



<b>Body System: Cardiovascular</b>		
<b>Session Topic: Peripheral Vascular Disease - Screening, Diagnosis and Management</b>		
<b>Educational Format</b>		<b>Faculty Expertise Required</b>
<b>REQUIRED</b>	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.
<b>OPTIONAL</b>	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>
<b>Professional Practice Gap</b>	<b>Learning Objective(s) that will close the gap and meet the need</b>	<b>Outcome Being Measured</b>
<ul style="list-style-type: none"> <li>Physicians perceive disease management of PAD as an area of education need.</li> <li>Knowledge gaps to develop treatment protocol that provides medical therapy, risk factor modification (i.e. smoking cessation programs, diet/nutrition counseling, exercise prescriptions, etc.) and regular monitoring and follow-up to promote compliance, evaluate treatment efficacy, and provide early endovascular evaluation if needed.</li> <li>Knowledge and practice gaps in the ability to collaborate with appropriate subspecialty providers to provide multidisciplinary management of patients diagnosed with PAD</li> </ul>	<ol style="list-style-type: none"> <li>Identify patients at risk for asymptomatic PAD who may benefit from ankle-brachial index (ABI) screening.</li> <li>Formulate a differential diagnosis for patients experiencing signs and symptoms of intermittent claudication.</li> <li>Develop a treatment protocol that provides medical therapy, risk factor modification (i.e. smoking cessation programs, diet/nutrition counseling, exercise prescriptions, etc.) and regular monitoring and follow-up to promote compliance, evaluate treatment efficacy, and provide early endovascular evaluation if needed.</li> <li>Collaborate with appropriate subspecialty providers to provide multidisciplinary management of patients diagnosed with PAD.</li> </ol>	Learners will submit written commitment to change statements on the session evaluation, indicating how they plan to implement presented practice recommendations.
<b>ACGME Core Competencies Addressed (select all that apply)</b>		
X	Medical Knowledge	Patient Care



	Interpersonal and Communication Skills		Practice-Based Learning and Improvement
	Professionalism	X	Systems-Based Practice
<b>Faculty Instructional Goals</b>			
<p>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.</p> <ul style="list-style-type: none"> <li>• Provide up to 3 evidence-based recommended practice changes that can be immediately implemented, at the conclusion of the session; including SORT taxonomy &amp; reference citations</li> <li>• Facilitate learner engagement during the session</li> <li>• Address related practice barriers to foster optimal patient management</li> <li>• 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 <u>References</u> section below are a good place to start <ul style="list-style-type: none"> <li>○ Visit <a href="http://www.aafp.org/journals">http://www.aafp.org/journals</a> for additional resources</li> <li>○ Visit <a href="http://familydoctor.org">http://familydoctor.org</a> for patient education and resources</li> </ul> </li> <li>• Provide recommendations for identifying patients at risk for asymptomatic PAD who may benefit from ankle-brachial index (ABI) screening.</li> <li>• Provide recommendations for formulating a differential diagnosis for patients experiencing signs and symptoms of intermittent claudication</li> <li>• Provide recommendations for developing a treatment protocol that provides medical therapy, risk factor modification (i.e. smoking cessation programs, diet/nutrition counseling, exercise prescriptions, etc.) and regular monitoring and follow-up to promote compliance, evaluate treatment efficacy, and provide early endovascular evaluation if needed.</li> <li>• Provide strategies and recommendations for collaborating with appropriate subspecialty providers to provide multidisciplinary management of patients diagnosed with PAD.</li> </ul>			

**Needs Assessment**

Approximately 8.5 million people in the United States have peripheral vascular disease (PVD, or peripheral artery disease (PAD), including 12-20% of individuals older than age 60. General population awareness of PAD is estimated at 25%, based on prior studies.<sup>1,2</sup> Diagnosis can be challenging, as many patients are asymptomatic.<sup>1</sup>

