

AOAO 2019 Annual Meeting Needs Assessment

Thursday, October 24, 2019

General Session I: Business

Moderated and developed by Dennis Blackburn, DO, FAOAO

The world of Medicine is ever changing. This is noted in new innovations, new techniques, new government regulations, and new ways to have information stolen.

In our first discussion we will learn of the current process of Board Certification for the current Osteopathic Orthopedist and the process for the Future Osteopathic Orthopedist due to the ACGME merger.

Next, we will have a discussion from our current incoming AOA President on the activities of the AOA and what we are doing for our members. We will discuss the Mentorship that goes on in our society and how we can continue to assist our members and potential members.

During medical school and residency, no one prepares you for a deposition or what you need for one. Here we will have Michael Slovis JD assist in the thought process of going through a Deposition as well as what information the lawyers are looking for in preparing their cases.

In today's medical practices, the push has been to go to electronic claims and health records. This allows an "easy way" to get vast amounts of information "to and fro" quickly. There are some out in the world who look at exploiting the very sensitive information and try to take that electronic information. We will learn of the safe practices that The Doctors Company recommends in safe guarding your patients' information.

Lastly, we have a lecture on what it means to "Moderate a Session" at an AOA meeting. This lecture is intended to educate the individual into the process of what is needed and the time line for which it needs to be done. This will outline what is currently needed for the CME Cycle and if there is an upcoming change.

AOA Core Competencies:

- ✓ Patient Care
- ✓ Professionalism
- ✓ System Based Practice
- ✓ Interpersonal and Communication Skills
- ✓ Practice Base Learning and improvement

Sports Session

Moderated and developed by Kevin A. Witte, DO

Like the rest of the world, the medical world is ever growing and changing with new developments and new technologies. The rise of new technologies and new procedures happens relatively quickly in orthopedics and specifically sports medicine. With new developments also come new expectations for better outcomes and quicker returns to full activity. Recently there has been a growing trend toward repairing tendon, ligament, or meniscal injuries by augmenting with synthetic material or biologics. These techniques are being utilized in shoulders, elbows, hips and

knees in an attempt to provide a stronger construct or in an attempt to speed up recovery. Biologics are also being utilized to try to avoid surgery.

The style of the session will be expert lectures with point-counterpoint type presentation during panel discussions.

Rodeo, S. A. (2018). Moving Toward Responsible Use of Biologics in Sports Medicine. *The American Journal of Sports Medicine*, 46(8), 1797–1799. <https://doi.org/10.1177/0363546518782182>

[Stem Cells in Orthopedics: A Comprehensive Guide for the General Orthopedist.](#)

(PMID:27552451)

Saltzman BM, Kuhns BD, Weber AE, Yanke A, Nho SJ.

Am J. Orthop. [2016]

Bucci, G., Begg, M., Pillifant, K., & Singleton, S. B. (2018). Primary ACL Repair vs Reconstruction: Investigating the Current Conventional Wisdom. *Orthopaedic Journal of Sports Medicine*. <https://doi.org/10.1177/2325967118S00049>

Walters, B. L., Lyle Cain, E., Emblom, B. A., Frantz, J. T., & Dugas, J. R. (2016). Ulnar Collateral Ligament Repair with Internal Brace Augmentation: A Novel UCL Repair Technique in the Young Adolescent Athlete. *Orthopaedic Journal of Sports Medicine*. <https://doi.org/10.1177/2325967116S00071>

AOA Core Competencies:

- ✓ Medical Knowledge
- ✓ Patient Care
- ✓ Practice Based Learning and Improvement

General Session II: Basics of Cell Based Therapy in Orthopedics

Moderated and developed by Edward G. Loniewski, DO, FACOS, FAOAO

Regenerative medical treatments has experienced growth not only in orthopedics, but also allied health care fields such as chiropractic, podiatric and naturopathic practitioners. Orthopedic pathology such as arthritis, tendonitis, fractures and infections may be treated from this growing field of knowledge, yet many orthopedic surgeons lack basic training in the proper patient selection, harvesting, processing and delivery of cell therapy. In addition, integrating this form of medicine into the everyday practice of orthopedics requires skill in patient, employee and colleague education. The objectives of this section will allow participants to gain knowledge and skills critical to safe and effective cell therapy using techniques and products within the FDA guidelines. In addition, participants will learn techniques in properly educating patients, staff and colleagues in cell therapies for orthopedic conditions.

The first lecture will provide an overview of regenerative medicine in orthopedics and how this will add value to the common orthopedic practice. The second lecture will be presented on the cellular content of common off the shelf amniotic cell preparations. Dr. Alberto Panero will present his published study evaluating the true cellular content of these preparations (Panero AJ1, Hirahara AM1, Andersen WJ1, Rothenberg J2, Fierro F3. Are Amniotic Fluid Products Stem Cell Therapies? A Study of Amniotic Fluid Preparations for Mesenchymal Stem Cells With Bone Marrow Comparison. *Am J Sports Med.* 2019 Apr;47(5):1230-1235. doi: 10.1177/0363546519829034. Epub 2019 Mar 7.)

