ACGME Program Requirements for Fellowship Education
in Abdominal Radiology

Common Program Requirements are in BOLD

Introduction

A. Definition and Scope of the Subspecialty

A fellowship program in a subspecialty of diagnostic radiology is an educational experience of at least one year designed to develop advanced knowledge and skills in a specific clinical area. ~~All educational components of the program should be related to program goals~~. The program design and/or structure must be approved by the Review Committee as part of the regular review process.

Abdominal radiology constitutes the application and interpretation of conventional techniques and procedures as they apply to diseases involving the gastrointestinal tract, genitourinary tract, and the intraperitoneal and extra peritoneal abdominal organs. These techniques and procedures include computed tomography, ultrasonography, magnetic resonance (MR) imaging, nuclear medicine, and fluoroscopy.

The program must substantially enhance the fellows' knowledge of all forms of diagnostic imaging and interventional techniques as they apply to the unique clinical and pathophysiologic problems encountered in diseases affecting the gastrointestinal and genitourinary systems. Fellows should have education in normal and pathologic anatomy and physiology of gastrointestinal and genitourinary disease. The program should be structured to develop expertise in the appropriate application of all forms of diagnostic imaging and interventions to problems of the abdomen and pelvis.

~~B. Duration of Training~~

~~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

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.

B. Participating Sites

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:

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

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

c) specify the duration and content of the educational experience; and,

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

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).

3. An abdominal radiology fellowship program ~~may~~ should be accredited in institutions that either sponsor a residency education program in diagnostic radiology accredited by the Accreditation Council for Graduate Medical Education (ACGME) or are integrated by formal agreement into such programs. Close cooperation between the fellowship and residency program directors is required. An exception to the above is a pediatric radiology fellowship which is structured in a free standing children's hospital.

II. Program Personnel and Resources

A. Program Director

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.

a) *The program director should spend all of his/her professional time in abdominal radiology, and devote sufficient time to fulfill all responsibilities inherent in meeting the educational goals of the program.*

2. Qualifications of the program director must include:

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a) requisite specialty expertise and documented educational and administrative experience acceptable to the Review Committee;

b) current certification in the specialty by the American Board of Radiology**, or specialty qualifications that are acceptable to the Review Committee; and,**

c) current medical licensure and appropriate medical staff appointment.

d) current subspecialty certification in those subspecialties in which certification is offered;

e) post-residency experience in the subspecialty area, including ~~preferably~~ fellowship training, or five years of experience in the subspecialty for those subspecialties in which no certification is offered;

f) experience as an educator and supervisor of fellows in abdominal radiology.

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:

a) prepare and submit all information required and requested by the ACGME;

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;

c) obtain review and approval of the sponsoring institution's GMEC/DIO before submitting to the ACGME information or requests for the following:

(1) all applications for ACGME accreditation of new programs;

(2) changes in fellow complement;

(3) major changes in program structure or length of training;

(4) progress reports requested by the Review Committee;

(5) responses to all proposed adverse actions;

(6) requests for increases or any change to fellow duty hours;

(7) voluntary withdrawals of ACGME-accredited programs;

(8) requests for appeal of an adverse action;

(9) appeal presentations to a Board of Appeal or the ACGME.

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:

(1) program citations, and/or

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

B. Faculty

1. There must be a sufficient number of faculty with documented qualifications to instruct and supervise all fellows.

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.

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.**

a) In addition to the program director, the faculty should include at least one other full-time radiologist specializing in abdominal radiology. At a minimum, the program faculty must have two full-time equivalent faculty members dedicated to the program. Although it is desirable that abdominal radiologists supervise special imaging such as computed tomography, ultrasonography, and magnetic resonance imaging, in instances where they are not expert in a special imaging technique, other radiologists who are specialists in those areas must be part-time members of the abdominal radiology faculty. The faculty must provide didactic teaching and supervision of the fellows' performance and interpretation of all abdominal imaging procedures.

b) The total number of fellows in the program must be commensurate with the capacity of the program to offer an adequate educational experience in abdominal radiology. The minimum number of fellows need not be greater than one, but at least two fellows are desirable. To ensure adequate supervision and evaluation of the fellows' academic progress, the faculty/fellow ratio should not be less than one faculty member to each fellow.

4. **The physician faculty must possess current medical licensure and appropriate medical staff appointment.**

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.

1. *A program coordinator must devote sufficient time to support the administration and educational conduct of the program.*

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.

