^(Core)

III.C.4.b) Residents transferring into the PGY-5 level must have taken or be eligible to take the ABR Core Examination. ^(Core)

III.D. Appointment of Fellows and Other Learners

The presence of other learners (including, but not limited to, residents from other specialties, subspecialty fellows, PhD students, and nurse practitioners) in the program must not interfere with the appointed residents' education. ^(Core)

III.D.1. The program director must report the presence of other learners to the DIO and GMEC in accordance with sponsoring institution guidelines. ^(Detail)

III.D.2. The educational opportunities available to diagnostic radiology residents must not be diluted or detracted by the presence of interventional radiology residents. ^(Core)

IV. Educational Program

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

IV.A.1. Overall educational goals for the program, which the program must make available to residents and faculty; ^(Core)

IV.A.2. Competency-based goals and objectives for each assignment at each educational level, which the program must distribute to residents and faculty at least annually, in either written or electronic form; ^(Core)

IV.A.3. Regularly scheduled didactic sessions; ^(Core)

IV.A.3.a) The core didactic curriculum:

IV.A.3.a).(1) must be repeated at least every two years; ^(Core)

IV.A.3.a).(2) must provide at least five hours per week of lectures and conferences; ^(Core)

IV.A.3.a).(3) must include interactive conferences; ^(Core)

IV.A.3.a).(4) must be documented; and, ^(Core)

IV.A.3.a).(5) should include interdepartmental conferences in which both residents and faculty members participate on a regular basis. ^(Detail)

IV.A.3.b) Residents must be provided protected time to attend lectures and conferences scheduled by the program. ^(Core)

IV.A.3.c) The program must provide mechanisms for residents to participate in all scheduled lectures and conferences either in-person or by electronic means. ^(Core)

- IV.A.3.d) The program should document resident conference attendance for all 48 months of the educational program. ^(Detail)
- IV.A.3.e) The didactic curriculum must include:
- IV.A.3.e).(1) anatomy, disease processes, imaging, and physiology; ^(Core)
- IV.A.3.e).(2) specialty/subspecialty clinical and general content; ^(Core)
- IV.A.3.e).(3) topics related to professionalism, physician well-being, diversity, and ethics; ^(Core)
- IV.A.3.e).(4) training in the clinical application of medical physics, distributed throughout the 48 months of the educational program; and, ^(Core)
- IV.A.3.e).(4).(a) A medical physicist must oversee the development of the physics curriculum. ^(Core)
- IV.A.3.e).(4).(b) The curriculum should include real-time expert discussions and interactive educational experiences. ^(Detail)
- IV.A.3.e).(5) a minimum of 80 hours of classroom and laboratory training in basic radionuclide handling techniques applicable to the medical use of unsealed byproduct material for imaging and localization studies (10 CFR 35.290) and oral administration of sodium iodide I-131 for procedures requiring a written directive (10 CFR 35.392, 10 CFR 35.394). ^(Core)
- IV.A.3.e).(5).(a) Integral to the practice of nuclear radiology, these didactics must include, at a minimum, the following subjects:
- IV.A.3.e).(5).(a).(i) radiation physics and instrumentation; ^(Core)
- IV.A.3.e).(5).(a).(ii) radiation protection; ^(Core)
- IV.A.3.e).(5).(a).(iii) mathematics pertaining to use and measurement of radioactivity; ^(Core)
- IV.A.3.e).(5).(a).(iv) chemistry of by-product material for medical use; and, ^(Core)
- IV.A.3.e).(5).(a).(v) radiation biology. ^(Core)
- IV.A.4. Delineation of resident responsibilities for patient care, progressive responsibility for patient management, and supervision of residents over the continuum of the program; and, ^(Core)**

IV.A.5. ACGME Competencies

The program must integrate the following ACGME competencies into the curriculum: ^(Core)

IV.A.5.a) Patient Care and Procedural Skills

IV.A.5.a).(1) Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. Residents: ^(Outcome)

IV.A.5.a).(1).(a) should demonstrate competent patient care through safe, efficient, appropriately utilized, quality-controlled diagnostic and/or interventional radiological techniques. ^(Outcome)

