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# Cost Benefit Analysis of Athletic Team Coverage by an Orthopaedic Practice

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# Cost Benefit Analysis of Athletic Team Coverage by an Orthopaedic Practice

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## INTRODUCTION

- Coverage of high school football by an orthopaedic practice is considered standard of care in many localities.
- Taking time away from an orthopaedic practice to provide on field athletic care has potential advantages and disadvantages.
- To this date, the economic value of this endeavor has never been investigated.
- Purpose: to perform a cost/benefit analysis of local highschool sports coverage by an orthopaedic sports medicine practice.

## MATERIALS AND METHODS

- From January 2010 to June 2012, a prospective injury report database was established containing all sports injuries from five high school athletic programs covered by a single orthopaedic sports medicine practice.
- Patients referred for orthopaedic care were then tracked (Table 1) to determine potential revenue.

Category	Number of Visits	Percentage
Certified Athletic Trainer evaluations and treatments	19195	100.0%
Physician Referrals	473	2.4%
Orthopaedic Visits	319/473	67.4%
Non-Orthopaedic Visits	154/473	32.6%
Primary Care Physician visits	166/473	35.1%
Emergency department <sup>2</sup>	51/473	10.7%
Urgent Care Center <sup>2</sup>	71/473	15.0%
Covering Orthopaedic Physician Visits	89/319	27.9%
Other Orthopaedic Physician	96/319	30.1%
<b>Surgical Treatment<sup>1</sup></b>	26/473	5.5%
<b>Covering Physician Surgical treatments</b>	17/26	65.0%

<sup>1</sup> 29 total surgical procedures were performed however only 26 were orthopaedic in nature

<sup>2</sup> Visit number does not reflect any visit to an emergency room or urgent care center prior to referral to an orthopaedic physician visit

## RESULTS

- Evaluation and management codes and current procedure terminology (CPT) codes were used to determine the standardized Medicare reimbursement rates of:
  - Office visits
  - Surgical treatment
  - Calculations using both national average and regional Medicare reimbursement rates are shown.

Table 2: Reimbursement Rates and Totals

	Regional Rate	National Average
Office Visits (Total)	\$39,652.47	\$36,918.18
Urgent Care Center (UCC) visits	\$5,599.06	\$5,316.80
Emergency Department (ED) visits <sup>1</sup>	\$1,086.30	\$1,041.42
Covering Physician Office Visits	\$10,048.99	
Surgical Treatment Total <sup>2,3</sup>	\$23,340.49	\$21,970.58
Covering Physician Surgical treatments	\$16,177.15	
<b>Total Revenue</b>	\$69,678.52	\$65,246.66
<b>Total Revenue (Orthopaedic Injuries)</b>	\$44,239.94	
<b>Covering Physician Total Revenue</b>	\$26,266.14	

Example calculation of emergency department visit value (51 visits coded 99283 = 51 x \$60.25 = \$1041.42 national avg.)  
Surgical treatment multiple code cost calculation (example: ACL tear-29888, ACL + Meniscal tear-29883 = \$1057.62 + (1/2) \$900.17 = \$1412.74)  
Surgical treatments included: ACL reconstruction (29888), meniscal tear (29882 or 3), labral tear (29806), patellar fracture (27450), 5th metatarsal fracture (26489), shoulder instability (29806), SLAP tear (29807), metacarpal fracture (26615), bursitis (27340), MPFL reconstruction (27416 and/or 27420)

- Direct Cost of coverage was estimated based on:
  - Physician time required for team coverage
  - Hourly reimbursement rates for orthopaedic surgeons
  - Previously reported data (Leigh et al).

Table 3: Team Coverage Cost

Avg. physician hours per game	3
Total number of regular season games	38 (5 schools over 2 seasons)
Total Physician Hours	117
Cost per hour of an orthopaedic physician	\$107.93
<b>Cost of Physician per total hours of coverage</b>	<b>\$12,627.81</b>

Table 4: Total Revenue

	Regional rate	National Avg	Covering Physician	Orthopaedic Physician (Total)
<b>Total Revenue</b>	\$69,678.52	\$65,246.66	\$26,226.14	\$44,239.94
<b>Total Cost</b>	\$12,627.81	\$12,627.81	\$12,627.81	\$12,627.81
<b>Profit</b>	\$57,050.71	\$52,618.85	\$13,598.33	\$31,612.13

- Using the team coverage cost from Table 3 as the overhead in our analysis, we determined:
  - The profit of the covering physician to be \$13,598.33
  - (total revenue of covering physician (\$26,226.14) – overhead (\$12,627.81)).
  - The total potential orthopaedic profit to be \$31,612.13
  - (total orthopaedic revenue (\$44,239.94) – overhead (\$12,627.81)).

## DISCUSSION

- The adjusted hourly reimbursement rate based on actual profit (\$116.23), was slightly above the average per-hour reimbursement of an orthopaedic surgeon determine in a previous study by Leigh et al (\$107.93).
- Coverage of high school football games is either cost-neutral or profitable.
- The total profit made by the covering sports practice (\$13,598.33) represented 43% of the total potential profit.
  - Significant improvement can be made in the capture rate of this patient pool.
- A potentially profitable and personally beneficial engagement with local athletes can lead to a symbiotic relationship between physicians and their local communities.

## REFERENCES

1. Leigh J.P., PhD, Tancredi D., PhD, Anthony J, MD, Kravitz R; MD, MSPH. Physician Wages Across Specialties; Informing the Physician Reimbursement Debate. *Arch Intern Med.* October 25th, 2010; 170(19):1728-1734.