Introduction: The purpose of our study was to retrospectively evaluate patient characteristics and factors influencing clinical decision making in an effort to inform an ongoing discussion centered on standardization of treatment and management for traumatic brain injury (TBI) patients.

Methods: A retrospective study of 186 children undergoing treatment and management for TBI between January 2006 and April 2013 at the Vanderbilt University Children’s Hospital was conducted. Descriptive statistics, multivariate and logistic regression were conducted using R 2.13.3.

Results: We found that 63% of our cohort was male, 77% were Caucasian, and over 75% presented alert and were discharged home. The mean age was 7.6 years (sd 5.83). Approximately 50% of our cohort required ICU days of 3 or less while 40% required greater than 14 days in the ICU. Bleed characteristics including epidurals, subdurals, subarachnoid hemorrhage, and radiographic characteristics including bilateral hemorrhage, retinal hemorrhage and midline shift were evaluated. Of these factors, subdurals, epidurals, age, and low GCS were associated with ICU stays of 7 days or greater (p<.0001). Additionally, prolonged seizure activity, high glucose levels and subdural hematomas were found to be associated with hospital disposition other than home (p<.0001).

Conclusion: The purpose of this study was to retrospectively review our institution’s trauma patient population as a step towards standardization of clinical care. This descriptive study will inform a TBI protocol and multidisciplinary clinical pathway that will be used among the pediatric neurosurgery, emergency department and critical care teams at VCH.