IV.A.5.a).(2) Residents must be able to competently perform all medical, diagnostic, and surgical procedures considered essential for the area of practice. Residents: ^(Outcome)

must demonstrate competence in the:

IV.A.5.a).(2).(a) performance of basic image-guided procedures; ^(Outcome)

IV.A.5.a).(2).(b) interpretation of CT, MRI, radiography, and radionuclide imaging of the cardiovascular system (heart and great vessels); ^(Outcome)

IV.A.5.a).(2).(c) generation of ultrasound images using the transducer and imaging system, and interpretation of ultrasonographic examinations of various types; ^(Outcome)

IV.A.5.a).(2).(c).(i) Residents should have sufficient hands-on scanning experience. ^(Detail)

IV.A.5.a).(2).(c).(ii) Programs should incorporate a process to document resident proficiency of ultrasonographic skills. ^(Detail)

IV.A.5.a).(2).(d) management of contrast reactions; and, ^(Outcome)

IV.A.5.a).(2).(e) ongoing awareness of radiation exposure, protection, and safety, and the application of these principles in practice. ^(Outcome)

IV.A.5.b) Medical Knowledge

Residents must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care. Residents: ^(Outcome)

must demonstrate knowledge of:

- IV.A.5.b).(1) the principles of medical imaging physics, including CT, dual-energy X-ray absorptiometry, fluoroscopy, gamma camera and hybrid imaging technologies, MRI, radiography, and ultrasonography ; ^(Outcome)
- IV.A.5.b).(2) non-interpretive skills, including health care economics, coding and billing compliance, and the business of medicine; ^(Outcome)
- IV.A.5.b).(3) appropriate and patient-centered imaging utilization; ^(Outcome)
- IV.A.5.b).(4) quality improvement techniques; ^(Outcome)
- IV.A.5.b).(5) radiologic/pathologic correlation; and, ^(Outcome)
- IV.A.5.b).(6) physiology, utilization, and safety of contrast agents and pharmaceuticals. ^(Outcome)

IV.A.5.c)

Practice-based Learning and Improvement

Residents must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life-long learning. ^(Outcome)

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

- IV.A.5.c).(1) identify strengths, deficiencies, and limits in one's knowledge and expertise;** ^(Outcome)
- IV.A.5.c).(2) set learning and improvement goals;** ^(Outcome)
- IV.A.5.c).(3) identify and perform appropriate learning activities;** ^(Outcome)
- IV.A.5.c).(4) systematically analyze practice using quality improvement methods, and implement changes with the goal of practice improvement;** ^(Outcome)
- IV.A.5.c).(5) incorporate formative evaluation feedback into daily**

practice; (Outcome)

IV.A.5.c).(6) locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems; (Outcome)

IV.A.5.c).(7) use information technology to optimize learning; and, (Outcome)

IV.A.5.c).(8) participate in the education of patients, families, students, residents and other health professionals. (Outcome)

IV.A.5.d) Interpersonal and Communication Skills

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

Residents are expected to:

IV.A.5.d).(1) communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds; (Outcome)

IV.A.5.d).(1).(a) Residents must demonstrate competence in obtaining informed consent and effectively describing imaging appropriateness, safety issues, and the results of diagnostic imaging and procedures to patients. (Outcome)

IV.A.5.d).(2) communicate effectively with physicians, other health professionals, and health related agencies; (Outcome)

IV.A.5.d).(2).(a) Residents must demonstrate competence in communicating the results of examinations and procedures to the referring provider and/or other appropriate individuals effectively and in a timely manner. (Outcome)

IV.A.5.d).(3) work effectively as a member or leader of a health care team or other professional group; (Outcome)

IV.A.5.d).(4) act in a consultative role to other physicians and health professionals; (Outcome)

IV.A.5.d).(5) maintain comprehensive, timely, and legible medical records, if applicable; and, (Outcome)

IV.A.5.d).(6) supervise, provide consultation to, and teach medical

students and/or residents. (Outcome)

