

## TRAINING STATEMENT

# COCATS 4 Task Force 2: Training in Preventive Cardiovascular Medicine



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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 included a cardiovascular training program director, a cardiology clinic director, early-career cardiovascular disease (CVD) prevention experts, highly experienced specialists representing both the academic and community-based practice settings, a physician experienced in defining and applying training standards according to the core competencies structure that is promulgated by the Accreditation Council for Graduate Medical Education (ACGME) and American Board of Medical Specialties (ABMS) and endorsed by the American Board of Internal Medicine (ABIM), and a fellow in training. 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 the 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 peer review by individuals selected by the ACC, and then addressed peer reviewers' comments. The document was revised and posted for

public comment from December 20, 2014, to January 6, 2015. Authors addressed the additional comments from the public to complete the document. The final document was approved by the Task Force, COCATS Steering Committee, and ACC Competency Management Committee as well as ratified by the ACC Board of Trustees in March 2015. This document is considered current until the ACC Competency Management Committee revises or withdraws it.

### 1.2. Background and Scope

Atherosclerotic vascular disease, with its clinical manifestations of myocardial infarction, stroke, and peripheral vascular disease, is the world's leading cause of death, morbidity, and mortality and is, therefore, the major focus of training in prevention and in the strategies recommended in this document. Other disease prevention issues are dealt with in specific sections. The missions of the ACC and the American Heart Association have been to ensure optimal care to those with or at risk for developing atherosclerotic cardiovascular disease (ASCVD). The cardiovascular specialist is expected to contribute significantly to treating and preventing CVD in the setting of a rapidly growing field of knowledge ranging from molecular and cellular mechanisms to clinical outcomes. Over the past 2 decades, there have been dramatic increases in knowledge concerning specific risk factors, and guidelines have been developed to address these factors relating to atherosclerosis, hypertension, thrombosis, and other forms of vascular dysfunction.

Despite the fact that clinical outcomes can be improved by promoting favorable life habits and behaviors and by the proper use of drug treatment, the application of preventive interventions in the clinical practice of cardiovascular medicine is not optimal. Part of this problem may be the insufficient attention that prevention education currently receives during

cardiovascular fellowship. A recent survey of cardiovascular fellowship programs revealed that most programs do not meet current ACC/COCATS training recommendations for CVD prevention (1). In both the primary and secondary prevention settings, ASCVD prevention must no longer be peripheral to the practice of the cardiovascular specialist. The cardiovascular specialist must become proficient in primary and secondary prevention of ASCVD, having the ability to recommend specific primary and secondary preventive measures and to identify patients with subclinical ASCVD who may benefit from more aggressive risk factor modification. It is important for the cardiovascular fellow to understand which therapies promoted widely in practice and/or on the internet have a strong evidence base and which do not.

It is imperative that cardiovascular training programs provide the necessary education and training to promote best practices among their trainees, who bear the responsibility to provide optimal preventive services to their patients. This report outlines specific areas of knowledge and skills necessary to achieve this goal and also defines the required and recommended standards to achieve this goal. The report updates previously published standards for training cardiology fellows enrolled in cardiac fellowship programs 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. It also addresses the evolving framework of competency-based medical education described by the ACGME Outcomes Project and the 6 general competencies endorsed by the ACGME and ABMS. For the purpose of this document, all references to ASCVD prevention refer to both primary and secondary prevention.

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 subspecialty such as CVD prevention. The Steering Committee and Task Force recognize that implementation of these changes in training requirements will occur incrementally over time.

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 specific patients and conditions. This level of training is recognized only for those areas in which an

accepted instrument or benchmark, such as a qualifying examination, is available to measure specific knowledge, skills, or competence. In the case of prevention, the Task Force identified no specific competencies for Level II training. Given the central importance of prevention to managing patients with CVD, all competencies have been identified as Level I (required for all fellows) or relegated to advanced training postfellowship.

- **Level III training**—Although there are programs for advanced training in prevention, such as may be required to qualify as director of a clinical service, research program, or both, there is, as yet, no formal Level III certification process for added qualification in prevention. Cardiologists who wish to focus their careers on CVD prevention may wish to consider advanced training outside of the ACGME-accredited training program (see Section 4.2.2. Advanced Training).

