Body System: Integumentary		
Session Topic: Venous Ulcers		
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. Please describe your interest and plan for teaching a PBL on your proposal form.

Professional Practice Gap	**Learning Objective(s) that will close the gap and meet the need**	**Outcome Being Measured**
• Knowledge gaps in assessing patients for pressure sores and ulcers (including venous stasis ulcers and diabetic ulcers), including actively screening patients for venous insufficiency and microvascular complications that put them at risk for developing ulcerations or inhibiting proper wound healing • Knowledge gaps in counseling diabetic patients and patients with venous ulcers on the risk of recurrence of these ulcers and consistently check for signs of poor blood flow or changes to the skin in their legs and feet, emphasizing adherence to treatment therapies • Knowledge gaps of	1. Establish protocols to systematically and routinely evaluate all patients at risk of developing diabetic or venous stasis ulcers. 2. Develop collaborative care plans with diabetic patients emphasizing diabetic foot ulcer prevention strategy adherence; and develop collaborative care plans with patients with venous stasis ulcers, emphasizing adherence to strategies aimed at prevention of recurrence. 3. Apply current evidence-based recommendations and guidelines for treatment of diabetic or venous stasis ulcer, coordinating referral to subspecialists as indicated. 4. Establish and coordinate multidisciplinary teams, utilizing a patient-centered care approach, for the care and management of patients with diabetic and venous ulcers.	Learners will submit written commitment to change statements on the session evaluation, indicating how they plan to implement presented practice recommendations.

current evidence-based recommendations for treatment of diabetic and venous ulcers • Knowledge and performance gaps in establishing and coordinating multidisciplinary teams for the care and management of patients with diabetic and venous ulcers		

ACGME Core Competencies Addressed (select all that apply)			
X	Medical Knowledge		Patient Care
X	Interpersonal and Communication Skills		Practice-Based Learning and Improvement
	Professionalism	X	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 specific strategies and resources to establishing protocols to systematically and routinely evaluate all patients at risk of developing diabetic or venous stasis ulcers
- Provide specific strategies and resources to assist physician-leaners in developing collaborative care plans with diabetic patients emphasizing diabetic foot ulcer prevention strategy adherence; and develop collaborative care plans with patients with venous stasis ulcers, emphasizing adherence to strategies aimed at prevention of recurrence
- Provide an overview, and case-based examples, illustrating current evidence-based recommendations and guidelines for diabetic foot and venous stasis ulcers
- Provide specific strategies and resources to assist physician-learners in establishing and coordinating multidisciplinary teams for the care and management of patients with diabetic and venous ulcers

Needs Assessment

Family physicians are frequently required to manage ulcers of the lower extremities. Among hospital discharges with diabetes as any-listed diagnosis, the number of discharges with a lower extremity condition (LEC) (e.g., peripheral arterial disease, ulcer/inflammation/infection or neuropathy) as any-listed diagnosis (first or secondary) doubled from 445,000 in 1988 to 890,000 in 2007. During this period, the number of discharges with LEC as the secondary diagnosis increased more rapidly than those with LEC as the first-listed diagnosis. In 2007, of 890,000 discharges with LEC as any-listed diagnosis, about 31% had LEC as the first-listed diagnosis.[1] Additionally, venous ulcers (stasis ulcers) account for 80 percent of lower extremity ulcerations, and while overall prevalence is relatively low, the refractory nature of these ulcers increase the risk of morbidity and mortality, and have a significant impact on patient quality of life.[2]

There were more than 21 million visits to family physicians for wound care treatment in 2010, some resulting from follow-up care for the 5 million emergency room visits for open wounds.[3] Physicians are challenged by a variety of acute and chronic wound care scenarios, and while there is no single best approach, systematic evidence-based management is recommended.[4]

