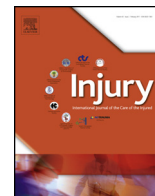




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## Non-accidental trauma: A national survey on management

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### ABSTRACT

**Introduction:** Non-accidental trauma (NAT) has significant societal and health care implications. Standardized care has been shown to improve outcomes. The purpose of our study was to survey trauma centers and elucidate the continued variable management of NAT.

**Methods:** After institutional review board approval, an email survey was sent to Level 1 and 2 ACS verified trauma centers along with general and pediatric surgery training programs. Trauma hospital characteristics and NAT management were analyzed.

**Results:** A total of 493 emails were sent and 91 responses (18%) were received. There were 74 (81%) pediatric surgeons who responded and 15(17%) adult general surgeons. The most common location of respondents were children's hospitals within academic/community hospitals (58%) followed by stand-alone children hospitals (42%), and adult only hospitals (9%).

51 (57%) providers reported using a screening tool; most commonly used by the emergency department (52%). 75% of providers reported utilizing management protocols in which 71% were initiated by trauma surgery. The most common consulting and admitting service for NAT was trauma surgery (86% and 84%). When comparing stand-alone and affiliated children hospitals, there was no difference in the use of a screening tool (54% vs. 59%;  $p = 0.84$ ), and management protocol (70% vs. 85%;  $p = 0.19$ ). However, those providers from pediatric trauma centers used a management protocol more often than providers from adult trauma centers (78% vs. 38%;  $p = 0.04$ ). No providers from adult trauma centers had intentions to initiate a management protocol in the future.

**Conclusion:** Screening and management of non-accidental trauma continues to vary across the country. Future studies focusing on standardization and outreach/education to adult trauma centers is warranted.

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### Introduction

In 2015, 683,000 children were victims of child abuse, also known as non-accidental trauma (NAT), or neglect and 17% of these children were victims of physical abuse [1]. The annual societal cost of child abuse and neglect is estimated conservatively to be over \$103 billion [2]. Unfortunately, the actual number of children who are victims of NAT is most likely greater than reported. The discrepancy is due to health care providers missing or not recognizing signs of abuse.

In United States and Europe, emergency departments and hospitals have developed checklists, screening tools and management protocols to help identify children who may be suffering from NAT [3–7]. These tools which help medical personnel identify NAT are vitally important because children with recurrent NAT have a

higher mortality compared to those identified at the initial episode [8]. Hospitals with a low volume of NAT with limited resources can utilize these tools as a cost effective method to identify NAT at initial presentation.

Standardized care for trauma patients has been shown to decrease mortality, length of stay and hospital resources in the United States and globally [9–11]. With the need to standardize care for NAT patients, trauma centers around the United States were surveyed about their NAT management tools and resources. We sought to elucidate the variation in management tools and resources between pediatric and adult trauma centers.

### Methods

Following approval by the Institutional Review Board (IRB) of Children's Mercy Hospital (IRB#17010006), we developed a web-based survey using REDCap (Research Electronic Data Capture) hosted at Children's Mercy Hospital (Fig. 1). We identified trauma centers by accessing the American College of Surgeons (ACS) website and searching for verified trauma centers. We included

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Confidential

## Non-Accidental Trauma Survey

Please complete the survey below. If any questions please contact us.

Thank you!

Trauma Department Affiliation

- Adult General Surgeon
- Pediatric General Surgeon
- Other

Institution Name

Type of Institution

- Academic Hospital w/ Children Hospital
- Stand Alone Children Hospital
- Community Hospital w/ Children Hospital
- Other

Trauma Level

- 1
- 2

Does your hospital admit pediatric trauma?

- Yes
- No

Is there a screening tool at your Institution

- Yes
- No

Do you plan on initiating a screening tool in the future?

- Yes
- No

Who Uses Screening Tool?

- Trauma Surgery
  - Emergency Department
  - Pediatricians
  - Other
- (May choose more than one)

Do you feel Screening Tool is Helpful?

- Yes
- No

Is there a management protocol

- Yes
- No

Do you plan on initiating a management protocol in the near future?

- Yes
- No

Who initiates protocol?

- Trauma Surgery
  - Emergency Department
  - Pediatricians
  - Other
- (May choose more than one)

03/27/2017 10:55am

www.projectredcap.org



Fig 1. REDCap (Research Electronic Data Capture) survey.

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