

## **Quantifying Emergency Department Visits from Sport with a Focus on the Lower Extremity and Knee**

Matthew S. Tenan, Jeffrey C. Ives.

Aberdeen Proving Ground, MD, Ithaca College, Ithaca, NY

The average cost of a visit to the Emergency Department (ED) in the United States is \$985. However, the number of nationwide ED visits resulting from injury sustained in sport and recreation (sport/rec) has not been quantified since 2000. **PURPOSE:** To quantify the number of injuries from sport/rec, with a focus on the lower extremity and knee, in the United States 1997-2009 using the National Hospital Ambulatory Medical Care Survey (NHAMCS), a national probabilistic sample of hospital EDs. **METHODS:** NHAMCS is designed to provide nationwide estimates and uses a four-stage probability design, containing 600 hospitals in each survey year. The sampling unit for NHAMCS is the patient visit, defined as a direct exchange with an ED physician or staff under a physician. The present study aggregated 1997-2009 data, resulting in 415,854 unweighted visits. Sport/rec-related visits were ascertained using two methods: reporting the cause of injury was sport-related (E-codes) and a custom text-search algorithm for sport/rec keywords. All diagnoses were classified by their ICD-9-CM code. Assessments for the lower extremity and sex differences were limited to patients aged 10-49 years. Data analysis was performed in SAS 9.3 and weighted quantification of data was performed using PROC SURVEYFREQ and PROC SURVEYLOGISTIC. **RESULTS:** Across all ages, there were 4,501,000 (95% CI: 4,199,000-4,804,000) ED visits per year from injuries sustained in sport/rec. For ages 10-49, males had 212% greater odds ( $p < 0.01$ ) of an ED visit from sport/rec-related causes. Lower extremity injuries accounted for more than half of sport/rec visits (1,093,000/yr). Knee injuries sustained in sport/rec caused 169,000 ED visits/yr. Compared to males, females had 25% and 39% greater odds ( $p < 0.01$ ) of a sport/rec ED visit for lower extremity and knee injury, respectively. **CONCLUSION:** A substantial number of ED visits each year were a result of sport/rec participation, costing the healthcare system approximately \$4.4 billion/yr. Though males were more likely to visit the ED for sport/rec causes, females were more likely for their sport/rec-related visit to be an injury to the lower extremity or knee. ED visit rates are multifactorial; however, there are clear public health implications for sex discrepancies in ED visitation.