ACGME Program Requirements for Graduate Medical Education in Diagnostic Radiology

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Common Program Requirements are in BOLD

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 a variety of diagnostic and image-guided therapeutic techniques, and includes but is not limited to: computed tomography (CT), including all aspects of image-based diagnosis, radiography, nuclear radiology, diagnostic ultrasound, magnetic resonance, computed tomography, interventional procedures, magnetic resonance imaging (MRI), medical physics, nuclear radiology and molecular imaging, radiography/fluoroscopy, ultrasonography, and radiology quality and safety. The residency program in diagnostic radiology shall offer a quality graduate medical educational experience in all of these associated disciplines.

Diagnostic radiology educational content includes, but 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. Duration and Scope of Education The educational program in diagnostic radiology must be 48-months in length. (Core)
Int.C.1. Resident education in diagnostic radiology must include five years of clinically oriented graduate medical education, of which four years must be in diagnostic radiology.

Int.C.2. Diagnostic Radiology Residency

The residency program is four years of graduate medical education (including vacation and meeting time) in diagnostic radiology. Full-time participation by the residents in clinical and didactic activities must occur at all levels of training, including the final year of residency. In the four years, the maximum period of training in any one of the nine subspecialty areas shall be 16 months. The nine subspecialty areas of diagnostic radiology are neuroradiology, musculoskeletal radiology, vascular and interventional radiology, cardiothoracic radiology, breast radiology, abdominal radiology, pediatric radiology, ultrasonography (including obstetrical and vascular ultrasound), and nuclear radiology (including PET and nuclear cardiology).

Int.C.3. Residents entering diagnostic radiology training on July 1, 2010 or thereafter must be provided appropriate clinical rotations and formal instruction in all subspecialties of diagnostic radiology and in the core subjects pertaining to diagnostic radiology (e.g., medical physics, physiology of contrast media, etc.) before taking the American Board of Radiology (ABR) Core Examination (given after 36 months of diagnostic radiology training at the end of PGY-4). During the final year of diagnostic radiology training (PGY-5), these residents should be allowed, within program resources, to select and participate in rotations, including “general radiology,” that will reflect their desired areas of concentration as they enter practice.

Int.C.4. Participation in on-call activities is essential for the development of radiologists, who are expected to practice independently upon completion of training, and should occur throughout the second, third and final years of diagnostic radiology residency.

Int.C.4.a) Program directors may exercise discretion in granting relief from call responsibilities for short periods before the oral board exam for residents entering diagnostic radiology training before July 1, 2010 and before the “Core” board exam for residents entering diagnostic radiology training on July 1, 2010 or thereafter.

Int.C.5. The education in diagnostic radiology must occur in an environment that encourages the interchange of knowledge and experience among residents in the program and among residents in other major clinical specialties located in those institutions participating in the program.

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 more than 32. (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 in meeting the educational goals of the program. (Core)

This protected time must total at least:

I.A.2.a) 0.4 full-time equivalent (FTE) for programs approved for 16 residents or fewer; (Core)
I.A.2.b) 0.5 FTE for programs approved for 17 to 24 residents; (Core)
I.A.2.c) 0.6 FTE for programs approved for 25 to 32 residents; (Core)
I.A.2.d) 0.7 FTE for programs approved for 33 to 40 residents; and, (Core)
I.A.2.e) 0.8 FTE for programs approved for more than 40 residents. (Core)

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

This support must be provided as follows:

I.A.3.a) Programs approved for 8-24 residents must have at least 1.0 FTE program coordinator support. (Core)
I.A.3.b) Programs approved for 25-39 residents must have at least 1.50 FTE program coordinator support. (Core)
I.A.3.c) Programs approved for 40 residents and over 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. The education in Diagnostic radiology must occur in an environment with other residents and/or fellows from other specialties at the Sponsoring Institution and/or participating sites to facilitate that encourages the interchange of knowledge and experience among the residents in the program and among residents in other major clinical specialties located in those institutions participating in the program. (Detail)

I.B.4. The program should be based at a primary hospital. A program using with multiple participating sites must ensure the provision of a cohesive unified educational experience for the residents. (Core)

I.B.5. Each participating site must offer significant meaningful educational opportunities to that enrich the overall program. Service responsibility alone at a participating site is not a suitable educational experience. (Core)

I.B.6. Programs should avoid affiliations with sites at such distances from the primary hospital as to make resident attendance at rounds and conferences impractical, unless there is a comparable educational experience at the site. (Detail)

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
The program director should be a full-time faculty member. 

The program director must be provided the equivalent of at least one day a week protected time in order to fulfill the responsibilities inherent in meeting the educational goals of the program.

The program director should continue in his or her position for a length of time adequate to maintain continuity of leadership and program stability.

Qualifications of the program director must include:

- requisite specialty expertise and documented educational and administrative experience acceptable to the Review Committee;
- current certification in the specialty by the American Board of Radiology, or specialty qualifications that are acceptable to the Review Committee;
- current medical licensure and appropriate medical staff appointment; and,
- at least three years’ experience as a faculty member in an ACGME-accredited program.

