

ACGME Program Requirements for Graduate Medical Education in Neuroradiology

One-year Common Program Requirements are in BOLD

Effective: July 1, 2007

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. The body of knowledge and practice of neuroradiology comprises both imaging (computed tomography, magnetic resonance imaging, plain film interpretation, neurosonography, and nuclear radiology) and invasive procedures related to the brain, spine and spinal cord, head, neck, and organs of special sense (eyes, ears, nose) in adults and children. Special training and skills are required to enable the neuroradiologist to function as an expert diagnostic and therapeutic consultant and practitioner. In addition to knowledge of imaging findings, the fellows must learn the fundamentals of pathology, pathophysiology, and clinical manifestations of the brain, spine and spinal cord, head, neck, and organs of special sense. The program must provide fellows with an organized, comprehensive, and supervised full-time educational experience in the selection, interpretation, and performance of neuroradiologic examinations and procedures. The program must also provide fellows with opportunities to conduct research in the field of neuroradiology.

The training program must provide the fellow with the opportunity to develop, under supervision, progressively independent skills in the performance and

interpretation of neuroradiologic imaging studies and invasive procedures. At the culmination of training, the fellow should be capable of independent and accurate clinical decision-making in all areas of neuroradiology.

Int.C. The program shall offer one year of graduate medical education in neuroradiology. Prerequisite training for entry into a diagnostic radiology subspecialty program should include the satisfactory completion of a diagnostic radiology residency accredited by the Accreditation Council for Graduate Medical Education (ACGME) or the Royal College of Physicians and Surgeons of Canada (RCPSC), or other training judged suitable by the program director.

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).

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. 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; and,

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

II.A.2.c).(1) The program director must be a credentialed member of the radiology faculty and must spend at least 80% of his or her time in the practice of neuroradiology.

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.B. Faculty

- II.B.1. **There must be a sufficient number of faculty with documented qualifications to instruct and supervise all fellows.**
 - II.B.1.a) The neuroradiology faculty or staff must include, in addition to the program director, one or more neuroradiologists who spend at least 80% of their time in the practice of neuroradiology.
 - II.B.1.b) To ensure adequate supervision and evaluation of a fellow's academic progress, the faculty/fellow ratio must be at least one full-time faculty person for each fellow.
- 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.2.a) These responsibilities must include supervision of fellows' performance and interpretation of neuroradiologic procedures.
- II.B.3. **The physician faculty must have current certification in the subspecialty by the American Board of Radiology, or possess qualifications acceptable to the Review Committee.**
 - II.B.3.a) At least 50% of the physician faculty must have subspecialty certification in neuroradiology from the American Board of Radiology.

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. Administrative support should be provided for the conduct of research projects. Assistance with literature searches, editing, statistical tabulation, and photography should be provided.

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. Equipment and Space

II.D.1.a) The following “state-of-the-art” equipment must be available: magnetic resonance (MR) scanner, multi-detector computed tomography (CT) scanner, digital subtraction angiography equipment, a radiographic-fluoroscopic room(s) with tilt table suitable for performing myelography, and conventional radiographic equipment. There must be advanced image processing workstations available for techniques such as CT angiography, perfusion imaging and multiplanar/three-dimensional anatomic image reconstruction. Physiological monitoring must be available. There must be adequate facilities, adjacent to or within examination rooms, for storing supplies needed for the conduct of invasive neuroradiologic procedures. There must be appropriately trained nurses and technologists for these invasive procedures. A crash cart for emergency ventilation and cardiac life support must be available.

II.D.1.b) Adequate space for image display, interpretation of studies, and consultation with clinicians must be available. There must be adequate office space and support space for neuroradiology faculty/staff and fellows.

II.D.1.c) The program should provide adequate office space and supplies for the conduct of research projects.

II.D.2. Library

There should be ready direct or indirect access to a library of current general medical texts and periodicals. In particular, there should be periodicals and texts in the fields of neuroradiology, diagnostic radiology, head and neck radiology, neurology, neurosurgery, neuroanatomy,

physics, neuropathology, otolaryngology, neurophysiology, and orthopedic surgery. Internet access and web-based literature search facilities must be available at all times. A film-based, web-based, or electronic neuroradiology teaching file must be available for use by the neuroradiology fellows. The available teaching material should be enhanced with new cases when appropriate.

