Problem Based Treatment in Action: Using Evidence to Prevent Pitching Injuries

Moving beyond diagnosis and treatment protocols is the focus of evidence-based medicine. The goal is to integrate the best available evidence to help in the creation of treatment plans. However, this can be difficult to conceptualize. This presentation defines, as well as gives an example of, Problem-Based Treatment with a focus on preventing pitching injuries. Explanation of the concepts of evidence-based medicine and the International Classification of Functioning, Disability, and Health are included before describing the process was utilized to produce a case study of several interventions that were used in order to prevent pitching injuries.

At the conclusion of the session, attendees will be able to:
1. Explain Problem Based Treatment.
2. Develop a Pitching Intervention Strategy.
3. Summarize the International Classification of Functioning, Disability, and Health.

New Trends in Emergency Care: An Update

This session reviews the evidence on emerging and revision of emergency care treatment techniques. Over the last several years, many changes have occurred in both the EMS and athletic training professions resulting in treatment paradigm shifts for certain injuries and medical conditions. This mini-course will review evidence for both current and potential emergency treatment techniques. This includes advanced airway use in athletic training, cardiopulmonary resuscitation performance metrics, cardiocerebral resuscitation (CCR), rigid cervical collar usage, and hemorrhage control.

At the conclusion of the session, attendees will be able to:
1. Explain up and coming potential changes in emergency care techniques regarding spine injury management, CPR, airway management and hemorrhage control.
2. Describe the process of cardiocerebral resuscitation.
3. Evaluate current spine injury care techniques in regards to current evidence.
4. Identify possible airway management difficulties in the equipment laden spine injured athlete.
5. Recognize the importance of using supraglottic airways by athletic trainers on equipment laden spine injured athletes.
6. Summarize new hemorrhage control treatment techniques.

Chronic Unusual Pain Syndromes

Often times in health care we are faced with a condition or constellation of signs and symptoms which do not make sense. We are trained to recognize patterns and package them into a firm diagnosis. This “firm” diagnosis dictates proper treatment. The treatment may consist of pharmaceuticals, physical therapy, and a tincture of time. However, incorrect clustering of signs and symptoms can delay proper treatment and could potentially harm the patient. There are many unusual pain conditions and syndromes which may occur more commonly than expected. This presentation will highlight some of these neurological and musculoskeletal conditions and treatments.

At the conclusion of the session, attendees will be able to:
1. Identify uncommon nerve impingement syndromes and how they may overlap with other common conditions.
2. Identify the difference between Complex Regional Pain Syndrome Type I and Type II.
3. Select appropriate treatment protocols and techniques to assist treatment of patients of Fibromyalgia.
4. Describe how thoracic outlet syndrome may present in previously healthy athletes.

**Hand Injuries in Athletes: Operative and Bracing Consideration**
This presentation will be an overview of the common hand and digit injuries that occur in the athlete and physically active. The focus of the presentation will be on metacarpal fractures and injuries to the digits. Current non-operative and operative procedures will be discussed. This presentation will also include returning to play, splinting/bracing options and therapeutic rehabilitation concerns. Case reviews with discussion will be held throughout the presentation.

At the conclusion of the session, attendees will be able to:
1. Recognize the common hand injuries seen in athletes and the physically active.
2. Distinguish between urgent and non-urgent injuries and make appropriate referrals.
3. Apply the concepts of early range of motion to better work with patients to help regain full movement.
4. Plan for appropriate return to play timelines

**New Developments in the Pediatric Concussion**
Pediatric concussions, population defined as 0-19 years of age, require complex management because of ongoing brain development in these early years. Healing time is often prolonged. The recovery process benefits from a multi-faceted care approach. Underlying disorders such as ADHD, depression and anxiety, can be exacerbated after injury. Less emphasis is being placed on baseline neurocognitive testing at the beginning of each season according to the 5th Concussion Consensus Statement and the SCAT5 is the gold standard for sideline testing. Research demonstrates that utilization of controlled physical activity as a treatment demonstrates a decrease in symptoms and overall recovery time.

At the conclusion of the session, attendees will be able to:
1. Compare similar findings between adolescent, adult and pediatric concussion presentation.
2. Differentiate mechanisms of injury for pediatric concussion.
3. Identify differences in pediatric post-concussion care

**Best Practices for Prevention of Medial Tibial Stress Syndrome**
The purpose of this minicourse will discuss an evidence-based approach to medial tibial stress syndrome (MTSS). MTSS is a prominent lower limb pathology that affects an array of active individuals from runners to military. As such, there is a need to explore the best practices of injury prevention using the Meuwisse Dynamic Model of Etiology in Sport. Through this model, the athletic trainer will develop an understanding of intrinsic and extrinsic risk factors. We will also discuss risk factors from the modifiable and non-modifiable paradigm. The mini-course will allow prevention screening and tailored interventions for patients predisposed to MTSS.

At the conclusion of the session, attendees will be able to:
1. Define Medial Tibial Stress Syndrome (MTSS) and describe the impact of the pathology on active participants throughout the disablement model.
2. Describe the Meuwissee Dynamic Model of Etiology in sport, including intrinsic and extrinsic risk factors, and modifiable and non-modifiable risk factors.

3. Apply primary, secondary, and tertiary prevention strategies including early screening strategies and intervention to reduce the impact of MTSS using the best available evidence.

Using Problem-Based Learning to Improve Clinical Examination and Diagnosis Skills
Athletic trainers often serve their patients in a primary care role. Therefore athletic trainers need to be prepared to evaluate a wide array of conditions beyond musculoskeletal pathologies. Additionally, clinicians must be prepared to work with various patient populations within their clinical practice. In this session, case based learning will engage the audience in patient history and differential diagnosis development. Attendees will develop a comprehensive systems based history, recognize clinical findings presented and identify an appropriate care plan for the cases presented. Examples of how PBLs can be integrated into athletic training education will be provided.

At the conclusion of the session, attendees will be able to:
1. Describe a problem-based learning approach to facilitate an active learning environment.
2. Apply a systems based approach to developing a comprehensive medical history for improved clinical diagnosis.
3. Explain the importance of developing a thorough differential diagnosis for various patient population groups.

Weathering Weather: Updating the Knowledge Gap
Updating the Knowledge Gap As technology advances in our society, dozens of different products and phone applications are available for purchase; however, a large knowledge gap exists regarding the science and efficacit of these products for weather detection. Evidence suggests few products actually yield the information claimed by companies opposed to what occurs in the field. [2,3] The most recent NATA position statement on weather and lightning safety recommends the use of app technologies to monitor weather conditions. [1] This talk aims to teach clinicians critical evaluation of app based technologies, local weather stations, and provide the science behind lightning and weather.

At the conclusion of the session, attendees will be able to:
1. Identify key governmental and private agencies responsible for weather information dissemination.
2. List different weather phenomena and severity criteria.
3. Discuss updated guidelines for emergency action planning in regards to weather safety, lightning safety, and situational awareness.
4. Discuss the pros and cons to various mobile applications and fixed weather detection systems for lightning safety at sport venues.