The program director must administer and maintain an educational environment conducive to educating the residents in each of the ACGME competency areas.

The program director must:

- oversee and ensure the quality of didactic and clinical education in all sites that participate in the program;
- approve a local director at each participating site who is accountable for resident education;
- approve the selection of program faculty as appropriate;
- evaluate program faculty;
- approve the continued participation of program faculty based on evaluation;
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;

II.A.4.n) obtain review and approval of the sponsoring institution's GMEC/DIO before submitting information or requests to the ACGME, including:

II.A.4.n).(1) all applications for ACGME accreditation of new programs;

II.A.4.n).(2) changes in resident complement;

II.A.4.n).(3) major changes in program structure or length of training;

II.A.4.n).(4) progress reports requested by the Review Committee;

II.A.4.n).(5) requests for increases or any change to resident duty hours;

II.A.4.n).(6) voluntary withdrawals of ACGME-accredited programs;

II.A.4.n).(7) requests for appeal of an adverse action; and,

II.A.4.n).(8) appeal presentations to a Board of Appeal or the ACGME.

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:

II.A.4.o).(1) program citations, and/or,

II.A.4.o).(2) request for changes in the program that would have significant impact, including financial, on the program or institution.

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 participate in the ACGME case log system;

II.A.4.p).(1) The logs must be submitted annually to the Review Committee office in accordance with the format and the due date specified by the Review Committee. The record must be reviewed by the program director at least annually; for residents beginning training in diagnostic radiology on July 1, 2010 or thereafter, data must be submitted for each resident only for the years of training.
II.A.4.q) participate in faculty development facilitated by GME organizations and/or meetings; and, (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. (Core)

II.A.4.s) be responsible for ensuring that the general content is integrated into the conference schedule; (Detail)

II.A.4.t) ensure that programs have a minimum of five hours per week of conferences/lectures; (Detail)

II.A.4.u) ensure that residents have protected time to attend all scheduled lectures and conferences; (Core)

II.A.4.u).(1) Resident attendance at conferences/lectures must be documented. (Detail)

II.A.4.v) ensure that there are interactive conferences in addition to the core didactic series; and, (Detail)

II.A.4.w) ensure that there are interdepartmental conferences in which both residents and faculty participate on a regular basis. (Detail)

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) The faculty must directly supervise all percutaneous invasive procedures, excluding intravenous injection of contrast, diagnostic lumbar puncture, thoracentesis, paracentesis and PICC line placement. (Core)
II.B.1.b).(2) The Faculty members should review all radiologic images diagnostic imaging and sign verify all resident reports within 24 hours. (Core, Detail)

II.B.1.b).(3) The Faculty members must always be available for backup when residents are on-call after hours, nights, on weekends or on holidays call. (Core)

II.B.1.b).(4) The faculty must review all radiologic images and sign all resident reports within 24 hours. (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 the American Osteopathic Board of Radiology, and other American Board of Medical Specialties (ABMS) or American Osteopathic Association (AOA) certifying boards. (Core)

II.B.2.b) In programs affiliated with a medical school, all members of the faculty must have their academic appointment in the department of radiology. For programs not affiliated with a medical school, all physician faculty must be members of the medical staff of at least one of the participating sites. (Detail)

II.B.2.c) There must be at least eight core one FTE physician faculty members in each of the nine subspecialty areas. The nine subspecialty areas are neuroradiology, musculoskeletal radiology, vascular and interventional radiology, cardiothoracic radiology, breast radiology, abdominal radiology, pediatric radiology, ultrasonography, and nuclear radiology. (Core)

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

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

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

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

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

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

II.B.2.c).(1).f) neuroradiology; (Core)

II.B.2.c).(1).g) nuclear radiology and molecular imaging; and, (Core)
II.B.2.c).(1). (h) pediatric radiology. (Core)

II.B.2.c).(2) The core faculty members must be responsible for the educational content of their practice domain and must organize conferences that cover topics in that domain. (Core)

II.B.2.c).(3) No faculty member may have primary responsibility for the educational content of more than one subspecialty area practice domain, although faculty but may have clinical responsibilities and/or teaching responsibilities in several subspecialty areas multiple practice domains. (Core)

II.B.2.c).(4) The program must designate one physician core faculty members to be responsible for the educational content of each of the nine subspecialty areas. This individual must devote practice at least 0.50 FTE percent of his or her time in their practice domain subspecialty area, and must demonstrate a commitment to the subspecialty. (Core)

II.B.2.c).(5) The core faculty members must demonstrate a commitment to their practice domain. (Core)

II.B.2.c).(5).(a) Such commitment should may be demonstrated by any two of the following: (Detail)

II.B.2.c).(5).(a).(i) specialty/subspecialty certification (CAQ), in the practice domain, fellowship training, or three years of subspecialty practice in the domain; (Detail)