## 2. GENERAL STANDARDS

ASCVD, or its antecedent risk factors, acquired at a young age is often strongly related to poor lifestyle habits such as unhealthy diet, sedentary behavior, and tobacco use. If widely implemented, evidence-based population strategies have the promise to reduce the burden of CVD risk factors in the community and make preventive strategies more effective for high-risk patients (3). As noted earlier, training in CVD prevention should be an essential part of all cardiovascular fellowship programs. Several important statements and guidelines provide the basis for training in the assessment and treatment of patients at risk of cardiovascular events. These statements have been developed by organizations such as the ACC; American Heart Association; and National Heart, Lung, and Blood Institute and should be included as core references in training as they become available and are updated (4-11). This evidence base will be especially useful when cardiologists begin practice after training and/or assume leadership positions.

### 2.1. Faculty

There should be adequate faculty, both in number and experience, to conduct training in preventive cardiovascular medicine. It is also highly desirable for at least some faculty to have expertise in vascular biology, atherosclerosis, hypertension, disorders of lipid metabolism, obesity and weight management, sleep medicine, diet and nutrition, smoking cessation, diabetes mellitus, thrombosis, clinical epidemiology, cardiac rehabilitation, exercise physiology, clinical pharmacology, genetics and pharmacogenomics, and the psychosocial aspects of CVD. Ideally, specific faculty in the cardiovascular medicine training program should be able to serve as topic area experts in 1 or more of these areas. This is important

because the faculty should be able to function as role models in preventive cardiovascular medicine. Mentoring is important for cardiovascular trainees in their formative years, and prevention-oriented role models should function in this capacity.

## 2.2. Facilities

Facilities should be adequate to ensure experience in managing patients undergoing cardiac rehabilitation, as well as to provide instruction on lifestyle measures such as diet, weight loss, physical activity, psychosocial evaluation, and smoking cessation. Programs without access to cardiac rehabilitation at the sponsoring institution may be able to access community resources or arrange for appropriate electives at other sites.

## 2.3. Equipment

Access to Web-based programs for assessing cardiovascular risk is important. The availability of equipment specified for noninvasive imaging (see COCATS 4 Task Force 5: Echocardiography; Task Force 6: Nuclear Cardiology; Task Force 7: Cardiovascular Computed Tomography; and Task Force 8: Cardiovascular Magnetic Resonance) is essential.

## 2.4. Ancillary Support

Ancillary support to provide counseling on diet, exercise, weight loss, smoking cessation, and managing psychosocial risk factors should be available.

# 3. TRAINING COMPONENTS

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## 3.1. Didactic Program

Didactic instruction may take place in a variety of formats, including, but not limited to, lectures, conferences, journal clubs, grand rounds, clinical case presentations, and patient safety or quality improvement conferences. The importance of clinical history should be taught on a regular basis and emphasized in patient-related conferences. Clinical history includes family history; assessment of diet, physical activity, fitness, and other lifestyle habits; physical examination; and electrocardiographic manifestations and findings from other noninvasive imaging tests used to identify subclinical atherosclerosis.

## 3.2. Clinical Experience

Rotation on general cardiovascular services is an essential component of training in CVD prevention. Level I trainees should gain firsthand experience in treatment strategies for primary and secondary prevention, as well as in management of complex dyslipidemia and advanced hypertension.

Training in CVD prevention should involve prevention across the risk continuum for patients of varying age,

sex, and ethnicity. It should include patients who have undergone revascularization, cardiac transplantation, and other complex cardiovascular procedures. Given the importance of CVD as a global threat, training obtained outside of the primary institution, including international experiences, can provide valuable insight to trainees on the challenges involved in reducing cardiovascular risk in less technologically developed health systems.

## 3.3. Hands-On Experience

Hands-on experience is important for training in CVD prevention. Trainees in cardiology should spend 6 to 12 months devoted to managing patients with advanced atherosclerosis, heart failure, valvular heart disease, arrhythmia, dyslipidemia, obesity, sedentary lifestyle, and hypertension. Additionally, trainees should participate in delivering cardiac rehabilitation in the appropriate inpatient and outpatient environments to acquire the core competencies. Opportunities to practice in disease prevention or wellness centers and in pediatric and adolescent prevention clinics may add valuable perspective and education on issues facing patients with less-advanced disease states.

# 4. SUMMARY OF TRAINING REQUIREMENTS

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## 4.1. Development and Evaluation of Core Competencies

Training and requirements in CVD prevention address the 6 general competencies promulgated by the ACGME/ABMS and endorsed by the ABIM. These competency domains include: medical knowledge, patient care and procedural skills, practice-based learning and improvement, systems-based practice, interpersonal and communication skills, and professionalism. The ACC has used this structure to define and depict the components of the core clinical competencies for cardiology. The curricular milestones for each competency and domain also provide a developmental roadmap for fellows as they progress through various levels of training and serve as an underpinning for the ACGME/ABIM reporting milestones. The ACC has adopted this format for its competency and training statements, career milestones, lifelong learning, and educational programs. Additionally, it has developed tools to assist physicians in assessing, enhancing, and documenting these competencies.

