

ACGME Program Requirements for Graduate Medical Education in Congenital Cardiac Surgery

Common Program Requirements are in BOLD

Effective: February 14, 2006

I. Introduction

I.A. Definition and Scope of the Specialty

Educational programs in congenital cardiac surgery must provide the educational resources appropriate for the development of proficiency in the diagnosis and treatment of diseases of congenital arterial, venous, and lymphatic circulatory systems, including those components intrinsic to the heart. Following completion of the program, the congenital cardiac surgery graduate should function as qualified practitioner of congenital cardiac surgery at the high level of performance expected of a board-certified specialist.

I.B. Duration and Scope of Education

The educational program must be 12 consecutive months exclusively devoted to congenital cardiac surgery following successful completion of a residency program in thoracic surgery accredited by the Accreditation Council for Graduate Medical Education (ACGME) or the Royal College of Physicians and Surgeons of Canada. Prior to entry into the program, each fellow must be notified in writing of the required length of the educational program

II. Institutions

II.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.

II.A.1. The sponsoring institution must include facilities and staff for a variety of pediatric and surgical services, including radiology, pathology, pediatric cardiology, anesthesiology, and intensive care.

II.A.2. Congenital cardiac surgery programs must be sponsored in association with a thoracic surgery program accredited by the ACGME. Request for exception to this policy will be reviewed on a case-by-case basis.

II.A.3. The congenital cardiac surgery service must be organized as an identifiable unit, even though it functions within the framework of a larger administrative department.

II.B. Participating Institutions

- II.B.1. Assignment to an institution must be based on a clear educational rationale, integral to the program curriculum, with clearly-stated activities and objectives. When multiple participating institutions are used, there should be assurance of the continuity of educational experience.**
- II.B.2. Assignment to a participating institution requires a letter of agreement with the sponsoring institution. Such a letter of agreement should:**
- II.B.2.a) identify the faculty who will assume both educational and supervisory responsibilities for fellows;**
 - II.B.2.b) specify their responsibilities for teaching, supervision, and formal evaluation of residents, as specified later in this document;**
 - II.B.2.c) specify the duration and content of the educational experience; and**
 - II.B.2.d) state the policies and procedures that will govern fellow education during the assignment.**
- II.B.3. Integrated Institutions**
- II.B.3.a) Institutions may be integrated with the sponsoring institution through an Integration Agreement that must additionally specify that the congenital cardiac surgery Program Director must:**
 - II.B.3.a).(1) appoint the members of the teaching staff at the integrated institution;**
 - II.B.3.a).(2) appoint the Chief or Director of the teaching service in the integrated institution;**
 - II.B.3.a).(3) appoint all fellows in the program; and**
 - II.B.3.a).(4) determine all rotations and assignments of both fellows and members of the teaching staff.**
 - II.B.3.b) Integrated institutions should be in close geographic proximity to allow all fellows to attend joint conferences, basic science lectures, and morbidity and mortality reviews on a regular and documented basis in a central location. If the institutions are geographically so remote that joint conferences cannot be held, an equivalent educational program of lectures and conferences in the integrated institution must be fully documented.**
- II.B.4. Prior approval must be obtained from the RRC for participating institutions where each fellow will be assigned for 4 months or more, as well as for all integrations.**

III. Program Personnel and Resources

III.A. Program Director

III.A.1. There must be a single program director responsible for the program. The person designated with this authority is accountable for the operation of the program. In the event of a change in either program director or department chair, the program director should promptly notify the executive director of the Residency Review Committee (RRC) through the Web Accreditation Data System of the Accreditation Council for Graduate Medical Education (ACGME).

III.A.2. The program director, together with the faculty, is responsible for the general administration of the program, and for the establishment and maintenance of a stable educational environment. Adequate lengths of appointment for both the program director and the faculty are essential for maintaining such an appropriate continuity of leadership.

III.A.2.a) The term of appointment, as a normal rule, must be for at least the duration of the program plus 1 year (i.e., 2 years).

III.A.3. Qualifications of the Program Director are as follows:

III.A.3.a) The program director must possess the requisite specialty expertise, as well as documented educational and administrative abilities.

