

## **Trends in Firearm Injuries at a Level 1 Pediatric Trauma Center: 2018-2022**

*Introduction:* The incidence of firearm injuries in pediatric patients has been increasing nationally. These injuries may lead to death or serious injury with long-term sequelae. The purpose of this study is to assess pediatric firearm injury context, treatment, and outcomes in one urban pediatric trauma during the peri-pandemic era. Defining the scope of this trend may serve as a starting point for firearm-related injury reduction strategies.

*Methods:* After IRB approval, a retrospective chart review was performed on patients younger than 18 years of age who presented to a single urban level I pediatric trauma center due to a firearm injury from 2018-2022. Patient demographics, context of the gunshot wound (GSW), type of injury, treatments, and outcomes were recorded.

*Results:* During the study period, 101 patients who sustained GSWs were identified; 96 patients had adequate records. This number represents an average of 19 GSW victims/year treated in our center, with an increasing trend over the study period. The average age was 13 years (range 11m – 17 y); 80% identified as male and 67% as Black/African American. Most (n=83) reported to be bystanders to shooting in the vicinity and not targets; 2 sustained self-inflicted GSWs, 3 were injured by an unsecured gun. Six patients (10%) were DOA or died in the ED. 13 patients (14%) had neurological injury, with 11 TBIs, and 2 spinal cord injuries. Sixty fractures occurred in 90 patients; 6 patients had 2 or more fractures. Surgical treatment was required in 35% of patients, with 57% of this group receiving one or more orthopedic procedures. Of the 45 orthopedic procedures, I and D of open fractures or traumatic arthrotomies (29%) were most common. ORIF was done on 13% of fractures. Average follow-up of <math>\leq 2</math> visits were seen.

*Conclusion:* Firearm injuries in pediatric patients have trended upward over the last 5 years to an average of 19/year, predominantly in teen males. These victims are mostly bystanders who are injured while in the vicinity of handgun fire, with few sustaining self-inflicted or accidental wounds. One-third of patients required surgical intervention, with unknown but potentially poor outcomes long-term.

*Conclusion:* Pediatric firearm-related injuries are a crisis in urban communities. This data is a call to action for the medical community to advocate for community-based, regional, and national solutions to address gun violence.