IV.A.5.e)

Professionalism

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

Residents are expected to demonstrate:

IV.A.5.e).(1)

compassion, integrity, and respect for others; (Outcome)

IV.A.5.e).(2)

responsiveness to patient needs that supersedes self-interest; (Outcome)

IV.A.5.e).(3)

respect for patient privacy and autonomy; (Outcome)

IV.A.5.e).(4)

accountability to patients, society and the profession; (Outcome)

IV.A.5.e).(5)

sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation; and, (Outcome)

IV.A.5.e).(6)

professionalism in interpersonal interactions. (Outcome)

IV.A.5.f)

Systems-based Practice

Residents must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care. (Outcome)

Residents are expected to:

IV.A.5.f).(1)

work effectively in various health care delivery settings and systems relevant to their clinical specialty; (Outcome)

IV.A.5.f).(2)

coordinate patient care within the health care system relevant to their clinical specialty; (Outcome)

IV.A.5.f).(3)

incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population-based care as appropriate; (Outcome)

IV.A.5.f).(4)

advocate for quality patient care and optimal patient care systems; (Outcome)

- IV.A.5.f).(5)** **work in interprofessional teams to enhance patient safety and improve patient care quality; and,** ^(Outcome)
- IV.A.5.f).(6)** **participate in identifying system errors and implementing potential systems solutions.** ^(Outcome)
- IV.A.6. Curriculum Organization and Resident Experiences
- IV.A.6.a) Residents must not interpret examinations without direct supervision until they have completed at least 12 months of diagnostic radiology training. ^(Core)
- IV.A.6.b) Resident participation in on-call activities, including being on-duty after-hours and on weekends or holidays, should occur throughout PGY-3-5. ^(Detail)
- IV.A.6.b).(1) Resident competence must be assessed and documented prior to residents assuming independent responsibilities. ^(Core)
- IV.A.6.b).(2) Resident supervision during on-call activities must be provided by a senior resident, fellow, or radiology faculty member. ^(Core)
- IV.A.6.b).(2).(a) A radiology faculty member must be available to residents for direct or indirect supervision. ^(Core)
- IV.A.6.b).(3) Resident on-call experiences must include interpretation, reporting, and management of active cases, and must not include administrative roles or duties consisting primarily of re-review of previously reported cases. ^(Core)
- IV.A.6.b).(4) Relief from after-hours duty granted to residents, at the program director's discretion, must not exceed three months preceding the ABR Core Examination. ^(Core)
- IV.A.6.c) Residents, as an individual or group, must not be provided protected study time for the ABR Core Examination or AOBR combined physics and diagnostic exam. ^(Core)
- IV.A.6.d) Resident participation in patient care and radiology-related activities must occur throughout all 48 months of the program. ^(Core)
- IV.A.6.e) The duration of education in a single practice domain or in research must not exceed 16 months. ^(Core)
- IV.A.6.f) Residents must have a minimum of 700 hours of training and work experience under the supervision of an authorized user (AU) in basic radionuclide handling techniques and radiation safety applicable to the medical use of unsealed byproduct material for imaging and localization studies (10 CFR 35.290) and oral

administration of sodium iodide I-131 for procedures requiring a written directive (10 CFR 35.392, 10 CFR 35.394). ; (Core)