III.A.3.b) The program director must be certified in Thoracic Surgery by the American Board of Thoracic Surgery, or possess qualifications judged to be acceptable by the RRC.

III.A.3.c) The program director must be appointed in good standing and based at the primary teaching site.

III.A.3.d) be licensed to practice medicine in the state where the institution that sponsors the program is located; and

III.A.3.e) demonstrate scholarly activity as noted in Section III.B.4 of this document.

III.A.4. Responsibilities of the Program Director are as follows:

III.A.4.a) The program director must oversee and organize the activities of the educational program in all institutions that participate in the program. This includes selecting and supervising the faculty and other program personnel at each participating institution, appointing a local site director, and monitoring appropriate resident supervision at all participating institutions.

- III.A.4.b) **The program director is responsible for preparing an accurate statistical and narrative description of the program as requested by the RRC, as well as updating annually both the program and resident records through the ACGME's Accreditation Data System.**
- III.A.4.c) **The program director must ensure the implementation of fair policies, grievance procedures, and due process, as established by the sponsoring institution and in compliance with the Institutional Requirements.**
- III.A.4.d) **The program director must seek the prior approval of the RRC for any changes in the program that may significantly alter the educational experience of the residents. Such changes, for example, include:**
 - III.A.4.d).(1) **the addition or deletion of a participating institution;**
 - III.A.4.d).(2) **a change in the format of the educational program;**
 - III.A.4.d).(3) **a change in the approved fellow complement for those specialties that approve fellow complement.**

On review of a proposal for such a major change in a program, the RRC may determine that a site visit is necessary.

III.B. Faculty

- III.B.1. **At each participating institution, there must be a sufficient number of faculty with documented qualifications to instruct and supervise adequately all fellows in the program.**
- III.B.2. **The faculty, furthermore, must devote sufficient time to the educational program to fulfill their supervisory and teaching responsibilities. They must demonstrate a strong interest in the education of residents, and must support the goals and objectives of the educational program of which they are a member.**
- III.B.3. **Qualifications of the physician faculty are as follows:**
 - III.B.3.a) **The physician faculty must possess the requisite specialty expertise and competence in clinical care and teaching abilities, as well as documented educational and administrative abilities and experience in their field.**
 - III.B.3.b) **The physician faculty must be certified in Thoracic Surgery by the American Board of Thoracic Surgery, or possess qualifications judged to be acceptable by the RRC.**
 - III.B.3.c) **The physician faculty must be appointed in good standing to**

the staff of an institution participating in the program.

III.B.3.d) In addition to the Program Director, for each approved residency position there must be at least one geographic full-time teaching Congenital Cardiac Surgery faculty member whose major function is to support the fellowship program.

III.B.3.e) Faculty members must be appointed for a period long enough to ensure adequate continuity in the supervision of the fellows.

III.B.4. 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:

III.B.4.a) the scholarship of *discovery*, as evidenced by peer-reviewed funding or publication of original research in peer-reviewed journal;

III.B.4.b) the scholarship of *dissemination*, as evidenced by review articles or chapters in textbooks;

III.B.4.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.

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.

III.B.5. Qualifications of the nonphysician faculty are as follows:

III.B.5.a) Nonphysician faculty must be appropriately qualified in their field.

III.B.5.b) Nonphysician faculty must possess appropriate institutional appointments.

III.C. Other Program Personnel

Additional necessary professional, technical, and clerical personnel must be provided to support the program

III.D. Resources

The program must ensure that adequate resources (e.g., sufficient

laboratory space and equipment, computer and statistical consultation services) are available.

IV. Fellows Appointment

IV.A. Eligibility Criteria

The Program Director must comply with the criteria for fellow eligibility as specified in the Institutional Requirements.

IV.B. Number of Fellows

The RRC will approve the number of fellows based upon established written criteria that include the adequacy of resources for fellow education (e.g., the quality and volume of patients and related clinical material available for education), faculty-fellow ratio, institutional funding, and the quality of faculty teaching.

IV.B.1. Both temporary and permanent increase in fellow complement must be approved in advance by the RRC.

IV.B.2. A permanent increase in fellow positions may be requested only in conjunction with a site-visit.

IV.B.3. Any increase in fellow complement must be justified in terms of the educational goals of the program.