**Table 1** delineates each of the 6 competency domains as well as their associated curricular milestones for training in CVD prevention. The milestones indicate the stage of fellowship training (12, 24, or 36 months, and additional time points) by which the typical cardiovascular trainee should achieve the designated level. Because programs may vary with respect to the sequence

**TABLE 1 Core Competency Components and Curricular Milestones for Training in Cardiovascular Disease Prevention**

Competency Component		Milestones (Months)			
		12	24	36	Add
<b>MEDICAL KNOWLEDGE</b>					
1	Know the structure of the normal artery and the basic vascular biology of atherosclerotic vascular disease.	I			
2	Know the principles of genetics as applied to cardiovascular disease and pharmacogenomics as applied to cardiovascular therapy.		I		
3	Know the impact of family history on disease risk and utility of family screening in cardiovascular disease prevention.	I			
4	Know the clinical epidemiology of cardiovascular disease, including incidence/prevalence, sex and ethnic differences, and the influence of traditional risk factors and demographics on outcomes.	I			
5	Know the principles for implementation both of individual and population-based cardiovascular disease prevention.	I			
6	Know the major tools to assess both lifetime and 10-year risks of a first cardiovascular event and influence primary prevention measures.	I			
7	Know the evidence for incremental benefit over a traditional risk-based approach, as well as the advantages, disadvantages, and limitations of screening methods to assess subclinical atherosclerosis (including biomarkers, coronary calcification, carotid intima-media thickness, and ankle-brachial index).		I		
8	Know the effects of diabetes mellitus, obesity, hypertension, lipid disorders, physical inactivity, and tobacco use on the development and progression of atherosclerosis, and their treatment strategies.	I			
9	Know the physiology and assessment of diabetes mellitus and principles of its management and comanagement in patients with cardiovascular disease.	I			
10	Know the physiology, assessment, and management of lipid disorders, including in special populations.	I			
11	Know the physiology, presentation, evaluation and management of hypertensive disorders, including refractory hypertension.	I			
12	Know the principles of nutrition and obesity assessment and management, including the roles of pharmacotherapy and bariatric surgery.	I			
13	Know the roles and management principles for behavioral and psychosocial contributions to cardiovascular disease.	I			
14	Know the principles and roles of exercise physiology, physical activity counseling, and cardiac rehabilitation.	I			
15	Know the tools and principles for managing and counseling regarding tobacco cessation.	I			
16	Know the effects of systemic diseases and their treatments (including renal, hepatic, inflammatory, and autoimmune-related disorders) on cardiovascular risk factors and their management.	I			
17	Know adverse effects of obstructive and central sleep apnea on the incidence and control of hypertension, atrial fibrillation and other arrhythmias, congestive heart failure, and atherosclerosis.	I			
18	Know the indications for noninvasive screening for carotid artery disease, abdominal aortic aneurysm, and peripheral vascular disease.	I			
19	Know the impact of reproductive stages, pregnancy, and hormonal treatment for reproductive disorders on cardiovascular risk.	I			
20	Know the principles of antithrombotic therapy in cardiovascular disease.	I			
21	Know the pharmacology, indications, contraindications, and interactions of medications commonly used in cardiovascular disease prevention and therapy (e.g., antithrombotic agents, antihypertensive agents, lipid-lowering agents, agents used in diabetes mellitus management, and agents used in cessation of tobacco).	I			
<b>EVALUATION TOOLS:</b> chart-stimulated review, direct observation, and in-training examination.					
<b>PATIENT CARE AND PROCEDURAL SKILLS</b>					
1	Skill to perform global risk assessment and appropriately utilize diagnostic testing—both in patients at risk for and those with prior cardiovascular events or diagnoses.	I			
2	Skill to evaluate a patient's family history and appropriately recommend family screening.	I			
3	Skill to identify patients who may have common systemic disorders that affect cardiovascular disease diagnosis and treatment such as sleep apnea and thyroid disorders.	I			
4	Skill to implement and prescribe lifestyle approaches for the prevention and treatment of hypertension, dyslipidemia, tobacco use, obesity, and diabetes mellitus.	I			
5	Skill to assess physical activity patterns and exercise capacity and provide physical activity counseling and exercise prescription, as well as counseling on whether to return to sports.	I			

