

BACKGROUND

Risk of injury is not equitable among children

- Higher injury severity, morbidity, and mortality are associated with higher Area Deprivation Index (ADI) among injured children
- The relationship between ADI and need for additional management such as operative intervention is not understood

OBJECTIVE: To examine the relationship between ADI and the likelihood and type of operative intervention among pediatric trauma patients.

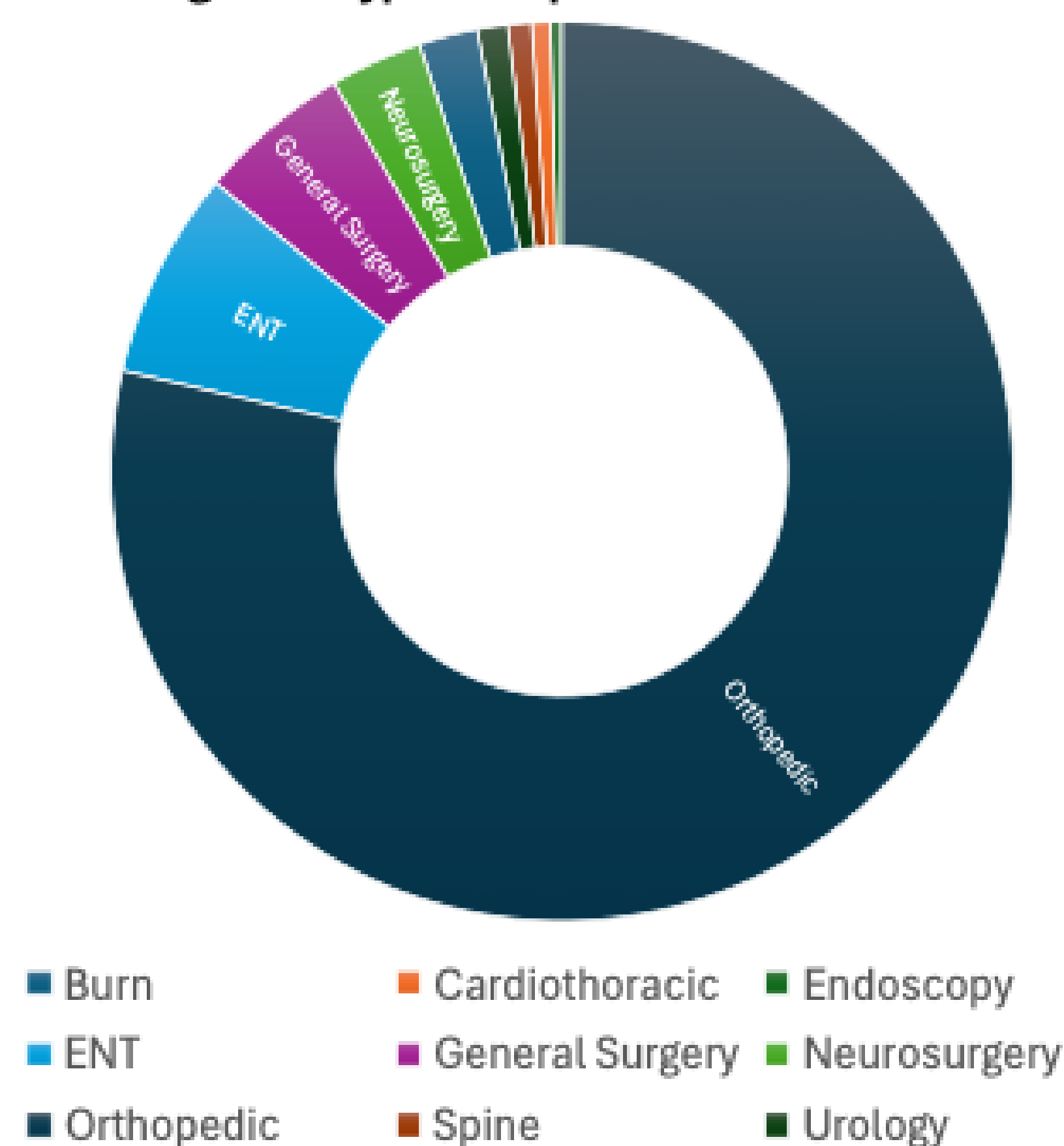
METHODS

- Design:** Cross-sectional study of pediatric trauma patients ages 0–18y from Jan 2024 – May 2025 to a single ACS-verified Level I Pediatric Trauma Center.
- Primary outcome:** Proportion of patients with operative intervention across quintiles of ADI
- Secondary outcomes:**
 - Type of operative intervention
 - Injury characteristics: body region, mechanism, ISS
- ADI** determined by home zip code
- Operative intervention categories:** orthopedic, neurosurgical, general, otolaryngologic, urologic, spine, and endoscopic

