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Implementation of an Injury Prevention Program in NCAA Division I Athletics Reduces Injury-Related Healthcare Costs

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Introduction: Sports injuries impose a high economic burden on society. At the collegiate level, the estimated cost per year has been reported to be in the billions in the United States. Injury prevention programs are often assessed but only the magnitude of reduction of injuries, and there is little evidence on the associated reduction in costs if and when these programs are effective.

The purpose of this study is to investigate the change in health care costs at a Division I university from sports injuries after the implementation of an injury prevention system.

Methods: Data was obtained from 3 academic years prior and 2 years after the implementation of an injury surveillance and prevention system (Sparta Science). This system utilizes a commercially available force plate system with dedicated software to assess kinematic variables gathered from vertical jumps; this information is used to flag athletes who are at higher risk of sustaining an injury, and guides strength and conditioning programs based on each athlete's output. Teams were designated as "users" (U) versus "non-users" (NU) based on their utilization of the Sparta Science system. Total number of injuries, total cost of injuries, and volume and cost by discipline (surgery, physician office visits, imaging, and physical therapy (PT)) was compared for the U versus the NU groups. **Results:** Total average annual injuries decreased from 179 to 177 for the U group, and total charges decreased by 19%; the NU group had a 12% increase in injuries and 8% increase in total charges. The U group demonstrated a 29% reduction in the number of surgeries and a 45% decrease in surgery charges; the NU group had a 3% reduction in surgeries, but a 33% increase in surgery charges. The U group had a 23% reduction in physician office visits and an associated 48% reduction in charges; the NU group showed a 14% increase in visits, but no change in charges. The U group had a 7% reduction in the quantity of imaging ordered, and a 1% reduction in imaging costs; the NU group had no change in the quantity of imaging, but an 83% increase in imaging charges. There was a 6% increase in PT courses of care and 13% increase in PT charges for the U group, versus a 33% and 35% increase in courses of care and charges, respectively, for the NU group. **Discussion/Conclusion:** A reduction was seen in the total billed amount of claims, the billed surgery costs, and the billed office costs in the group which utilized the injury surveillance and prevention system. This group also demonstrated a decrease in the number of surgeries, number of office visits, number of imaging. Although the number of charges for PT visits increased for both groups, it increased by a lesser degree for the group which utilized the system.