

ACGME Program Requirements for Graduate Medical Education in Adult Cardiothoracic Anesthesiology

One-year Common Program Requirements are in BOLD

Effective: February 14, 2006

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. Adult cardiothoracic anesthesiology is the anesthesiology subspecialty devoted to the preoperative, intraoperative, and postoperative care of adult patients undergoing cardiothoracic surgery and related invasive procedures.

Int.C Fellowship education in adult cardiothoracic anesthesiology shall comprise a minimum of 12 months duration, beginning after satisfactory completion of a residency program in anesthesiology. Because cardiothoracic anesthesiology education requires an intensive continuum of training, it should not be interrupted by frequent and/or prolonged periods of absence. The majority of the training must be spent in caring for patients in the operating room, other anesthetizing locations, and intensive care units. The training shall include experience in providing anesthesia for cardiac, non-cardiac thoracic, and intrathoracic vascular surgical procedures. It may also include anesthesia for non-operative diagnostic and interventional cardiac and thoracic procedures outside of the operating room. Preanesthesia preparation and postanesthesia care, pain management, and advanced cardiac life support shall also be included. Fellows must be educated in advanced cardiac life support and must be an ACLS provider.

Int. D The program must be structured to ensure optimal patient care while providing fellows the opportunity to develop skills in clinical care and judgment, teaching, and research. The adult cardiothoracic anesthesiology fellow should be proficient in providing anesthesia care for patients undergoing cardiac surgery with and without extracorporeal circulation, and thoracic surgery including operations on the lung, esophagus, and thoracic aorta. The curriculum should also include experience with patients undergoing non-operative diagnostic and interventional cardiac, thoracic, and electrophysiological procedures. In addition, fellows should develop skills in the conduct of preoperative patient evaluation and interpretation of cardiovascular and pulmonary diagnostic test data, hemodynamic and respiratory monitoring, advanced-level perioperative transesophageal echocardiography (TEE), management of cardiopulmonary bypass (CPB), pharmacological and mechanical hemodynamic support, perioperative critical care, including ventilatory support and perioperative pain management. To meet these goals, the program should expose fellows to the wide variety of clinical problems in cardiothoracic patients as outlined below, which are necessary for the development of these clinical skills. Each fellow should also be able to function as a consultant in the anesthetic care of cardiothoracic patients.

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 institutions.

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.C. Relationship to the Core Residency Program

Accreditation of the fellowship program will be granted only when the program is associated with an ACGME-accredited core residency program by formal agreement. There must be close cooperation between the core program and the fellowship training program. The division of responsibilities between the fellows in the core program and the adult cardiothoracic fellows must be clearly delineated. The presence of an adult cardiothoracic anesthesiology fellowship must not be permitted to compromise the clinical experience and the number of cases available to the residents in a core program in anesthesiology.

I.D. Institutional Policy

There should be an institutional policy governing the educational resources committed to the adult cardiothoracic anesthesiology program.

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 are as follows:

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 specialty by the American Board of Anesthesiology, 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.c).(1) The program director must have an appointment to the medical staff of an institution participating in the program. The Clinical Director of the cardiothoracic anesthesiology

service may be someone other than the program director.

- II.A.2.c).(2) The program director also must be licensed to practice medicine in the state where the institution that sponsors the program is located. (In certain federal programs unrestricted medical licensure in any state may be accepted.)
- II.A.2.d) training and/or experience in providing anesthesia care for adult cardiothoracic surgical patients beyond the requirements for completion of a core anesthesiology residency. The program director should have training and experience that meet or exceed that associated with the completion of a one-year adult cardiothoracic anesthesiology fellowship.
- 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.3.e) prepare a written outline of the educational goals of the program with respect to the knowledge, skills, and other attributes of fellows for each rotation or other aspect of the program assignment;
- II.A.3.e).(1) This statement must be distributed to fellows and members of the teaching staff, and should be readily available for review.
- II.A.3.f) devote sufficient time to provide substantial leadership to the program and supervision for the fellows;
- II.A.3.g) select fellows in accordance with institutional and departmental policies and procedures;
- II.A.3.h) provide adequate supervision of the fellows through explicit written descriptions of supervisory lines of responsibility for the care of patients; and,
- II.A.3.h).(1) Such guidelines must be communicated to all members of the program staff.
- II.A.3.h).(2) Fellows must be provided with prompt, reliable systems for communication and interaction with supervisory physicians.
- II.A.3.i) ensure that all fellows maintain accurate logs, and that this information should be submitted as requested by the Review Committee.