Peripheral arterial disease (PAD) is the progressive stenosis or occlusion of the arteries of the extremities that results from atherosclerosis, leading to decreased oxygenated blood and degeneration of the vasculature, nerves and surrounding tissue. PAD can result in intermittent claudication, pain at rest, and loss of sensation in the extremities, with progression to limb ischemia, persistent wounds, and infections and gangrene requiring amputation. PAD is also associated with a higher risk of coronary artery disease, myocardial infarction, and



cerebrovascular disease, and is a marker for cardiovascular death and disability with a 22% mortality rate at 4.4 years.<sup>3,4</sup>

PAD is a condition that is growing in prevalence world-wide and consuming an increasing amount of health care resources in the United States.<sup>3</sup> Approximately 8-14 million people in the US and an estimated 202 million people worldwide had PAD as of 2010. More than 1 million people in the US have lost a limb due to vascular disease, including diabetes, PAD, and critical limb ischemia; and approximately half of the individuals with limb loss due to vascular disease die within 5 years of the amputation. It is estimated that up to 85% of these amputations could have been delayed or prevented through patient education, lifestyle modification, early diagnosis, and endovascular intervention.<sup>4</sup>

The emphasis of care is placed on risk factor modification, medical therapies, and improvement of cardiovascular health and functional performance through exercise; methodologies all within the scope of care of the family physician. When symptoms are disabling, referral for revascularization therapy may be appropriate. For those patients, follow-up care involves regular monitoring to record improvements, assess risk factors, and optimizes compliance with medical therapy, and monitoring hemodynamic and patency status.<sup>3,5,6</sup>

### **Practice Gaps**

Data from a 2012 American Academy of Family Physicians (AAFP) CME Needs Assessment Survey indicates that family physicians have a statistically significant and meaningful gaps in the medical skill necessary to provide optimal care for patients with PAD.<sup>7</sup> More specifically, data from a 2016 CME Training Needs Survey indicates that physicians perceive disease management of PAD as an area of education need.<sup>8</sup>

Millions of PAD patients are undertreated, despite proven cardiovascular risks of PAD and established guidelines for treatment.<sup>9,10</sup> Often times patients with PAD are asymptomatic and so diagnosis frequently takes place after permanent damage has occurred, resulting in a high rate of morbidity, amputation, and loss of life.<sup>3,4,11</sup> Early diagnosis with ongoing treatment can reduce debilitating morbidity and improve patient outcomes.

Patients are often non-adherent to prescribed treatments; and in fact, patients with diverse manifestations of vascular disease exhibit a range of adherence to individual guideline-recommended therapies was 64%–91% for aspirin, 43%–83% for statins (Figure 2), 49%–66% for ACE inhibitors, and 47%–78% for smoking abstinence.<sup>12,13</sup> Utilization of guideline-recommended post-discharge treatment of patients who have survived an acute atherothrombotic event or have PAD is often suboptimal.<sup>14,15</sup>

These patients also infrequently receive the use of limb-sparing treatments, and so the disease often progresses to a point of irreversible damage due to the lack of awareness on the part of both patients and health care providers, limited availability of diagnostic tests in some primary care centers, and delayed referral for endovascular evaluation. A 2012 review of over 20,000 Medicare patients who underwent a major amputation for critical limb ischemia showed that 71% had no revascularization attempts, and 46% had no diagnostic angiogram prior to a major



amputation. Another study showed that primary amputation was the first procedure for the treatment of critical limb ischemia in 67% of Medicare patients.<sup>4</sup>

Physicians may improve their care of patients with PAD 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:<sup>5,6</sup>