1. *The program must have appropriate facilities and space for the education of the fellows. There must be office space, conference space, and access to computers.*

2. Modern imaging equipment and adequate space must be available to accomplish the overall educational program in abdominal radiology. There must be state-of-the-art equipment for conventional radiography, digital fluoroscopy, computed tomography, ultrasonography, nuclear medicine, and magnetic resonance imaging. Laboratory and pathology services must be adequate to support the educational experience in abdominal radiology. Adequate areas for display of images, interpretation of images, and consultation with clinicians must be available.

~~2. Ancillary teaching resources must include access to a medical library. A variety of textbooks, journals, and other teaching materials in abdominal radiology and related medical and surgical fields must be available. A subspecialty teaching file and in-house file must be actively developed and available for use by residents. The ACR teaching files in gastrointestinal and genitourinary radiology only partially meet this requirement.~~

3. There should be an ACGME-accredited residency or subspecialty program available in general surgery, gastroenterology, oncology, urology, gynecology, and pathology~~; at a minimum there must be Board-certified or specialists in these areas to provide appropriate patient populations and educational resources in the institution. These specialists may serve as additional faculty.~~

4. Fellows must have an adequate volume and variety of imaging studies and ~~interventional~~ image-guided invasive procedures, and must be provided instruction in their indications, appropriate utilization, risks, and alternatives;. ~~The resident must have the opportunity to perform the abdominal imaging studies, including: urethrography; urography;~~

261 ~~cystography; hysterosalpingography; computed tomography;~~
262 ~~ultrasonography; MR imaging; and plain radiographic and fluoroscopic~~
263 ~~studies of the hollow gastrointestinal tract. The resident also must gain~~
264 ~~experience in performing guided biopsies of intraperitoneal and~~
265 ~~retroperitoneal structures, aspiration and drainage of abscesses.~~
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267 **E. Medical Information Access**
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269 **Fellows must have ready access to specialty-specific and other appropriate**
270 **reference material in print or electronic format. Electronic medical literature**
271 **databases with search capabilities should be available.**
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273 **III. Fellow Appointments**
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275 **A. Eligibility Criteria**
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277 **Each fellow must successfully complete an ACGME-accredited specialty**
278 **program and/or meet other eligibility criteria as specified by the Review**
279 **Committee. The program must document that each fellow has met the**
280 **eligibility criteria.**
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282 *1. Prerequisite training for entry into ~~a subspecialty~~ the fellowship program*
283 *~~of Diagnostic Radiology~~ should include the satisfactory completion of a*
284 *diagnostic radiology residency program accredited by the ACGME or the*
285 *Royal College of Physicians and Surgeons of Canada (RCPSC), or the*
286 *completion of other radiology ~~training~~ experience judged to be ~~suitable~~*
287 *acceptable to ~~by~~ the program director.*
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289 **B. Number of Fellows**
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291 **The program director may not appoint more fellows than approved by the**
292 **Review Committee, unless otherwise stated in the specialty-specific**
293 **requirements. The program's educational resources must be adequate to**
294 **support the number of fellows appointed to the program.**
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296 *1. The presence of other learners (including, but not limited to residents*
297 *from other specialties, subspecialty fellows, PhD students, and nurse*
298 *practitioners) in the program must not interfere with the appointed fellows'*
299 *education.*
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301 *2. The fellows must not dilute or detract from the educational opportunities*
302 *available to residents in the core diagnostic radiology residency program.*
303 *Lines of responsibilities of the diagnostic radiology residents and the*
304 *subspecialty fellow must be clearly defined.*
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306 **IV. Educational Program**
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308 **A. The curriculum must contain the following educational components:**
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310 **1. Skills and competencies the fellow will be able to demonstrate at the**
311 **conclusion of the program. The program must distribute these skills**
312 **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;

2. ACGME Competencies

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

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:

(1) must have the opportunity to provide consultation with referring physicians or services;

(2) should have a clearly defined role in educating diagnostic residents, and if appropriate, medical students and other professional personnel in the care and management of patients;

(3) must follow standards of care for practicing in a safe environment, attempt to reduce errors, and improve patient outcomes;

(4) must apply low dose radiation techniques in both adults and children;

(5) must have the opportunity to perform and interpret all the following under close, graded responsibility and supervision;

(6) must have the opportunity to interpret the range of abdominal imaging studies, encompassing:

(a) plain films and contrast enhanced conventional radiography studies of the GI and GU tracts including Barium contrast studies and urography;

(b) all ultrasonic examinations of the solid and hollow organs and conduits of the GI tract and of the kidneys, retroperitoneal spaces, the bladder and male and female reproductive organs and conduits;

(c) all computed tomography examinations of the solid and hollow organs and conduits of the GI and GU tract and associated vessels and spaces,

(d) all magnetic resonance imaging examinations of the abdomen including but not limited to magnetic

resonance cholangiopancreatography and magnetic resonance angiography.