IV.C. Fellow Transfers

To determine the appropriate level of education for fellows who are transferring from another fellowship program, the Program Director must receive written verification of the previous educational experiences and a statement regarding the performance evaluation of the transferring fellow prior to acceptance into the program. A Program Director is required to provide verification of fellowship education for fellows who may leave the program prior to completion of their education.

IV.D. Appointment of Fellows and Other Students

The appointment of fellows and other specialty fellows or students must not dilute or detract from the educational opportunities available to regularly appointed specialty fellows.

IV.D.1. The relationship of the congenital cardiac surgery fellow to the thoracic surgery residents must be detailed.

IV.D.2. A fellow in congenital cardiac surgery and a thoracic surgery resident may not have primary responsibility for the same patients.

IV.D.3. A congenital cardiac surgery fellow may not be a teaching assistant for thoracic surgery residents and general surgery chief residents, but may

be a teaching assistant for other levels of residents and other fellows.

V. Program Curriculum

V.A. Program Design

V.A.1. Format

The program design and sequencing of educational experiences will be approved by the RRC as part of the review process.

V.A.2. Goals and Objectives

The program must possess a written statement that outlines its educational goals with respect to the knowledge, skills, and other attributes of fellows for each major assignment and each level of the program. This statement must be distributed to fellows and faculty, and must be reviewed with fellows prior to the assignments.

V.B. Specialty Curriculum

The program must possess a well-organized and effective curriculum, both didactic and clinical. The curriculum must also provide residents with direct experience in progressive responsibility for patient management.

V.B.1. Academic Component

The written course of study should reflect careful planning with evidence of cyclical presentation of core specialty knowledge, including teaching in critical thinking, design of experiments, and evaluation of data, as well as in technological advances that relate to congenital cardiac surgery.

V.B.1.a) Conferences should be scheduled to permit the fellows to attend on a regular basis. Participation by the fellows and the faculty must be documented. Active participation by congenital cardiac surgery fellows in the planning and production of these conferences is highly desirable.

V.B.1.b) The following types of conferences must exist within a program:

V.B.1.b).(1) a monthly review of all current complications and deaths, including radiological and pathological correlation of surgical specimens and autopsy findings;

V.B.1.b).(2) a course or a structured series of conferences that ensure education in the basic and clinical sciences fundamental to congenital cardiac surgery; sole reliance on textbook review is inadequate;

V.B.1.b).(3) regular, organized, clinical teaching such as Grand Rounds, ward rounds, and clinical conferences; and

- V.B.1.b).(4) a regular review of recent literature, such as a journal club format.
- V.B.1.c) A specific review of surgical results and outcomes must be a part of the curriculum.
- V.B.1.d) Fellows must have clearly-defined educational responsibilities for other fellows, medical students, and professional personnel.
- V.B.2. Clinical Component
- V.B.2.a) Operative skill is essential, and can be acquired only through personal experience and education. The program must provide sufficient operative experience to educate qualified congenital cardiac surgeons, accounting for individual capability and rate of progress. This education includes progressive senior surgical responsibilities in the total care of congenital cardiac surgery patients, including preoperative evaluation, therapeutic decision making, operative experience, and postoperative management.
- V.B.2.b) Continuity of patient care must be documented in a longitudinal way, and include ambulatory care, inpatient care, referral and consultation, and utilization of community resources.
- V.B.2.c) Fellows must be provided with education with special diagnostic techniques for the management of congenital cardiac lesions; the methods and techniques of cardiac catheterization, and competence in the interpretation of such findings; and experience with the application, interpretation, and limitations of echocardiography and other imaging techniques.
- V.B.2.d) Fellows must be provided with specific experience in the management of adults with congenital cardiac disease.
- V.B.2.e) Operative experience
- V.B.2.e).(1) Fellows must be provided with a sufficient volume, variety, complexity, and balance of operative experience, as determined by the RRC, for the achievement of adequate operative skill and surgical judgment.
- V.B.2.e).(2) Fellows must document a minimum of 75 major congenital cardiac surgery procedures as primary surgeon in the spectrum of surgical care of congenital cardiac diseases. Specific core requirements include ventricular septal defects (5); atrioventricular septal defect (4); arterial switch (4); arch reconstruction, including coarctation (4); tetralogy of Fallot (4); Glenn/Fontan (5) procedures.