Cohort Demographics

- N=2459 patients**
- Mean age: 8.3 years**
- 63.7% male**
- Total of 4946 injuries**
- 1658 injuries required surgery (33.5%)**

Figure 1. Types of Operative Intervention



RESULTS

Figure 2. Adjusted OR for Operative Intervention vs. Q5 (Most Deprived)

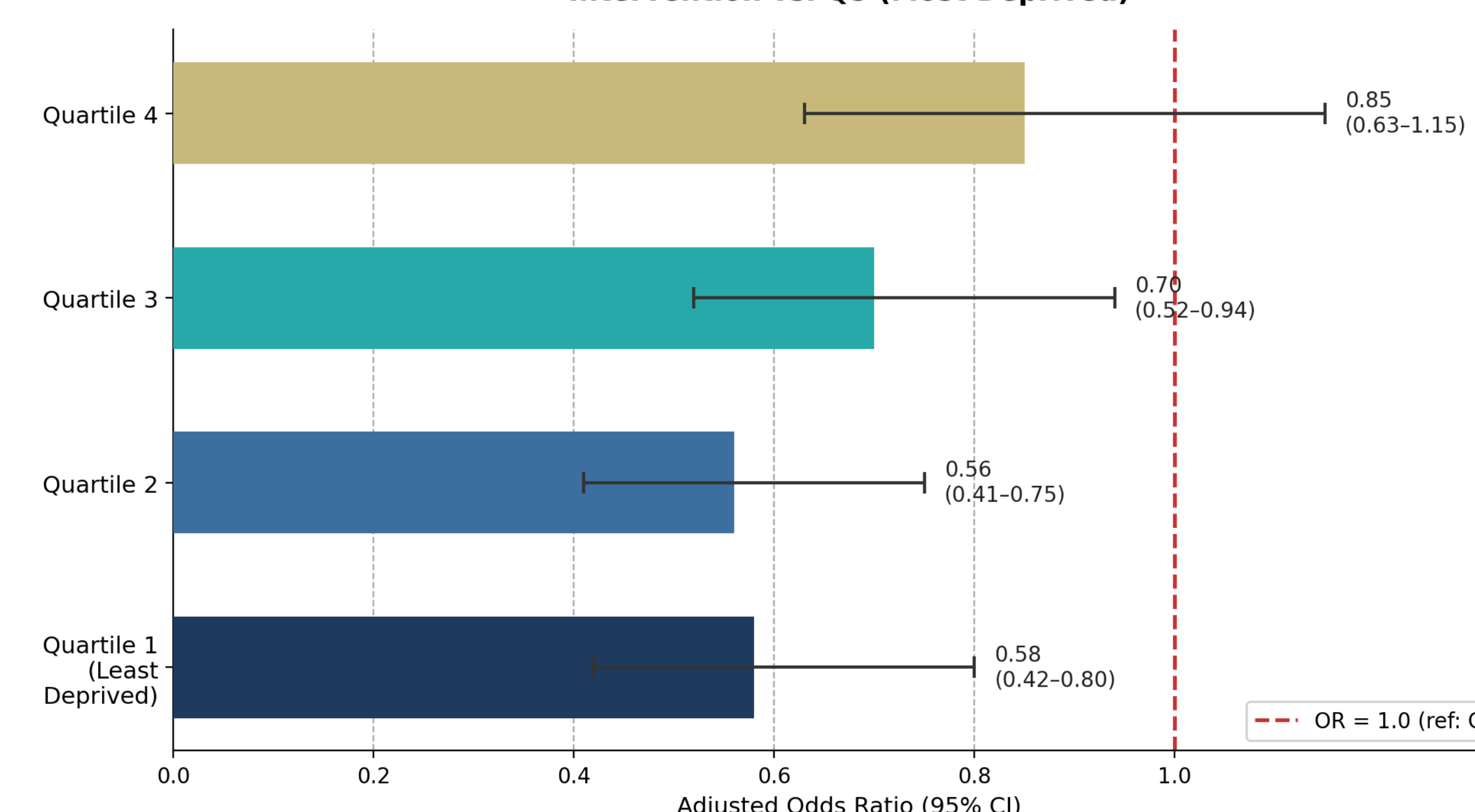
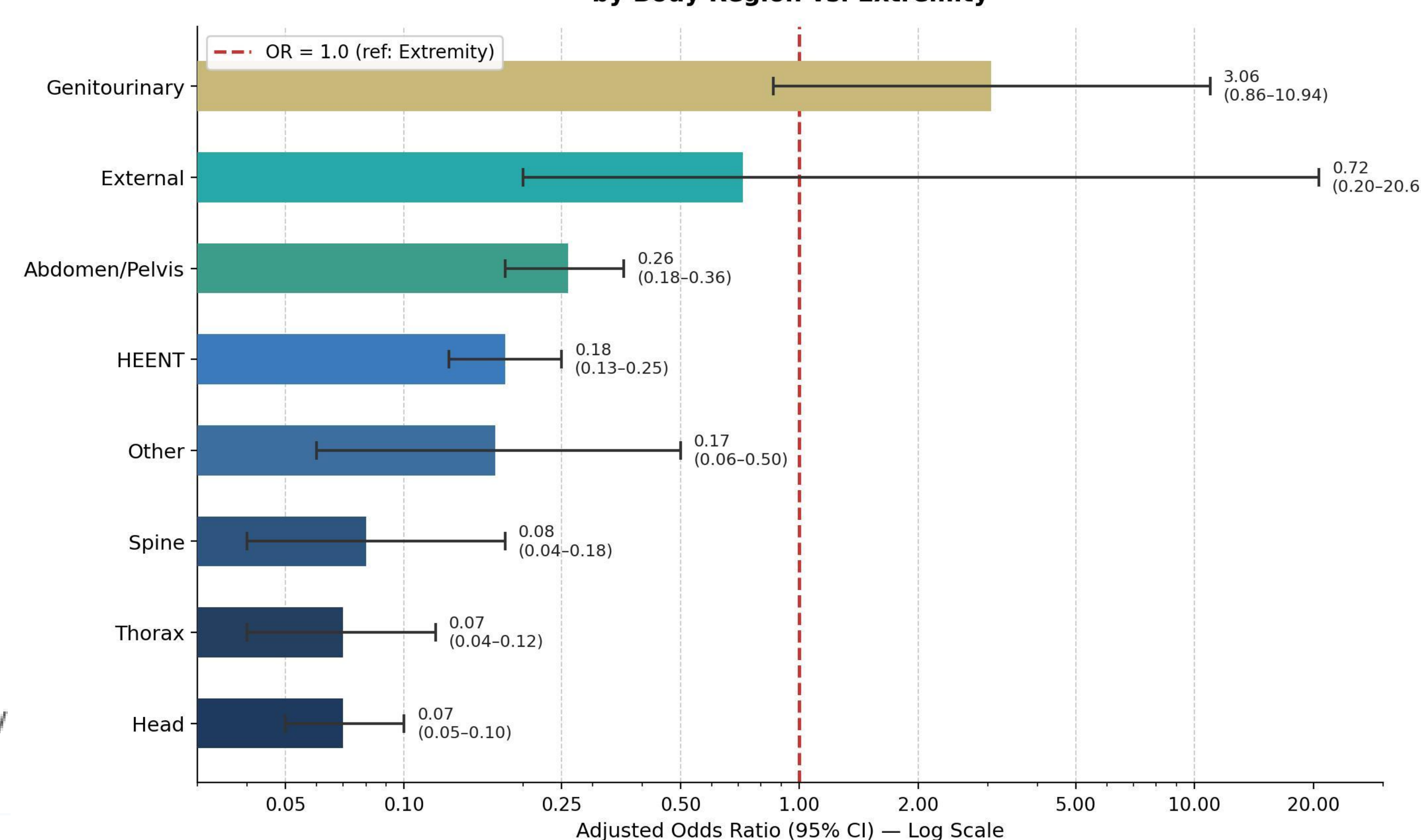


Figure 3. Adjusted OR for Operative Intervention by Body Region vs. Extremity



CONCLUSIONS

- One-third** of total injuries were managed with an operative intervention
- Orthopedic procedures** were the most common (78.6%), followed by **otolaryngological** procedures (7.5%).
- Children from more deprived neighborhoods had a **higher odds** of operative intervention. Children in the highest deprivation quintile (Q5) were **72% more likely** to undergo operative intervention than those from Q1, the least deprived quintile (aOR 1.72, 95% CI 1.25–2.38)
- Operative intervention **was markedly more likely** following extremity injuries, with odds **4 to 14 times higher** than non-extremity injuries (aOR 4.0–14.3)

FUTURE IMPLICATIONS

- ADI may help **identify populations** at higher risk for certain injury patterns
- Targeted injury prevention strategies addressing common mechanisms of injury in high-deprivation neighborhoods may reduce disparities.