The third lecture will be an overview of FDA compliant cell therapies within the USA and cell therapies used in other countries. The focus will be on the development of using fibroblasts in orthopedics. The fourth presentation will inform attendees of the preliminary results of an ongoing study about providing bone marrow concentrate to obese patients for

osteoarthritis of the knee. The fifth lecture will involve how to utilize numerous forms of regenerative medicine techniques. Utilizing currently FDA compliant cell based therapies will be reviewed based on actual procedures. The sixth presentation will be given by the discoverer of the cardiac stem cell line. Dr. Theresa Deisher has extensive experience with developing medications and treatments related to stem cell therapies. She will provide an overview of the fate of transplanted or transported stem cells within the human body. Finally, a panel discussion will cover integrating cell based therapies into your current practice of orthopedics. The focus will be on educating patients, staff and colleagues on proper mechanisms of action of cell therapies and managing expectations of patients, staff and colleagues.

AOA Core Competencies:

- ✓ Medical Knowledge
- ✓ Patient Care
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Foot and Ankle Session

Moderated and developed by Premjit Deol, DO

The treatment of foot and ankle pathology is complex and variable based upon exposure and training. As foot and ankle training in residency can often times be limited, comfort with injuries and pathology in this area can often create a sense of anxiety if complications arise.

The goal of this session will be to assist orthopedic surgeons with creating an algorithm to highlight patients at risk for complications, how to actively avoid complications and management of complications when they arise. This session will focus on 2 broad areas of foot and ankle pathology — trauma and elective reconstruction. As most general orthopedic trauma call will expose clinicians to foot and ankle injuries, it is necessary to highlight the most common complications that arise from both bony and soft tissue related injuries. We will focus on pilon/ankle and hind foot fractures, Achilles injuries and ligamentous pathology of the ankle. The second half of the session will focus on the elective aspects of foot and ankle surgery with identification of patient risk factors and treatment options when complications arise. The focus of this second half will be total ankles, fusions, osteoporosis/nonunions and wound management/nutrition.

AOA Core Competencies addressed:

1. Medical knowledge
2. Patient care
3. Practice based learning and improvement

References:

1. Hsu RY, Ramirez JM, Blakenhorn BD. Surgical complications of osteoporosis in ankle fracture fixation. *Orthopedic Clin North Am.* 2019 Apr; 50(2):245-258
2. Gross CE, Green CL, DeOrio JK, Easley M, Adams S, Nunley JA 2nd. Impact of Diabetes on outcomes of total ankle replacement. *Foot Ankle Int.* 2015 Aug; 36(8); 871-80
3. Redfern D and Myerson M. The management of concomitant tears of the peroneal longus and brevis tendons. *Foot Ankle Int.* 2004 Oct; 25(10): 695-707

4. Krause F, Younger BS, Baumauer JF, et al. Clinical outcomes of nonunions of hind foot and ankle fusions. J Bone Joint Surgery Am. 2016 Dec; 98(23): 2006-2016

Digital Poster Presentation Session

Within the new single accreditation system, residents are required to participate in research and/or scholarly activity. This session was developed to provide an opportunity for not only residents, but osteopathic medical students and physicians in fellowship training, to present their research. The AOA Residents and Fellows Committee review and score the abstracts submitted to the Annual Meeting. Top scores in each category of orthopedic specialty, adult reconstruction, foot/ankle, general, hand, pediatrics, spine, sports and trauma, are then invited to produce a poster, and present it during this session. Presenters will have 10 minutes to present their research and answer questions from among the conference attendees.

Friday, October 25, 2019

Pediatric Session

Moderated and developed by Nathan J. Donaldson, DO

Complications occur in all branches of surgery. It is important to recognize what can go wrong in the treatment of common pediatric orthopedic conditions. It is also important to learn from the complications that occur so that in the future they can either be prevented or managed expeditiously.

Upon completion of this session, the participants will have learned and will have reviewed the complications that can arise in the treatment of common conditions encountered in pediatric patients, both traumatic, congenital, and developmental. This will be a series of nine didactic sessions covering the topics listed below. The last session will be one in which participants will be encouraged to submit cases in which they encountered complications. The cases will be reviewed and potential treatment options will be discussed as a group.

Clin Orthop Relat Res. 2012 Apr; 470(4): 1124–1132. Published online 2011 Sep 13. doi: 10.1007/s11999-011-2060-2

PMCID: PMC3293946 PMID: 21912995; Quality Indicators in Pediatric Orthopaedic Surgery: A Systematic Review

Angeliki Kennedy, MSc,¹ Christina Bakir, MD,¹ and Carmen A. Brauer, MD, MSc (Health Econ), FRCSCorresponding author^{1,2}

AOA Core Competencies:

- ✓ Medical Knowledge
- ✓ Patient Care
- ✓ Practiced Based Learning and Improvement

Shoulder and Elbow Session

Moderated and developed by Anand P. Panchal, DO

Complications are what every orthopedic surgeon dreads: the sleepless nights, the self-doubt, the wondering if you could have done something different. Every single surgeon has them, and every surgeon learns from them. It is, in

some respects, the most important learning tool in the lifelong pursuit of “perfecting” our craft. This upcoming shoulder and elbow session will focus on complications commonly encountered in the everyday practice of orthopedics. Emphasis will be on recognition of the problem, identifying solutions, and, most crucial to the practice of the thoughtful surgeon, implementing the appropriate treatment plan for the patient.