II.B.2.c).(5).(a).(ii) membership in active participation in specialty/subspecialty society societies, including CME activities in the practice domain; (Detail)

II.B.2.c).(5).(a).(iii) publications or and presentations in the specialty/subspecialty practice domain; or, (Detail)

II.B.2.c).(5).(a).(iv) annual CME credits in the subspecialty; or, (Detail)

II.B.2.c).(5).(a).(v) participation in Maintenance of Certification maintenance of certification with emphasis on the specialty/subspecialty area practice domain. (Detail)

II.B.2.d) 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.d).(1) **CT;** (Detail)

II.B.2.d).(2) **MRI;** (Detail)

II.B.2.d).(3) **radiography/fluoroscopy;** (Detail)

II.B.2.d).(4) **reproductive/endocrine imaging;** (Detail)

II.B.2.d).(5) **ultrasonography; and,** (Detail)

II.B.2.d).(6) **vascular imaging.** (Detail)

II.B.2.e) There should be physician or non-physician faculty members with expertise in quality, safety, and informatics. (Detail)

II.B.2.e).(1) These faculty members should develop didactic content related to their areas of expertise. (Detail)

II.B.2.f) No faculty member may have primary responsibility for the educational content of more than one subspecialty area, although faculty may have clinical responsibility and/or teaching responsibilities in several subspecialty areas. (Core)

II.B.2.f).(1) A pediatric radiologist may have a primary appointment at another site and still be the designated faculty member supervising pediatric radiologic education. (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 other pertinent modern facilities to ensure an effective educational experience for residents in all of the specialty/subspecialty rotations in diagnostic radiology. The program must also provide the modern facilities and equipment required in all of the subspecialty rotations. (Core)

II.D.2. There must be secure on-site call facilities for residents at locations where in-house call is required. (Core)

II.D.3. The ACR teaching file or its equivalent must be available to residents. (Detail)

II.D.4. The program must ensure provide a sufficient volume and variety of patients of all ages for to ensure that residents to gain experience in the full spectrum range of radiological examinations, procedures, and interpretations. The number and variety of examinations and the length of rotations in each subspecialty area must be sufficient to ensure an adequate training experience. (Core)

II.D.4.a) The program’s volume must be no fewer than have at least 7,000 radiological examinations per year per resident in both the diagnostic radiology program and in the PGY2-4 years of the integrated interventional radiology program, if applicable. The number of examinations in each of the nine subspecialty areas must be of sufficient volume to ensure adequate training experience. (Core-Detail)

II.D.5. Programs requiring in-house call must provide residents with secure on-site on-call facilities. (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.

III. Resident Appointments

III.A. Eligibility Criteria

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

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.

III.A.1.a).(1) Clinical Year Pre-requisite Training

To be eligible for appointment to the program, residents must have successfully completed a pre-requisite clinical year of direct patient care, including education in the fundamental clinical skills of medicine in a program consisting of training accredited by the ACGME, RCPSC, or CFPC in the specialties of emergency medicine, family medicine, internal medicine, neurology, obstetrics and gynecology, pediatrics, surgery or surgical specialties, the transitional year, or any combination of these. The clinical year may also comprise a transitional year accredited by the ACGME or RCPSC.

III.A.1.a).(1).(a) Residents should develop the following fundamental clinical skills of medicine competencies during the pre-requisite year to include:

III.A.1.a).(1).(a).(i) obtaining a comprehensive medical history;

III.A.1.a).(1).(a).(ii) performing a comprehensive physical examination;
III.A.1.a).(1).(a).(iii) assessing a patient’s medical condition; (Outcome)

III.A.1.a).(1).(a).(iv) making appropriate use of diagnostic studies and tests; (Outcome)

III.A.1.a).(1).(a).(v) integrating information to develop a differential diagnosis; and, (Outcome)

III.A.1.a).(1).(a).(vi) integrating a treatment plan. (Outcome)

During the pre-requisite clinical year, elective rotations in diagnostic radiology or interventional radiology must occur only in radiology departments with an ACGME-accredited diagnostic radiology residency program or an RCPSC-accredited diagnostic radiology residency program located in Canada and cannot exceed a combined total of two months. (Core)

If the clinical year is offered by the institution of the core residency, and is not a standalone ACGME- or RCPSC-accredited year, the program director will be responsible for ensuring the quality of the year. (Detail)

The program director must verify is responsible for verifying that the residents accepted into the diagnostic radiology program have successfully completed the clinical a pre-requisite year. (Core, Detail)

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)

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)

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 have a minimum of eight residents. (Core)

III.B.3. Prior approval by the Review Committee is required 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 to the equivalent level in the integrated interventional radiology program. (Core)

III.C.4.b) Residents transferring at the PGY-5 level must have taken or be eligible to take the American Board of Radiology (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) The program 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 ensure that there are interactive conferences...
This curriculum must be documented, and should consist of subspecialty clinical content and general content; and,

should include interdepartmental conferences in which residents and faculty members participate on a regular basis.

