

Network News

VOLUME I, ISSUE I

NOVEMBER 2010

THE SECONDARY SCHOOL ATHLETIC TRAINING PRACTICE-BASED RESEARCH NETWORK

Director's Update

Welcome to our first issue of *Network News*, a quarterly newsletter to keep you connected with the Secondary School Athletic Training PBRN. In this and future issues we plan to highlight aspects of the CORE-AT EMR, provide clinical site information and discuss current studies in the literature. We'll also use this newsletter as a forum for our own research studies, once they get up and running.

Practice-based research is research conducted by providers 'at the bedside,' which typically occurs in an individual or small group of clinical practices with the overarching goal of improving patient care by improving clinical practice. Practice-based research networks (PBRN) provide the impetus and infrastructure to bring together clinicians and researchers to conduct point-of-care research that serves as the transitional research link between bench side and bed side research. According to the Agency for Healthcare Research and Quality (AHRQ), PBRNs are, "... groups of primary care clinicians and practices working together to answer community-based health care questions and translate research findings into practice. PBRNs engage clinicians in quality improvement activities and an evidence-based culture in primary care practice to improve the health of all Americans."

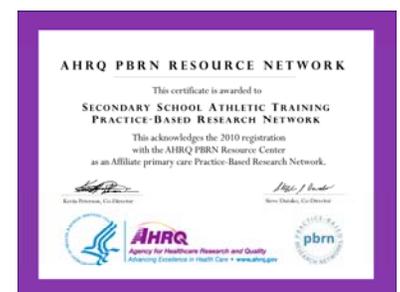
The Secondary School Athletic Training PBRN was developed to study and improve the quality of athletic training services provided in the secondary school setting. The mission of the Secondary School Athletic Training PBRN is to improve the quality of care and patient outcomes in adolescent athletes under the care of certified athletic trainers. We currently have close to 30 participating clinical practice sites utilizing the CORE-AT EMR.

Additionally we have developed an external advisory board to provide scientific direction and guidance for our future research endeavors. We welcome the following external advisors:

- Keith Loud, MD: Associate Professor of Pediatrics, Dartmouth Medical School; Chief Second of General Academic Pediatrics, Dartmouth-Hitchcock Medical Center
- Mark Laursen, MS, ATC: Clinical Associate Professor, Director of Athletic Training Services, Boston University
- Bonnie VanLunen, PhD, ATC: Associate Professor and Director Post-Professional Athletic Training Education, Old Dominion University
- Gary Wilkerson, EdD, ATC: Professor and Director of Graduate Athletic Training Program, University of Tennessee Chattanooga
- Tim McGuine, PhD, ATC: Coordinator of Sports Medicine Research, University of Wisconsin Sports Medicine
- Mike West, MS, ATC: Principal at the Learning Center in the Jurupa Unified School District, Riverside, California

We thank all of you for your efforts thus far and look forward to working with you more in the future.

Tamara



EMR Overview

The CORE-AT system is a web-based medical record system developed to act like a virtual filing cabinet for the secure storage of patient records. When the system was officially launched in Fall 2009, it was comprised of the following components:



Electronic medical record (EMR): EMR capabilities include registering new patients, recording patient demographic information and completing documentation forms such as injury demographics, injury evaluation, daily treatment, and discharge notes. In addition, integrated ICD-9 codes for diagnoses and CPT codes for treatment interventions offer the ability to generate financial and clinical practice characteristic reports.

Injury surveillance component (ISC): The ISC is designed to work seamlessly with the EMR system and offers the ability to record and track injury surveillance information such as incidences of injury, time loss due to injury, and injury severity.

Patient-rated outcome (PRO) measures: The integrated PRO measures are auto-generated using information related to the patient's age and site of injury. Integration of PRO instruments will help to improve clinical practice, not only with individual patients, but also within the profession as a whole.

We are committed to making the CORE-AT system as user friendly as possible. Based on user feedback provided by our clinical practice sites, we have recently made the following upgrades to the system:

Print function: This feature allows the athletic trainer to print all completed forms within the system and offers the flexibility to print off forms for physician visits and referrals and limits the need for double-documentation.

Updated ICD-9 codes: The ICD-9 codes were updated to offer a combination of specific and general diagnoses that could capture most injuries, conditions, and illnesses that athletic trainers encounter on a daily basis. This updated list includes general medical conditions such as asthma, skin conditions, and heat illnesses.

Concussion module: The concussion module is the first of our specific evaluation and discharge forms (see below: body region-specific forms). For injuries diagnosed and recorded within the system as a concussion, the system will generate concussion-specific fields for the evaluation and discharge forms to limit documentation time and will also add a SCAT2 form to the patient's injury record to help the athletic trainer better document and treat concussive injuries.

Daily Sign-In module: This has been one of the most requested upgrades by our system users and we are excited that it has finally gone live! The daily login module is designed to help the athletic trainer track and capture all patient visits, including those with non-time loss injuries. In addition, items such as taping, wound care, and preventative exercises can now be captured using the daily sign-in module.

Body region-specific evaluation and discharge forms (In development - Anticipated release: Early 2011): These forms will be generated relative to location of the injury and will offer body-region specific fields and drop-menus to make documentation more efficient. For example, if the athletic trainer indicates that the patient has suffered a knee injury, a "knee evaluation" form will be automatically compiled to include knee-specific ROM, stress tests, MMT tests, special tests, etc.

Look for future additions and upgrades as we continue to modify the EMR system based on your feedback.

PBRN Research Goals

While we are currently working on establishing our clinical sites within the PBRN and getting clinicians using the EMR, our future goals include specific investigations within the PBRN framework with the following goals. As an individual study is developed and approved by our IRB, we will invite participating sites to participate.

