# Changes in Transport Mode for Pediatric Trauma Patients Before and After the COVID-19 Pandemic

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**Background:** The Emergency Medical Services (EMS) system has faced significant stress due to the COVID-19 pandemic and now workforce issues. This study was performed to evaluate potential changes in pediatric trauma patient transport over that time period. We hypothesized that more trauma patients would use private transportation/personal vehicles to arrive at the ED in the post-pandemic time frame when compared pre-pandemic.

**Methods:** This was a retrospective cohort study of patients that were admitted to the Emergency Department of Riley Hospital for Children between 01/01/2017 to 12/31/2022. Patients were excluded if they were transferred from another hospital or had mechanisms of injury including burns, suffocations, drownings, hangings, medical, and ingestions. Pre- and post-COVID patients were defined as admission to the ED before or after March 25, 2020, the day after a stay at home orders were implemented in Indiana. Univariate and multivariate analyses were performed.

**Results:** A total of 4,116 patients matching the criteria were identified with 52% arriving after the start of the COVID-19 shut down orders. 30.6% of patients arrived by private operated vehicles (POV) during pre-covid times and 30.3% in the post-covid years (p=0;39). A logistic regression analysis was performed for mortality which demonstrated that transport mode (ground ambulance vs helicopter vs POV) was not statistically associated with mortality rate (OR 0.36, 95% CI 0.12 – 1.10, p=0.07), when controlling for important clinical variables associated with injury severity.

**Conclusion:** There was no statistical difference in arrival by POV before and after the COVID-19 pandemic in our cohort. Additionally, there was no significant data to suggest that transport mode was associated with mortality. Further research should be done to assess potential barriers to transport to pediatric trauma centers, particularly considering ongoing EMS workforce strains.