Residents must be provided protected time to attend all lectures and conferences scheduled by the program.

The program must provide mechanisms for residents to participate in all scheduled lectures and conferences either in-person or by electronic means.

The program should document resident conference attendance for all 48 months of the educational program.

The didactic curriculum must include:

- anatomy, disease processes, imaging, and physiology;
- specialty/subspecialty clinical and general content;
- topics related to professionalism, physician well-being, diversity, and ethics;
- training in the clinical application of medical physics, distributed throughout the 48 months of the educational program; and,

A qualified medical physicist should oversee the development of the physics curriculum.

Educational content should be delivered in-person.

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).

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.3.e).(6) Subspecialty Didactic Content

IV.A.3.e).(6).(a) There must be a didactic component for each of the nine subspecialty areas, including the heart and coronary arteries. The content should include the following in all age groups: anatomy, physiology, disease processes, and imaging. (Core)

IV.A.3.e).(6).(b) Each of the nine designated subspecialty chiefs must organize a series of intradepartmental lectures that cover these topics in their respective subspecialty area. (Core)

IV.A.3.e).(6).(b).(i) These lectures may be supplemented with other educational materials. (Detail)

IV.A.3.e).(6).(c) Didactic training must include the following subjects as they relate to nuclear medicine: (Core)

IV.A.3.e).(6).(c).(i) diagnostic radiologic physics, instrumentation, and radiation biology; (Core)

IV.A.3.e).(6).(c).(ii) patient and medical personnel safety (i.e., radiation protection); (Core)

IV.A.3.e).(6).(c).(iii) the chemistry of by-product material for medical use; (Core)

IV.A.3.e).(6).(c).(iv) biologic and pharmacologic actions of materials administered in diagnostic and therapeutic procedures; and, (Core)

IV.A.3.e).(6).(c).(v) topics in safe handling, administration, and quality control of radionuclide doses used in clinical medicine. (Core)

IV.A.3.e).(6).(d) The didactic instruction (or work experience) must include ordering, receiving, and unpacking
Diagnostic Radiology 20

IV.A.3.e).(7) General Didactic Content

There must be didactic components that address the following subjects: *(Core)*

IV.A.3.e).(7).(a) diagnostic radiologic physics and radiation biology; *(Core)*

IV.A.3.e).(7).(b) patient and medical personnel safety (i.e., radiation protection, MRI safety); *(Core)*

IV.A.3.e).(7).(c) appropriate imaging utilization (proper sequencing; cost-benefit analysis); *(Core)*

IV.A.3.e).(7).(d) radiologic/pathologic correlation; *(This requirement may be satisfied by resident participation in a formal course on radiologic-pathologic correlation.)* *(Core)*

IV.A.3.e).(7).(e) fundamentals of molecular imaging; *(Core)*

IV.A.3.e).(7).(f) biologic and pharmacologic actions of materials administered in diagnostic or therapeutic procedures; *(Core)*

IV.A.3.e).(7).(g) use of needles, catheters, and other devices employed in invasive image-based diagnostic and therapeutic procedures; *(Core)*

IV.A.3.e).(7).(h) socioeconomics of radiologic practice; and, *(Core)*

IV.A.3.e).(7).(i) professionalism and ethics. *(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:

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

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:

IV.A.5.a).(1) Residents must be able to provide patient care through safe, efficient, appropriately utilized, quality-controlled diagnostic and/or interventional radiological techniques.

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:

must demonstrate competence in the:

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

IV.A.5.a).(2).b) must acquire and interpretation of conventional radiography, computed tomography CT, magnetic resonance imaging MRI, angiography, and nuclear radiography, and radionuclide imaging examinations of the cardiovascular system (heart and great vessels) including studies performed on both adults and children;

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

Residents should have sufficient hands-on scanning experience.

Programs should incorporate a process to document resident proficiency of ultrasonographic skills.

IV.A.5.a).(2).d) performance of moderate sedation;

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

IV.A.5.a).(2).(g) must perform under preceptor supervision at least three therapies involving oral administration of I-131 in quantities less than or equal to 33 millicuries (mCi) and at least three therapies in quantities greater than 33mCi. (Outcome)

IV.A.5.a).(2).(g).(i) Residents must participate in patient selection, informed consent, understanding and calculating the administered dose, counseling of patients and their families on radiation safety issues and patient follow up. (Outcome)

IV.A.5.a).(2).(g).(ii) must perform interpretation/multi-reading of at least 240 mammograms within a six-month period during their last two years of the residency program; (Outcome)

IV.A.5.a).(2).(h) must perform interventional procedures including image-guided biopsies, drainage procedures, angioplasty, embolization and infusion procedures, and other percutaneous interventional procedures under preceptor supervision; (Outcome)

IV.A.5.a).(2).(h).(i) must perform and interpret vascular, interventional, and invasive procedures; (Outcome)

