Body System: Musculoskeletal		
Session Topic: Common Shoulder and Knee Problems in the Elderly		
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**
• A knowledge gap exists in familiarity with the anatomy of the knee and the most common causes of atraumatic knee pain. • A competence gap exists with familiarity to design nonoperative treatment strategies for atraumatic knee pain. • A knowledge gap exists to understand the risks and benefits of various therapies, and prescribe treatment accordingly. • A knowledge and practice gap exists to diagnose bursitis and tendinitis, and to identify complications and associated conditions. • A knowledge and practice gap exists to develop evidence-based treatment strategies specific to type, location, and severity of bursitis or tendinitis. • Inadequacies in musculoskeletal education	1. Conduct an evidence-based assessment of geriatric patients with shoulder injuries, identify any red flags suggesting serious injuries or conditions that warrant diagnostic imaging and possible referral as necessary. 2. Evaluate geriatric patients with shoulder injuries for peripheral nerve injury, and determine appropriate nonoperative treatment therapy, or if referral is necessary. 3. Coordinate care for geriatric patients with shoulder injuries to encourage adherence to rehabilitation therapy. 4. Evaluate geriatric patients with atraumatic knee pain to determine etiology and determine the most appropriate evidence-based treatment plan for pain. 5. Coordinate care for geriatric patients with atraumatic knee pain who require surgery, physical therapy, or other specialty care. 6. Counsel geriatric patients to encourage adherence to therapies	Learners will submit written commitment to change statements on the session evaluation, indicating how they plan to implement presented practice recommendations.

have previously been documented among medical students, residents, and attending physicians in a number of specialties. •	for the treatment of atraumatic knee pain.	

ACGME Core Competencies Addressed (select all that apply)			
X	Medical Knowledge		Patient Care
	Interpersonal and Communication Skills		Practice-Based Learning and Improvement
X	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 recommendations for conducting an evidence-based assessment of geriatric patients with shoulder or knee injuries, identify any red flags suggesting serious injuries or conditions that warrant diagnostic imaging and possible referral as necessary.
- Provide recommendations for evaluating geriatric patients with shoulder or knee injuries for peripheral nerve injury, and determine appropriate nonoperative treatment therapy, or if referral is necessary.
- Provide strategies and resources for coordinating care for geriatric patients with shoulder or knee injuries to encourage adherence to rehabilitation therapy.
- Provide recommendations for evaluating geriatric patients with atraumatic shoulder or knee pain to determine etiology and determine the most appropriate evidence-based treatment plan for pain.
- Provide strategies and resources for coordinating care for geriatric patients with atraumatic shoulder or knee pain who require surgery, physical therapy, or other specialty care.
- Provide strategies and resources for counseling geriatric patients to encourage adherence to therapies for the treatment of atraumatic knee or shoulder pain.

Needs Assessment

The prevalence of shoulder pain in the general adult population ranges between 6.9-31%; although the peak prevalence of shoulder pain occurs in people aged 45-64, and varies by definition and duration of pain.[1] Sprains and strains accounted for nearly 18.4 million musculoskeletal injury treatment episodes in 2006-2007 (the last year for which such estimates were available); most commonly among patients aged 18-44. Dislocations occur most frequently in the 45-64 year age range, and although they're less common, they are more likely to be treated in physician offices.[2] Middle-aged and older individuals are likely to experience shoulder pain due to rotator cuff lesions.[3,4] According to the American Association of Retired Persons (AARP), the five most common causes of shoulder pain among older adults is osteoarthritis, rotator cuff damage, bursitis, dislocated shoulder, and frozen should (adhesive capsulitis).[5]

Practice Gaps

There were more than 3.5 million ambulatory visits in 2009 to family physicians for knee pain, ache, soreness, or discomfort.[6] Atraumatic knee pain is most often caused by patellofemoral syndrome or osteoarthritis; which can be a hereditary condition, but it most often occurs in overweight patients (as added weight puts excess stress on the joints) and those who have had fractures or injuries (including overuse/repetitive motion injuries) earlier in life, either due to sports or work-related conditions.[2,7] Common causes of knee problems in the elderly include tendinitis, patellofemoral osteoarthritis, bursitis, meniscus tear, and osteoarthritis.[8]