(7) must be familiar with the indications and complications of percutaneous nephrostomy, and transhepatic cholangiography, tumor embolization, and percutaneous ablation; ~~and obtain experience in providing fluoroscopic guidance for the dilation of gastrointestinal, biliary, pancreatic, and ureteric duct strictures. Interpretation of endoscopic retrograde cholangiopancreatography (ERCP) and operative cholangiography must be taught.~~

(8) must be familiar with the indications, performance, and interpretation of PET and PET/CT in relation to abdominal disease;

~~(9)~~ (8)should~~ have the opportunity~~, through conferences and individual consultation, ~~for the fellows to~~ integrate invasive procedures, where indicated, into optimal care plans for patients, even though formal responsibility for performing the procedures may not be part of the program.

~~The program must provide instruction in the indications for, as well as the complications of, certain procedures, such as visceral angiography, tumor embolization, radionuclidescintigraphy, lithotripsy, gastrostomy, nephrostomy, and cholecystostomy~~.

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:

(1) must demonstrate a level of expertise in the knowledge of those areas appropriate for a radiologist specialist;

(2) must be educated in low dose radiation techniques in both adults and children, and learn how to prevent and/or treat complications of contrast administration;

(3) should develop skills in preparing and presenting educational material for medical students, graduate medical staff, and allied health personnel;

~~Education must be available in the basic radiologic sciences, e.g., diagnostic radiologic physics, radiation biology, and the pharmacology of radiographic contrast materials.~~

(4) ~~should prepare clinically and/or pathologically proven cases for inclusion in an ongoing teaching file~~;

(4) (~~5~~)must have daily image interpretation sessions, under faculty review and critique, in which fellows reach their own diagnostic conclusions. ~~Diagnostic reports generated by fellows should be closely reviewed for content, level of confidence, grammar, and style~~.

c) Practice-based Learning and Improvement

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

(1) systematically analyze practice using quality improvement methods, and implement changes with the goal of practice improvement;

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

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.

(1) Fellows must communicate effectively with patients, colleagues, referring physicians, and other members of the health care team concerning imaging and procedure appropriateness, informed consent, safety issues, and the results of imaging tests or procedures. 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.

e) Professionalism

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

Fellows ~~are expected to~~ must demonstrate:

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

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

(3) respect for patient privacy and autonomy;

(4) *accountability to patients, society and the profession;*

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

(6) *compliance with institutional and departmental policies (HIPAA, the Joint Commission, patient safety, infection control, etc).*

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.

(1) *work in interprofessional teams to enhance patient safety and improve patient care quality;*

(2) *participate in identifying system errors and implementing potential systems solutions.*

3. Fellows must have both clinical and didactic experiences that encompass the full breadth of abdominal diseases and their pathophysiology. This experience must include uncommon problems involving the gastrointestinal tract, genitourinary tract, and abdomen~~, including but not limited to the liver and biliary system, pancreas, stomach, esophagus, small bowel, colon, spleen, kidneys, adrenal glands, bladder, male and female reproductive systems, and lymphatic system~~.

4. ~~Fellows should have an understanding of the pathophysiology of diseases that affect the gastrointestinal and genitourinary tracts.~~ Fellows should be instructed in ~~D~~~~iagnostic skill and understanding of uncommon problems in abdominal disease, as well as of~~ the indications, risks, limitations, alternatives, and appropriate utilization of imaging and ~~interventional~~ image-guided invasive procedures. ~~, should be part of the body of knowledge imparted;~~