**TABLE 1 Core Competency Components, continued**

Competency Component		Milestones (Months)			
		12	24	36	Add
<b>PATIENT CARE AND PROCEDURAL SKILLS</b>					
6	Skill to identify patients who will benefit from low-density lipoprotein apheresis.		I		
7	Skill to identify patients for whom antiplatelet therapy is indicated.	I			
8	Skill to identify and address factors that contribute to nonadherence to treatment regimen.	I			
9	Skill to utilize individualized risk-benefit assessment in the management of patients and adapt prevention strategies to patients with specific comorbidities (e.g., diabetes mellitus, chronic kidney disease, arthritis).	I			
10	Skill to appropriately integrate new medical information into patient care.	I			
<b>EVALUATION TOOLS:</b> chart-stimulated recall, direct observation, and registry and/or hospital program quality data.					
<b>SYSTEMS-BASED PRACTICE</b>					
1	Practice in a manner that best balances appropriate utilization of finite resources with the net clinical benefit for the individual patient.	I			
2	Utilize an interdisciplinary team approach for disease management.	I			
3	Coordinate patient care among healthcare providers, including transfer of care.	I			
4	Identify and address financial, cultural, and social barriers to treatment implementation and adherence.	I			
5	Appropriately utilize specialty care for patients with advanced or complex diabetes mellitus, complex lipid disorders, refractory hypertension, obesity, depression, or sleep apnea.	I			
6	Appropriately utilize disease management tools and protocols as an aid in the management of patients with high risk-factor burden and established chronic diseases.	I			
<b>EVALUATION TOOLS:</b> direct observation and multisource evaluation.					
<b>PRACTICE-BASED LEARNING AND IMPROVEMENT</b>					
1	Identify knowledge and performance gaps and engage in opportunities to achieve focused education and performance improvement.		I		
2	Utilize point-of-service resources to enhance adherence to guidelines and protocols and obtain new information from clinical trials and professional societies.		I		
<b>EVALUATION TOOLS:</b> chart-stimulated recall, direct observation, registry and/or hospital program quality data, and reflection and self-assessment.					
<b>PROFESSIONALISM</b>					
1	Know and promote adherence to guidelines and appropriate use criteria.		I		
2	Demonstrate respect for individuals with lifestyle disorders such as obesity and tobacco use.	I			
3	Practice prevention in your personal lifestyle and promote a culture of healthy lifestyle choices and physical activity in your work environment and community.	I			
<b>EVALUATION TOOLS:</b> conference presentation, direct observation, and multisource evaluation.					
<b>INTERPERSONAL AND COMMUNICATION SKILLS</b>					
1	Communicate with and educate patients and families across a broad range of cultural, ethnic, and socioeconomic backgrounds regarding appropriate risk factor modification.		I		
2	Communicate in ways that patients and families can understand the evidence on which recommendations are based.		I		
3	Evaluate a patient's health literacy and appropriately adapt counseling strategies and tools.	I			
4	Communicate effectively with patients, families, and referring physicians.	I			
<b>EVALUATION TOOLS:</b> direct observation and multisource evaluation.					

Add = additional months beyond the 3-year cardiovascular fellowship.

of clinical experiences provided to trainees, the milestones at which various competencies are reached may vary as well. Level I competencies may be achieved at earlier or later time points. The table also describes examples of evaluation tools suitable for assessing competence in each domain.

## 4.2. Training Requirements

Training for CVD prevention should be incorporated into all aspects of a cardiovascular training program. Given the importance of prevention in managing patients with CVD, all competencies to be obtained during the 3-year fellowship program are denoted as Level I, required for every trainee. Advanced postfellowship training can be obtained to acquire a body of knowledge and career pathway to specialize in CVD prevention, leading to a leadership focus in this field. The specific training elements required are discussed in the following sections.

### 4.2.1. Level I Training Requirements

Clinical trials have proven that strategies aimed at appropriately detecting and modifying risk factors can slow progression of atherosclerosis and hypertension and reduce the occurrence of clinical events in both primary and secondary prevention settings. More recently, it has been shown that atherosclerosis can be stabilized or even modestly reversed with an associated reduction in undesirable clinical outcomes. Finally, the growing knowledge base of cardiovascular molecular genetics has potentially important implications for the future clinical practice of preventive cardiovascular medicine. Level I training is required of all cardiovascular specialists and includes the milestones outlined in [Table 1](#). It is important to realize that this list of key measures should not be considered all-inclusive. The field of cardiovascular prevention is ever-changing, as epidemiologic and clinical trial data accumulate. Training programs should be oriented toward implementing the most up-to-date guidelines for all risk factors in CVD prevention.