V.B.2.e).(3) A fellow is considered to be the surgeon when he or she can document a significant role in all of the following aspects of management: determination or confirmation of the diagnosis; provision of preoperative care; selection and accomplishment of the appropriate operative procedure; direction of the postoperative care; and accomplishment of sufficient follow-up to be acquainted with both the course of the disease and the outcome of its treatment. Participation in the operation only, without preoperative and postoperative care, is inadequate, and such cases will not be approved by the RRC as meeting educational requirements.

V.B.2.f) Outpatient Activities

Fellows must be provided with outpatient experience. Fellows must have an opportunity to examine patients preoperatively, to consult with the attending surgeon regarding operative care, participate in the operation, and be responsible to see patients personally in an outpatient setting.

V.C. Fellows Scholarly Activities

Each program must provide an opportunity for residents to participate in research or other scholarly activities, and residents must participate actively in such scholarly activities.

V.D. ACGME Competencies

N.B.: Section V. D does not apply to this subspecialty.

VI. Fellow Duty Hours and the Working Environment

Providing fellows with a sound didactic and clinical education must be carefully planned and balanced with concerns for patient safety and fellow well-being. Each program must ensure that the learning objectives of the program are not compromised by excessive reliance on fellows to fulfill service obligations. Didactic and clinical education must have priority in the allotment of a fellow's time and energy. Duty hour assignments must recognize that faculty and fellows collectively have responsibility for the safety and welfare of patients.

VI.A. Supervision of Fellows

VI.A.1. All patient care must be supervised by qualified faculty. The Program Director must ensure, direct, and document adequate supervision of fellows at all times. Fellows must be provided with rapid, reliable systems for communicating with supervising faculty.

VI.A.2. Faculty schedules must be structured to provide fellows with continuous supervision and consultation.

VI.A.3. Faculty and fellows must be educated to recognize the signs of fatigue and adopt and apply policies to prevent and counteract its potential negative effects.

VI.A.4. The attending physician has both an ethical and a legal responsibility for the overall care of the patient. A chain of command that delegates graded authority and increasing responsibility to the fellow must be established. Judgments on this delegation of responsibility must be made by the attending surgeon based on knowledge of each fellow's skills and ability as determined by direct involvement in and observation of the fellow's clinical experience.

VI.B. Duty Hours

VI.B.1. Duty hours are defined as all clinical and academic activities related to the residency program; i.e., patient care (both inpatient and outpatient), administrative duties related 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.

VI.B.2. Duty hours must be limited to 80 hours per week, averaged over a 4-week period, inclusive of all in-house call activities.

VI.B.3. Fellows must be provided with 1 day in 7 free from all educational and clinical responsibilities, averaged over a 4-week period, inclusive of call. *One day* is defined as one continuous 24-hour period free from all clinical, educational, and administrative activities.

VI.B.4. 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.

VI.C. On-Call Activities

The objective of on-call activities is to provide fellows with continuity of patient care experiences throughout a 24-hour period. *In-house call* is defined as those duty hours beyond the normal work day when fellows are required to be immediately available in the assigned institution.

VI.C.1. In-house call must occur no more frequently than every third night, averaged over a 4-week period.

VI.C.2. Continuous on-site duty, including in-house call, must not exceed 24 consecutive hours. Fellows may remain on duty for up to 6 additional hours to participate in didactic activities, transfer care of patients, conduct outpatient clinics, and maintain continuity of medical and surgical care.

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

VI.C.3.a) A new patient is defined as one new to the institution.

VI.C.4. *At-home call (or pager call)* is defined as call taken from outside the assigned institution.

VI.C.4.a) The frequency of at-home call is not subject to the every third night limitation. However, at-home call must not be so frequent as to preclude rest and reasonable personal time for each fellow. Fellows taking at-home call must be provided with 1 day in 7 completely free from all educational and clinical responsibilities, averaged over a 4-week period.

VI.C.4.b) When fellows are called into the hospital from home, the hours fellows spend in house are counted toward the 80-hour limit.