- Screening for PAD with the ankle-brachial index may be considered in patients 65 years and older and in those 50 years and older who have a history of diabetes mellitus, smoking, exertional leg pain, or a nonhealing extremity wound. However, there is no prospective evidence that screening improves health outcomes in these patients.
- Patients with PAD and lifestyle-limiting claudication should be prescribed a supervised exercise program and trial of cilostazol (Pletal; 100 mg twice per day) in the absence of heart failure.
- Patients with PAD who smoke should be offered smoking-cessation counseling and interventions.
- Treatment of PAD should include statin therapy to achieve a low-density lipoprotein level of 100 mg per dL (2.59 mmol per L) or less.
- Patients with symptomatic PAD should be treated with aspirin (81 mg per day) or clopidogrel (Plavix; 75 mg per day) to prevent cardiovascular events.
- PVD can be effectively treated with supervised exercise therapy, cilostazol, lipid-lowering therapy, and antiplatelet therapy. All of these treatments increase pain-free walking distance. Antiplatelet therapy also decreases the need for surgical revascularization. The best treatment is supervised exercise therapy, which increases maximal pain-free walking distance by up to 180 m. (Strength of Recommendation: A, based on systematic reviews of randomized controlled trials [RCTs].)

These recommendations are provided only as assistance for physicians making clinical decisions regarding the care of their patients. As such, they cannot substitute for the individual judgment brought to each clinical situation by the patient's family physician. As with all clinical reference resources, they reflect the best understanding of the science of medicine at the time of publication, but they should be used with the clear understanding that continued research may result in new knowledge and recommendations. These recommendations are only one element in the complex process of improving the health of America. To be effective, the recommendations must be implemented. As such, physicians require continuing medical education to assist them with making decisions about specific clinical considerations.

Physicians should also be kept up to date on new treatment therapies, changes to therapies, or warnings associated with existing therapies. Provide recommendations regarding new FDA approved medications for the treatment of PAD; including safety, efficacy, tolerance, and cost considerations relative to currently available options. Including, but not limited to, Zontivity (vorapaxar). Approved May 2014; for the reduction of thrombotic cardiovascular events.<sup>16</sup>

Faculty should be prepared to discuss the EUCLID trial, and make recommendations regarding ticagrelor versus clopidogrel for prevention of cardiovascular events in patients with PAD.<sup>17</sup> Physicians should also be aware that a small, increased risk of certain cardiovascular adverse events was reported in a study of patients with cardiovascular disease receiving Chantix. The



events included angina pectoris, nonfatal myocardial infarction, need for coronary revascularization, and new diagnosis of peripheral vascular disease or admission for a procedure for the treatment of peripheral vascular disease.<sup>18</sup>

Family physicians should consider a collaborative approach that may include specialists in endocrinology, smoking cessation, endovascular interventionists, vascular surgeons, and others. An algorithm has been developed to assist the family physician in diagnosis and management of PAD. The goal of this algorithm is early diagnosis, appropriate referrals, and establishment of a multidisciplinary treatment strategy including early angiography, appropriate use of endovascular interventions, and ultimately decreased limb loss and decreased morbidity, and mortality.<sup>3,4</sup> Practice guidelines on the management of PAD have been published from the Society for Vascular Surgery, American College of Cardiology Foundation (ACCF) and American Heart Association (AHA). The American Heart Association (AHA) and the American College of Cardiology (ACC) recently (2016) released new guidelines on the management of lower extremity peripheral artery disease.<sup>19</sup> These guidelines and other evidence based recommendations can assist the family physicians in the early diagnosis and management, and the achievement of improved outcomes for their patients with PAD.<sup>6,11</sup>

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

- Diagnosis and treatment of peripheral arterial disease<sup>5</sup>
- Peripheral Vascular Disease: Treatment in Older Adults<sup>6</sup>
- Familydoctor.org - Peripheral Arterial Disease and Claudication (patient education)<sup>20</sup>

References

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8. CME Training Session Needs Survey. Leawood KS: AAFP; 2016.
9. Armstrong EJ, Chen DC, Westin GG, et al. Adherence to guideline-recommended therapy is associated with decreased major adverse cardiovascular events and major adverse limb events among patients with peripheral arterial disease. *Journal of the American Heart Association*. 2014;3(2):e000697.
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20. Familydoctor.org. Peripheral Arterial Disease and Claudication. 2014;