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) Although the number of faculty members involved in teaching will vary, at least three faculty members must be involved, and these should be equal to or greater than two FTEs, including the program director. A ratio of no less than one FTE faculty member

to one fellow shall be maintained. The Review Committee understands that full-time means that the faculty member devotes essentially all professional time to the program.

- 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 Anesthesiology, 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.B.4.a) There must be evidence of active participation by qualified physicians with training and/or expertise in adult cardiothoracic anesthesiology beyond the requirement for completion of a core anesthesiology residency. The faculty must possess training and experience in the care of adult cardiothoracic patients that would generally meet or exceed that associated with the completion of a one-year adult cardiothoracic anesthesiology program, and must have a continuous and meaningful role in the program.
- II.B.5. The faculty must include at least one individual who has successfully completed advanced perioperative echocardiography education according to echocardiography training objectives of the American Society of Echocardiography and the Society of Cardiovascular Anesthesiologists' "Guidelines for Training in Perioperative Echocardiography"; this individual must also have successfully completed the certification examination of Special Competence in Advanced Perioperative Transesophageal Echocardiography.
- II.B.6. Faculty members in cardiology, cardiothoracic surgery, intensive care, pediatrics, and pulmonary medicine should provide teaching in multidisciplinary conferences.
- II.B.7. The faculty may include members from the core anesthesiology program who have subspecialty expertise, including critical care and pediatric anesthesiology.
- II.B.8. The responsibility for establishing and maintaining an environment of inquiry and scholarship rests with the faculty, and an active research component must be included in each program. *Scholarship* is defined as the following:
 - II.B.8.a) the scholarship of *discovery*, as evidenced by peer-reviewed funding or by publication of original research in a peer-reviewed journal;
 - II.B.8.b) the scholarship of *dissemination*, as evidenced by review articles

or chapters in textbooks;

II.B.8.c) the scholarship of *application*, as evidenced by the publication or presentation of, for example, case reports or clinical series at local, regional, or national professional and scientific society meetings.

II.B.9. Complementary to the above scholarship is the regular participation of the teaching staff in clinical discussions, rounds, journal clubs, and research conferences in a manner that promotes a spirit of inquiry and scholarship (e.g., the offering of guidance and technical support for fellows involved in research such as research design and statistical analysis); and the provision of support for fellows' participation, as appropriate, in scholarly activities that pertain specifically to the care of cardiothoracic patients.

II.B.10. The program director and faculty members responsible for teaching fellows must maintain an active role in scholarly pursuits pertaining to cardiothoracic anesthesiology, as evidenced by participation in continuing medical education, as well as by involvement in research that pertains to the care of adult cardiothoracic patients.

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.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 following resources and facilities are necessary to the program:

II.D.1.a) intensive care units for both surgical and nonsurgical cardiothoracic patients;

II.D.1.a).(1) These units may provide care to patients other than adult cardiothoracic patients, but there must be adequate support and expertise to care for cardiothoracic patients.

II.D.1.b) an emergency department in which cardiothoracic patients are effectively managed 24 hours a day;

II.D.1.c) operating rooms adequately designed and equipped for the management of cardiothoracic patients;

II.D.1.c).(1) A post-anesthesia care area adequately designed and equipped for the management of cardiothoracic patients must be located near the operating room suite.

- II.D.1.d) cardiothoracic patients in sufficient volume and variety to provide a broad educational experience for the program;
- II.D.1.d).(1) Physicians with special training and/or experience in cardiovascular disease, clinical cardiac electrophysiology, cardiac and noncardiac thoracic surgery, general vascular surgery, pediatrics, and pulmonary diseases must be available.
- II.D.1.e) monitoring and advanced life support equipment representative of current levels of technology;
- II.D.1.f) allied health staff and other support personnel who have experience and expertise in the care of cardiothoracic patients;
- II.D.1.g) facilities that are readily available at all times to provide prompt laboratory measurement pertinent to the care of cardiothoracic patients.
- II.D.1.g).(1) These include, but are not limited to, the measurement of blood chemistries, blood gas and acid base analysis oxygen saturation, hematocrit/hemoglobin and coagulation function.
- II.D.1.h) facilities that are readily available at all times to provide prompt noninvasive and invasive diagnostic and therapeutic cardiothoracic procedures; and,
- II.D.1.h).(1) These include, but are not limited to, echocardiography, cardiac stress testing, cardiac catheterization, electrophysiological testing and therapeutic intervention, cardiopulmonary scanning procedures and pulmonary function testing.
- II.D.1.i) conveniently located library facilities and space for research and teaching conferences in cardiothoracic anesthesiology.