VI.C.4.c) The Program Director and the faculty must monitor the demands of at-home call in their programs, and make scheduling adjustments as necessary to mitigate excessive service demands and/or fatigue.

VI.D. Moonlighting

VI.D.1. Because residency education is a full-time endeavor, the Program Director must ensure that moonlighting does not interfere with the ability of the fellow to achieve the goals and objectives of the educational program.

VI.D.2. The Program Director must comply with the sponsoring institutions written policies and procedures regarding moonlighting, in compliance with the ACGME Institutional Requirements.

VI.D.3. Any hours a fellow works for compensation at the sponsoring institution or any of the sponsor's primary clinical sites must be considered part of the 80-hour weekly limit on duty hours. This refers to the practice of *internal moonlighting*.

VI.E. Oversight

VI.E.1. Each program must have written policies and procedures consistent with the Institutional and Program Requirements for fellow duty hours and the working environment. These policies must be distributed to the fellows and the faculty. Duty hours must be monitored with frequency sufficient to ensure an appropriate balance between education and service.

VI.E.2. Back-up support systems must be provided when patient care responsibilities are unusually difficult or prolonged, or if unexpected circumstances create fellow fatigue sufficient to jeopardize patient

care.

VI.F. Duty Hours Exception

An RRC may grant exceptions for up to 10% of the 80-hour limit, to individual programs based on a sound educational rationale. Prior permission of the institution's GMEC, however, is required.

VII. Evaluation

VII.A. Fellow

VII.A.1. Formative Evaluation

The faculty must evaluate in a timely manner the residents who they supervise. In addition, the residency program must demonstrate that it has an effective mechanism for assessing resident performance throughout the program, and for utilizing the results to improve resident performance.

VII.A.1.a) Assessment should include the use of methods that produce an accurate assessment of fellow's competence in patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice.

VII.A.1.b) Assessment should include the regular and timely performance feedback to residents that includes at least semiannual written evaluation. Such evaluations are to be communicated to each resident in a timely manner, and maintained in a record that is accessible to each resident.

VII.A.1.c) Assessment should include the use of assessment results, including evaluation by faculty, patients, peers, self, and other professional staff, to achieve progressive improvements in residents' competence and performance.

VII.A.2. Final Evaluation

The Program Director must provide a final evaluation for each fellow who completes the program. This evaluation must include a review of the fellow's performance during the final period of education, and should verify that the fellow has demonstrated sufficient professional ability to practice competently and independently. The final evaluation must be part of the fellow's permanent record maintained by the institution.

VII.B. Faculty

The performance of the faculty must be evaluated by the program no less frequently than at the midpoint of the accreditation cycle, and again prior to

the next site visit. The evaluations should include a review of their teaching abilities, commitment to the educational program, clinical knowledge, and scholarly activities. This evaluation must include annual written confidential evaluations by fellows.

VII.C. Program

The educational effectiveness of a program must be evaluated at least annually in a systematic manner.

VII.C.1. Representative program personnel (i.e., at least the Program Director, representative faculty, and at least one fellow) must be organized to review program goals and objectives and the effectiveness with which they are achieved. This group must conduct a formal documented meeting at least annually for this purpose. In the evaluation process, the group must take into consideration written comments from the faculty, the most recent report of the GMEC of the sponsoring institution, and the fellows' confidential written evaluations. If deficiencies are found, the group should prepare an explicit plan of action, which should be approved by the faculty and documented in the minutes of the meeting.

VII.C.2. The program should use fellow performance and outcome assessment in its evaluation of the educational effectiveness of the residency program. Performance of program graduates on the certification examination should be used, when available, as one measure of evaluating program effectiveness. The program should maintain a process for using assessment results together with other program evaluation results to improve the residency program.

VIII. Experimentation and Innovation

Since responsible innovation and experimentation are essential to improving professional education, experimental projects along sound educational principles are encouraged. Requests for experimentation or innovative projects that may deviate from the program requirements must be approved in advance by the RRC, and must include the educational rationale and a method of evaluation. The sponsoring institution and program are jointly responsible for the quality of education offered to fellows for the duration of such a project.

IX. Certification

Fellows who plan to seek certification by the American Board of Thoracic Surgery should communicate with the office of the board regarding the full requirements for certification.

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