

ACGME Program Requirements for Graduate Medical Education in the Subspecialties of Diagnostic Radiology

One-year Common Program Requirements are in BOLD

Effective: July 1, 2010

These requirements apply to all of the accredited subspecialty areas of diagnostic radiology and should be consulted along with the individual subspecialty program requirements.

Introduction

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

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

Int.B. Definition and Scope of Fellowship

Diagnostic radiology subspecialty fellowship programs are designed to develop advanced knowledge and skills in a specific clinical area. The program design and/or structure must be approved by the Review Committee as part of the regular review process.

Int.C. The educational program in diagnostic radiology subspecialties must be at least 12 months in length.

I. Institutions

I.A. Sponsoring Institution

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

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.

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.

The PLA should:

I.B.1.a) identify the faculty who will assume both educational and supervisory responsibilities for fellows;

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

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

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

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

I.B.3. A fellowship program in the subspecialties of diagnostic radiology should be accredited in institutions that either sponsor an ACGME-accredited residency program in diagnostic radiology or are integrated by formal agreement into such programs. Close cooperation between fellowship and residency program directors is required.

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 GMC must approve a change in program director. After approval, the program director must submit this change to the ACGME via the ADS.

- II.A.2. Qualifications of the program director must include:**
- II.A.2.a) requisite specialty expertise and documented educational and administrative experience acceptable to the Review Committee;**
 - II.A.2.b) current certification in the subspecialty by the American Board of Radiology, or specialty qualifications that are acceptable to the Review Committee;**
 - II.A.2.c) current medical licensure and appropriate medical staff appointment; and,**
 - II.A.2.d) post-residency experience in the subspecialty area, including fellowship education, or five years of practice experience in the subspecialty for those subspecialties in which no certification is offered.**
- II.A.3. The program director must administer and maintain an educational environment conducive to educating the fellows in each of the ACGME competency areas. The program director must:**
- II.A.3.a) prepare and submit all information required and requested by the ACGME;**
 - II.A.3.b) be familiar with and oversee compliance with ACGME and Review Committee policies and procedures as outlined in the ACGME Manual of Policies and Procedures;**
 - II.A.3.c) obtain review and approval of the sponsoring institution's GMEC/DIO before submitting to the ACGME information or requests for the following:**
 - II.A.3.c).(1) all applications for ACGME accreditation of new programs;**
 - II.A.3.c).(2) changes in fellow complement;**
 - II.A.3.c).(3) major changes in program structure or length of training;**
 - II.A.3.c).(4) progress reports requested by the Review Committee;**
 - II.A.3.c).(5) responses to all proposed adverse actions;**
 - II.A.3.c).(6) requests for increases or any change to fellow duty hours;**
 - II.A.3.c).(7) voluntary withdrawals of ACGME-accredited programs;**

- II.A.3.c).(8) requests for appeal of an adverse action; and,
- II.A.3.c).(9) appeal presentations to a Board of Appeal or the ACGME.
- II.A.3.d) obtain DIO review and co-signature on all program information forms, as well as any correspondence or document submitted to the ACGME that addresses:
 - II.A.3.d).(1) program citations, and/or
 - II.A.3.d).(2) request for changes in the program that would have significant impact, including financial, on the program or institution.

II.A.4. The program director should spend at least 80% of his or her professional time in the subspecialty, and devote sufficient time to fulfill all responsibilities inherent to meeting the educational goals of the program.

II.B. Faculty

- II.B.1. There must be a sufficient number of faculty with documented qualifications to instruct and supervise all fellows.
- II.B.2. The faculty must devote sufficient time to the educational program to fulfill their supervisory and teaching responsibilities and demonstrate a strong interest in the education of fellows.
- II.B.3. The physician faculty must have current certification in the specialty by the American Board of Radiology, or possess qualifications acceptable to the Review Committee.
- II.B.4. The physician faculty must possess current medical licensure and appropriate medical staff appointment.

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.

- II.C.1. There must be a program coordinator who devotes sufficient time to support the administration and educational conduct of the program.

II.D. Resources

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

- II.D.1. The program must have appropriate facilities and space for the education

of fellows. There must be adequate study space, conference space, and access to computers.

