BASIC STANDARDS FOR SUBSPECIALTY RESIDENCY TRAINING IN INTERVENTIONAL CARDIOLOGY

American Osteopathic Association

and the

American College of Osteopathic Internists

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Basic Standards for Subspecialty Residency Training in Interventional Cardiology

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ARTICLE I - INTRODUCTION

These are the Basic Standards for Residency Training in Interventional Cardiology as approved by the American Osteopathic Association and the American College of Osteopathic Internists. These standards will provide the osteopathic subspecialty resident with advanced training in the field of diseases of the cardiovascular system and prepare the resident for examination for board certification in interventional cardiology.

ARTICLE II - DEFINITION AND PURPOSES

The subspecialty of interventional cardiology consists of the diagnosis, medical and mechanical therapy, pre- and post-procedure management of adult patients with acute and chronic forms of cardiovascular disease amenable to catheter-based therapy. The purpose of an osteopathic training program in interventional cardiology is as follows:

A. To identify cardiovascular disease states that are amenable to catheter-based intervention.

B. To develop the medical knowledge and technical skill to perform a catheter-based intervention in patients with cardiovascular disease amenable to the same.

C. To develop the medical knowledge and technical skill required for the pre- and post-procedure management of patients undergoing catheter-based interventional procedures.

ARTICLE III - INSTITUTIONAL REQUIREMENTS

To be approved by the AOA for subspecialty residency training in interventional cardiology an institution must meet all the requirements as formulated in the residency training requirements of the American Osteopathic Association. To be approved for subspecialty training in the subspecialty of interventional cardiology the minimum institutional resources include the following:

A. Adequate patient volume to enable the cardiovascular subspecialty resident to meet the case volume requirements listed hereafter.

B. Interventional cardiology laboratory suite with capabilities for balloon angioplasty, intracoronary stent deployment and rotational atherectomy. The performance of extraction atherectomy, directional coronary atherectomy, balloon valvuloplasty and peripheral angioplasty is not required at this time.

C. The Institution shall maintain an adequate medical library containing carefully
selected texts, the latest editions of medical journals and other appropriate
publications in the subspecialty of interventional cardiology. The library shall be in
the charge of a qualified person who shall act as custodian of its contents and arrange
for the proper cataloging and indexing that will facilitate investigative work by the
cardiovascular subspecialty residents.

D. The Institution must provide written policy and procedure for the selection of
subspecialty residents which shall include:

a) Application review and personal interview by an appropriate educational
committee that includes the program director.
b) Requirements for the subspecialty resident to meet Federal, State and local
licensing and controlled substances registration regulations within a
reasonable time from selection.
c) Requirements for the subspecialty resident to meet National, State and local
organizational membership requirements within a reasonable time from
selection.

E. The Institution shall execute a contract with each subspecialty resident in accordance
with the residency training requirements of the AOA.

F. Upon satisfactory completion of the training program, the Institution shall award the
subspecialty resident an appropriate certificate. The certificate shall confirm the
fulfillment of the program requirements, starting and completion dates of the program
and name of the training institution and program director.

ARTICLE IV - PROGRAM REQUIREMENTS

The subspecialty training program in interventional cardiology requires approval by the
Council on Postdoctoral Training and the AOA Board of Trustees.

The duration of the training program in interventional cardiology shall be 12 months. Of this
period a full 11 months should be spent in the interventional cardiology laboratory. One
month will be provided for vacation or “elective” time to be used by the trainee at his or her
discretion. A formal interventional cardiology training program shall establish:

A. Diagnosis of cardiovascular disease states amenable to catheter-based interventions.
Catheter-based interventional procedures should be discussed in the context of
therapeutic options for the patient, including medical therapy or surgery.

B. Indications for urgent catheterization in the management of patients with acute
coronary syndromes. Issues regarding the choice of therapy, including catheter-based
intervention, medical or surgical therapy should be established.

C. Indications for the proper technical placement of intra-aortic balloon counter
pulsation devices.
D. Indications for, and the proper technique for placement of, emergency temporary pacemakers.