Collect *injury surveillance (i.e., epidemiological)* data in the secondary school setting that include sex, sport, geographic region, and type of sport.

Document the *clinical outcomes and effectiveness* of athletic training services in the secondary school setting for reducing disability and restoring function through the use of patient-based outcome measures.

Characterize the practice patterns of secondary school athletic trainers through the identification of common athletic training diagnoses (ICD-9 CM) codes and interventions (CPT) codes and to further delineate relevant practice parameters, such as average duration of care, number of treatments, and referral patterns.

Evaluate the *economic impact* (e.g., cost-based evaluations) of athletic training services in secondary schools based on standard regionally based fee schedules matched to clinician-reported interventions (CPT codes).

The SSAT PBRN is one of 10 Affiliate PBRNs and the only in Athletic Training

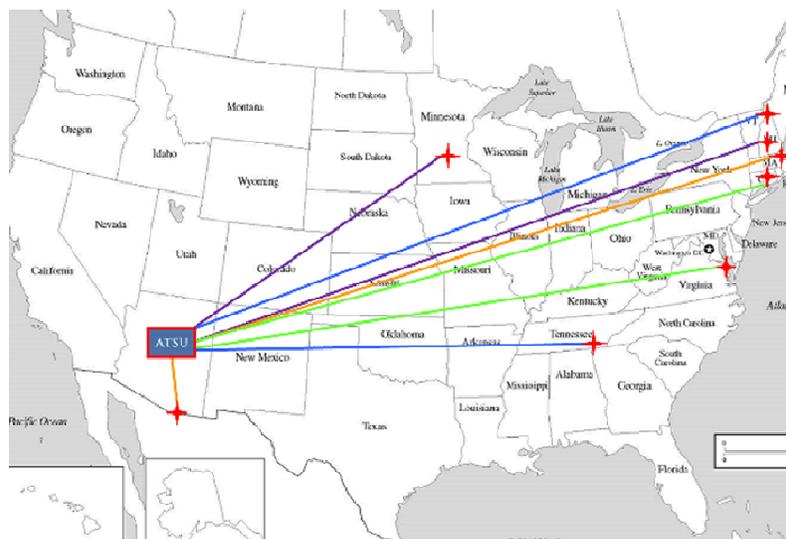
PBRN Overview

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In April 2010, the Secondary School Athletic Training Practice-Based Research Network (PBRN) was granted Affiliate Status by the Agency for Healthcare Research and Quality. Affiliate status is given to those PBRNs with fewer than 50% primary care physicians. We are one of only three affiliate-PBRNs in the country and the only PBRN in athletic training.

When the PBRN was officially launched in the Fall of 2009, it consisted of 15 secondary schools across 3 states. As the PBRN enters its second year, it has expanded to 30 secondary schools across 7 states! Please help us welcome our new sites! (denoted by **)

- MN (Clinic) = 3 sites**
- NH1 (Clinic) = 3 sites
- NH2 (Hospital) = 2 sites**
- MA (GA) = 1 site**
- CT (Independent) = 1 site**
- VA (GA) = 2 sites
- TN (Hospital) = 5 sites**
- AZ (Independent) = 3 sites
- ATSU (GA) = 10 Sites



THE SECONDARY SCHOOL
ATHLETIC TRAINING PRACTICE-
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The mission of the Secondary School Athletic Training PBRN is to improve the quality of care and patient outcomes in adolescent athletes under the care of certified athletic trainers. The PBRN is administered through A.T. Still University and consists of partnerships with Professional (a.k.a., entry-level) and Post-Professional Athletic Training Education Programs as well as hospital groups and clinics, establishing a geographically diverse group of clinical sites.



www.coreat.org

In the Literature

The CORE-AT electronic medical record (EMR) has a variety of generic and specific patient-rated outcome measures included in the system, including the International Knee Documentation Committee Subjective Knee Form (IKDC). The IKDC is a knee specific outcomes instrument that evaluates the improvement or deterioration in symptoms, function, and sports activity from the perspective of patients with a variety of knee disorders. While the IKDC is reliable, valid, and responsive in adults, there has been some concern that the instrument is not appropriate for younger populations. (Iversen MD et al.; Med Sci Sports; 2010) A recent study by Kocher et al. (2010), *Reliability, Validity, and Responsiveness of a Modified International Knee Documentation Committee Subjective Knee Form (Pedi-IKDC) in Children with Knee Disorders*, investigated the measurement properties of a modified IKDC, the Pedi-IKDC, adapted specifically for children and adolescents. Modifications to the IKDC were in the areas of general instruction, grammar and terminology, and question content/format. Participants included 589 male (48.9%) and female (51.1%) youth aged 14.6 ± 2.5 years old who were suffering from a variety of knee disorders (eg, ligament, meniscal, or patellofemoral injury, fracture, plica syndrome, general knee pain). Three groups were studied: the total cohort, patients with stable knee conditions, and patients undergoing any knee surgery. The results of this study indicate that the Pedi-IKDC total score has acceptable test-retest reliability ($ICC = .91$), internal consistency (Cronbach alpha = .91), floor and ceiling effects (<30%), criterion validity, construct validity, and responsiveness (large effect: $>.80$) when used in children and adolescents. It is noteworthy that there were high ceiling effects $>30\%$ found in some questions (ie, catching, going upstairs, going downstairs, sitting, and rising), indicating that these individual questions may not be good at discriminating and, therefore, using them alone may not be warranted. However, the Pedi-IKDC is structured for use as a complete instrument and scored in aggregate, not by individual questions. The findings related to the Pedi-IKDC are similar to those found for the original IKDC and suggest that it is a reliable, valid, and responsive instrument for use in measuring outcomes in children and adolescents with a variety of knee disorders. Future considerations within the EMR may be the inclusion of pediatric specific versions of some outcome measures.