To achieve this level of competency, the Task Force believes the typical fellow will require 1 month of dedicated training in ASCVD prevention. A potential mechanism to obtain this level of training could be participation in a 1-month (or longer) rotation dedicated to preventive cardiovascular medicine ([Table 1](#)). Acceptable alternatives include a 3-month (or longer) clinical cardiovascular rotation that allows concomitant exposure to a comprehensive cardiovascular rehabilitation program at least 1 day each week. This would allow incorporation of a broad range of preventive approaches in addition to the predominant rehabilitation focus of physical exercise. Ideally, the 1-month rotation should include weekly

attendance at a cardiac rehabilitation program, diabetes mellitus or endocrinology clinic, hypertension clinic, and lipid disorders clinic. Another alternative includes obtaining training in these areas through consultative, inpatient, and outpatient rotations, with additional didactic sessions, such as monthly lectures focusing on cardiovascular prevention topics. If the latter approach is taken, the time allotted should be equivalent to at least 1 month of full-time training. Training program directors may also consider supplementing clinical experiences with short courses devoted exclusively to preventive cardiovascular medicine or risk factor evaluation and management.

### 4.2.2. Advanced Training Requirements

The most effective preventive cardiovascular medicine services incorporate the skills and knowledge of multiple providers, including cardiovascular physicians, nurses, nurse practitioners, physician assistants, dietitians, sleep and behavioral medicine specialists, and exercise physiologists. They operate on principles of interdisciplinary teamwork and use systemic approaches to patient care. Although such programs are more effective than routine cardiovascular practice, few training programs offer opportunities to learn these new skills. Programs interested in offering advanced training should incorporate these new concepts into the training program, and trainees interested in advanced training should seek programs that offer these approaches to patient care ([12](#)). The type of skills developed in such advanced training programs might include competency in managing patients using low-density lipoprotein apheresis; leadership training to serve as director of a preventive cardiovascular medicine, hypertension, or lipid service, a cardiac rehabilitation program, or vascular or sleep medicine laboratory; or, in the case of a trainee, obtaining a master's degree in public health, clinical epidemiology, or outcomes research. These competencies are beyond the Level I training in preventive cardiovascular medicine included in a cardiovascular fellowship program. Fellows interested in advanced training may wish to consider training and certification through participation in various subspecialty societies (e.g., the American Association of Cardiovascular and Pulmonary Rehabilitation, American Academy of Sleep Medicine, American Society of Hypertension, National Lipid Association, Association for the Treatment of Tobacco Use and Dependence, and The Obesity Society/American Board of Obesity Medicine) or to participate in additional training in CVD prevention during 3rd year electives or during a 4th year of training in non-ACGME training programs in CVD prevention ([12](#)). Specific competencies for prevention specialists and medical directors of cardiac rehabilitation programs have been published previously ([5,13](#)).

## 5. EVALUATION OF COMPETENCY

Evaluation tools in CVD prevention include direct observation by instructors, in-training examinations, case logbooks, conference and case presentations, multisource evaluations, trainee portfolios, simulation, and reflection and self-assessment. Case management, judgment, interpretation, and bedside skills must be evaluated in every trainee. Quality of care and follow-up; reliability; judgment, decisions, or actions that result in complications; interaction with other physicians, patients, and laboratory support staff; initiative; and the ability to make appropriate decisions independently should be considered. Trainees should maintain records of participation and advancement in the form of a Health Insurance Portability and Accountability Act (HIPAA)-compliant electronic database or logbook that meets ACGME reporting standards and summarizes pertinent clinical information (e.g., number of cases, dates, and patient identifiers such as medical record number and faculty supervisor).

The ACC, American Heart Association, and American College of Physicians published a curriculum on CVD prevention (5). The ACC offers an Adult Clinical Cardiology Self-Assessment Program (ACCSAP) that includes information on preventive cardiovascular medicine, and other societies offer similar self-assessment programs (e.g., the National Lipid Association Self-Assessment Program). Training directors and trainees are encouraged to incorporate resources such as these in the course of training, to utilize in-service examinations, and to ensure trainees (and faculty) have acquired appropriate knowledge of preventive cardiovascular medicine.