E. Preparation and performance of interventional cardiology procedures, including balloon angioplasty, intra-coronary stent deployment and rotational atherectomy. The use of extraction atherectomy, directional coronary atherectomy, balloon valvuloplasty, peripheral angioplasty and intra-vascular ultrasound is not required at this time; however, the trainee is encouraged to take part in the performance of these procedures if they are available at the institution. Selection and use of vascular access devices, guiding catheters, guide wires and balloon catheters.

F. Knowledge of the biological effects and indications for the use of pharmacologic agents common to the practice of interventional cardiology. These agents should include thrombolytics, antiplatelet agents, anti-thrombin agents, anticoagulants, vaso-active drugs and anti-arrhythmics, sedatives and analgesics. Additionally, indications for the use of various radio contrast agents should be established.

G. Management of coronary interventional complications including, but not limited to, coronary dissection, coronary perforation, acute vessel closure, slow and no reflow phenomenon, distal coronary embolization, side branch loss and vascular access site complications.

H. Knowledge of vascular biology including the processes involved in plaque formation, vascular injury and vaso reactivity. A thorough understanding of the process of restenosis and the therapeutic options available for the treatment of this phenomenon. Knowledge of the coagulation cascade and the effect of pharmacologic agents as noted above.

I. Sufficient patient volume to provide the resident with a total case volume of 400 interventional procedures. The resident should serve as the primary operator on no fewer than 250 of these cases. One subspecialty resident per case will be designated as the primary operator. The primary operator shall perform under supervision the majority of the technical aspects of the procedure. The primary operator shall be actively involved in decision making regarding equipment selection, problem solving, post-procedural assessment and complication management. There will be no volume requirements with regard to diagnostic cardiac catheterization. However, it is strongly encouraged that the trainee perform the minimum number of diagnostic procedures to maintain clinical competency in this field.

J. Bi-monthly conference session that may be dedicated to formal lectures, case review or literature review opportunities.

K. Understanding of radiation safety and overview of x-ray equipment function.

L. Adequate communication skills to enable the trainee to convey the risks, benefits and
general technique of interventional procedure to the patient and family. The trainee should be able to obtain informed consent in this context.

ARTICLE V - PROGRAM FACULTY REQUIREMENTS

Program personnel and faculty must fulfill and maintain eligibility requirements as delineated in the residency training requirements of the American Osteopathic Association.

ARTICLE VI - QUALIFICATIONS OF THE PROGRAM DIRECTOR

The program director must be certified in cardiology and interventional cardiology by the American Osteopathic Association through the American Osteopathic Board of Internal Medicine.

The program director must meet the standards of the position as formulated in the residency training requirements of the AOA.

All trainers participating in the residency training program shall be under the supervision of the program director.

ARTICLE VII - RESPONSIBILITIES OF THE PROGRAM DIRECTOR

The training program director shall oversee the training of the interventional cardiology subspecialty residents. Responsibilities include the following:

A. Development of a schedule allowing the interventional cardiology resident to meet the program requirements as defined in Article IV.

B. Develop and maintain an evaluation form for the subspecialty residents documenting their clinical competency, case selection skills, manual skills and follow-up care. The evaluation form will assist in formulating documents necessary for the certification exam in interventional cardiology.

C. Develop and maintain a procedural log for each individual resident.

D. Provide adequate opportunity for subspecialty resident and facility evaluation as outlined under Articles IX and X.

E. In cooperation with the AOA Department of Education, prepare and maintain required material for program inspection.

F. Submit annual program directors report on each subspecialty resident to the
American College of Osteopathic Internists.

G. Maintain all schedules, including lectures and educational sessions and the appropriate documentation of subspecialty resident participation in the required educational and teaching activities.

ARTICLE VIII - RESIDENT REQUIREMENTS

Applicants for advanced training in interventional cardiology must:

A. Have graduated from an AOA-accredited college of osteopathic medicine.

B. Have completed an AOA-approved residency training program in internal medicine.

C. Have completed a three-year AOA-approved residency in cardiovascular medicine.

D. Be appropriately licensed in the state in which training is conducted.

During the training program, the subspecialty resident must:

A. Submit a Resident Annual Report, including an annual procedural log, to the American College of Osteopathic Internists. The log should list the complete procedural profile of the subspecialty resident for the 12-month interventional cardiology training. The trainee should be designated as the primary or secondary operator for the procedure. The type of procedure, i.e. balloon angioplasty, stent, rotational atherectomy should be documented. The procedural log must include certification of authenticity by the program director and also the cath lab and/or interventional cardiology director.

