

# Referral Source for Concussion Clinic After Sports-related Traumatic Brain Injury

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#### Introduction

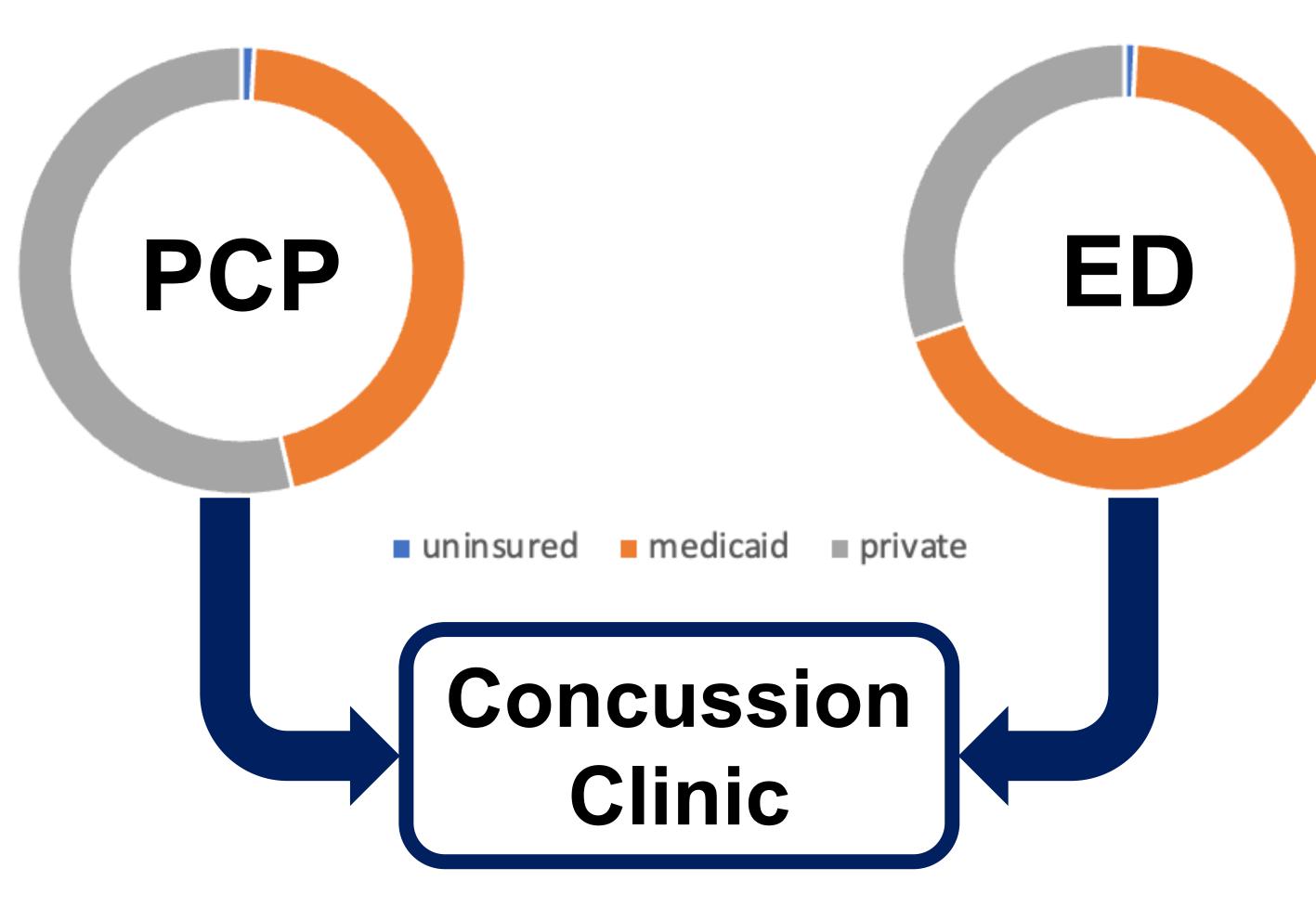
An estimated 6.6 million pediatric head injuries occur each year nationwide<sup>1</sup>, and sports-related injuries in particular are on the rise. Currently, little is known about whether certain populations have difficulty accessing care for sports-related concussions (SRC). Recent trends have shown an increasing amount of Medicaid patients and decreasing amount of privately insured patients presenting to the emergency department (ED)<sup>3</sup>. Further, patients identifying as white and having private insurance are reportedly seen more in specialized concussion clinics than their counterparts<sup>4</sup>, despite the rates of concussions rising among all socioeconomic classes<sup>5</sup>. We hypothesize that children with Medicaid will be more likely to utilize the ED over their pediatrician's office as their primary encounter after a sports-related traumatic brain injury.



## Methods

We performed a retrospective chart review of patients < 18 years who were diagnosed with SRC at our stand-alone children's hospital from January 2007 to December 2022. During this review, it was noted where the patient was initially referred from, their insurance status, as well as characteristics of the patients (age, sex, race). We then performed t-test, chi-square vs Fischer's exact (as deemed appropriate), and univariate as well as multivariate analyses for referral source.