II.E. Medical Information Access

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

III. Fellow Appointments

III.A. Eligibility Criteria

Each fellow must successfully complete an ACGME-accredited specialty program and/or meet other eligibility criteria as specified by the Review Committee. The program must document that each fellow has met the eligibility criteria.

III.A.1. Prerequisite education for entry into the program should include the satisfactory completion of a diagnostic radiology residency program accredited by the ACGME or the Royal College of Physicians and Surgeons of Canada.

III.B. Number of Fellows

The program director may not appoint more fellows than approved by the Review Committee, unless otherwise stated in the specialty-specific requirements. The program's educational resources must be adequate to support the number of fellows appointed to the program.

III.B.1. The presence of other learners in the program, including residents from other specialties, other subspecialty fellows, PhD students, and nurse practitioners, must not interfere with the appointed fellows' education.

III.B.2. The fellows must not dilute or detract from the educational opportunities available to residents in the core diagnostic radiology residency.

III.B.3. Lines of responsibilities for the diagnostic radiology residents and the subspecialty fellows must be clearly defined.

IV. Educational Program

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

IV.A.1. Skills and competencies the fellow will be able to demonstrate at the conclusion of the program. The program must distribute these skills and competencies to fellows and faculty annually, in either written or electronic form. These skills and competencies should be reviewed by the fellow at the start of each rotation;

IV.A.2. ACGME Competencies

The program must integrate the following ACGME competencies into the curriculum:

IV.A.2.a) Patient Care

Fellows must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. Fellows:

- IV.A.2.a).(1) must have the opportunity to provide consultation with referring physicians or services;
- IV.A.2.a).(2) should have a clearly defined role in educating diagnostic radiology residents, and if appropriate, medical students and other professional personnel, in the care and management of patients;
- IV.A.2.a).(3) must follow standards of care for practicing in a safe environment, attempt to reduce errors, and improve patient outcomes;
- IV.A.2.a).(4) must apply low dose radiation techniques for both adults and children; and,
- IV.A.2.a).(5) must have the opportunity to perform and interpret all specified exams and/or invasive studies under close, graded responsibility and supervision.

IV.A.2.b) Medical Knowledge

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

- IV.A.2.b).(1) must demonstrate a level of expertise in the knowledge of those areas appropriate for a diagnostic radiology specialist;
- IV.A.2.b).(2) must be educated in low dose radiation techniques for both adults and children, and must learn how to prevent and/or treat complications of contrast administration; and,
- IV.A.2.b).(3) should develop skills in preparing and presenting educational material for medical students, graduate medical staff, and allied health personnel.

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

Fellows are expected to develop skills and habits to be able

including HIPAA, the Joint Commission, patient safety, and infection control.

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

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

IV.A.2.f).(1) Fellows must work in interprofessional teams to enhance patient safety and improve patient care quality.

IV.A.2.f).(2) Fellows must participate in identifying system errors and implementing potential system solutions.

IV.A.3. Curriculum Organization and Fellow Experiences

IV.A.3.a) Fellows must participate in scheduled conferences on a regular basis. Conferences must provide for progressive fellow participation. These conferences should include:

IV.A.3.a).(1) intradepartmental conferences;

IV.A.3.a).(2) departmental grand rounds;

IV.A.3.a).(3) at least one interdisciplinary conference per week; and,

IV.A.3.a).(4) peer-review case conferences and/or morbidity and mortality conferences.

IV.A.3.b) Fellows should attend and participate in local conferences and at least one national meeting or post-graduate course in the subspecialty during the program. Reasonable expenses should be reimbursed.

IV.A.3.c) Fellows must attend didactic conferences directed to the level of the fellow that provide formal review of the topics in the specialty curriculum. These conferences should occur at least twice per month.

IV.B. Fellows' Scholarly Activities

IV.B.1. The program must provide instruction in the fundamentals of experimental design, performance, and interpretation of results.

IV.B.2. All fellows must engage in a scholarly project.

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

IV.B.2.b) The results of such projects must be submitted for publication or presented at departmental, institutional, local, regional, national or international meetings.