- IV.A.6.f).(1) Supervised work experience, at a minimum, must involve all operational and quality control procedures integral to the practice of nuclear radiology, including but not limited to: (Core)
- IV.A.6.f).(1).(a) receiving packages; (Core)
- IV.A.6.f).(1).(b) using generator systems; (Core)
- IV.A.6.f).(1).(c) calibrating and administering unsealed radioactive materials for diagnostic and therapeutic use; (Core)
- IV.A.6.f).(1).(d) completing written directives; (Core)
- IV.A.6.f).(1).(e) adhering to the ALARA (as low as reasonably achievable) principle; (Core)
- IV.A.6.f).(1).(f) ensuring radiation protection in practice, to include dosimeters, exposure limits, and signage; (Core)
- IV.A.6.f).(1).(g) using radiation-measuring instruments; (Core)
- IV.A.6.f).(1).(h) conducting area surveys; (Core)
- IV.A.6.f).(1).(i) managing radioactive waste; (Core)
- IV.A.6.f).(1).(j) preventing medical events; and, (Core)
- IV.A.6.f).(1).(k) responding to radiation spills and accidents. (Core)
- IV.A.6.f).(2) Under AU preceptor supervision, residents must:
- IV.A.6.f).(2).(a) participate in at least three cases involving the oral administration of less than or equal to 1.22 gigabecquerels (33 millicuries) of sodium iodide I-131 and at least three cases involving the oral administration of greater than 1.22 gigabecquerels (33 millicuries) of sodium iodide I-131. (Core)
- IV.A.6.f).(2).(b) participate in patient selection and preparation; (Core)
- IV.A.6.f).(2).(c) complete documentation, including the written directive and informed consent; (Core)
- IV.A.6.f).(2).(d) understand and calculate the administered dosage; (Core)
- IV.A.6.f).(2).(e) counsel patients and their families on radiation

- safety issues; ^(Core)
- IV.A.6.f).(2).(f) determine release criteria; ^(Core)
- IV.A.6.f).(2).(g) arrange patient follow-up; and, ^(Core)
- IV.A.6.f).(2).(h) make pregnancy and breastfeeding recommendations. ^(Core)
- IV.A.6.g) Residents must have a minimum of 12 weeks of clinical rotations in breast imaging. ^(Core)
- IV.A.6.h) Residents must interpret the minimum number of mammograms within the specified time period as designated by the U.S. Food and Drug Administration's (FDA) Mammography Quality Standards Act (MQSA) regulations. ^(Core)
- IV.A.6.i) Resident procedural experiences must be tracked using the ACGME Case Log System, and must at least meet the procedural minimums as defined by the Review Committee. ^(Core)
- IV.A.6.j) Residents must maintain current certification in advanced cardiac life-support (ACLS). ^(Core)
- IV.A.6.k) Residents should have experience in sedation analgesia. ^(Detail)
- IV.A.6.l) Residents must maintain a Resident Learning Portfolio, which must include, at a minimum, documentation of the following: ^(Core)
- IV.A.6.l).(1) Patient Care
- IV.A.6.l).(1).(a) participation in therapies involving oral administration of sodium iodide I-131, including the date, diagnosis, and dosage; ^(Core)
- IV.A.6.l).(1).(b) interpretation/multi-reading of mammograms ; ^(Core)
- IV.A.6.l).(1).(c) participation in hands-on ultrasonographic examinations of various types; and, ^(Core)
- IV.A.6.l).(1).(d) performance of invasive procedures and any complications. ^(Core)
- IV.A.6.l).(2) Medical Knowledge
- IV.A.6.l).(2).(a) conferences/courses/meetings attended, and self-assessment modules completed; and, ^(Core)
- IV.A.6.l).(2).(b) performance on rotation-specific and/or annual objective examinations. ^(Core)

- IV.A.6.I).(3) Practice-based Learning and Improvement
- IV.A.6.I).(3).(a) evidence of a reflective process that must result in the annual documentation of an individual learning plan and self-assessment; and, ^(Core)
- IV.A.6.I).(3).(b) scholarly activity, such as publications and/or presentations. ^(Core)
- IV.A.6.I).(4) Interpersonal and Communication Skills
- IV.A.6.I).(4).(a) formal documented assessment of oral and written communication. ^(Core)
- IV.A.6.I).(5) Professionalism
- IV.A.6.I).(5).(a) compliance with institutional and departmental policies including, but not limited to HIPAA, Joint Commission, patient safety, infection control, and dress code; and, ^(Core)
- IV.A.6.I).(5).(b) status of medical license, if appropriate. ^(Core)
- IV.A.6.I).(6) Systems-Based Practice
- a learning activity that involves deriving a solution to a system problem at the departmental, institutional, local, regional, national, or international level. ^(Core)