IV.A.5.a).(2).(i) must acquire and interpret conventional radiography, computed tomography, magnetic resonance imaging, angiography, and nuclear radiology examinations of the cardiovascular system (heart and great vessels) including studies performed on both adults and children; (Outcome)

IV.A.5.a).(2).(j) must maintain current basic life-support (BLS) certification. Advanced cardiac life-support (ACLS) training is recommended; (Outcome)

IV.A.5.a).(2).(k) must competently perform a minimum of 12 months of training in diagnostic radiology prior to independent in-house on-call responsibilities; and, (Outcome)

IV.A.5.a).(2).(l) must demonstrate hands-on work experience when they perform the supervised work experience
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 competence in their 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 subspecialty clinical didactic content and general didactic content.; (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
improve 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.c).(9) evaluate their personal practice, utilizing scientific evidence, "best practices", and self-assessment programs with the intent of practice improvement; (Outcome)

IV.A.5.c).(10) demonstrate a skill set that allows them to access, interpret, and apply best scientific evidence to the care of patients (evidence based medicine); and, (Outcome)

IV.A.5.c).(11) demonstrate on an ongoing basis an awareness of radiation exposure, protection, and safety, as well as the application of these principles in imaging. (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)
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)

work effectively as a member or leader of a health care team or other professional group; (Outcome)

act in a consultative role to other physicians and health professionals; (Outcome)

maintain comprehensive, timely, and legible medical records, if applicable; and, (Outcome)

communicate effectively with patients, colleagues, referring physicians, and other members of the health care team concerning imaging appropriateness, informed consent, safety issues, and the results of imaging tests or procedures; and,

when they are senior residents, supervise, provide consultation or act as consultants to, and teach medical students and/or residents. (Outcome)

Professionalism

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

Residents are expected to demonstrate:

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

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

respect for patient privacy and autonomy; (Outcome)

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

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,

professionalism in interpersonal interactions. (Outcome)

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.5.f).(7) demonstrate an understanding of how the components of the local and national healthcare system function interdependently, and how changes to improve the system involve group and individual. The residents must function as consultants for other health care professionals, and act as a resource for information regarding the most appropriate use of imaging resources, and efforts.; and, (Outcome)

IV.A.5.f).(8) identify existing systems problems that compromise their ability to provide the most efficient and effective patient care. Analyze systematically the problems, develop solutions, implement solutions, and evaluate the effectiveness of the intervention at the departmental, institutional, local or national level. (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 have a minimum of 12 months of training in diagnostic radiology training prior to independent in-house on-call responsibilities. (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 the PGY-3-5 years. (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 consist of the 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. (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 (approximately four months 16 weeks) 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), in clinical nuclear medicine, which may include the required 80 hours of classroom and laboratory instruction (Section IV.A.5.b.1.a.iii), (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 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).(a) Under AU preceptor supervision, residents must:
IV.A.6.f).(2).(a).(i) participate in patient selection and preparation; (Core)
IV.A.6.f).(2).(a).(ii) complete documentation, including the written directive and informed consent; (Core)
IV.A.6.f).(2).(a).(iii) understand and calculate the administered dosage; (Core)
IV.A.6.f).(2).(a).(iv) counsel patients and their families on radiation safety issues; (Core)
IV.A.6.f).(2).(a).(v) determine release criteria; (Core)
IV.A.6.f).(2).(a).(vi) arrange patient follow-up; and, (Core)
IV.A.6.f).(2).(a).(vii) 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 Advanced Cardiac Life-Support (ACLS) certification. (Core)

IV.A.6.k) Residents must maintain a Resident Learning Portfolio which must include, at a minimum, documentation of the following: (Core)

IV.A.6.k).(1) Patient Care

IV.A.6.k).(1).(a) Case/procedure log;

IV.A.6.k).(1).(b) the resident’s participation in therapies involving oral administration of sodium iodide I-131, to must include the date, diagnosis, and dosage of each I-131 therapy; (Core)

IV.A.6.k).(1).(c) the interpretation/multi-reading of mammograms at least 240 mammograms within a six-month period during their last two years of the residency program; (Core)

IV.A.6.k).(1).(d) participation in hands-on ultrasonographic examinations of various types; and, (Core)

IV.A.6.k).(1).(d).(i) supervised experience in interventional procedures: This includes image-guided biopsies, drainage procedures, angioplasty, embolization and infusion procedures, and other percutaneous interventional procedures; (Core)

IV.A.6.k).(1).(e) the performance, of interpretation, and complications of vascular, interventional, and invasive procedures and any complications; (Core)

IV.A.6.k).(1).(f) 12 months of training in diagnostic radiology prior to independent in-house on-call responsibilities; (Core)
IV.A.6.(k).(2) Medical Knowledge

Conferences/attended, courses/meetings attended, and self-assessment modules completed; and, etc., (Core)

IV.A.6.(k).(2).(a) compliance with regulatory-based training requirements in nuclear medicine and breast imaging; (Core)