## Results

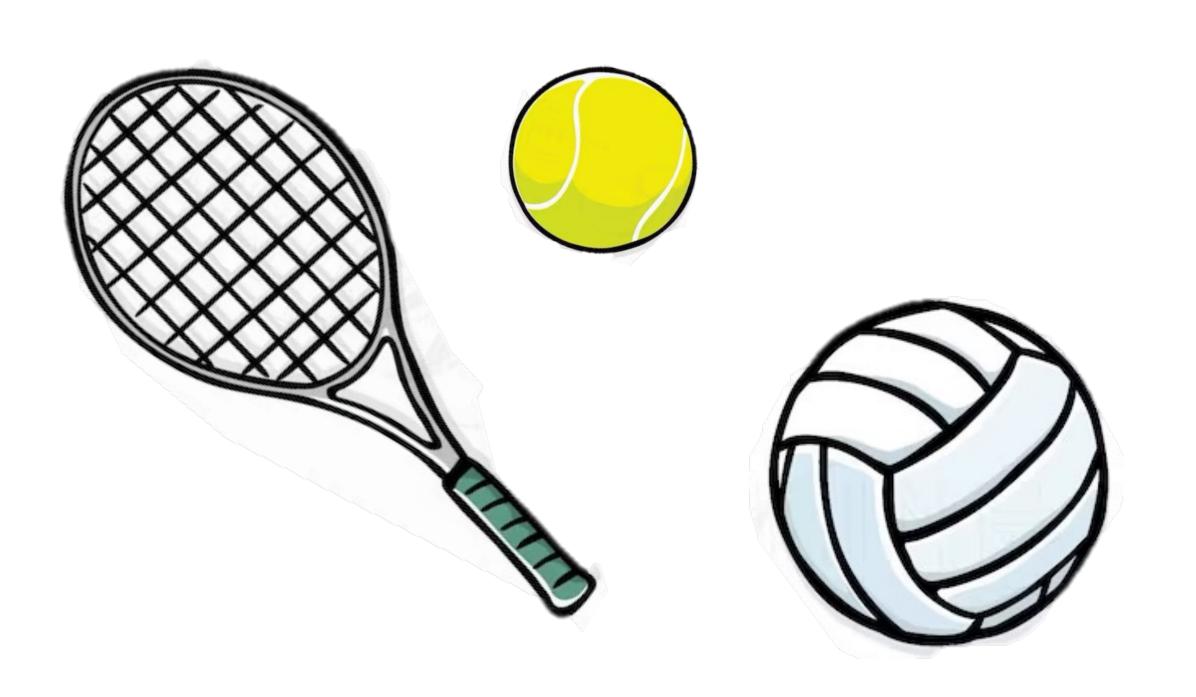


	Medicaid n = 411 (%)	Private n = 291 (%)	p-value
Emergency Department (ED)	262 (63.7)	115 (39.5)	0.001
Primary Care Physician (PCP)	149 (36.6)	176 (60.5)	

	All Sports-Related Concussions n = 708 (%)
Age (mean, SD)	14 ± 2.6
Male	481 (68)
Race	
White	324 (45.8)
Non-white	355 (50.1)
Unknown	29 (4.1)
Insurance Status	
Medicaid	411 (58.1)
Private	291 (41.1)
Uninsured	6 (0.8)

#### Conclusions

Medicaid patients are more likely to utilize the ED for concussion care compared to patients who are privately insured. We plan to implement community, school-based, and parent education to better delineate guidelines for concussion care, with the goal of optimizing resource utilization and improved ease of referral for multidisciplinary follow up care.



### References

<sup>1</sup>Wallace, Jessica S., and Rebekah C. Mannix. "Racial Disparities in Diagnosis of Concussion and Minor Head Trauma and Mechanism of Injury in Pediatric Patients Visiting the Emergency Department." The Journal of Pediatrics, vol. 233, 2021, https://doi.org/10.1016/j. jpeds.2021.01.057.

<sup>2</sup>Moore, R. Davis, et al. "The Long-Term Outcomes of Sport-Related Concussion in Pediatric Populations." International Journal of Psychophysiology, vol. 132, 2018, pp. 14-24, https://doi.org/10.1016/j.ijpsycho. 2018.04.003.

<sup>3</sup>Moore BJ (IBM Watson Health), Stocks C (AHRQ), Owens PL (AHRQ). Trends in Emergency Department Visits, 2006–2014. HCUP Statistical Brief #227. September 2017. Agency for Healthcare Research and Quality, Rockville, MD. www.hcupus. ahrq.gov/ reports/ statbriefs/ sb227-Emergency-Department-Visit Trends

<sup>4</sup>Pate, James, et al. "Socioeconomic and Demographic Considerations of Pediatric Concussion Recovery." Journal of Clinical Neuroscience, vol. 100, 2022, pp. 94–99, https://doi.org/ 10.1016/j.jocn. 2022.04.008.

<sup>5</sup>Harkins, Joshua, et al. "PW 1238 Socio-Economic Status and Ed Visits for Pediatric Concussion." Abstracts, 2018, https://doi. org/10.1136/injuryprevention-2018-safety.687