IV.B. Residents' Scholarly Activities

- IV.B.1. The curriculum must advance residents' knowledge of the basic principles of research, including how research is conducted, evaluated, explained to patients, and applied to patient care. ^(Core)**
- IV.B.2. Residents should participate in scholarly activity. ^(Core)**
- IV.B.2.a) Residents must have training in critical thinking skills and research design. ^(Core)
- IV.B.2.b) All residents must engage in a scholarly project under faculty member supervision. ^(Core)
- IV.B.2.b).(1) The results of such projects must be published or presented at institutional, local, regional, national, or international meetings, and must be included in each resident's Learning Portfolio. ^(Outcome)
- IV.B.2.b).(2) The program should specify how each project will be evaluated. ^(Detail)

IV.B.3. The sponsoring institution and program should allocate adequate educational resources to facilitate resident involvement in scholarly activities. ^(Detail)

V. Evaluation

V.A. Resident Evaluation

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

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

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

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

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

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

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

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

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

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

V.A.2. Formative Evaluation

V.A.2.a) The faculty must evaluate resident performance in a timely manner during each rotation or similar educational

assignment, and document this evaluation at completion of the assignment. ^(Core)

- V.A.2.b) The program must:**
- V.A.2.b).(1) provide objective assessments of competence in patient care and procedural skills, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice based on the specialty-specific Milestones;** ^(Core)
 - V.A.2.b).(2) use multiple evaluators (e.g., faculty, peers, patients, self, and other professional staff);** ^(Detail)
 - V.A.2.b).(3) document progressive resident performance improvement appropriate to educational level;** ^(Core)
 - V.A.2.b).(4) provide each resident with documented semiannual evaluation of performance with feedback;** ^(Core)
 - V.A.2.b).(5) ensure that assessment for progressive resident responsibility or independence is based upon knowledge, skills, and experience;** ^(Core)
 - V.A.2.b).(6) ensure that written faculty member end-of-rotation evaluations are provided to residents within one month of completion of the rotation; and,** ^(Core)
 - V.A.2.b).(7) ensure that resident assessment includes:** ^(Core)
 - V.A.2.b).(7).(a) global faculty evaluation (all competencies);** ^(Core)
 - V.A.2.b).(7).(b) multi-source evaluation (for interpersonal skills/communication and professionalism);** ^(Core)
 - V.A.2.b).(7).(c) resident ability to take independent call; and,** ^(Core)
 - V.A.2.b).(7).(d) review of the resident Learning Portfolio.** ^(Core)

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

- V.A.2.c).(1) The program must have a clearly defined process for remediation of resident underperformance.** ^(Core)
- V.A.2.c).(1).(a) The program should provide more frequent performance reviews of residents experiencing difficulties or receiving unfavorable evaluations.** ^(Detail)

V.A.2.c).(1).(b) When a resident fails to progress satisfactorily, the program should develop a written plan identifying the problems and addressing how they can be corrected, and then discuss this plan with the resident. ^(Detail)

V.A.2.c).(1).(b).(i) This plan should be signed by the resident and placed in his or her individual file. ^(Detail)

V.A.3. Summative Evaluation

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

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

This evaluation must:

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

V.A.3.b).(2) document the resident's performance during the final period of education; and, ^(Detail)

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

V.B. Faculty Evaluation

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

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

V.B.3. This evaluation must include at least annual written confidential evaluations by the residents. ^(Detail)

V.B.4. Faculty members must receive feedback from resident evaluations at least annually. ^(Core)