IV.A.6.(k).(2).(b) performance on rotation-specific and/or annual yearly objective examinations. (Core)

IV.A.6.(k).(2).(c) Practice-based Learning and Improvement

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.(k).(3).(a) scholarly activity, such as publications and/or presentations. (Core)

IV.A.6.(k).(3).(b) Interpersonal and Communication Skills

Formal documented assessment of oral and written communication. (Core)

IV.A.6.(k).(4).(a).(i) Competence in oral communication must be judged through direct observation. Competence in written communication must be judged on the basis of the quality and timeliness of dictated reports. (Basal)

IV.A.6.(k).(4).(a).(ii) Professionalism

Compliance with institutional and departmental policies (e.g., including, but not limited to HIPAA, JCAHO Joint Commission, patient safety, infection control, and dress code, etc.); and, (Core)

IV.A.6.(k).(5).(a) status of medical license, if appropriate; (Core)

IV.A.6.(k).(5).(b) Systems-Based Practice

A learning activity that involves deriving a solution to a system problem at the departmental, institutional, local, regional, or national, or international level; (Core)

IV.A.6.(k).(6) Scholarly Activities

Diagnosic Radiology 30
IV.A.6.k).(8) Other

any materials pertinent to the educational experience of residency education. (Detail)

IV.A.6.l) There must be at least 80 hours of didactic (classroom and laboratory training) training under the direction of an authorized user (AU). (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 (e.g., lectures, journal club, etc.). (Core)

IV.B.2.b) During their training, all residents must engage in a scholarly project under faculty supervision. (Core)

IV.B.2.b).(1) This may take the form of laboratory research, or clinical research, or the analysis of disease processes, imaging techniques, or practice management issues. (Detail)

IV.B.2.b).(2) The results of such projects must be published or presented at institutional, local, regional, or national, or international meetings, and included in the resident’s learning portfolios. (Outcome)

IV.B.2.b).(3) 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)
At a minimum the Clinical Competency Committee must be composed of three members of the program faculty. (Core)

The program director may appoint additional members of the Clinical Competency Committee.

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)

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)

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

The Clinical Competency Committee should:

- review all resident evaluations semi-annually; (Core)
- prepare and ensure the reporting of Milestones evaluations of each resident semi-annually to ACGME; and, (Core)
- advise the program director regarding resident progress, including promotion, remediation, and dismissal. (Detail)

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)

The program must:

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, manual skills, and experience; and, (Core)

V.A.2.b).(6) ensure that written faculty member end-of-rotation evaluations are provided to the residents within one month of completion of the rotation; and, (Core)

V.A.2.b).(7) ensure that resident assessment includes the following: (Core)

V.A.2.b).(7).(a) Global faculty evaluation (all competencies); (Core)

V.A.2.b).(7).(b) 360 Multi-source Evaluation (for interpersonal skills/communication and professionalism); and (Core)

V.A.2.b).(7).(c) 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, address how they can be corrected, and 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.2.c).(2) Residents should be advanced to positions of higher responsibility only on the basis of their satisfactory progressive professional growth and scholarship. (Core)
V.A.2.c).(3) More frequent reviews of performance for residents experiencing difficulties or receiving unfavorable evaluations are required. When a resident fails to progress satisfactorily, a written plan identifying the problems and addressing how they can be corrected must be discussed with and 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. The Chair should ensure that confidential faculty evaluations by residents occur annually. Faculty members must receive annual feedback from these 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 the program’s graduates from the preceding three-year period who take the ABR Core Examination must pass by the end of residency. (Core)

V.C.2.c).(2) At least 90 percent of the program’s graduates from the preceding three-year period who take the American Osteopathic Board of Radiology (AOBR) physics and diagnostic imaging examinations must pass by the end of residency. (Core)
V.C.2.d) Residents and faculty must have the opportunity to evaluate the program confidentially and in writing at least annually, and (Detail)

V.C.2.d).(1) 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.d).(2) The 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)

V.C.4. For residents entering diagnostic radiology training before July 1, 2010, at least 50 percent of a program’s graduates should pass the oral examination either on the first attempt or, if only one section is failed, should pass that section at the first opportunity. For residents entering diagnostic radiology training on July 1, 2010 or thereafter, during the most recent five year period, at least 50 percent of a program’s graduates should pass the ABR Core Examination either on the first attempt, or if only one section is failed, should pass that section at the first opportunity. (Outcome)

VI. Resident Duty Hours in the Learning and Working Environment

VI.A. Professionalism, Personal Responsibility, and Patient Safety

VI.A.1. Programs and sponsoring institutions must educate residents and faculty members concerning the professional responsibilities of physicians to appear for duty appropriately rested and fit to provide the services required by their patients. (Core)

VI.A.2. The program must be committed to and responsible for promoting patient safety and resident well-being in a supportive educational environment. (Core)