Family physicians should be kept up to date on current research and evidence-based recommendations and guidelines for the treatment and management of wound care. Data from the 2012 AAFP CME Needs Assessment Survey suggests that family physicians have gaps in their medical knowledge to provide optimal patient care and management of diabetic and venous stasis ulcers, and overall wound care; therefore, family physicians are in need of additional education and training specifically to the care and management of these conditions.[5] Managing wounds from diabetic foot continues to be a challenge for physicians; it is therefore important that family physicians receive training to help them establish and coordinate a multidisciplinary team with clinical specialists (e.g. podiatrists) and trained nursing staff.[6,7] Additionally, CME outcomes data from the 2011 AAFP Scientific Assembly: *Pressure Sores and Ulcers: Wound Care From Diabetic Ulcers to Pressure Sores*, 2012 AAFP Scientific Assembly: Wound Care-related session topics, as well as the 2014 AAFP Assembly: *Diabetic and Venous Stasis Ulcer Management* sessions, suggests that family physicians require more education and training related to developing formal diabetic foot risk assessments; being up to date on current ulcer treatment guidelines; proper ulcer assessment; when to refer to a wound specialist, including referral management best practices; assessment of wounds generally; management of chronic non-healing wounds; and chart documentation of wound evaluation; especially related to current evidence-based techniques and treatment options for specific situations and types of ulcers, rather than a general overview.[8-10]

A recent study indicates that vacuum-assisted closure (VAC), a new method in wound care, may speed wound healing by causing vacuum; appears to be as safe as, and more effective than moist dressing for the treatment of diabetic foot ulcers.[11] Family physicians should refer to the Infectious Diseases Society of American (IDSA) guidelines for the diagnosis and treatment of diabetic foot infections, or the evidence-based recommendations from U.S. Department of Veterans Affairs for advanced wound care therapies for non-healing diabetic ulcers.[12,13] Family

physicians should utilize the American Medical Association (AMA) PCPI approved quality measures for chronic wound care to develop a patient-centered quality improvement initiative to improve patient safety and optimal chronic wound care management.[14] These AMA PCPI quality measures include the following:

- Assessment of wound characteristics in patients undergoing debridement
- Offloading (pressure relief) of diabetic foot ulcers
- Patient education regarding diabetic foot care
- Patient education regarding long term compression therapy
- Use of compression system in patients with venous ulcers
- Use of wet to dry dressings in patients with chronic skin ulcers (overuse measure)
- Use of wound surface culture technique in patients with chronic skin ulcers (overuse measure)

For proper wound healing, family physicians should ensure patients are receiving adequate nutrition, as vitamin and mineral deficiencies, for instance, can also impair cell structure and prevent proper mechanisms of repair.[15,16] However, there is currently insufficient scientific evidence to counsel patients on specific healing benefits from macro or micro-nutrients.[17,18] Nutritional counseling may need to be provided to patients who have underlying chronic diseases as well. Family physicians should also be kept up to date on current scientific evidence illustrating wound care management techniques with insufficient evidence for recommended use. The following are from a current Cochrane review:

- Topical silver for treating infected wounds[19]
- Honey as a topical treatment for wounds[20]
- Hyperbaric oxygen therapy for treating acute surgical and traumatic wounds[21]
- Silver based wound dressings and topical agents for treating diabetic foot ulcers[22]

More than one-half of nontraumatic lower extremity amputations are related to diabetic foot infections, and 85% of all lower extremity amputations in patients with diabetes are preceded by an ulcer. Physicians must be adept at proper diabetic foot ulcer management in order to avoid infection. Protocols should be in place to ensure that all patients with diabetes should undergo a systematic foot examination at least once a year, and more frequently if risk factors for diabetic foot ulcers exist; that preventive measures include patient education on proper foot care, glycemic and blood pressure control, smoking cessation, use of prescription footwear, intensive care from a podiatrist, and evaluation for surgical interventions as indicated.[23]

Family physicians should consider the following evidence-based recommendations for the management of venous ulcers and diabetic foot ulcers:[2,23]

- Compression therapy has been proven beneficial for venous ulcer treatment and is the standard of care
- Leg elevation minimizes edema in patients with venous insufficiency and is recommended as adjunctive therapy for venous ulcers. The recommended regimen is 30 minutes, three or four times per day
- Dressings are beneficial for venous ulcer healing, but no dressing has been shown to be superior
- Pentoxifylline (Trental) is effective when used with compression therapy for venous ulcers, and may be useful as monotherapy