To that end the shoulder and elbow session this year will focus on the following topics:

Proximal humerus fractures - Complications of internal fixation. Locking plate fixation, though quite commonly utilized, is not without complications. Humeral head AVN and collapse, hardware failure, post op stiffness, are all potential complications. Discussion will revolve around which fractures need internal fixation versus arthroplasty versus non-op treatment and what to do if complications are encountered.

Complications Associated with Locking Plate of Proximal Humerus Fractures.

Kavuri V, Bowden B, Kumar N, Cerynik D.

Indian J Orthop. 2018 Mar-Apr;52(2):108-116. doi: 10.4103/ortho.IJOrtho_243_17. Review.

Treatment of fracture sequelae of the proximal humerus: anatomical vs reverse shoulder prosthesis.

Mansat P, Bonneville N.

Int Orthop. 2015 Feb;39(2):349-54. doi: 10.1007/s00264-014-2651-0. Epub 2015 Jan 24. Review.

Reverse shoulder arthroplasty - complications : how do you revise an RSA? With the significant increased in RSA being performed across the country, it is important to understand not only how to reliably perform a RSA but, just as important, how to revise a RSA in the setting of glenoid baseplate failure, prosthesis instability, and even post op fractures, including acromial fractures.

Clinical Outcomes and Complications during the Learning Curve for Reverse Total Shoulder Arthroplasty: An Analysis of the First 40 Cases.

Cho CH, Song KS, Koo TW.

Clin Orthop Surg. 2017 Jun;9(2):213-217. doi: 10.4055/cios.2017.9.2.213. Epub 2017 May 8. Erratum in: Clin Orthop Surg. 2017 Sep;9(3):396.

Complications and revision of reverse total shoulder arthroplasty.

Boileau P.

Orthop Traumatol Surg Res. 2016 Feb;102(1 Suppl):S33-43. doi: 10.1016/j.otsr.2015.06.031. Epub 2016 Feb 12. Review.

Total shoulder arthroplasty: Glenoid side failure: Revision options?? DO I automatically revise to a reverse? Glenoid side failure is one well studied complication in total shoulder arthroplasty. Discussion will focus on recognizing glenoid side failure, possible etiologies, and then setting up revision surgery, including possible conversion to RSA.

Complications of Shoulder Arthroplasty.

Bohsali KI, Bois AJ, Wirth MA.

J Bone Joint Surg Am. 2017 Feb 1;99(3):256-269. doi: 10.2106/JBJS.16.00935. Review. No abstract available. Erratum in: J Bone Joint Surg Am. 2017 Jun 21;99(12):e67.

Revisions of total shoulder arthroplasty: Clinical results and complications of various modalities.

Antoni M, Barthoulot M, Kempf JF, Clavert P. Orthop Traumatol Surg Res. 2016 May;102(3):297-303. doi: 10.1016/j.otsr.2016.01.009. Epub 2016 Mar 8.

How to avoid complications with instability surgery. Appropriate patient selection is crucial to ensure that the proper surgery is done on the proper patient. Emphasis in recent years has focused on comparing Primary labral repair versus Latarjet, in addition to research on which patients would benefit from augmentation during instability surgery such as remplissage.

How to minimize complications in shoulder instability and rotator cuff surgery.

Neviaser AS, Flatow EL, Omid R, Yamaguchi K, Levine WN.

Instr Course Lect. 2012;61:131-41. Review.

How to avoid complications in Rotator cuff repair and how to handle intra-op complications

Numerous steps are involved in performing a well thought out and well-planned rotator cuff repair. Issues from bone quality and anchor purchase, to tendon mobilization, to optimizing the biologic healing environment, have extensively studied.

How to minimize complications in shoulder instability and rotator cuff surgery.

Neviaser AS, Flatow EL, Omid R, Yamaguchi K, Levine WN.

Instr Course Lect. 2012;61:131-41. Review.

Periprosthetic infection: Recent research has focused on P. Acnes as a potential and common source of shoulder arthroplasty infections. Proper identification of risk factors for infection, pre-op treatment, intra-op handling, and post op follow up and treatment will be discussed

Periprosthetic Joint Infection of Shoulder Arthroplasties: Diagnostic and Treatment Options.

Fink B, Sevelde F.

Biomed Res Int. 2017;2017:4582756. doi: 10.1155/2017/4582756. Epub 2017 Dec 20. Review.

Outcomes in the treatment of periprosthetic joint infection after shoulder arthroplasty: a systematic review.

Nelson GN, Davis DE, Namdari S.

J Shoulder Elbow Surg. 2016 Aug;25(8):1337-45. doi: 10.1016/j.jse.2015.11.064. Epub 2016 Mar 21. Review.

Recurrent elbow instability after Terrible triad injuries/elbow fracture dislocations:

Elbow fracture dislocations are inherently difficult to treatment, as the pathology is multi factorial in terms of soft tissue and anatomic contributions. Discussion will focus on avoiding intra-op complications, pre-op and intraop planning, and addressing post op recurrent instability.