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.

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.1.a) The program design and sequencing of educational experiences will be approved by the Review Committee as part of the review process. All educational components should be related to the program goals.

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.

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.

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; and,

counterpulsation, and should be actively involved in the management of patients with left ventricular assist devices.

- IV.A.3.b) Additional required clinical experience within the full one-year fellowship should include at least one month or its equivalent of anesthetic management of patients undergoing noncardiac thoracic surgery, and the anesthetic management of 10 adult patients undergoing surgery on the ascending or descending thoracic aorta requiring full CPB, left heart bypass and/or deep hypothermic circulatory arrest.
- IV.A.3.b).(1) Thoracic aortic stent placements performed under anesthesia may be counted among these cases.
- IV.A.3.b).(2) The scope of thoracic experience provided, however, should not be limited to stent placement.
- IV.A.3.c) Each fellow is required to have experience in the anesthetic management of adult patients for cardiac pacemaker and automatic implantable cardiac defibrillator placement, surgical treatment of cardiac arrhythmias, cardiac catheterization, and cardiac electrophysiologic diagnostic/therapeutic procedures.
- IV.A.3.c).(1) The majority of this experience should be obtained in non-operating room environments to encourage multidisciplinary interaction.
- IV.A.3.d) Additional clinical experience within the full one-year fellowship must include successful completion of advanced perioperative echocardiography education according to the training objectives from the American Society of Echocardiography and the Society of Cardiovascular Anesthesiologists' "Guidelines for Training in Perioperative Echocardiography".
- IV.A.3.d).(1) This will include the study of 300 complete perioperative echocardiographic examinations, of which at least 150 are comprehensive intraoperative TEE examinations performed, interpreted, and reported by each fellow.
- IV.A.3.e) Each fellow is required to have a one-month experience managing adult cardiothoracic surgical patients in a critical care (ICU) setting. This experience may include the management of non-surgical cardiothoracic patients.
- IV.A.3.f) Each fellow must have two months of elective rotations (none fewer than two weeks in duration) from the following categories: inpatient or outpatient cardiology or pulmonary medicine, invasive cardiology, medical or surgical critical care and extracorporeal perfusion technology. Experience with pediatric cardiothoracic anesthesia is encouraged. One to two months devoted to a research project in cardiothoracic anesthesiology may be

substituted for the two months of clinical elective rotations.

IV.A.4. Didactic Curriculum

The didactic curriculum provided through lectures, conferences, and workshops should supplement clinical experience as necessary for the fellow to acquire the knowledge to care for adult cardiothoracic patients and meet the conditions outlined in the guidelines for the minimum clinical experience for each fellow. Didactic components should include the following areas, with emphasis on how cardiothoracic diseases affect the administration of anesthesia and life support to adult cardiothoracic patients. These represent guidelines for the minimum didactic experience for each fellow:

- IV.A.4.a) embryological development of the cardiothoracic structures;
- IV.A.4.b) pathophysiology, pharmacology, and clinical management of patients with cardiac disease, including cardiomyopathy, heart failure, cardiac tamponade, ischemic heart disease, acquired and congenital valvular heart disease, congenital heart disease, electrophysiologic disturbances and neoplastic and infectious cardiac diseases;
- IV.A.4.c) pathophysiology, pharmacology, and clinical management of patients with respiratory disease, including pleural, bronchopulmonary, neoplastic, infectious and inflammatory diseases;
- IV.A.4.d) pathophysiology, pharmacology, and clinical management of patients with thoracic vascular, tracheal, esophageal, and mediastinal diseases, including infectious, neoplastic and inflammatory processes;
- IV.A.4.e) non-invasive cardiovascular evaluation: electrocardiography, transthoracic echocardiography, TEE, stress testing, cardiovascular imaging. (TEE education must be based upon the training objectives for advanced perioperative echocardiography of the American Society of Echocardiography and the Society of Cardiovascular Anesthesiologists outlined in "Guidelines for Training in Perioperative Echocardiography" [Appendix I].)
- IV.A.4.f) cardiac catheterization procedures and diagnostic interpretation: invasive cardiac catheterization procedures, including angioplasty, stenting, and transcatheter laser and mechanical ablations;
- IV.A.4.g) non-invasive pulmonary evaluation: pulmonary function tests, blood gas and acid-base analysis, oximetry, capnography, pulmonary imaging;
- IV.A.4.h) preanesthetic evaluation and preparation of adult cardiothoracic patients;

