

## Introduction

- ❖ Traumatic Hand Injuries (THI) are one of the most common presentations to Emergency Departments (ED) in the United States.
- ❖ Roughly 10% of all traumas nationwide
- ❖ THI has potential to reduce a patient's ability to perform daily tasks and significantly alter their quality of life.
- ❖ Despite the high incidence of THI in the United States, research on this subject remains limited.
- ❖ The objective of this study was to examine current practices with THI in order to gain insight to help develop evidence-based guidelines to improve patient outcomes in this demographic.

## Methods

- ❖ Retrospective chart review of patients presenting with THI was performed
- ❖ Patients presenting to University Medical Center - New Orleans Level 1 Trauma Center were used for this study
- ❖ Patients meeting study criteria were obtained through UMC's Trauma Registry
- ❖ Protected patient information from EPIC software was also used for data collection

## Demographics and Injury Characteristics

Median Age with IQRs	38 years (IQR 29, 52.5)
Gender	79% Male 21% Female
Race	44% Black; 42% White; 13% Other; 1% Asian
Average BMI	27.38
Patient Admit Rate	65% Admitted (n=205) 36% Trauma
Admit Service	32% Other (IM, OMFS, Burn, NSGY, etc.) 18% Orthopedic Surgery 14% Plastic and Reconstructive Surgery
Mechanism of Injury	61% Blunt (39% Motor Vehicle Accident, 12% Blunt Trauma, 10% Falls) 39% Penetrating
Transfer Status	28% Transferred from OSH (n=87)
Nerve Injury	9% (n=28)
Average Hospital LOS	5.6 days
Average ED LOS	11.5 hours
ED Disposition	Floor: 29% (n=91) Home: 28% (n=88) Operating Room: 23% (n=71) ICU: 11% (n=36) Other: 7% (n=22) (Jail, Psych, Transfer, etc.) Death: 2% (n=7)
Hand Surgery Performed	41% (n=128)
In-Patient vs. Outpatient Surgery	In-Patient Surgery: 64% (n=82) Open Reduction Internal Fixation (ORIF) of Metacarpal Bone: 14% (n=18) ORIF of Phalange: 16% (n=20) Hand Nerve Repair: 11% (n=14) Hand Tendon Repair: 10% (n=13)
In-Hospital Mortality	4% (n=12)
Patient Total	NOTE: All due to polytrauma and not THI n=315

Figure 1: Descriptive analyses of data parameters obtained from chart reviewing patients from trauma registry presenting with THI.

## Results

- ❖ The patients affected were relatively young with a median age of 38 years
- ❖ Males and black/African American are majority in this demographic
- ❖ THI patients were more likely to be admitted (65%)
- ❖ Trauma Surgery had highest admit rate of THI patients (36%)
- ❖ Majority of injuries were blunt (61%) compared to penetrating (39%)
- ❖ 28% of patients were transferred from a lower level or non-trauma center hospital
- ❖ Avg Hospital LOS was 5.6 days, and avg ED LOS was 11.5 hours
- ❖ Hand surgery performed in 41% of patients and most surgeries were performed while in-patient (64%)

## Conclusion

- ❖ Results showed the breadth of hand injuries managed at a Level 1 trauma center over a one-year period.
- ❖ With most patients transferred from OSH and being admitted into hospital care, this shows THI is a complex medical issue that often necessitates interventions by appropriately trained hand surgeons.
- ❖ Future multi-center studies are needed to develop best practice guidelines for patients presenting with THI.

## Reference

Moore, K. L., Dalley, A. F., & Agur, A. (2017). *Clinically oriented anatomy* (8th ed.). Lippincott Williams and Wilkins.

## Hand Neuroanatomy

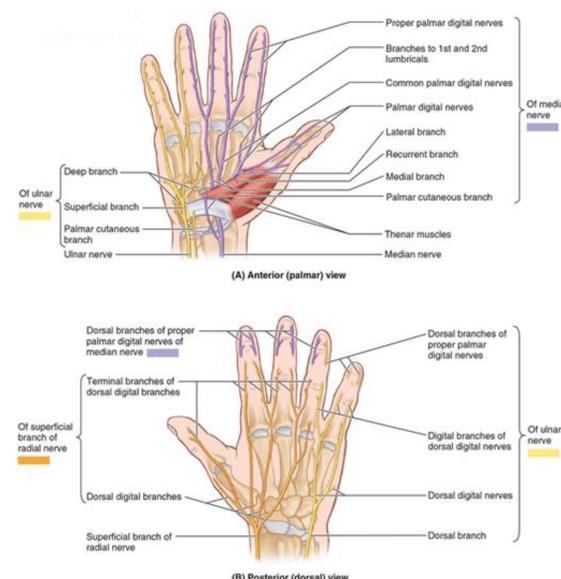


Figure 2: Visual Illustrations of Hand Nerve Anatomy of Median, Ulnar, and Superficial Branch of Radial Nerve with respective branches.