Risk factors that influence subsequent recurrent instability in terrible triad injury of the elbow.

Jung SW, Kim DH, Kang SH, Eho YJ, Yang SW, Lee GE.

J Orthop Trauma. 2019 Jan 9.

The management of elbow instability using an internal joint stabilizer: preliminary results.

Orbay JL, Mijares MR.

Clin Orthop Relat Res. 2014 Jul;472(7):2049-60

Complications in elbow arthroplasty:

With numerous advances in shoulder, knee, and hip arthroplasty, the elbow sometimes is the forgotten joint. Recent research has focused on the interface between the humeral and ulnar components and the coupling mechanisms, handling soft tissue coverage and surgical approaches, and revision elbow arthroplasty due to loosening and bone loss.

Why does total elbow arthroplasty fail today? A systematic review of recent literature.

Prkic A, Welsink C, The B, van den Bekerom MPJ, Eygendaal D.

Arch Orthop Trauma Surg. 2017 Jun;137(6):761-769. doi: 10.1007/s00402-017-2687-x. Epub 2017 Apr 9. Review.

Revision Total Elbow Arthroplasty.

Ramirez MA, Cheung EV, Murthi AM.

J Am Acad Orthop Surg. 2017 Aug;25(8):e166-e174. doi: 10.5435/JAAOS-D-15-00479. Review.

AOA Core Competencies:

- Medical Knowledge
- Patient Care
- Practice Based Learning and Improvement
- Systems Based Practice

Trauma Session

Moderated and developed by Benjamin Maxson, DO

Trauma surgery encompasses a wide variety of body regions and procedures, and there are ever changing techniques and approaches to many common injuries. The last two decades have seen vast improvements in treatment techniques and management of the polytraumatized patient, improving survivability, as well as decreasing morbidity and improving maximal recovery from traumatic injuries. Despite continuing research, and publication of new ideas, protocols and techniques there are numerous areas in which complications persist. The overriding theme of this year's conference is "Complications, and What We Have Learned From Them". The goal of the trauma session is to take a more in-depth look at a number of topics which continue to represent areas of possible improvement in patient care, and patient outcomes, and present the evidence and recommendations in a clear and concise manner.

The trauma session will consist of eight individual topics, addressing common questions, complications, and problems in orthopedic trauma, including timing of management of specific traumatic injuries, preventing known complications

including nonunion, infection, and other associated morbidity and mortality. Current literature will be referenced, as we explore the current accepted best practices, reviewing where we have been, and where we are going.

At the conclusion of the lectures we will spend dedicated time in panel discussion. Specific patient cases with complications will be presented by the lecturers, with the opportunity for audience questions, panel feedback, and interactive panel discussion.

After the lectures and panel discussion, the audience, both traumatologist and non-traumatologist alike, will have a better understand of current literature recommendations for these specific topics of complication, morbidity and mortality, as a result of orthopedic trauma injuries.

The implementation of a Geriatric Fracture Centre for hip fractures to reduce mortality and morbidity: an observational study. [Kusen JQ¹, Arch Orthop Trauma Surg.](#) 2019 Jul 13. doi: 10.1007/s00402-019-03229-0. [Epub ahead of print]

[Bisphosphonate-related atypical femoral fracture: Managing a rare but serious complication.](#)

Silverman S, Kupperman E, Bukata S.

Cleve Clin J Med. 2018 Nov;85(11):885-893. doi: 10.3949/ccjm.85a.17119. Review.

[Combination therapy with low-dose teriparatide and zoledronate contributes to fracture healing on rat femoral fracture model.](#)

Tsubouchi Y, Ikeda S, Kataoka M, Tsumura H.

J Orthop Surg Res. 2018 Oct 25;13(1):267. doi: 10.1186/s13018-018-0917-8.

Management of Deep Vein Thrombosis (DVT) Prophylaxis in Trauma Patients. [Paydar S¹, Bull Emerg Trauma.](#) 2016 Jan;4(1):1-7.

[Direct Oral Anticoagulants vs Low-Molecular-Weight Heparin for Thromboprophylaxis in Nonoperative Pelvic Fractures.](#)

Hamidi M, Zeeshan M, Sakran JV, Kulvatunyou N, O'Keeffe T, Northcutt A, Zakaria ER, Tang A, Joseph B.

J Am Coll Surg. 2019 Jan;228(1):89-97. doi: 10.1016/j.jamcollsurg.2018.09.023. Epub 2018 Oct 22.

[Poly-traumatic multi-ligament knee injuries: is the knee the limiting factor?](#)

Woodmass JM, Johnson NR, Mohan R, Krych AJ, Levy BA, Stuart MJ.

Knee Surg Sports Traumatol Arthrosc. 2018 Sep;26(9):2865-2871. doi: 10.1007/s00167-017-4784-3. Epub 2017 Nov 29.

[Traumatic Knee Dislocations: Evaluation, Management, and Surgical Treatment.](#)

Lachman JR, Rehman S, Pipitone PS.

Orthop Clin North Am. 2015 Oct;46(4):479-93. doi: 10.1016/j.ocl.2015.06.004. Epub 2015 Aug 6. Review.