II.E. Medical Information Access

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

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.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 minimum number of fellows need not be greater than one, but two or more fellows are preferable.

III.B.2. The number of fellows must not have a negative impact on the core diagnostic radiology program.

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 perform 1500 neuroradiological CT scans and 1500 neuroradiological MR scans; and,
- IV.A.2.a).(2) must participate in and document the performance and interpretation of a minimum of:
 - IV.A.2.a).(2).(a) 50 catheter-based angiographic procedures (participation in at least 5 intracranial microcatheter procedures is highly recommended);
 - IV.A.2.a).(2).(b) 50 image-guided invasive procedures (CT, MR, or fluoroscopically guided); and,
 - IV.A.2.a).(2).(c) 250 non-invasive (CT and/or MR) angiograms.

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 perform invasive procedures including: diagnostic catheter-based cerebral angiography; percutaneous minimally-invasive procedures for image-guided biopsies, spinal canal access (for myelography, spinal fluid analysis, and medication installation); and spine interventions, with direct supervision by an attending radiologist including pre- and postprocedural patient care;
- IV.A.2.b).(2) must perform non-invasive imaging studies related to the brain, head, neck, organs of special sense, skull base, and spine should include: CT; MRI; non-invasive (MR/CT) angiography; nuclear medicine studies (including SPECT and PET), and radiography;
- IV.A.2.b).(3) must perform advanced techniques such as magnetic resonance spectroscopy (MRS), functional activation studies (fMRI). Diffusion Weighted Imaging (DWI), Diffusion Tensor Imaging (DTI), and Perfusion Imaging (CTP and MRP) should be incorporated into the training program;
- IV.A.2.b).(4) must be thoroughly familiar with all aspects of administering and monitoring sedation of the conscious patient;

- IV.A.2.b).(5) must have completed advanced cardiac life support training and certification;
- IV.A.2.b).(6) must perform and interpret all non-invasive imaging studies of the brain, spine, neck, organs of special sense and vascular supply to these regions, including:
- IV.A.2.b).(6).(a) CT – Anatomic imaging CT, CT Perfusion, Multiplanar imaging and advanced image reconstruction;
- IV.A.2.b).(6).(b) MR – Anatomic imaging, MR angiography, MR Perfusion, MR spectroscopy, Diffusion Imaging, Diffusion Tensor Imaging and functional MR;
- IV.A.2.b).(6).(c) plain radiography;
- IV.A.2.b).(6).(d) ultrasound – fetal, vascular sonography, and transcranial Doppler sonography;
- IV.A.2.b).(6).(e) nuclear medicine studies including PET; and,
- IV.A.2.b).(6).(f) new and evolving imaging techniques.
- IV.A.2.b).(7) must perform the following invasive procedures:
- IV.A.2.b).(7).(a) angiography (diagnostic and therapeutic) of the cranial cavity, neck and spine;
- IV.A.2.b).(7).(b) image guided access to the spinal subarachnoid space for the purposes of myelography, CSF analysis and/or instillation of therapeutic agents;
- IV.A.2.b).(7).(c) image guided biopsies of the spine, skull, and neck;
- IV.A.2.b).(7).(d) spine procedures including vertebroplasty, kyphoplasty, discography epidural injections, and nerve blocks; and,
- IV.A.2.b).(7).(e) performance of relevant patient evaluation, patient management skills and relevant pharmacology.
- IV.A.2.b).(8) should have formal didactic instruction in the indications, limitations, risks, alternatives and appropriate utilization of neuroradiologic imaging and interventional procedures;
- IV.A.2.b).(9) should have formal didactic instruction in normal anatomy, physiology and genetics of the central and peripheral nervous systems;
- IV.A.2.b).(10) should have formal didactic instruction in pathophysiology,

pathology, anatomy, and genetics of diseases that affect the brain, neck and spine, including congenital, traumatic, vascular, neoplastic, infectious, inflammatory, metabolic, and neurodegenerative disorders;

IV.A.2.b).(11) should have formal didactic instruction in neuroradiologic consequences of medical and surgical treatments of diseases of the brain, spine and head and neck; and,

IV.A.2.b).(12) should have formal didactic instruction in radiologic sciences with an emphasis on CT and MR physics, radiation biology, and the pharmacology of radiographic contrast materials.

