



Body System: Cardiovascular		
Session Topic: Cardiovascular Physical Exam		
Educational Format		Faculty Expertise Required
REQUIRED	Interactive Lecture	Expertise in the field of study. Experience teaching in the field of study is desired. Preferred experience with audience response systems (ARS). Utilizing polling questions and engaging the learners in Q&A during the final 15 minutes of the session are required.
OPTIONAL	Problem-Based Learning (PBL)	Expertise teaching highly interactive, small group learning environments. Case-based, with experience developing and teaching case scenarios for simulation labs preferred. Other workshop-oriented designs may be accommodated. A typical PBL room is set for 50-100 participants, with 7-8 each per round table. <u>Please describe your interest and plan for teaching a PBL on your proposal form.</u>
Professional Practice Gap	Learning Objective(s) that will close the gap and meet the need	Outcome Being Measured
<ul style="list-style-type: none"> Family physicians have knowledge gaps with regard to evaluating and managing heart failure, analyzing electrocardiography, performing cardiovascular physical examinations. Physicians demonstrate significant deficiencies in cardiac auscultation skills; especially if the patient is female, and particularly when male physicians are attempting to correctly auscultate the mitral valve region and palpate for the apical impulse on female versus male patients. Point of Care Ultrasound (POCUS) increases the accuracy of cardiovascular physical examination; however, 17.6% of family physicians have a knowledge and practice gap regarding their ability 	<ol style="list-style-type: none"> Take a preparticipation sports history using questions that have proven effective for identifying athletes at risk for sudden cardiac death. Recognize symptoms and signs of cardiovascular conditions that may indicate a need for echocardiogram. Distinguish clinical and auscultatory characteristics of physiologic and pathologic cardiac murmurs, and know when further evaluation by echocardiography is indicated. Identify criteria for appropriate use of electrocardiogram (ECG) during the preparticipation sports physical, and explain what ECG findings may be clinically significant for athletes. Understand the role of point-of-care ultrasound to supplement the bedside cardiovascular physical exam. 	Learners will submit written commitment to change statements on the session evaluation, indicating how they plan to implement presented practice recommendations.



<p>to effectively use POCUS equipment.</p> <ul style="list-style-type: none"> • Medical students, in general, may not be receiving adequate technical training to perform accurate cardiovascular physical examinations. • Data from a recent AAFP Common Medical Procedures Needs Assessment indicate that family physicians have a need for advanced training in ECG analysis 		
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ACGME Core Competencies Addressed (select all that apply)

X	Medical Knowledge		Patient Care
	Interpersonal and Communication Skills		Practice-Based Learning and Improvement
	Professionalism		Systems-Based Practice

Faculty Instructional Goals

Faculty play a vital role in assisting the AAFP to achieve its mission by providing high-quality, innovative education for physicians, residents and medical students that will encompass the art, science, evidence and socio-economics of family medicine and to support the pursuit of lifelong learning. By achieving the instructional goals provided, faculty will facilitate the application of new knowledge and skills gained by learners to practice, so that they may optimize care provided to their patients.

- Provide up to 3 evidence-based recommended practice changes that can be immediately implemented, at the conclusion of the session; including SORT taxonomy & reference citations
- Facilitate learner engagement during the session
- Address related practice barriers to foster optimal patient management
- Provide recommended journal resources and tools, during the session, from the American Family Physician (AFP), Family Practice Management (FPM), and Familydoctor.org patient resources; those listed in the References section below are a good place to start
 - Visit <http://www.aafp.org/journals> for additional resources
 - Visit <http://familydoctor.org> for patient education and resources
- Provide recommendations regarding taking a preparticipation sports history using questions that have proven effective for identifying athletes at risk for sudden cardiac death.
- Provide recommendations for recognizing symptoms and signs of cardiovascular conditions that may indicate a need for echocardiogram.
- Provide recommendations for distinguishing clinical and auscultatory characteristics of physiologic and pathologic cardiac murmurs, and know when further evaluation by echocardiography is indicated.



- Provide recommendations regarding criteria for appropriate use of electrocardiogram (ECG) during the preparticipation sports physical, and explain what ECG findings may be clinically significant for athletes.
- Provide recommendations regarding the role of point-of-care ultrasound to supplement the bedside cardiovascular physical exam.

Needs Assessment

At any given time, family physicians are likely to see patients who have evidence of a suspected cardiovascular-related problem. Approximately 600,000 people die of heart disease in the U.S. every year, with coronary heart disease (CHD) being the most common type, and is the leading cause of death for both men and women.^{1,2} In 2010, heart disease (excluding ischemic) was the principle diagnosis in over 12 million office visits.³ Family physicians frequently screen, diagnose, and evaluate heart disease.