VI.A.3. The program director must ensure that residents are integrated and actively participate in interdisciplinary clinical quality improvement and patient safety programs. (Core)

VI.A.4. The learning objectives of the program must:
VI.A.4.a) be accomplished through an appropriate blend of supervised patient care responsibilities, clinical teaching, and didactic educational events; and, (Core)

VI.A.4.b) not be compromised by excessive reliance on residents to fulfill non-physician service obligations. (Core)

VI.A.5. The program director and institution must ensure a culture of professionalism that supports patient safety and personal responsibility. (Core)

VI.A.6. Residents and faculty members must demonstrate an understanding and acceptance of their personal role in the following:

VI.A.6.a) assurance of the safety and welfare of patients entrusted to their care; (Outcome)

VI.A.6.b) provision of patient- and family-centered care; (Outcome)

VI.A.6.c) assurance of their fitness for duty; (Outcome)

VI.A.6.d) management of their time before, during, and after clinical assignments; (Outcome)

VI.A.6.e) recognition of impairment, including illness and fatigue, in themselves and in their peers; (Outcome)

VI.A.6.f) attention to lifelong learning; (Outcome)

VI.A.6.g) the monitoring of their patient care performance improvement indicators; and, (Outcome)

VI.A.6.h) honest and accurate reporting of duty hours, patient outcomes, and clinical experience data. (Outcome)

VI.A.7. All residents and faculty members must demonstrate responsiveness to patient needs that supersedes self-interest. They must recognize 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. Transitions of Care

VI.B.1. Programs must design clinical assignments to minimize the number of transitions in patient care. (Core)

VI.B.2. Sponsoring institutions and programs must ensure and monitor effective, structured hand-over processes to facilitate both continuity of care and patient safety. (Core)

VI.B.3. Programs must ensure that residents are competent in
communicating with team members in the hand-over process.  

VI.B.4. The sponsoring institution must ensure the availability of schedules that inform all members of the health care team of attending physicians and residents currently responsible for each patient’s care.  

VI.C. Alertness Management/Fatigue Mitigation  

VI.C.1. The program must:  

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

VI.C.1.b) educate all faculty members and residents in alertness management and fatigue mitigation processes; and,  

VI.C.1.c) adopt fatigue mitigation processes to manage the potential negative effects of fatigue on patient care and learning, such as naps or back-up call schedules.  

VI.C.2. Each program must have a process to ensure continuity of patient care in the event that a resident may be unable to perform his/her patient care duties.  

VI.C.3. The sponsoring institution must provide adequate sleep facilities and/or safe transportation options for residents who may be too fatigued to safely return home.  

VI.D. Supervision of Residents  

VI.D.1. In the clinical learning environment, each patient must have an identifiable, appropriately-credentialed and privileged attending physician (or licensed independent practitioner as approved by each Review Committee) who is ultimately responsible for that patient’s care.  

VI.D.1.a) This information should be available to residents, faculty members, and patients.  

VI.D.1.b) Residents and faculty members should inform patients of their respective roles in each patient’s care.  

VI.D.2. The program must demonstrate that the appropriate level of supervision is in place for all residents who care for patients.  

Supervision may be exercised through a variety of methods. Some activities require the physical presence of the supervising faculty member. 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 or resident physician, either in the institution, or by means of telephonic and/or electronic modalities. In some circumstances, supervision may include post-hoc review of resident-delivered care with feedback as to the appropriateness of that care. (Detail)

VI.D.3. Levels of Supervision

To ensure oversight of resident supervision and graded authority and responsibility, the program must use the following classification of supervision: (Core)

VI.D.3.a) Direct Supervision – the supervising physician is physically present with the resident and patient. (Core)

VI.D.3.b) Indirect Supervision:

VI.D.3.b).(1) 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.D.3.b).(2) 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.D.3.c) Oversight – the supervising physician is available to provide review of procedures/encounters with feedback provided after care is delivered. (Core)

VI.D.4. 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.D.4.a) The program director must evaluate each resident’s abilities based on specific criteria. When available, evaluation should be guided by specific national standards-based criteria. (Core)

VI.D.4.b) Faculty members functioning as supervising physicians should delegate portions of care to residents, based on the needs of the patient and the skills of the residents. (Detail)

VI.D.4.c) Senior residents or fellows should serve in a supervisory role of 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.D.5. Programs must set guidelines for circumstances and events in which residents must communicate with appropriate supervising faculty members, such as the transfer of a patient to an intensive care unit, or end-of-life decisions. (Core)

VI.D.5.a) Each resident must know the limits of his/her scope of authority, and the circumstances under which he/she is permitted to act with conditional independence. (Outcome)

VI.D.5.a).(1) In particular, PGY-1 residents should be supervised either directly or indirectly with direct supervision immediately available. (Core)

VI.D.6. Faculty supervision assignments should be of sufficient duration to assess the knowledge and skills of each resident and delegate to him/her the appropriate level of patient care authority and responsibility. (Detail)

VI.E. Clinical Responsibilities

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

VI.F. Teamwork

Residents must care for patients in an environment that maximizes effective 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. (Core)

VI.G. Resident Duty Hours

VI.G.1. Maximum Hours of Work per Week

Duty hours must be limited to 80 hours per week, averaged over a four-week period, inclusive of all in-house call activities and all moonlighting. (Core)

VI.G.1.a) Duty Hour Exceptions

A Review Committee may grant exceptions for up to 10% or a maximum of 88 hours to individual programs based on a sound educational rationale. (Detail)

The Review Committee for Diagnostic Radiology will not consider requests for exceptions to the 80-hour limit to the residents' work week.