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

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

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

IV.A.2.c).(2) locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems;

IV.A.2.c).(3) reach their own diagnostic conclusions, which are then reviewed with the faculty; diagnostic reports generated by fellows should be reviewed for content, level of confidence, grammar, and style. Feedback must be provided and the reports must be signed by a neuroradiology staff physician;

IV.A.2.c).(4) actively participate in a regular review of all morbidity and mortality related to the performance of interventional procedures, which must be held at least four times a year;

IV.A.2.c).(5) participate in one or more weekly departmental and or interdepartmental conferences with allied clinical departments (e.g., neurology, neurosurgery, orthopedic surgery, neuron-oncology, head and neck surgery, and ophthalmology) in addition to neuroscience grand rounds;

IV.A.2.c).(6) utilize web-based educational materials including those provided by ASNR to enhance their learning;

IV.A.2.c).(7) teach conferences for medical students, radiology residents, residents from other services, graduate medical staff and other health professionals;

IV.A.2.c).(8) present at least one didactic lecture reflecting their

research; and,

IV.A.2.c).(9) attend and participate in local and regional extramural conferences and should attend at least one national meeting or postgraduate course in neuroradiology, and participate in local, regional and national neuroradiology societies.

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

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

IV.A.2.e) Professionalism

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

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.3. Procedure log

The fellows are required to maintain documentation (a procedure log) of the invasive cases they have performed. The program director must review the log with the fellow at least quarterly.

IV.A.4. Interchange with students and fellows in other specialties

Fellows should be encouraged to participate in the research projects of staff persons and fellows in other specialties. They should attend clinical conferences in other specialties and serve as consultants to these conferences. It is desirable that they participate in the clinical teaching of medical students and also in the preclinical curriculum in subjects such as neuroanatomy and neurophysiology.

IV.A.5. Participation in a journal club that meets on a regular basis, in which a fellow presents and leads a discussion on current peer reviewed articles pertaining to the specialty of neuroradiology is encouraged.

IV.A.6. The curriculum must provide a minimum of:

IV.A.6.a) four weeks or equivalent of dedicated training in pediatric neuroradiology;

- IV.A.6.b) four weeks or equivalent of dedicated training in head and neck radiology;
- IV.A.6.c) four weeks or equivalent of training in spine radiology including non-invasive studies and image-guided procedures such as access to the spinal canal for myelography and medication installation, biopsy, discography, and therapeutic spine procedures;
- IV.A.6.d) six weeks or equivalent of training in vascular neuroradiology. (The program must offer the opportunity for fellows to perform and interpret non-invasive and invasive diagnostic catheter-based cervicocerebral angiography. During this period there should be a special emphasis on catheter-based selective cervicocerebral angiography. Experience in microcatheter techniques for thrombolysis treatment of acute stroke and endovascular treatment of aneurysms is strongly recommended.); and,
- IV.A.6.e) the remainder of the time should be spent in general (adult) neuroradiology. During this time there should be an experience in new and evolving techniques such as Perfusion imaging, MR spectroscopy, Diffusion imaging, Diffusion Tension Imaging, fMRI, and PET.

Note: Since programs may not offer dedicated rotations in each subspecialty equivalent, it is possible that training may be calculated based on case volumes in each subspecialty.

IV.B. Fellows' Scholarly Activities

- IV.B.1. The fellows should learn the fundamentals of experimental design, performance, and interpretation of results.
- IV.B.2. Fellows should participate in clinical, basic biomedical, or health services research projects and should be encouraged to undertake at least one project as principal investigator.
- IV.B.3. Fellows should submit at least one scientific paper or exhibit for presentation at a regional or national meeting.
- IV.B.4. The opportunity also must be provided for fellows to develop their competence in critical assessment of new imaging modalities and of new procedures in neuroradiology.

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.c)** The evaluations of fellow performance must be accessible for review by the fellow, in accordance with institutional policy.
- V.A.1.d)** Fellow assessment must include quarterly meetings with the program director to discuss performance and methods for improvement.
- 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.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.

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.