[Do Systemic Factors Influence the Fate of Nonunions to Become Atrophic? A Retrospective Analysis of 162 Cases.](#)

Rupp M, Kern S, El Khassawna T, Ismat A, Malhan D, Alt V, Heiss C, Raschke MJ.

Biomed Res Int. 2019 Feb 19;2019:6407098. doi: 10.1155/2019/6407098. eCollection 2019.

[Technical considerations to avoid delayed and non-union.](#)

McMillan TE, Johnstone AJ.

Injury. 2017 Jun;48 Suppl 1:S64-S68. doi: 10.1016/j.injury.2017.04.019. Epub 2017 May 9.

[Timing of Operative Debridement in Open Fractures.](#)

Rozell JC, Connolly KP, Mehta S.

Orthop Clin North Am. 2017 Jan;48(1):25-34. doi: 10.1016/j.ocl.2016.08.006. Review.

[Associations of timing of surgery with postoperative length of stay, complications, and functional outcomes 3-6 years after operative fixation of closed ankle fractures.](#)

Naumann MG, Sigurdson U, Utvåg SE, Stavem K.

Injury. 2017 Jul;48(7):1662-1669. doi: 10.1016/j.injury.2017.03.039. Epub 2017 Mar 31.

[Complications and early results after operative fixation of 68 pilon fractures of the distal tibia.](#)

Lomax A, Singh A, N Jane M, C Senthil K.

Scott Med J. 2015 May;60(2):79-84. doi: 10.1177/0036933015569159. Epub 2015 Jan 27.

[Is There an Impact of Concomitant Injuries and Timing of Fixation of Major Fractures on Fracture Healing? A Focused Review of Clinical and Experimental Evidence.](#)

Hildebrand F, van Griensven M, Huber-Lang M, Flohe SB, Andruszkow H, Marzi I, Pape HC; Trauma Research Network of the German Society of Trauma, DGU.

J Orthop Trauma. 2016 Mar;30(3):104-12. doi: 10.1097/BOT.0000000000000489. Review.

[Delayed flap coverage of open extremity fractures after previous vacuum-assisted closure \(VAC\) therapy - worse or worth?](#)

Steiert AE, Gohritz A, Schreiber TC, Krettek C, Vogt PM.

J Plast Reconstr Aesthet Surg. 2009 May;62(5):675-83. doi: 10.1016/j.bjps.2007.09.041. Epub 2008 Mar 25.

[The Management of Soft Tissue and Bone Loss in Type IIIB and IIIC Pediatric Open Tibia Fractures.](#)

Laine JC, Cherkashin A, Samchukov M, Birch JG, Rathjen KE.

J Pediatr Orthop. 2016 Jul-Aug;36(5):453-8. doi: 10.1097/BPO.0000000000000492.

AOA Core Competencies Addressed:

- ✓ Medical Knowledge
- ✓ Patient Care
- ✓ Practice Based Learning and Improvement
- ✓ Systems Based Practice

Hand Session

Moderated and developed by Sean A. Blake, DO, DPT

Inherent to all surgery are potential complications. Orthopedic surgery can have unique complications such as, but not limited to, implant failure, periprosthetic fractures, nonunion of fractures or osteotomies, malunion of fractures, stiffness, decreased musculoskeletal function. Even more so, the subspecialty of hand surgery may identify with distinctive complications. This session will address topics with which both general orthopedists and hand specialists may work.

Fellowship trained hand surgeons are specially trained to treat flexor tendon injuries and Dupuytren's disease. Both of these conditions are privy to their own set of complications. These matters will be presented from which knowledge may be gleaned to treat such issues as well as potentially prevent them.

Ulnar sided wrist pain is another area of complexity with which the hand surgeon may deal. Complications can arise with both non-operative and operative treatment. Learning from both may complement all treatment methods.

General orthopedic surgeons as well as fellowship trained hand surgeons treat fractures of the distal radius, phalanges and metacarpals. Many options for treatment have evolved over time and through experience. Have the advances in surgery changed the complications with which the orthopedist may have to deal in these conditions? This will be explored with the expectation to deepen our awareness of the potential difficulties in treating these injuries.

Recognizing the need for expertise in therapy of the hand, the Certified Hand Therapist now must dedicate three years to focusing on treatment of hand conditions before attempting to obtain this distinguished certification. As a vital

member of the hand team, the therapist encounters complications specific to therapy. Growing in understanding of these can aid in the communication between the therapist and the surgeon.

Overall, at the conclusion of this session, attendees will have a greater appreciation for and knowledge base of some of the multiple facets of hand surgery and the complications with which one may have to deal. They will additionally gain depth of understanding for improvements in patient care by learning from these circumstances. The ultimate goal of the session will be to optimize the results for our patients while improving their quality of care and of life.

1. Klifto C, Capo J, Sapienza A, Yang S, Paksima N. Flexor Tendon Injuries. J Am Acad Orthop Surg. 2018; 26(2): e26-e35.
2. Denkler K. Surgical Complications Associated with Fasciectomy for Dupuytren's Disease: A 20-year Review of the English Literature. Eplasty. 2010; 10: e15.
3. Satake H et al. Complications of Distal Radius Fractures Treated by Volar Locking Plate Fixation. Orthopedics. 2016 Sep 1;39(5):e893-6.
4. Markiewitz A. Complications of Hand Fractures. Hand Clin 2013; 29:601-620.