B. In order to meet the case volume requirements for certification eligibility in interventional cardiology, the subspecialty residents should perform a total of 300 cases in interventional cardiology during the training year. The subspecialty resident should serve as the primary operator on no less than 250 of these cases. One subspecialty resident per case will be designated as the primary operator. There will be no volume requirements with regard to diagnostic cardiac catheterization.

It is strongly encouraged that the subspecialty resident perform the minimum number of procedures to maintain clinical competency in this field. There will be no volume requirements for individual interventional devices. However, the subspecialty resident should be aware that the examination in interventional cardiology includes, but is not limited to, balloon angioplasty, intracoronary stent deployment, rotational atherectomy, extraction atherectomy, directional coronary atherectomy, laser angioplasty, peripheral angioplasty, balloon valvuloplasty, radiation therapy and intravascular ultrasound.
ARTICLE IX - DOCUMENTATION OF THE COMPETENCY OF CARDIOVASCULAR SUBSPECIALTY RESIDENTS

A. Evaluation. As noted above a procedural log will be required of all subspecialty residents. The ACOI reserves the right to verify procedural logs at any time. In order to meet the requirements for the added qualifications examination in interventional cardiology, the subspecialty resident must meet the case volume requirements listed above. Additionally, a letter of recommendation from an interventional cardiologist will be required. The letter will address the applicants clinical competency, case selection skills, manual skills and follow-up care.

B. Certification. Subspecialty residents who complete the 12-month interventional cardiology training program will receive an appropriate certificate as outlined under Article III, paragraph F.

ARTICLE X - EVALUATION AND DOCUMENTATION OF THE TRAINING PROGRAM

A. Subspecialty Resident Evaluation- the program director will provide forms for the evaluation of the subspecialty resident by the interventional cardiology staff. These will be collected and reviewed by the program director and discussed with the resident on a quarterly basis. Due to the highly technical nature of this subspecialty, clinical and technical competency is essential. Methods for remediation of deficiencies must be clearly stated in institutional training documents. Methodology to dismiss the subspecialty resident who fails to remediate appropriately must be clearly established (see Appendix B).

B. Facility Evaluation - The subspecialty resident should be provided opportunity to evaluate the training facility with evaluation forms provided by the program director. These will be reviewed with the subspecialty resident trainee in conjunction with Article X, paragraph A on a quarterly basis.

C. Case Volume Requirements - Ample opportunity to meet the case volume requirements of each individual subspecialty resident must be provided by the institution. If the institution fails to provide this opportunity for its trainees in two consecutive years, a plan must be submitted to the American College of Osteopathic Internists to remediate this problem and maintain approval by the ACOI and American Osteopathic Association.
The ACOI recognizes the primary objective of a residency program in internal medicine is the structured and supervised education of the trainee in appropriate and recognized standards of diagnosis, management and continuity care of patients. However, while the proper care of patients continues, both in the ambulatory and hospital settings, service is also provided simultaneous to the educational exposure and experience. This cumulative process requires simultaneously, adequate supervision and appropriate study, work and rest environment within a well structured work hours schedule. It is to be recognized that many of the assigned duty hours are not spent in patient care, but rather in the education process including conferences, research and library time. Therefore, the following policy regarding educational supervision and resident work hours is established. This policy will be reviewed and its adherence evaluated at the accreditation inspection and utilized in determination of program reapproval.

**WORK HOURS**

Internal medicine residents shall not be assigned to patient care responsibilities in excess of 84 hours per week averaged over any consecutive four-week period. The resident shall not be scheduled in excess of thirty-two (32) continuous hours including continuity clinic assignment. He/she shall not be scheduled for night call responsibilities more frequently than twice per seven (7) day period or nine (9) times per 30-31 day calendar month. These work hour limits will include all hours on-call, either in the hospital or on-call from home. When on-call for at least twenty-four (24) hours, the resident should be provided with adequate opportunity and facilities for rest or sleep when possible during that work period.