Practice Gaps

The AAFP Recommended Curriculum Guidelines for Family Medicine Residents indicates that family medicine residents should possess the following competencies related to cardiovascular medicine:⁴

- Understand basic and clinical knowledge of cardiac anatomy and pathophysiology of common cardiovascular diseases. (Medical Knowledge)
- Perform an appropriate cardiac history and physical examination, document findings, develop an appropriate differential diagnosis, and plan for further evaluation and management. (Patient Care, Medical Knowledge, Interpersonal and Communication Skills)

Physicians also need to be familiar with recent research regarding evidence-based recommendations for ECG analysis with regard to preparticipation physical evaluation for athletes of all ages and skill levels.⁵

In addition to patients older than 65 years of age, all persons undergoing preparticipation physical evaluations should be questioned about exertional symptoms, the presence of a heart murmur, symptoms of Marfan syndrome, and family history of premature serious cardiac conditions or sudden death.⁵

Physicians may improve their care of patients with HF by engaging in continuing medical education that provides practical integration of current evidence-based guidelines and recommendations into their standards of care, including, but not limited to the following:^{6,7}

- The initial evaluation of patients with suspected heart failure should include a history and physical examination, laboratory assessment, chest radiography, and electrocardiography. Echocardiography can confirm the diagnosis.

Murmurs can be benign, but they can also be the first signs of pathological changes in the heart valves. Cardiac auscultation is one of the most useful investigative tools available to a physician to detect alterations in cardiovascular anatomy and physiology. Auscultation has a reported sensitivity of 70 percent and a specificity of 98 percent for detection of valvular heart disease. However, the sensitivity and specificity vary substantially with the expertise of the examiner.⁸



Distinguishing a pathological murmur from a physiological murmur can be difficult, and some studies indicate that as few as 35% of internal medicine and family medicine residents are able to correctly diagnose a heart murmur using auscultation.^{9,10} While signs and symptoms usually depend on the cause (i.e., systolic vs. diastolic functioning) and its severity, some patients exhibit more obvious signs, including blue coloring of the skin; poor eating and abnormal growth, which is especially common in infants; shortness of breath; excessive sweating; chest pain; dizziness or fainting; and fatigue.

Data from a recent American Academy of Family Physicians (AAFP) CME Needs Assessment survey indicate that family physicians have knowledge gaps with regard to evaluating and managing AF, effective use of electrocardiography, cardiovascular physical examination.¹¹ More specifically, CME outcomes data from 2012-2015 AAFP FMX (formerly Assembly): *Syncope* sessions suggest that physicians have knowledge and practice gaps with regard to ordering appropriate diagnostic tests; taking an adequate history and more detailed physical exam; increased awareness of Brugada syndrome; and more effective use of ECG.¹²⁻¹⁵ AAFP Recommended Curriculum Guidelines for Family Medicine Residents indicates that family medicine residents should be able to perform cardiovascular diagnostic procedures such as history taking and cardiovascular physical examination.¹⁶ However, data from a recent AAFP Common Medical Procedures Needs Assessment indicate that family physicians have a need for advanced training in ECG analysis.¹⁷ More broadly, some studies suggest that medical students, in general, may not be receiving adequate technical training to perform accurate cardiovascular physical examinations.¹⁸

Studies suggest that utilizing a small hand-carried ultrasound (HCU), or Point-of-Care ultrasonography (POCUS) significantly increases the accuracy of the bedside cardiovascular physical examination.^{19,20} However, a recent AAFP Needs Assessment Survey on Common Medical Procedures, suggest that 17.6% of family physicians indicated that they do not currently perform ultrasound procedures, but that they would like to; and therefore require training.¹⁷

Resources: Evidence-Based Practice Recommendations/Guidelines/Performance Measures

- The Preparticipation Sports Evaluation⁵
- Diagnosis and evaluation of heart failure⁶
- ACCF/AHA guideline for the management of heart failure²¹

References

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18. Ortiz-Neu C, Walters CA, Tenenbaum J, Colliver JA, Schmidt HJ. Error Patterns of 3rd-Year Medical Students on the Cardiovascular Physical Examination. *Teaching and learning in medicine*. 2001;13(3):161-166.
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2018 AAFP FMX Needs Assessment

Guidelines: developed in collaboration with the International Society for Heart and Lung Transplantation. *Circulation*. 2009;119(14):1977-2016.