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Saturday, October 26, 2019

Spine Session

Moderated and developed by Alireza Anissipour, DO

Today's practicing spine surgeon is faced with great challenges. We are presented with rapidly evolving technologies such as 3d guided navigation, motion preservation, and robotics. We are exposed to less invasive techniques such as tubular retractors, retroperitoneal exposures, and percutaneous instrumentation. Yet we must stay true to the fundamentals of spinal surgery including achieving an arthrodesis and decompression while minimizing risk and maximizing patient outcomes.

Common controversies are explored in today's literature and skewed by industry influence.

- Is titanium, bone, or peek best for the interbody space?
- Is open or tubular or endoscopic techniques the best? What are the potential complications?
- What is the current state of adoption and science behind stem cells?
- What are the benefits, risks, and costs of robotic versus navigation assisted spine surgery?

At the conclusion of the spine session an attendee will have answers to these questions. Topics will cover updates in deformity and degenerative spine. The speakers will present up to date techniques, but also compare these to known standard techniques. Attendees will have a better understanding of what is at the forefront of spine surgical techniques.

Specific topics will include:

- The current state of disc herniation: open, tubular, endoscopic

- Differentiating indications of different technology into everyday practice.
- The potential complications of each technique and how to prevent them
- The interbody fusion:
 - Allograft, Peek, titanium?
 - What does the literature say?
 - Why consider titanium? Is it another temporary trend? How to evaluate the fusion?
- Stem cells: the current state of the literature and practical application in practice.
 - What do we tell patients
- Degenerative scoliosis: what is the best techniques to achieve our goals?
 - A proposed treatment algorithm
- Degenerative spondylolisthesis
 - Upon completion, participants will gain strategies to
 - Understand the different characteristics that define stable and unstable DS
 - Gain knowledge into alternative strategies related to DS
 - Discuss pros and cons of decompression alone vs fusion
 - Open vs MIS, TLIF vs posterior only, vs. retroperitoneal
- L5-S1 Isthmic spondylolisthesis
 - Current state of pars repair (indications and techniques)
 - L5-S fusion (ALIF, OLIF, TLIF, open posterior fusion)
 - +/- decompression?
- Outpatient Spine Surgery in 2019
 - Economic analysis
 - Payor and Hospital perspective
 - Surgeon and patient perspective
 - Best practices: patient selection and workflow
 - Safety of outpatient surgery
- Emerging technologies are here. Now what?
 - O-Arm vs 3d-Carm navigation
 - Robotics

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Adult Session: Periprosthetic Joint Infections

Moderated and developed by Joshua E. Drumm, DO

CO*RE REMS: Pain Management and Opioids: Balancing Risks and Benefits

Program presented by the **American Osteopathic Academy of Orthopedics**.

The “**ER/LA Opioid REMS**” program has been developed by the Collaborative for REMS Education (CO*RE). The American Osteopathic Association (AOA) is a CO*RE partner. CO*RE recently received approval from the REMS Program Committee (RPC) for its national initiative to support educational activities addressing the public health crisis

surrounding the use, abuse, diversion and overdose associated with Extended-Release/Long-Acting (ER/LA) opioids. As a result of that action, the AOA invited affiliates to apply for grants to present the REMS program. The **American Osteopathic Academy of Orthopedics** has received an AOA grant to present the program at the **AOAO 2019 Annual Fall Meeting**.

A Risk Evaluation and Mitigation Strategy (REMS) is a risk management program required by the U.S. Food and Drug Administration (FDA) to ensure that the benefits of a drug outweigh its risks. The FDA has determined that a single, shared REMS is required for all brand and generic ER/LA opioid pain medicines. This is the *first time* the FDA has mandated a REMS to include accredited professional education. The FDA has also required the pharmaceutical companies that produce these agents to provide financial support for independent professional education. The **“ER/LA Opioid REMS”** program uses a standardized education module based on the approved FDA Blueprint. The program is presented by DOs who have participated in the CO*RE master faculty training.

In the mid-1990s, the use of prescription opioids traditionally reserved for treating cancer and acute pain expanded to include treatment of other chronic pain conditions. In part, this change resulted from ethical concerns related to the under-treatment of chronic pain. State medical boards and legislatures changed regulations, ending a prohibition on opioid use for chronic non-cancer pain, while new policies from state and national medical boards encouraged the use of opioids for long-term pain control. Following this change, a dramatic rise in opioid-related poisoning deaths was seen, with a parallel increase in overall consumption of opioid analgesic, nonmedical use of drugs, and an increased potential for abuse.¹As of 2012, prescription opioid drug abuse, misuse, and addiction are considered an epidemic and a significant public health concern.² The problems of pain and misuse of pain treatments are well documented.^{3, 4} Opioids now exceed cocaine and heroin in causing unintentional overdose deaths, having increased from causing 8,048 deaths in the US in 1999 to 47,600 in 2017.⁵ The misuse of opioids has become the most common form of poisoning treated in US emergency departments (EDs).^{6, 7} With regard to diversion of opioids in particular, the National Drug Intelligence Center (NDIC) estimated the costs to public and private insurers to be \$72.5 billion per year.⁸

¹ Oxford Academic. (2019). *Changes in Mortality Involving Extended-Release and Long-Acting Opioids After Implementation of a Risk Evaluation and Mitigation Strategy*. Available at: <https://academic.oup.com/painmedicine/advance-article/doi/10.1093/pm/pnz031/5382197>

² White House. [Epidemic: Responding to America's Prescription Drug Abuse Crisis](#). Accessed March 28, 2013.