Residents shall have at least alternate forty-eight (48) hour weekend periods (Saturday and Sunday) off duty or one twenty-four (24) hour period off each weekend (Saturday or Sunday). A minimum of twelve (12) hours shall be assigned off all responsibilities between assigned duty shifts.

The training institution shall provide an on-call room for residents which is clean and comfortable so as to permit rest during call. A telephone shall be present in the on-call room. Toilet and shower facilities should be present in or convenient to the room. Nourishment shall be available during the on-call hours of the night.

Adequate back-up shall be provided by a senior internal medicine resident and/or assigned attending internist. This will provide an increased assurance of quality of patient care and resident supervision. Lines of communication shall be established and maintained and availability assured, between the internal medicine residents and the attending internists on a continuum basis with the ultimate accountability resting with the assigned attending internist. The residency program director must define specific lines of responsibility for trainees and is
the accountable person for development of and adherence to these policies.

At no time shall a resident abandon care responsibilities unless a patient's care can be continued and maintained in an appropriate fashion. The resident physician's ultimate responsibility is to ensure his/her patient's welfare at any clock hours.

**SUPERVISION**

Each internal medicine training department shall have a sufficient number of clinical trainers available to assure the resident's exposure to appropriate educational philosophies in the diagnosis and management of the patient.

This faculty will also participate in the supervision and evaluation of the resident's clinical and professional performance as well as counseling residents when indicated and requested.

Throughout the training program, residents in internal medicine will receive supervision which will be progressive and adjusted to their training and qualification (performance) levels. At the conclusion of each training year, the program director, in conjunction with the faculty, will determine whether each resident may progress to the next training year level. Each residency year level involves progressive clinical responsibility. Responsibility may vary among residents in a program at the same educational level, depending on individual rates of progress and qualifications. However, supervision shall be available at all times throughout the entire residency program.

Supervision requirements apply equally to hospital and continuity clinic training sites.
APPENDIX B

Model Hospital Policy on
Academic and Disciplinary Dismissals

In July, 1993, the Board of Trustees of the American Osteopathic Association adopted the following policy:

The hospital and department have clearly defined procedures for academic and disciplinary action. Academic dismissals result from a failure to attain a proper level of scholarship or non-cognitive skills, including clinical abilities, interpersonal relations, and/or personal and professional characteristics. Institutional standards of conduct include such issues as cheating, plagiarism, falsifying records, stealing, alcohol and/or substance abuse, or any other inappropriate actions or activities.

In cases of academic dismissal, the hospital and department will inform trainees, orally and in writing, of inadequacies and their effects on academic standing. The trainee will be provided a specified period in which to implement specified actions required to resolve academic deficiencies. Following this period, if academic deficiencies persist, the trainee may be placed on probation for a period of three (3) to six (6) months. The trainee may be dismissed following this period, if deficiencies remain and are judged to be unremediable. In accordance with institutional policy, the trainee will be provided an opportunity to meet with evaluators to appeal decisions regarding probation or dismissal. Legal counsel at hearings concerning academic issues will not be allowed.

In cases of disciplinary infractions that are judged unremediable, the hospital and department will provide the trainee with adequate notice, in writing, of specific ground(s) and the nature of the evidence on which the disciplinary action is based. The trainee will be given an opportunity for a hearing in which the disciplinary authority will provide a fair opportunity for the trainee's position, explanations and evidence. Finally, no disciplinary action will be taken on grounds which are not supported by substantial evidence. The department and/or hospital intern training committee, or house staff education committee, or other appropriate committees will act as the disciplinary authority. Trainees may be allowed counsel at hearings concerning disciplinary issues. Pending proceedings on such disciplinary action, the hospital in its sole discretion may suspend the trainee, when it is believed that such suspension is in the best interests of the hospital or of patient care.

The above policies are a model. Programs should adhere to institutional disciplinary procedures where they exist.