V.C. Program Evaluation and Improvement

- V.C.1. The program director must appoint the Program Evaluation Committee (PEC).** ^(Core)
- V.C.1.a) The Program Evaluation Committee:**
- V.C.1.a).(1)** must be composed of at least two program faculty members and should include at least one resident; ^(Core)
- V.C.1.a).(2)** must have a written description of its responsibilities; and, ^(Core)
- V.C.1.a).(3)** should participate actively in:
- V.C.1.a).(3).(a)** planning, developing, implementing, and evaluating educational activities of the program; ^(Detail)
- V.C.1.a).(3).(b)** reviewing and making recommendations for revision of competency-based curriculum goals and objectives; ^(Detail)
- V.C.1.a).(3).(c)** addressing areas of non-compliance with ACGME standards; and, ^(Detail)
- V.C.1.a).(3).(d)** reviewing the program annually using evaluations of faculty, residents, and others, as specified below. ^(Detail)
- V.C.2. The program, through the PEC, must document formal, systematic evaluation of the curriculum at least annually, and is responsible for rendering a written, annual program evaluation.** ^(Core)
- The program must monitor and track each of the following areas:**
- V.C.2.a)** resident performance; ^(Core)
- V.C.2.b)** faculty development; ^(Core)
- V.C.2.c)** graduate performance, including performance of program graduates on the certification examination; ^(Core)
- V.C.2.c).(1)** At least 90 percent of a program's residents and graduates from the preceding five-year period who take the ABR Core Examination must pass by the end of the PGY-5. ^(Core)
- V.C.2.c).(2)** At least 90 percent of a program's residents and graduates from the preceding five-year period who take the American Osteopathic Board of Radiology (AOBR) combined physics and diagnostic imaging examination must pass by the end of the PGY-5. ^(Core)

- V.C.2.d) program quality; and, ^(Core)
- V.C.2.d).(1) Residents and faculty must have the opportunity to evaluate the program confidentially and in writing at least annually, and ^(Detail)
- V.C.2.d).(2) The program must use the results of residents' and faculty members' assessments of the program together with other program evaluation results to improve the program. ^(Detail)
- V.C.2.e) progress on the previous year's action plan(s). ^(Core)
- V.C.3. The PEC must prepare a written plan of action to document initiatives to improve performance in one or more of the areas listed in section V.C.2., as well as delineate how they will be measured and monitored. ^(Core)
- V.C.3.a) The action plan should be reviewed and approved by the teaching faculty and documented in meeting minutes. ^(Detail)

VI. The Learning and Working Environment

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

- *Excellence in the safety and quality of care rendered to patients by residents today*
- *Excellence in the safety and quality of care rendered to patients by today's residents in their future practice*
- *Excellence in professionalism through faculty modeling of:*
 - *the effacement of self-interest in a humanistic environment that supports the professional development of physicians*
 - *the joy of curiosity, problem-solving, intellectual rigor, and discovery*
- *Commitment to the well-being of the students, residents, faculty members, and all members of the health care team*

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

VI.A.1. Patient Safety and Quality Improvement

All physicians share responsibility for promoting patient safety and enhancing quality of patient care. Graduate medical education must prepare residents to provide the highest level of clinical care with

continuous focus on the safety, individual needs, and humanity of their patients. It is the right of each patient to be cared for by residents who are appropriately supervised; possess the requisite knowledge, skills, and abilities; understand the limits of their knowledge and experience; and seek assistance as required to provide optimal patient care.

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

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

VI.A.1.a) Patient Safety

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

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

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

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

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

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

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

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

to identify causes and institute sustainable systems-based changes to ameliorate patient safety vulnerabilities.