- Aspirin (300 mg per day) is effective when used with compression therapy for venous ulcers
- Diagnosis of diabetic foot infection is based on the presence of at least two classic findings of inflammation or purulence
- Magnetic resonance imaging is the most accurate imaging study in early osteomyelitis
- Surgical debridement and drainage of deep tissue abscesses and infections should be performed in a timely manner
- All patients with diabetes should undergo a systematic foot examination at least once a year, and more frequently if risk factors for diabetic foot ulcers exist

There is some evidence suggesting that there is inconsistent adherence to evidence-based guidelines for the diagnosis, evaluation, treatment, and management of diabetic and venous ulcers, by both health care providers and patients. Physicians are in need of continuing education that provides specific recommendations that foster guideline adherence, and provides up to date recommendations on current evidence-based management strategies, techniques, and treatment options. Physicians should consider evidence-based guidelines for the following aspects of diabetic and venous stasis ulcer care and management:[12,24-27]

- Assessment and Classification of Patients with Ulcers and Lower-Extremity Venous Disease (LEVD) / Neuropathic Disease (LEND), and Suspect Diabetic Foot Infection
- Prevention and Education of Ulcers and Recurrence
- Interventions for Patients with LEND, LEVD and Ulcers / Diabetic Foot Ulcers & Infection
- Development and Coordination of a qualified professional multidisciplinary team evaluate and document venous ulcer (VU), and diabetic foot ulcer/infection for patient diagnosis and risk factors for delayed healing or recurrence of VU to guide treatment plan
- Document venous ulcer, and diabetic foot ulcer wound characteristics, monitor and manage ulcer progress
- Patient-oriented care to prevent or heal VU, and diabetic foot ulcer; and prevent recurrence. Improve venous return and provide patient and skin care
- Local Wound Care for VU / Diabetic Foot Ulcer/Infection
- Adjunctive interventions to apply if conservative therapy does not work in 30 days
- Local evidence-based wound care VU/Diabetic Foot Ulcer programs, pain management and patient education until healed
- Palliative care for patients with a VU
- Assessment of Suspected Limb Ischaemia
- Consideration of Imaging Studies to evaluate diabetic foot infection
- Diagnosis and Treatment of Osteomyelitis of the Foot in patients with diabetes
- Consideration and management of surgical interventions

In addition to being knowledgeable about evidence-based recommendations and guidelines for the diagnosis, evaluation, treatment and management of diabetic and venous stasis ulcers, physicians are often in need of education to help them put into place the strategies and protocols for coordinating and managing referral, follow-up care, patient education, and establishing patient-centered practices of care.[28-34]

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

- Diagnosis and treatment of venous ulcers[2]
- Diabetic foot infections[23]
- Standards of medical care in diabetes. VI: Prevention and management of diabetes complications[35]
- Management of diabetes. A national clinical guideline[36]
- ADA Standards of medical care in diabetes[37]
- Infectious Diseases Society of America clinical practice guideline for the diagnosis and treatment of diabetic foot infections[12]
- Guideline for management of wounds in patients with lower-extremity venous disease[24]
- Guideline for management of wounds in patients with lower-extremity neuropathic disease[25]
- (AAWC) venous ulcer guideline[26]
- SVS/AVF Management of venous leg ulcers: Clinical Practice Guidelines[38]
- Diabetic foot problems. Inpatient management of diabetic foot problems[27]
- Edema: Diagnosis and Management[39]
- AMA PCPI Approved Quality Measures: Chronic Wound Care Management[14]
- An organized approach to chronic disease care[28]
- Making diabetes checkups more fruitful[29]
- Patient-physician partnering to improve chronic disease care[30]
- Engaging Patients in Collaborative Care Plans[31]
- Encouraging patients to change unhealthy behaviors with motivational interviewing[32]
- Simple tools to increase patient satisfaction with the referral process[33]
- Leadership in a health care organization: not like private practice[34]
- FamilyDoctor.org. Diabetes Overview (patient resource)[40]
- FamilyDoctor.org. Varicose Veins | Overview (patient resource)[41]
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