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TRAINING STATEMENT

COCATS 4 Task Force 11: Training in Arrhythmia Diagnosis and Management, Cardiac Pacing, and Electrophysiology

Endorsed by the Heart Rhythm Society

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1. INTRODUCTION

1.1. Document Development Process

1.1.1. Writing Committee Organization

The writing committee was selected to represent the American College of Cardiology (ACC) and the Heart Rhythm Society (HRS) and included a cardiovascular training program director, an electrophysiology (EP) program training director, early-career experts, highly experienced specialists representing both the academic and community-based practice settings, and physicians experienced in defining and applying training standards according to the 6 general competency domains promulgated by the Accreditation Council for Graduate Medical Education (ACGME) and the American Board of Medical Specialties (ABMS) and endorsed by the American Board of Internal Medicine (ABIM). The ACC determined that relationships with industry or other entities were not relevant to the creation of this general cardiovascular training statement. Employment and affiliation details for authors and peer reviewers are provided in Appendixes 1 and 2, respectively, along with disclosure reporting categories. Comprehensive disclosure information for all authors, including relationships with industry and other entities, is available as an online supplement to this document.

1.1.2. Document Development and Approval

The writing committee developed the document, approved it for review by individuals selected by the ACC and HRS, and addressed the reviewers' comments. The document was revised and posted for public comment from December 20, 2014, to January 6, 2015. Authors addressed the additional comments to complete the document. The final document was approved by the Task Force, COCATS Steering Committee, and ACC Competency Management Committee; ratified by the ACC Board of Trustees in March, 2015; and endorsed by the Heart Rhythm Society. This document is considered current until the ACC Competency Management Committee revises or withdraws it.

1.2. Background and Scope

The diagnosis and management of cardiac arrhythmias and conduction disorders are common and important components of the practice of clinical cardiology and are thus part of the core competency training of a clinical cardiologist. Clinical cardiac electrophysiologists are responsible for the comprehensive care of patients with more complex arrhythmias, along with advanced testing and invasive therapies. Clinical cardiac electrophysiologists are trained to implant cardiac electrical devices, perform diagnostic EP procedures and therapeutic catheter ablation procedures, and employ pharmacological agents to treat patients with complex arrhythmias and conduction disturbances. Cardiac implantable electrical devices (CIEDs) include pacemakers, implantable cardioverter-defibrillators (ICDs), cardiac resynchronization therapy (CRT) devices, implantable

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hemodynamic monitors, and implantable loop recorders (ILRs). For this document, implantable hemodynamic monitors and ILRs are excluded from the minimum training requirements. All cardiovascular trainees are expected to understand their indications for clinical use and to learn how to interpret the generated results in providing clinical care as part of their basic training.

The Task Force was charged with updating previously published standards for training fellows in cardiology enrolled in cardiac fellowship programs (1–4) on the basis of changes in the field since 2008 (2) and as part of a broader effort to establish consistent training criteria across all aspects of cardiology. This document does not provide specific guidelines for advanced cardiac electrophysiology training. Recommendations for advanced training in clinical cardiac electrophysiology (CCEP) are provided in the 2006 Clinical Competence Statement (5). The 2006 Clinical Competence Statement is currently being revised and retitled as the Electrophysiology Advanced Training Statement. In its revised form, it will provide detailed recommendations for the electrophysiology training required to obtain ABIM certification. The Task Force also updated previously published standards to address the evolving framework of competency-based medical education described by the ACGME Outcomes Project and the 6 general competencies endorsed by ACGME and ABMS. The background and overarching principles governing fellowship training are provided in the COCATS 4 Introduction, and readers should become familiar with this foundation before considering the details of training in a subdiscipline like electrophysiology. The Steering Committee and Task Force recognize that implementation of these changes in training requirements will occur incrementally.

For most areas of adult cardiovascular medicine, 3 levels of training are delineated:

- **Level I training**, the basic training required of trainees to become competent consultant cardiologists, is required of all fellows in cardiology, and can be accomplished as part of a standard 3-year training program in cardiology.
- **Level II training** refers to additional training in 1 or more areas that enables some cardiologists to perform or interpret specific procedures or render more specialized care for patients and conditions. This level of training is recognized for those areas in which an accepted instrument or benchmark, such as a qualifying examination, is available to measure specific knowledge, skills, or competence. Level II training in selected areas may be achieved by some trainees during the standard 3-year cardiovascular fellowship, depending on the trainees' career goals and use of elective rotations. It is anticipated that during a standard 3-year cardiovascular fellowship training program, sufficient time will be available to receive Level II training in a specific subspecialty. In the case of EP, Level II training is required for individuals to provide specialized arrhythmia and CIED management, including implantation, interrogation, and programming of pacemakers and ILRs, and interrogation and programming of implanted defibrillators. Those cardiovascular fellows seeking to implant ICDs and CRT devices without subspecialty board certification in CCEP are required to take an additional year of dedicated training beyond the 3 years required for cardiovascular training.
- **Level III training** requires additional training and experience beyond the cardiovascular fellowship for the trainee to acquire specialized knowledge and experience in performing, interpreting, and training others to perform specific procedures or render advanced specialized care for specific procedures at a high level of skill. In the case of EP, Level III training is required of individuals seeking subspecialty board certification (CCEP). As noted previously, those cardiovascular fellows seeking to implant ICDs and CRT devices without subspecialty board certification in CCEP are required to take an additional year of dedicated training beyond the 3 years required for cardiovascular training.

The recommended number of cases, procedures, and experiences is based on published guidelines, competency statements, and the experience and opinions of the members of the writing group. It is assumed that training is directed by appropriately trained mentors in an ACGME-accredited program and that satisfactory completion of training is documented by the program director. The number and types of encounters and the duration of training required for fellows are summarized in Section 4. Level III training is described here only in broad terms to provide context for trainees and clarify that these advanced competencies are not covered during the cardiovascular fellowship. The additional exposure and requirements for Level III training will be addressed in a subsequent, separately published, Advanced Training Statement, previously described in the 2006 Clinical Competency Statement (5).

2. GENERAL STANDARDS

Three organizations—the ACC, American Heart Association, and HRS—have addressed training requirements and guidelines for the following topic areas: permanent pacemaker selection, implantation, and follow-up (6,7); implantation and follow-up of ICDs (8,9); training in catheter ablation procedures (10,11); and educational objectives for fellowship training in CCEP (2,12,13). The recommendations are congruent and address faculty, facility requirements, emerging technologies, and practice. We strongly recommend that candidates for the ABIM examination for certification in cardiovascular diseases, as well as those