

# Determinants of Surgical Admissions Amongst Pediatric Trauma Patients in Bahrain

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## Abstract

**Introduction:** Pediatric trauma requiring surgical intervention is a major cause of morbidity and mortality in Bahrain, and delays in surgery are associated with worse outcomes. The goal of this study was to identify determinants of surgical admission amongst pediatric trauma patients.

**Methods:** This multicenter, observational cross-sectional study utilized national data from the Bahrain Pediatric Trauma Registry study, which collected data on all trauma patients in Bahrain under 14 year of age over a 3-month period. Demographics, mechanism of injury, Age-specific pediatric trauma score (ASPTS), and other relevant variables were collected and analyzed. Logistic regression modelling was used to determine the association of each variable with admission to surgery.

**Results:** 1,328 patients were sampled, 6.2% of whom required surgical intervention. Sex, age, nationality, and road traffic accident involvement were not significantly associated with surgical admission. Imaging, ambulance use, and burns were strongly associated with admission to surgery after adjusting for all other covariates. No other mechanism of injury predicted surgical admission. ASPTS also strongly correlated with surgical intervention, as each unit increase produced a 46% reduction in the odds of surgical admission.

**Conclusion:** ASPTS proved to be useful in predicting surgical admission, in addition to predicting mortality. Demographic patterns from this sample were not significant predictors. Burn patients, patients transported by ambulance, and those who required imaging were also more likely to need surgery. By implementing these predictors into pediatric trauma triage protocols globally, patients requiring surgical admission can be more rapidly and reliably identified.

**Figure 1: Predictors of Surgical Admission and Associated Adjusted Odds Ratios**