³ U.S. Food and Drug Administration. *FDA Education Blueprint for Health Care Providers Involved in the Management or Support of Patients with Pain*. (2017) Available from: <https://www.fda.gov/media/105199/download>

⁴ National Academies of Sciences, Engineering, and Medicine; Health and Medicine Division; Board on Health Sciences Policy; Committee on Pain Management and Regulatory Strategies to Address Prescription Opioid Abuse; Phillips JK, Ford MA, Bonnie RJ, editor. (2017) *Pain Management and the Opioid Epidemic: Balancing Societal and Individual Benefits and Risks of Prescription Opioid Use*. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK458655/>

⁵ National Institute of Drug Abuse.(2019) *Overdose Death Rates*. Available from: <https://www.drugabuse.gov/related-topics/trends-statistics/overdose-death-rates>

⁶ U.S. Department of Health and Human Services Behavioral Health Coordinating Committee Prescription Drug Abuse Subcommittee.(2013) *Addressing Prescription Drug Abuse in the United States*. Available from: https://www.cdc.gov/drugoverdose/pdf/hhs_prescription_drug_abuse_report_09.2013.pdf

⁷ National Institute on Drug Abuse.(2018) *Emerging Trends and Alerts*. Available from: <https://www.drugabuse.gov/drugs-abuse/emerging-trends-alerts>

⁸ Association of Healthcare Internal Auditors. (2018) *Drug Diversion Prevention & Detection Using a Comprehensive Risk & Internal Audit Approach*. Available from <https://ahia.org/AHIA/media/WhitePapers/DrugDiversionPreventionAndDetectionJuly2018.pdf>

At the same time, numerous clinical reports suggest that chronic pain remains undertreated.^{9, 10, 11, 12} Approximately 50 million Americans experience chronic pain.¹³ However, 80% of patients worldwide receive inadequate treatment and pain management, and half of American who suffers from chronic pain receives inadequate treatment and pain management.^{14, 15} In terms of financial impact, the U.S. spends approximately \$560-\$635 billion annually on healthcare utilization due to chronic pain.¹⁶

In response to a 2006 Institute of Medicine (IOM) report on drug safety,¹⁷ the Food and Drug Administration Amendments Act (FDAAA) was signed into law in 2007; this gave the FDA authority to require risk evaluation and mitigation strategies (REMS) to have an increased focus on drug safety and post-marketing surveillance.¹⁸ In July 2012, the FDA approved a REMS for extended-release and long-acting (ER/LA) opioids, mandating that manufacturers of these drugs implement a multi-faceted program to “reduce risks and improve safe use of ER/LA opioids while continuing to provide access to these medications for patients in pain.” A central component of these efforts is an education program for prescribers, outlined in the document [FDA’s Opioid Analgesic REMS Education Blueprint for Health Care Provider’s Involved in the Treatment and Monitoring of Patients with Pain](#).

In 2011, the CO*RE Partners designed and conducted an in-depth, multi-method needs assessment to evaluate current literature, barriers to change, barriers to best practice, perceived educational needs, health care professionals’ attitudes, and gaps in knowledge, skills, and competence. Findings revealed that respondents perceive significant need for education, including initial assessment of the patient, development of a treatment plan, assessment of risk for abuse, and ongoing reassessment of the patient.

For continuous improvement of the CO*RE curriculum, the 2014 needs assessment was designed to build on that needs assessment and identify where and how clinician needs have evolved over the past 3 years. Results of a quantitative assessment of perceived competency gaps are illustrated in the figure below. Primary care and specialist providers rated their current and desired levels of competency; the average difference between these represents the gap or perceived need. All of the measured competencies recorded gaps above 0.5, which is considered meaningful; many gaps fall between 1.0 and 2.0, the ideal range for health care professional education.

⁹ American Journal of Public Health. Brennan, F. et al. *Access to Pain Management as Human Rights*. (2019):p.1-5

¹⁰ Bulls, Hailey ., Goodin, Burel R., and Scott – Herbet, Matthew. *A Biopsychosocial Perspective on the Assessment and Treatment of Chronic Pain in Older Adults*. (2018): pp 131-152

¹¹ The Journal of the International Association for the Study of Pain. Schug, Stephan A. et al. *The IASP Classification of Chronic Pain for ICD -11*. (2019) Available from

https://journals.lww.com/pain/Fulltext/2019/01000/The_IASP_classification_of_chronic_pain_for.6.aspx