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

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

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

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

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

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

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

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

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

VI.A.1.b) Quality Improvement

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

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

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

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

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

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

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

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

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

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

VI.A.2. Supervision and Accountability

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

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

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

- VI.A.2.a).(1).(a) This information must be available to residents, faculty members, other members of the health care team, and patients. ^(Core)
- VI.A.2.a).(1).(b) Residents and faculty members must inform each patient of their respective roles in that patient's care when providing direct patient care. ^(Core)
- VI.A.2.b) *Supervision may be exercised through a variety of methods. For many aspects of patient care, the supervising physician may be a more advanced resident or fellow. Other portions of care provided by the resident can be adequately supervised by the immediate availability of the supervising faculty member, fellow, or senior resident physician, either on site or by means of telephonic and/or electronic modalities. Some activities require the physical presence of the supervising faculty member. In some circumstances, supervision may include post-hoc review of resident-delivered care with feedback.*
- VI.A.2.b).(1) The program must demonstrate that the appropriate level of supervision in place for all residents is based on each resident's level of training and ability, as well as patient complexity and acuity. Supervision may be exercised through a variety of methods, as appropriate to the situation. ^(Core)
- VI.A.2.c) **Levels of Supervision**
- To promote oversight of resident supervision while providing for graded authority and responsibility, the program must use the following classification of supervision: ^(Core)
- VI.A.2.c).(1) **Direct Supervision – the supervising physician is physically present with the resident and patient. ^(Core)**
- VI.A.2.c).(2) **Indirect Supervision:**
- VI.A.2.c).(2).(a) **with Direct Supervision immediately available – the supervising physician is physically within the hospital or other site of patient care, and is immediately available to provide Direct Supervision. ^(Core)**
- VI.A.2.c).(2).(b) **with Direct Supervision available – the supervising physician is not physically present within the hospital or other site of patient care, but is immediately available by means of telephonic and/or electronic modalities, and is**

available to provide Direct Supervision. ^(Core)

- VI.A.2.c).(3) Oversight – the supervising physician is available to provide review of procedures/encounters with feedback provided after care is delivered. ^(Core)
- VI.A.2.d) The privilege of progressive authority and responsibility, conditional independence, and a supervisory role in patient care delegated to each resident must be assigned by the program director and faculty members. ^(Core)
- VI.A.2.d).(1) The program director must evaluate each resident’s abilities based on specific criteria, guided by the Milestones. ^(Core)
- VI.A.2.d).(2) Faculty members functioning as supervising physicians must delegate portions of care to residents based on the needs of the patient and the skills of each resident. ^(Core)
- VI.A.2.d).(3) Senior residents or fellows should serve in a supervisory role to junior residents in recognition of their progress toward independence, based on the needs of each patient and the skills of the individual resident or fellow. ^(Detail)
- VI.A.2.e) Programs must set guidelines for circumstances and events in which residents must communicate with the supervising faculty member(s). ^(Core)
- VI.A.2.e).(1) Each resident must know the limits of their scope of authority, and the circumstances under which the resident is permitted to act with conditional independence. ^(Outcome)
- VI.A.2.e).(1).(a) Initially, PGY-1 residents must be supervised either directly, or indirectly with direct supervision immediately available. ^(Core)
- VI.A.2.f) Faculty supervision assignments must be of sufficient duration to assess the knowledge and skills of each resident and to delegate to the resident the appropriate level of patient care authority and responsibility. ^(Core)
- VI.B. Professionalism
- VI.B.1. Programs, in partnership with their Sponsoring Institutions, must educate residents and faculty members concerning the professional responsibilities of physicians, including their obligation to be appropriately rested and fit to provide the care required by their patients. ^(Core)

- VI.B.2. The learning objectives of the program must:**
- VI.B.2.a) be accomplished through an appropriate blend of supervised patient care responsibilities, clinical teaching, and didactic educational events;** ^(Core)
 - VI.B.2.b) be accomplished without excessive reliance on residents to fulfill non-physician obligations; and,** ^(Core)
 - VI.B.2.c) ensure manageable patient care responsibilities.** ^(Core)
- VI.B.3. The program director, in partnership with the Sponsoring Institution, must provide a culture of professionalism that supports patient safety and personal responsibility.** ^(Core)
- VI.B.4. Residents and faculty members must demonstrate an understanding of their personal role in the:**
- VI.B.4.a) provision of patient- and family-centered care;** ^(Outcome)
 - VI.B.4.b) safety and welfare of patients entrusted to their care, including the ability to report unsafe conditions and adverse events;** ^(Outcome)
 - VI.B.4.c) assurance of their fitness for work, including:** ^(Outcome)
 - VI.B.4.c).(1) management of their time before, during, and after clinical assignments; and,** ^(Outcome)
 - VI.B.4.c).(2) recognition of impairment, including from illness, fatigue, and substance use, in themselves, their peers, and other members of the health care team.** ^(Outcome)
 - VI.B.4.d) commitment to lifelong learning;** ^(Outcome)
 - VI.B.4.e) monitoring of their patient care performance improvement indicators; and,** ^(Outcome)
 - VI.B.4.f) accurate reporting of clinical and educational work hours, patient outcomes, and clinical experience data.** ^(Outcome)
- VI.B.5. All residents and faculty members must demonstrate responsiveness to patient needs that supersedes self-interest. This includes the recognition that under certain circumstances, the best interests of the patient may be served by transitioning that patient's care to another qualified and rested provider.** ^(Outcome)
- VI.B.6. Programs must provide a professional, respectful, and civil environment that is free from mistreatment, abuse, or coercion of students, residents, faculty, and staff. Programs, in partnership with**