VI.G.1.a).(1) In preparing a request for an exception the program
director must follow the duty hour exception policy
from the ACGME Manual on Policies and Procedures. (Detail)

Prior to submitting the request to the Review
Committee, the program director must obtain approval
of the institution’s GMEC and DIO. (Detail)

VI.G.2. Moonlighting

VI.G.2.a) Moonlighting must not interfere with the ability of the resident
to achieve the goals and objectives of the educational
program. (Core)

VI.G.2.b) Time spent by residents in Internal and External Moonlighting
(as defined in the ACGME Glossary of Terms) must be
counted towards the 80-hour Maximum Weekly Hour Limit. (Core)

VI.G.2.c) PGY-1 residents are not permitted to moonlight. (Core)

VI.G.3. Mandatory Time Free of Duty

Residents must be scheduled for a minimum of one day free of duty
every week (when averaged over four weeks). At-home call cannot
be assigned on these free days. (Core)

VI.G.4. Maximum Duty Period Length

VI.G.4.a) Duty periods of PGY-1 residents must not exceed 16 hours in
duration. (Core)

VI.G.4.b) Duty periods of PGY-2 residents and above may be
scheduled to a maximum of 24 hours of continuous duty in
the hospital. (Core)

VI.G.4.b).(1) Programs must encourage residents to use alertness
management strategies in the context of patient care
responsibilities. Strategic napping, especially after 16
hours of continuous duty and between the hours of
10:00 p.m. and 8:00 a.m., is strongly suggested. (Detail)

VI.G.4.b).(2) It is essential for patient safety and resident education
that effective transitions in care occur. Residents may
be allowed to remain on-site in order to accomplish
these tasks; however, this period of time must be no
longer than an additional four hours. (Core)

VI.G.4.b).(3) Residents must not be assigned additional clinical
responsibilities after 24 hours of continuous in-house
duty. (Core)
In unusual circumstances, residents, on their own initiative, may remain beyond their scheduled period of duty to continue to provide care to a single patient. Justifications for such extensions of duty are limited to reasons of required continuity for a severely ill or unstable patient, academic importance of the events transpiring, or humanistic attention to the needs of a patient or family. (Detail)

Under those circumstances, the resident must:

appropriately hand over the care of all other patients to the team responsible for their continuing care; and, (Detail)

document the reasons for remaining to care for the patient in question and submit that documentation in every circumstance to the program director. (Detail)

The program director must review each submission of additional service, and track both individual resident and program-wide episodes of additional duty. (Detail)

PGY-1 residents should have 10 hours, and must have eight hours, free of duty between scheduled duty periods. (Core)

Intermediate-level residents should have 10 hours free of duty, and must have eight hours between scheduled duty periods. They must have at least 14 hours free of duty after 24 hours of in-house duty. (Core)

R1, R2, and R3 PGY-2, PGY-3, and PGY-4 residents are considered to be at the intermediate level.

Residents in the final years of education must be prepared to enter the unsupervised practice of medicine and care for patients over irregular or extended periods. (Outcome)

R4-PGY-5 residents are considered to be in the final years of education.

This preparation must occur within the context of the 80-hour, maximum duty period length, and one-day-off-in-seven standards. While it is desirable that residents in their final years of education have eight
hours free of duty between scheduled duty periods, there may be circumstances when these residents must stay on duty to care for their patients or return to the hospital with fewer than eight hours free of duty. (Detail)

VI.G.5.c).(1).(a) Circumstances of return-to-hospital activities with fewer than eight hours away from the hospital by residents in their final years of education must be monitored by the program director. (Detail)

VI.G.6. Maximum Frequency of In-House Night Float

Residents must not be scheduled for more than six consecutive nights of night float. (Core)

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

PGY-2 residents and above must be scheduled for in-house call no more frequently than every-third-night (when averaged over a four-week period). (Core)

VI.G.8. At-Home Call

VI.G.8.a) Time spent in the hospital by residents on at-home call must count towards the 80-hour maximum weekly hour 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 duty, when averaged over four weeks. (Core)

VI.G.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.G.8.b) Residents are permitted to return to the hospital while on at-home call to care for new or established patients. Each episode of this type of care, while it must be included in the 80-hour weekly maximum, will not initiate a new “off-duty period”. (Detail)

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

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

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

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

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