V. Evaluation

V.A. Fellow Evaluation

V.A.1. Formative Evaluation

V.A.1.a) The faculty must evaluate fellow performance in a timely manner.

V.A.1.b) The program must:

V.A.1.b).(1) provide objective assessments of competence in patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice;

V.A.1.b).(2) use multiple evaluators (e.g., faculty, peers, patients, self, and other professional staff); and,

V.A.1.b).(3) provide each fellow with documented semiannual evaluation of performance with feedback.

V.A.1.b).(3).(a) The program must ensure that there is at least a quarterly review which should include:

V.A.1.b).(3).(a).(i) review of faculty evaluations of the fellow;

V.A.1.b).(3).(a).(ii) review of the procedure log; and,

V.A.1.b).(3).(a).(iii) documentation of compliance with institutional and departmental policies, including HIPAA, the Joint Commission, patient safety, and infection control.

V.A.1.c) The evaluations of fellow performance must be accessible for review by the fellow, in accordance with institutional policy.

V.A.2. Summative Evaluation

The program director must provide a summative evaluation for each fellow upon completion of the program. This evaluation must become part of the fellow's permanent record maintained by the institution, and must be accessible for review by the fellow in accordance with institutional policy. This evaluation must:

- V.A.2.a) document the fellow's performance during their education, and
- V.A.2.b) verify that the fellow has demonstrated sufficient competence to enter practice without direct supervision.

V.B. Faculty Evaluation

- V.B.1. At least annually, the program must evaluate faculty performance as it relates to the educational program.
- 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.
- V.B.3. These evaluations must include written, confidential evaluations by the fellows.
- V.B.4. Faculty members must receive annual feedback from these evaluations.

V.C. Program Evaluation and Improvement

- V.C.1. The program must document formal, systematic evaluation of the curriculum at least annually. The program must monitor and track each of the following areas:
 - V.C.1.a) fellow performance, and
 - V.C.1.b) faculty development.
- V.C.2. If deficiencies are found, the program should prepare a written plan of action to document initiatives to improve performance in the areas listed in section V.C.1. The action plan should be reviewed and approved by the teaching faculty and documented in meeting minutes.

VI. Fellow 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 fellows 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.
- VI.A.2. The program must be committed to and responsible for promoting patient safety and fellow well-being in a supportive educational environment.
- VI.A.3. The program director must ensure that fellows are integrated and actively participate in interdisciplinary clinical quality improvement

and patient safety programs.

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,

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

VI.A.5. The program director and sponsoring institution must ensure a culture of professionalism that supports patient safety and personal responsibility. Fellows and faculty members must demonstrate an understanding and acceptance of their personal role in the following:

VI.A.5.a) assurance of the safety and welfare of patients entrusted to their care;

VI.A.5.b) provision of patient- and family-centered care;

VI.A.5.c) assurance of their fitness for duty;

VI.A.5.d) management of their time before, during, and after clinical assignments;

VI.A.5.e) recognition of impairment, including illness and fatigue, in themselves and in their peers;

VI.A.5.f) attention to lifelong learning;

VI.A.5.g) the monitoring of their patient care performance improvement indicators; and,

VI.A.5.h) honest and accurate reporting of duty hours, patient outcomes, and clinical experience data.

VI.A.6. All fellows and faculty members must demonstrate responsiveness to patient needs that supersedes self-interest. Physicians 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.

VI.B. Transitions of Care

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

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.

VI.B.3. Programs must ensure that fellows 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 fellows 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 fellows to recognize the signs of fatigue and sleep deprivation;

VI.C.1.b) educate all faculty members and fellows 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 fellow 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 fellows who may be too fatigued to safely return home.

VI.D. Supervision of Fellows

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 fellows, faculty members, and patients.

VI.D.1.b) Fellows 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 fellows 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 fellow. Other portions of care provided by the fellow can be adequately supervised by the immediate availability of the supervising faculty member or fellow physician, either in the institution, or by means of telephonic and/or electronic modalities. In some circumstances, supervision may include post-hoc review of fellow-delivered care with feedback as to the appropriateness of that care.