Under the aegis of the program director, the faculty should record and verify each trainee's experiences, assess performance, and document satisfactory achievement. The program director is responsible for confirming experience and competence and reviewing the overall progress of individual trainees with the Clinical Competency Committee to ensure achievement of selected training milestones and identify areas in which additional focused training may be required.

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**KEY WORDS** ACC Training Statement, cardiovascular disease prevention, clinical competence, COCATS, fellowship training

**APPENDIX 1. AUTHOR RELATIONSHIPS WITH INDUSTRY AND OTHER ENTITIES (RELEVANT)—  
COCATS 4 TASK FORCE 2: TRAINING IN PREVENTIVE CARDIOVASCULAR MEDICINE**

<b>Committee Member</b>	<b>Employment</b>	<b>Consultant</b>	<b>Speakers Bureau</b>	<b>Ownership/ Partnership/ Principal</b>	<b>Personal Research</b>	<b>Institutional/ Organizational or Other Financial Benefit</b>	<b>Expert Witness</b>
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For the purpose of developing a general cardiology training statement, the ACC determined that no relationships with industry or other entities were relevant. This table reflects authors' employment and reporting categories. To ensure complete transparency, authors' comprehensive healthcare-related disclosure information—including RWI not pertinent to this document—is available in an online data supplement. Please refer to <http://www.acc.org/guidelines/about-guidelines-and-clinical-documents/relationships-with-industry-policy> for definitions of disclosure categories, relevance, or additional information about the ACC Disclosure Policy for Writing Committees.

ACC = American College of Cardiology.

**APPENDIX 2. PEER REVIEWER RELATIONSHIPS WITH INDUSTRY AND OTHER ENTITIES (RELEVANT)—  
COCATS 4 TASK FORCE 2: TRAINING IN PREVENTIVE CARDIOVASCULAR MEDICINE**

<b>Name</b>	<b>Employment</b>	<b>Representation</b>	<b>Consultant</b>	<b>Speakers Bureau</b>	<b>Ownership/ Partnership/ Principal</b>	<b>Personal Research</b>	<b>Institutional/ Organizational or Other Financial Benefit</b>	<b>Expert Witness</b>
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Dhanunjaya Lakkireddy	Kansas University Cardiovascular Research Institute	Official Reviewer, ACC Board of Governors	None	None	None	None	None	None
Howard Weitz	Thomas Jefferson University Hospital—Director, Division of Cardiology; Sidney Kimmel Medical College at Thomas Jefferson University—Professor of Medicine	Official Reviewer, Competency Management Committee Lead Reviewer	None	None	None	None	None	None
Kiran Musunuru	Brigham and Women's Hospital, Harvard University	Organizational Reviewer, AHA	None	None	None	None	None	None
Mouaz Al-Mallah	King Abdul-Aziz Cardiac Center—Associate Professor of Medicine	Content Reviewer, Prevention Council	None	None	None	None	None	None
Michael Emery	Greenville Health System	Content Reviewer, Sports and Exercise Cardiology Section Leadership Council	None	None	None	None	None	None
Brian D. Hoit	University Hospitals Case Medical Center	Content Reviewer, Cardiology Training and Workforce Committee	None	None	None	None	None	None
Larry Jacobs	Lehigh Valley Health Network, Division of Cardiology; University of South Florida—Professor, Cardiology	Content Reviewer, Cardiology Training and Workforce Committee	None	None	None	None	None	None
Richard Josephson	University Hospitals Harrington Heart & Vascular Institute, Case Medical Center; Case Western Reserve School of Medicine—Division of Cardiology	Content Reviewer, Prevention Council	None	None	None	None	None	None
Andrew Kates	Washington University School of Medicine	Content Reviewer, Academic Cardiology Section Leadership Council	None	None	None	None	None	None
Deirdre Mattina	Henry Ford Hospital—Senior Staff Physician, Cardiology	Content Reviewer, Prevention Council	None	None	None	None	None	None

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ACC = American College of Cardiology; AHA = American Heart Association.

**APPENDIX 3. ABBREVIATION LIST**

ABIM = American Board of Internal Medicine

ABMS = American Board of Medical Specialties

ACC = American College of Cardiology

ACC/SAP = Adult Clinical Cardiology Self-Assessment Program

ACGME = Accreditation Council for Graduate Medical Education

ASCVD = atherosclerotic cardiovascular disease

COCATS = Core Cardiovascular Training Statement

CVD = cardiovascular disease

HIPAA = Health Insurance Portability and Accountability Act