- IV.A.4.i) pharmacokinetics and pharmacodynamics of medications prescribed for medical management of adult cardiothoracic patients;
- IV.A.4.j) perianesthetic monitoring: non invasive and invasive (intraarterial, central venous, pulmonary artery, mixed venous saturation, cardiac output);
- IV.A.4.k) pharmacokinetics and pharmacodynamics of anesthetic medications prescribed for cardiothoracic patients;
- IV.A.4.l) extracorporeal circulation, including myocardial preservation, effects of CPB on pharmacokinetics and pharmacodynamics, cardiothoracic, respiratory, neurological, metabolic, endocrine, hematological, renal, and thermoregulatory effects of CPB and coagulation/anticoagulation before, during, and after CPB;
- IV.A.4.m) pharmacokinetics and pharmacodynamics of medications prescribed for management of hemodynamic instability: inotropes, chronotropes, vasoconstrictors, vasodilators;
- IV.A.4.n) circulatory assist devices: intra-aortic balloon counterpulsation, left and right ventricular assist devices, and biventricular assist devices;
- IV.A.4.o) pacemaker insertion and modes of action;
- IV.A.4.p) cardiac surgical procedures: minimally invasive myocardial revascularization, valve repair and replacement, pericardial, neoplastic procedures, and heart and lung transplantation;
- IV.A.4.q) thoracic aortic surgery: ascending, transverse, and descending aortic surgery with circulatory arrest, CPB employing low flow and or retrograde perfusion;
- IV.A.4.r) esophageal surgery: varices, neoplastic, colon interposition, foreign body, stricture, tracheoesophageal fistula;
- IV.A.4.s) pulmonary surgery: thoracoscopic or open, lung reduction, bronchopulmonary lavage, one-lung ventilation, lobectomy, pneumonectomy and bronchoscopy: endoscopic, fiberoptic, rigid, laser resection;
- IV.A.4.t) postanesthetic critical care of adult cardiothoracic surgical patients;
- IV.A.4.u) perioperative ventilator management: intraoperative anesthetic, and critical care unit ventilators and techniques;
- IV.A.4.v) pain management of adult cardiothoracic surgical patients;

- IV.A.4.w) research methodology/statistical analysis;
- IV.A.4.x) quality assurance/improvement;
- IV.A.4.y) ethical and legal issues; and,
- IV.A.4.z) practice management.
- IV.A.5. Conferences, including lectures, interactive conferences, hands-on workshops, morbidity and mortality conferences, cardiac catheterization and echocardiography conferences, cardiothoracic surgery case review conferences, journal reviews, and research seminars should be regularly attended. Active participation of the fellow in the planning and production of these conferences is essential. Faculty members should be the leaders in the majority of the sessions. Attendance at multidisciplinary conferences, especially in cardiovascular medicine, pulmonary medicine, cardiothoracic surgery, vascular surgery and pediatrics relevant to cardiothoracic anesthesiology, is encouraged.

IV.B. Fellows' Scholarly Activities

- IV.B.1. Each program must provide an opportunity for fellows to participate in research or other scholarly activities, and fellows must participate actively in such scholarly activities related to cardiothoracic anesthesiology.
- IV.B.2. Each fellow must complete a minimum of one academic assignment. Academic projects may include grand rounds presentations, preparation and publication of review articles, book chapters, and manuals for teaching or clinical practice, clinical, translational, or basic research investigation, or similar scholarly activities.
 - IV.B.2.a) A faculty supervisor must be in charge of each project.

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.a).(1) Faculty members responsible for teaching must provide critical evaluations of each fellow's progress and competence to the cardiothoracic anesthesiology program director at the end of six and 12 months of training.
 - V.A.1.a).(2) The program director or designee must inform each fellow of the results of the evaluations at least every six months during the program, and advise the fellow of areas needing

improvement and document the communication.

V.A.1.a).(3) Assessment should include essential character attributes, acquired character attributes, fund of knowledge, clinical judgment, and clinical psychomotor skills, as well as specific tasks and skills for patient management and critical analysis of clinical situations.

V.A.1.a).(4) Periodic evaluation of patient care (quality assurance) is mandatory. Fellows should be involved in continuing quality improvement and risk management.

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.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.a).(1) Fellows in adult cardiothoracic anesthesiology must obtain overall satisfactory evaluations at the completion of 12 months training to receive credit for training.

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.F.1. Interprofessional teams may include non-physician health care professionals, e.g., medical assistants, specialized nurses, and technicians.

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.

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”.

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