UW Cardiovascular Medicine (CVM) Cardiology Fellowship
Preventive Cardiology Curriculum

Overview

The primary goal of the Preventive Cardiology curriculum for the University of Wisconsin Cardiovascular Medicine Fellowship is to provide the knowledge and skills necessary to successfully initiate and maintain long-term preventive therapies in a general clinical cardiology practice. This curriculum satisfies all requirements of ACC 2015 Core Cardiovascular Training Statement (COCATS 4) Task Force 2: Training in Preventive Cardiovascular Medicine for each fellow to achieve all core (level 1) competencies within 24 months of clinical cardiovascular medicine fellowship. This is accomplished by each fellow actively participating in a month of dedicated training in Cardiovascular Disease prevention, supplemented by a comprehensive, didactic/interactive lecture series offered every other year, so each fellow will have the opportunity to participate in it twice during their clinical training. The Preventive Cardiology lecture series includes several interactive methods such as case management and problem solving, in addition to didactic and written support materials. The Preventive Cardiology curriculum is introduced in the first year of a fellows’ training. Knowledge obtained during this curriculum is practiced and reinforced as part of the fellow’s weekly cardiology continuity clinic and during rotations on the inpatient cardiology services (CCU, VA, Heart Failure, and consultation).

Additional educational, clinical and research opportunities are available for fellows interested in a cardiology career with an emphasis in prevention. A half or full year of specific Preventive Cardiology training is available for interested fourth-year fellows, especially if they have an interest in prevention or imaging research. Specific research and learning opportunities are available in the areas of lipids, hypertension, sleep apnea, smoking cessation, inflammatory diseases, vascular imaging, cardiovascular epidemiology and health services research.

The Preventive Cardiology curriculum meets the program requirements for the ACGME as follows:

A. Patient Care. Learned as part of the Preventive Cardiology one-month rotation. It is supervised and evaluated by an attending supervision.
B. Medical Knowledge. Obtained as part of the Preventive Cardiology rotation and lecture series. It is evaluated by informal pre- and post-tests.
C. Practice-Based Learning and Improvement. Obtained as part of the Preventive Cardiology rotation, supplemented by case-based learning during the lecture series and evaluated by quizzes.
D. Interpersonal Communication Skills. Emphasized and role-modeled during the Preventive Cardiology rotation.
E. Professionalism. Emphasized and role-modeled during the Preventive Cardiology rotation.
F. Systems-Based Practice. Emphasized and role-modeled during the Preventive Cardiology rotation and supplemented by the lecture series and their clinical inpatient and ambulatory care experiences, including continuity clinics.
Preventive Cardiology Specific Goals and Objectives

(Note: the corresponding COCATS 4, Task Force 2 Medical Knowledge Competencies are listed in parentheses next to each section)

1. Atherosclerosis and Lipids (lectures, clinic)

**Goal:** To understand clinical aspects of lipoprotein metabolism and diagnosis and management of lipid disorders as they relate to atherosclerotic cardiovascular disease.

**Objectives:** Fellows will be able to

- a. Describe basic mechanisms of atherogenesis and atherosclerosis. (1,8)
- b. Know the principles of genetics as applied to cardiovascular disease and pharmacology (2)
- c. Know the risk factors for atherosclerotic cardiovascular disease, including family history, and how they affect risk (3-6)
- d. Describe clinical aspects of lipid and lipoprotein metabolism. (8,10, 21)
- e. Describe and implement the AHA/ACC lipid guidelines. (3-7).
- f. Describe dietary treatment of lipid disorders. (10,12)
- g. Describe pharmacologic treatment of lipid disorders. (10, 21)
- h. Describe the major clinical trials that affect lipid therapy and guidelines. (10)
- i. Evaluate clinical dyslipidemias and recommend treatment strategies based on case presentations. (10)
- j. Understand the methodology and appropriate use of advanced lipoprotein testing. (7,10)
- k. Know the effects of systemic diseases and inflammation on cardiovascular disease risk and its management (16)

2. Hypertension Management (lectures, clinic)

**Goal:** To understand clinical aspects of the diagnosis and management of hypertension.

**Objectives:** Fellows will be able to

- a. Understand the major secondary causes of hypertension and their initial evaluation. (8,11,17)
- b. Describe key aspects of management of patients with hypertension. (11, 21)
- c. Describe and implement the AHA/ACC and ASH hypertension guidelines. (11, 21)
- d. To understand the approach to the diagnosis and treatment of the patient with resistant hypertension. (11)