Clinical practice guidelines for the management of osteoarthritis of the knee are available from both the American Academy of Orthopaedic Surgeons (AAOS), and from the American College of Rheumatology (ACR).[9,10] There is increasing evidence that nonpharmacologic therapies provide effective pain treatment of knee osteoarthritis, however, proper patient adherence continues to be a barrier.[11-13] Family physicians need to be knowledgeable about the use of nonpharmacologic therapies, especially complementary and alternative medicine therapies for use with patients with atraumatic knee pain. These patients also require routine follow-up to monitor adherence, and to ensure there are no adverse complications from the therapy.

Adhesive capsulitis, often peaking between 40 and 70 years of age, is a common, painful condition of the shoulder that is associated with loss of range of motion in the glenohumeral joint.[14] CME outcomes data from 2013-2015 AAFP FMX (formerly Assembly) musculoskeletal sessions, including *Bursitis and Tendonitis* sessions, suggest that physicians have knowledge and practice gaps with regard to the use of appropriate exam techniques and maneuvers; ordering lab and diagnostic tests; evidence-based recommendations for steroid injections and other treatments; and the recognition and management of specific syndromes.[15-18]

Physicians may improve their care of patients with adhesive capsulitis 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:[14]

- Acetaminophen, nonsteroidal anti-inflammatory drugs, and rehabilitation are commonly used to treat adhesive capsulitis. However, there is a lack of high-level evidence to support their use.

- Oral corticosteroids provide short-term pain relief and improve range of motion in patients with adhesive capsulitis, but the effect may not extend beyond six weeks.
- Compared with oral glucocorticoid therapy, intra-articular corticosteroid injections provide better short-term pain relief and improved range of motion in patients with isolated adhesive capsulitis. However, the effect may not extend beyond six weeks.
- Radiographically guided capsular distension, with or without corticosteroid injection, provides short-term benefit in the treatment of adhesive capsulitis. Its effectiveness is similar or superior to manipulation under anesthesia, and carries less risk.
- Acupuncture may be helpful in the treatment of shoulder pain, but further study is needed before it can be recommended for treatment of adhesive capsulitis.

The 2010 AAFP *Practice Profile Survey* reports that the most common imaging modalities used in family physicians' practices are electrocardiography tests (which 94% of respondents offer) and x-rays (which 46% offer). Respondents cite the most common reasons for not having these mechanisms available as the equipment being too expensive and not desiring the diagnostic procedures.[19] Qualitative research indicates, however, that "patient convenience and satisfaction are improved by the presence of on-site radiography. Traveling to another facility, especially for the elderly and the disabled, places an addition burden on patients and caretakers."[20] The AAFP confirms that family physicians are not only well trained and well positioned to offer initial diagnostic imaging and interpretation, but their use of imaging modalities enhances patient access and care.[21] Ultrasound imaging of older patients complaining of shoulder or knee pain, can reduce the number of unnecessary referrals.

Data from a recent American Academy of Family Physicians (AAFP) CME Needs Assessment survey indicate that family physicians have statistically significant and meaningful gaps in the medical skill necessary to employ efficacious musculoskeletal exam techniques, including the appropriate use of diagnostic imaging.[22] More specifically, CME outcomes data from 2012-2015 AAFP Assembly: *Musculoskeletal Exam Technique* sessions suggest that physicians have knowledge and practice gaps with regard to appropriate application of Ottawa rules; proper examination skills; understanding which diagnostic imaging tests to order, and when to order them; when to order physical therapy; establishing a standardized process for coordinating referrals; being aware of new, more effective tests; and improving surveillance of pathological findings.[15-18] A review of the literature indicates that inadequacies in musculoskeletal education have previously been documented among medical students, residents, and attending physicians in a number of specialties.[23-26]

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

- Treatment of knee osteoarthritis[27]
- Adhesive capsulitis[14]
- Use of complementary therapies to treat the pain of osteoarthritis[12]
- Are you ready to discuss complementary and alternative medicine?[28]
- Appropriate and safe use of diagnostic imaging[29]
- FamilyDoctor.org. Knee Bracing: What Works? (patient resource)[30]
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