

## Background

- Hand injuries are one of the most common types of pediatric traumas, encompassing ~1.7% of pediatric emergency room visits in the U.S. annually.
- 10% of these patients require surgical intervention → transfer to specialized centers is common.
- Transfers can significantly reduce patient morbidity. **However, transfers can also place undue burden on families to travel distances.**

## Objectives

Characterize factors associated with patient transfer in pediatric hand trauma in one of the largest cohorts of pediatric hand trauma to date.

## Methods

- Retrospective observational study between 2010 and 2020
- Comparing transfer patients to non-transfer patients
- Inclusion Criteria: [1] evaluated for hand trauma at a pediatric Level 1 trauma center; [2] ≥ 18 years of age

### Data elements queried from EHR:

patient demographics (age, race, gender, zip code), Date of Injury, ICD-10 codes, fracture type(s), fracture(s) etiology, associated injuries

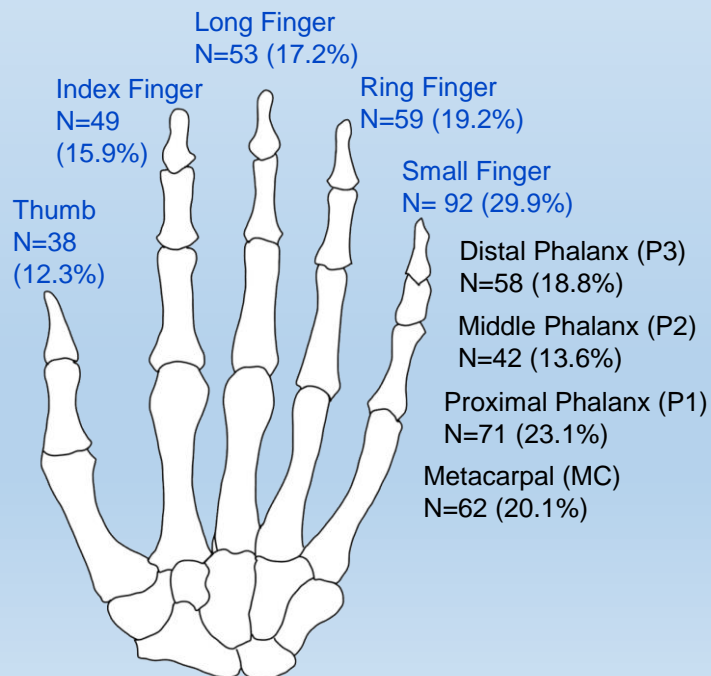
## Results

### Demographics (N= 1151)

- 308 (26.8%) transferred from outside institution
- Most injuries were sports-associated (n=77, 25%), followed by door slams (n=64, 21%)
- Median age: 10.79 [IQR 6.33, 13.63] years
- Majority of patients were R-handed (n=234, 76%), and most injuries R-sided (n=174, 56.5%)

### Fracture Details

74% of patients (n=227) presented with bone fractures, followed by laceration only (13%), and sprains (3.6%).



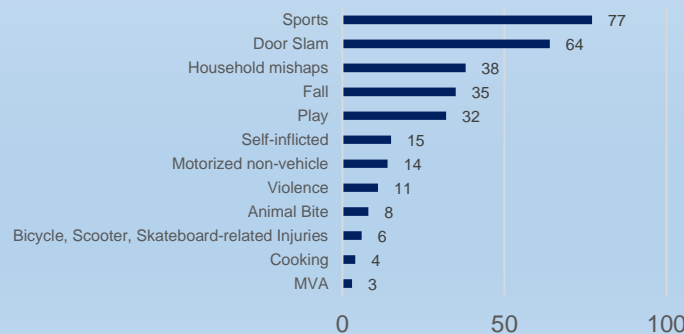
### Treatment Characteristics

- Majority treated with splints (n=107, 34.7%)
- Management with washout and sutures (n=62, 20.1%)

### Factors Associated With Greater Likelihood of Transfer

- Injury Type:** **scaphoid** fractures (RR 7.63, 95% CI [1.80, 72.58]), **index finger** injuries (RR 1.57, CI [1.01, 2.43]), and **fangertip** injuries (RR 1.62, CI [1.08, 2.44])
- Mechanism of Injury (MOI):** **Motor Vehicle Accident (MVA)** (RR 6.06, p<0.001, **Animal Bites** (RR 13.47, p=0.002)
- Rural Geography:** 2.89x greater risk of transfer vs. patients living in urban/suburban areas

### Number of Transfer Patients (N=308) per MOI



### Factors Associated With Reduced Risk of Transfer

Importantly, Black patients had a 61% reduced risk of transfer (RR 0.39, CI [0.23, 0.64], p<0.001).

## Conclusions

- Patients living rural areas were significantly associated with being at greater risk for transfer.
- Black patients had a significantly **REDUCED** risk of transfer, suggesting potential inequities in pediatric hand trauma management.
- Understanding factors that influence likelihood of transfer to specialized institutions is critical for maximizing patient benefit in interfacility transfer.

## Limitations/Future Directions

- Limitations:**
  - Retrospective nature of the study, can only estimate associations between predictor variables and transfer status.
  - Limited granular data on time of transfer, and on imaging and recognizing need for transfer

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