3. Diabetes Mellitus, Metabolic Syndrome, and Obesity (lectures, clinic)

**Goal:** To understand the prevalence, cardiovascular implications, and treatment of obesity, metabolic syndrome, and diabetes mellitus, including sleep apnea and cardiovascular disease risk

**Objectives:** Fellows will be able to

- a. Describe the pathophysiology of obesity and metabolic syndrome (insulin resistance syndrome). (8,9)
b. Describe the mechanisms by which obesity and metabolic syndrome increase cardiovascular risk. (8,9)
c. Describe lifestyle management of obesity and metabolic syndrome. (8,9,12)
d. Describe pharmacological therapy of obesity and metabolic syndrome. (8,9)
e. Describe treatment of diabetes mellitus and diabetic lipid disorders. (8,9,12)
f. Describe the initial approach to recognizing and managing obstructive sleep apnea and its effect on CVD risk. (17)

4. Smoking Cessation (lecture, clinic, smoking cessation module)

**Goal:** To understand the cardiovascular effects of tobacco exposure and strategies for physician-assisted smoking cessation.

**Objectives:** Fellows will be able to
a. Describe the effects of smoking on cardiovascular disease incidence. (8,15)
b. Describe primary methods for smoking cessation. (15, 21)
c. Describe the key components of office-based smoking management systems. (15)

5. Exercise and Cardiac Rehabilitation (cardiac rehabilitation clinic and inpatient experience)

**Goal:** To understand the physiological principles and processes of cardiac rehabilitation for patients with a wide range of cardiovascular diseases.

**Objectives:** Fellows will be able to
a. Describe cardiovascular and pulmonary responses to exercise in patients with cardiovascular disease. (12,14)
b. Understand exercise testing protocols and accurately determine functional capacity. (12,14)
c. Provide the basic components of an exercise prescription for patients with cardiovascular disease. (12,14)
d. Understand principles of early mobilization and cardiovascular response to low-level exercise following myocardial infarction, coronary artery bypass surgery, and cardiac transplant. (12,14)
e. Understand guidelines for home activities upon hospital discharge. (12,14)
f. Understand physiology of exercise training in patients with cardiovascular disease. (12,14)
g. Understand the metabolic cost and cardiovascular response to activities of daily living. (12,14)
h. Incorporate secondary prevention into cardiac rehabilitation goals of the patient. (12,14)
i. Work with a multi-disciplinary team to achieve treatment and rehabilitation goals. (12,14)

6. Nutrition (lecture, clinic, nutrition clinic)

**Goal:** To understand the metabolic, epidemiological, and clinical rationale for nutritional recommendations for patients with cardiovascular disease.

**Objectives:** Fellows will be able to
a. State the primary dietary elements related to atherosclerosis prevention. (12)
b. Describe dietary interventions for hypertension and dyslipidemia. (5, 12)

7. Psychosocial and Behavioral Aspects of Cardiovascular Diseases (lecture, clinic, cardiac rehabilitation clinic, nutrition clinic, smoking cessation module)

Goal: To understand how depression, anxiety, and patient behavior affect cardiac outcomes, as well as interventions to motivate behavioral change.

Objectives: Fellows will be able to
   a. Describe the effects of depression and anxiety on cardiovascular outcomes. (12,13,15)
   b. Describe strategies for motivating behavior change in patients with heart disease. (12,13,15)
   c. Outline treatment strategies for cardiovascular disease patients with concomitant depression and/or anxiety. (12,13,15)

8. Screening Tests (lecture, clinic)

Goal: To understand proper use of new/emerging serological and imaging tests for evaluating cardiovascular risk and detecting subclinical atherosclerosis.

Objectives: Fellows will be able to
   a. Describe the appropriate clinical use of screening tests such as lipoprotein(a), high sensitivity C-reactive protein, and advanced lipoprotein testing. (4,6)
   b. Understand imaging tests for screening such as measurement of carotid intima-media thickness, ankle-brachial index, coronary calcium scoring, and AAA screening. (7,18)

9. Special Populations (lecture, clinic)

Goal: To review differences in cardiovascular prevention strategies between men and women, young and old patients, and people of different racial backgrounds.

Objectives: Fellows will be able to:
   a. Identify sex-related differences in risk factors for heart disease (4).
   b. Consider differences in prevention strategies among young and older patient (4).
   c. Consider differences in evaluation of patients of different racial backgrounds (4).

Note: these COACTS 4, Take Force 2 items are covered elsewhere in the UW CVM Fellowship:
   19. Know the impact of reproductive stages, pregnancy, and hormonal treatment for reproductive disorders on cardiovascular risk.
   20. Know the principles of antithrombotic therapy in cardiovascular disease.