¹² Lindsey E. Dayer, Jacob T. Painter, Kelsey McCain, Jarrod King, Julia Cullen & Howell R. Foster (2019) A recent history of opioid use in the US: Three decades of change, *Substance Use & Misuse*, 54:2, 331-339, DOI: [10.1080/10826084.2018.1517175](https://doi.org/10.1080/10826084.2018.1517175)

¹³ Centers for Disease Control and Prevention. *Morbidity and Mortality Report: Prevalence of Chronic Pain and High – Impact Chronic Pain Among Adults – United States, 2016*. (2018) 67(36);1001-1006 Available from

<https://www.cdc.gov/mmwr/volumes/67/wr/mm6736a2.htm>

¹⁴ U.S. National Library of Medicine National Institute of Health. *Towards Effective Pain Management: Breaking the Barriers*. (2017) DOI:[10.5001/omj.2017.69](https://doi.org/10.5001/omj.2017.69) Available from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5632690/>

¹⁵ Glajcjen, Myra MSW. *Chronic Pain: Treatment Barriers and Strategies for Clinical Practice*.(2019) Available from <https://www.jabfm.org/content/jabfp/14/3/211.full.pdf>

¹⁶ Pizzi LT, Carter CT, Howell JB, et al. Work loss, healthcare utilization, and costs among US employees with chronic pain. *Dis Manag Health Outcomes*. 2005;13(3):201-208.

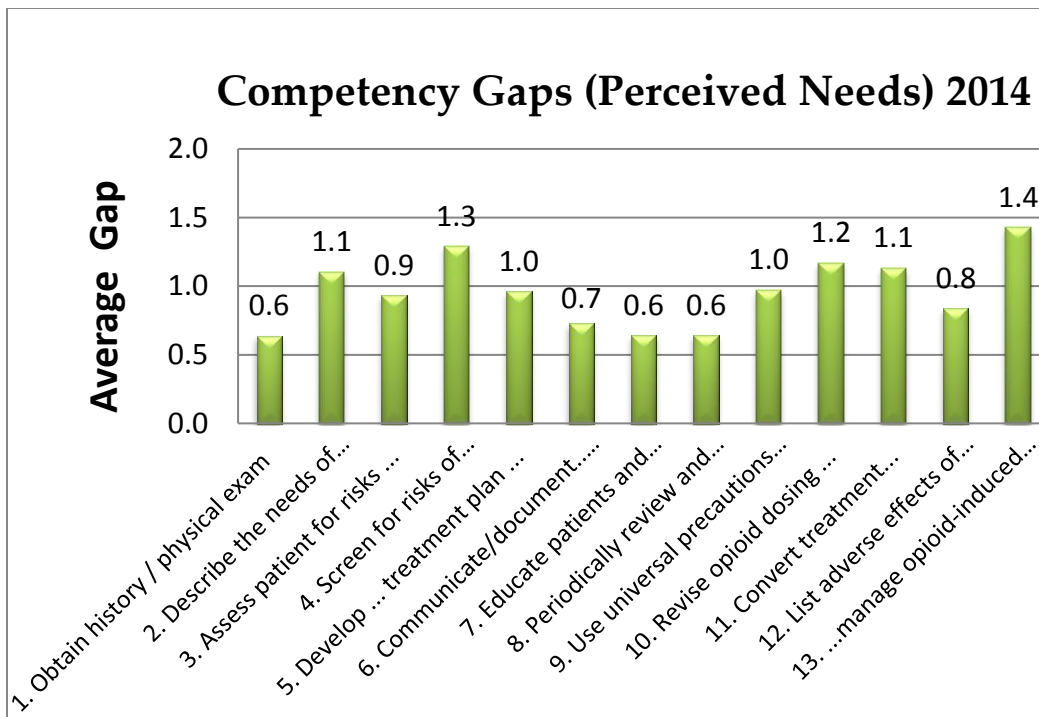
U.S. National Library of Medicine National Institute of Health. Res Pain, J. *Just how much does it cost? A cost study of chronic pain following cardiac surgery*. (2018) doi: [10.2147/JPR.S175090](https://doi.org/10.2147/JPR.S175090) Available from

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6235323/>

¹⁷ Institute of Medicine. *The future of drug safety: promoting and protecting the health of the public*. September 22, 2006; Available at: http://books.nap.edu/catalog.php?record_id=11750. Accessed July 7, 2011.

¹⁸ 110th United States Congress. Food and Drug Administration Amendment Act of 2007. Available at:

http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_cong_public_laws&docid=f:publ085.110. Accessed July 7, 2011.



The survey additionally revealed that learners perceive many barriers to best practices, particularly concern about accidental overdose, patients' concerns that they may become dependent or addicted, and limited access to pain specialists for consultation or referral. The fear of abuse and need to recognize potential diversion were identified as major concerns for opioid prescribers.

Furthermore, the findings suggested that those who participated in opioid REMS education have lower perceived needs and greater competency related to managing patients with chronic pain and use of ER/LA opioids. Individuals who partake REMS education utilize more tools and resources when assessing patients and managing patient's pain. These learner's have also used methods to reduce the abuse and diversion of opioids. However, significant competency gaps and barriers to best practice still remain prevalent.

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https://ce.opioidanalgesicrems.com/RpcCEUI/remss/pdf/resources/List_of_RPC_Companies.pdf