their Sponsoring Institutions, should have a process for education of residents and faculty regarding unprofessional behavior and a confidential process for reporting, investigating, and addressing such concerns. ^(Core)

VI.C. Well-Being

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

VI.C.1. This responsibility must include:

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

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

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

VI.C.1.d) policies and programs that encourage optimal resident and faculty member well-being; and, ^(Core)

VI.C.1.d).(1) Residents must be given the opportunity to attend medical, mental health, and dental care appointments, including those scheduled during their working hours. ^(Core)

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

VI.C.1.e).(1) encourage residents and faculty members to alert the

program director or other designated personnel or programs when they are concerned that another resident, fellow, or faculty member may be displaying signs of burnout, depression, substance abuse, suicidal ideation, or potential for violence; ^(Core)

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

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

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

VI.D. Fatigue Mitigation

VI.D.1. Programs must:

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

VI.D.1.b) educate all faculty members and residents in alertness management and fatigue mitigation processes; and, ^(Core)

VI.D.1.c) encourage residents to use fatigue mitigation processes to manage the potential negative effects of fatigue on patient care and learning. ^(Detail)

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

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

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

VI.E.1. Clinical Responsibilities

The clinical responsibilities for each resident must be based on PGY

level, patient safety, resident ability, severity and complexity of patient illness/condition, and available support services. ^(Core)

VI.E.2. Teamwork

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

VI.E.3. Transitions of Care

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

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

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

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

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

VI.F. Clinical Experience and Education

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

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

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

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

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

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

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

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

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

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

VI.F.3.a) Clinical and educational work periods for residents 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 resident education. ^(Core)

VI.F.3.a).(1).(a) Additional patient care responsibilities must not be assigned to a resident during this time. ^(Core)

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

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

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

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

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

- VI.F.4.b)** These additional hours of care or education will be counted toward the 80-hour weekly limit. ^(Detail)
- VI.F.4.c)** A Review Committee may grant rotation-specific exceptions for up to 10 percent or a maximum of 88 clinical and educational work hours to individual programs based on a sound educational rationale.
- The Review Committee for Radiology will not consider requests for exceptions to the 80-hour limit to the residents' work week.
- VI.F.4.c).(1)** In preparing a request for an exception, the program director must follow the clinical and educational work hour exception policy from the *ACGME Manual of Policies and Procedures*. ^(Core)
- VI.F.4.c).(2)** Prior to submitting the request to the Review Committee, the program director must obtain approval from the Sponsoring Institution's GMEC and DIO. ^(Core)
- VI.F.5.** Moonlighting
- VI.F.5.a)** Moonlighting must not interfere with the ability of the resident to achieve the goals and objectives of the educational program, and must not interfere with the resident's fitness for work nor compromise patient safety. ^(Core)
- VI.F.5.b)** Time spent by residents 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 residents are not permitted to moonlight. ^(Core)
- VI.F.6.** In-House Night Float
- Night float must occur within the context of the 80-hour and one-day-off-in-seven requirements. ^(Core)
- VI.F.7.** Maximum In-House On-Call Frequency
- Residents 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 residents 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 resident. ^(Core)

VI.F.8.b)

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

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

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

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

Osteopathic Recognition

For programs seeking Osteopathic Recognition for the entire program, or for a track within the program, the Osteopathic Recognition Requirements are also applicable.

http://www.acgme.org/Portals/0/PFAssets/ProgramRequirements/Osteopathic_Recognition_Requirements.pdf