5. *Fellows must participate on a regular basis in scheduled conferences. Conferences must provide for progressive fellow participation. Scheduled presentations by fellows should be encouraged. These conferences should include:*

a) intradepartmental conferences

b) departmental grand rounds

c) at least one interdisciplinary conference per week

519 *d) peer review case conference and/or M&M conference*
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521 *6. Fellows should attend and participate in local conferences and at least*
522 *one national meeting or post graduate course in the subspecialty while in*
523 *training. Participation in local or national subspecialty societies should be*
524 *encouraged. Reasonable expenses should be reimbursed;*
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526 *7. Fellows must attend didactic conferences directed to the level of the*
527 *fellow that provides formal review of the topics in the specialty curriculum.*
528 *These conferences should occur at least twice a month.*
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530 **B. Fellows' Scholarly Activities**
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532 *1. The program must provide instruction in the fundamentals of experimental*
533 *design, performance, and interpretation of results.*
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535 *2. All fellows must engage in a scholarly project. This project may take the*
536 *form of laboratory research, clinical research, analysis of disease*
537 *processes, imaging techniques or practice management issues. The*
538 *results of such projects must be submitted for publication or presented at*
539 *local, regional, national or international meetings.*
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541 **V. Evaluation**
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543 **A. Fellow Evaluation**
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545 **1. Formative Evaluation**
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547 **a) The faculty must evaluate fellow performance in a timely**
548 **manner.**
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550 **b) The program must:**
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552 **(1) provide objective assessments of competence in**
553 **patient care, medical knowledge, practice-based**
554 **learning and improvement, interpersonal and**
555 **communication skills, professionalism, and systems-**
556 **based practice;**
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558 **(2) use multiple evaluators (e.g., faculty, peers, patients,**
559 **self, and other professional staff); and,**
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561 **(3) provide each fellow with documented semiannual**
562 **evaluation of performance with feedback.**
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564 *(a) The program must ensure that there is at least a*
565 *quarterly review which should include:*
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567 *(i) review of faculty's evaluations of the fellow,*
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569 *(ii) review of the procedure log*
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(iii) documentation of compliance with institutional and departmental policies (HIPAA, the Joint Commission, patient safety, infection control, etc).

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

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:

a) document the fellow's performance during their education, and

b) verify that the fellow has demonstrated sufficient competence to enter practice without direct supervision.

B. Faculty Evaluation

1. At least annually, the program must evaluate faculty performance as it relates to the educational program.

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.

3. These evaluations must include a written confidential evaluation by the fellows. Faculty must receive annual feedback from these evaluations.

C. Program Evaluation and Improvement

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:

a) fellow performance, and

b) faculty development

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

A. Principles

1. The program must be committed to and be responsible for promoting patient safety and fellow well-being and to providing a supportive educational environment.

2. Duty hour assignments must recognize that faculty and fellows collectively have responsibility for the safety and welfare of patients.

B. Supervision of Fellows

The program must ensure that qualified faculty provide appropriate supervision of fellows in patient care activities.

C. Duty Hours (the terms in this section are defined in the ACGME Glossary and apply to all programs)

Duty hours are defined as all clinical and academic activities related to the program; i.e., patient care (both inpatient and outpatient), administrative duties relative to patient care, the provision for transfer of patient care, time spent in-house during call activities, and scheduled activities, such as conferences. Duty hours do *not* include reading and preparation time spent away from the duty site.

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

2. Fellows must be provided with one day in seven free from all educational and clinical responsibilities, averaged over a four-week period, inclusive of call.

3. Adequate time for rest and personal activities must be provided. This should consist of a 10-hour time period provided between all daily duty periods and after in-house call.

D. On-call Activities

1. In-house call must occur no more frequently than every-third-night, averaged over a four-week period.

2. Continuous on-site duty, including in-house call, must not exceed 24 consecutive hours. Fellows may remain on duty for up to six additional hours to participate in didactic activities, transfer care of patients, conduct outpatient clinics, and maintain continuity of medical and surgical care.

a) *During this time, fellows may complete call activities and participate in read-out sessions with faculty of the previous night's cases.*

3. No new patients may be accepted after 24 hours of continuous duty.

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a) *A new patient is defined as reading a new study or participating in an interventional procedure on a patient for whom the fellow has not previously provided care.*

4. At-home call (or pager call)

a) The frequency of at-home call is not subject to the every-third-night, or 24+6 limitation. However at-home call must not be so frequent as to preclude rest and reasonable personal time for each fellow.

b) Fellows taking at-home call must be provided with one day in seven completely free from all educational and clinical responsibilities, averaged over a four-week period.

c) When fellows are called into the hospital from home, the hours fellows spend in-house are counted toward the 80-hour limit.

E. Moonlighting

1. Internal moonlighting must be considered part of the 80-hour weekly limit on duty hours.

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

F. Duty Hours Exceptions

The Review Committee for Diagnostic Radiology will not consider requests for duty hours exceptions.

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 residents for the duration of such a project.

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