

## **Epidemiology of Lacrosse Injuries Among Youth Players**

### **Investigators**

Andrew Lincoln, Sc.D. - MedStar Health Research Institute  
Lisa Hepburn, Ph.D. - MedStar Health Research Institute  
Jon Almquist, ATC, VATL - Fairfax County Public Schools  
Shane Caswell, Ph.D., ATC - George Mason University  
Richard Hinton, MD, MPH - Union Memorial Sports Medicine  
William Romani, Ph.D., PT - MedStar Health Research Institute

### **Background**

There is growing concern in the lacrosse community about the frequency and severity of injuries among lacrosse players. While recent studies have documented the rates and types of injuries among collegiate and high school lacrosse players, there is no scientific literature that characterizes injury risk at the youth level. This study will be the first to establish a structured injury surveillance system with trained clinicians to evaluate, treat, and document injuries incurred by youth players. By working in conjunction with a large and established youth sports organization in the Maryland area, we will provide sports medicine services to this active population of 9-14 year old boys and girls when competing at a large community park during the 2009 and 2010 seasons.

### **Objectives**

The objectives of the proposed research are as follows:

1. Establish a structured injury surveillance system based on certified athletic trainer coverage of a local youth lacrosse league.
2. Describe injuries resulting from youth recreational lacrosse play. Injury rates and patterns will be compared between age levels, boys and girls, player position, player and team activity, and contact and non-contact scenarios.
3. Identify patterns associated with the most severe injuries at each level of play.
4. Collect data to identify and quantify the number of injuries resulting from the impact with a ball in order to provide baseline data for future evaluations of a reduced impact ball prototype for youth lacrosse.
5. Suggest interventions targeting high-risk scenarios based on study results and successful interventions in other contact sports.

### **Methods**

Population:

Male and female lacrosse players (9-14 years old) participating in the Maryland Youth Lacrosse Association during the Spring 2009 season and Howard County Parks & Recreation lacrosse league during the Spring 2010 season.

Data Source:

Data is collected on any injury that occurs to a youth lacrosse player participating in league games by certified athletic trainers. Data will be entered into a computerized system using NeXTT Injury Management software housed on a secure MedStar Health server.

#### Analytic Approach:

Injuries rates will be calculated by dividing the number of injuries by number of players at risk. Incidence rate ratios and 95% confidence intervals will be used to compare injury rates by gender, session type (game or practice), level of play, player activity, anatomical site of injury and injury mechanism.

#### **Preliminary Results**

During the 2009 regular season there were 49 boys' games and 37 girls' games resulting in 40 documented injuries. Of the evaluated injuries, 9 occurred to girls and 31 to boys. The most common body part injured was the leg (knee, ankle, hip, foot, thigh) for both girls and boys. Data from the two seasons will be combined following the 2010 season for detailed analyses.

#### **Implications**

This research will determine the injury risks in youth lacrosse players. The findings will be used to suggest evidence-based methods to improve player safety at the youth level of play. If successful, this model may be replicated to improve the safety in other areas of the country and for other youth sports.

#### **Timeline**

Data collection began in April 2009 and will extend until early June 2010.