VI.D.3. Levels of Supervision

To ensure oversight of fellow supervision and graded authority and responsibility, the program must use the following classification of supervision:

- VI.D.3.a) Direct Supervision – the supervising physician is physically present with the fellow and patient.**
- 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.**
 - 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.**
- VI.D.3.c) Oversight – the supervising physician is available to provide review of procedures/encounters with feedback provided after care is delivered.**
- VI.D.4. The privilege of progressive authority and responsibility, conditional independence, and a supervisory role in patient care delegated to each fellow must be assigned by the program director and faculty members.**
 - VI.D.4.a) The program director must evaluate each fellow’s abilities based on specific criteria. When available, evaluation should be guided by specific national standards-based criteria.**
 - VI.D.4.b) Faculty members functioning as supervising physicians should delegate portions of care to fellows, based on the needs of the patient and the skills of the fellows.**
 - VI.D.4.c) Fellows should serve in a supervisory role of residents or junior fellows in recognition of their progress toward independence, based on the needs of each patient and the**

skills of the individual fellow.

VI.D.5. Programs must set guidelines for circumstances and events in which fellows must communicate with appropriate supervising faculty members, such as the transfer of a patient to an intensive care unit, or end-of-life decisions.

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

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

VI.E. Clinical Responsibilities

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

VI.F. Teamwork

Fellows 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.

VI.G. Fellow 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.

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.

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

VI.G.1.a).(2) Prior to submitting the request to the Review Committee, the program director must obtain approval of the institution's GMEC and DIO.

VI.G.2. Moonlighting

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

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

VI.G.3. Mandatory Time Free of Duty

Fellows 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.

VI.G.4. Maximum Duty Period Length

Duty periods of fellows may be scheduled to a maximum of 24 hours of continuous duty in the hospital. Programs must encourage fellows 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.

VI.G.4.a) It is essential for patient safety and fellow education that effective transitions in care occur. Fellows 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.

VI.G.4.b) Fellows must not be assigned additional clinical responsibilities after 24 hours of continuous in-house duty.

VI.G.4.c) In unusual circumstances, fellows, 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.

VI.G.4.c).(1) Under those circumstances, the fellow must:

VI.G.4.c).(1).(a) appropriately hand over the care of all other patients to the team responsible for their continuing care; and,

- VI.G.4.c).(1).(b)** document the reasons for remaining to care for the patient in question and submit that documentation in every circumstance to the program director.
- VI.G.4.c).(2)** The program director must review each submission of additional service, and track both individual fellow and program-wide episodes of additional duty.
- VI.G.5.** **Minimum Time Off between Scheduled Duty Periods**
- VI.G.5.a)** **Fellows must be prepared to enter the unsupervised practice of medicine and care for patients over irregular or extended periods.**
- Fellows in the subspecialties of diagnostic radiology are considered to be in the final years of education.
- VI.G.5.a).(1)** **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 fellows have eight hours free of duty between scheduled duty periods, there may be circumstances when these fellows must stay on duty to care for their patients or return to the hospital with fewer than eight hours free of duty.**
- VI.G.5.a).(1).(a)** **Circumstances of return-to-hospital activities with fewer than eight hours away from the hospital by fellows must be monitored by the program director.**
- VI.G.6.** **Maximum Frequency of In-House Night Float**
- Fellows must not be scheduled for more than six consecutive nights of night float.**
- VI.G.7.** **Maximum In-House On-Call Frequency**
- Fellows must be scheduled for in-house call no more frequently than every-third-night (when averaged over a four-week period).**
- VI.G.8.** **At-Home Call**
- VI.G.8.a)** **Time spent in the hospital by fellows 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.**

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 fellow.

VI.G.8.b)

Fellows 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”.

VII. Experimentation and Innovation

Requests for experimentation or innovative projects that may deviate from the institutional, common, and specialty-specific program requirements must be approved in advance by the Review Committee. In preparing requests, the program director must follow Procedures for Approving Proposals for Experimentation or Innovative Projects located in the ACGME Manual on Policies and Procedures. Once a Review Committee approves a project, the sponsoring institution and program are jointly responsible for the quality of education offered to fellows for the duration of such a project.

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