Analysis of preventable transfers of pediatric trauma patients to a Tertiary Level I Pediatric Trauma Center

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- We do not have any financial disclosures to report related to this presentation.

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Background

- Approximately 17.4 million children across the country live more than 60 minutes from an ACS designated Pediatric Trauma Center (PTC) [1].
- Prior research has demonstrated that between 27-41% of transfers to verified PTCs are unnecessary, or preventable [2-5].

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Methods

- Aim: To identify and describe patients who underwent preventable transfers from hospitals across Montana to a single out-of-state Level I PTC.
- Retrospective chart review of all pediatric trauma patients (age <18 years) transferred from the state of Montana to an out-of-state Level I PTC from 2013 to 2022.
- Preventable Transfer:
  - Discharge within 48 hours without advanced imaging (CT or MRI) or surgical intervention.
- Possibly Preventable Transfer:
  - Length of stay less than 7 days and injuries that could have been managed at a specific in-state Level II Adult Trauma Center.

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Results

	PREVENTABLE TRANSFERS (N=22)	POSSIBLY PREVENTABLE TRANSFERS (N=31)	NON-PREVENTABLE TRANSFERS (N=79)
AVERAGE AGE (YEARS)	5.27	7.10	6.90
SEX (% FEMALE)	54%	39%	38%
MOST COMMON MECHANISM OF INJURY	Fall (45%)	Motor Vehicle (29%)	Fall (21%) and Motor Vehicle (21%)
HOSPITAL LENGTH OF STAY (DAYS)	1.04	3.12	15.62
GCS ON INITIAL PRESENTATION	14.4	12.7	10.5
INJURY SEVERITY SCORE	7.13	9.90	17.21

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Results

- Preventable Transfers:
  - 16% of patients
  - Injury Patterns: head trauma 68%, isolated orthopedic injuries 18%, and burn injuries 9%.
  - Distance Traveled: 466 miles (SD: 110 miles)
  - Distance to in-state Level II Facility: 194 miles
- Possibly Preventable Transfers:
  - 23% of patients
  - Injury Patterns: head trauma 48%, isolated orthopedic injuries 16%.
  - Distance Traveled: 458 miles (SD: 81 miles)
  - Distance to in-state Level II Facility: 124 miles

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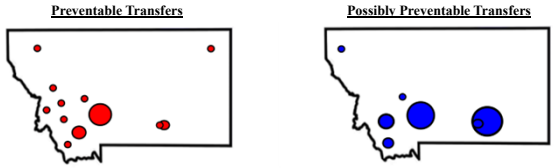
Results



Depiction of the location within the state of Montana of the initial facility for the Preventable Transfer group and Possibly Preventable Transfer group. The size of the circle for each facility is proportional to the number of patients transferred from that facility.

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Conclusions

- A significant proportion (39%) of pediatric trauma patients in Montana who underwent long-distance transfer to an out-of-state Level I PTC could have received appropriate care at facilities closer to home.
- Our results are consistent with prior research suggesting that pediatric trauma patients with minor head trauma are the most likely to undergo preventable transfer [6].

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Limitations and Next Steps

- Limitations:
  - Small sample size (n= 132)
  - Data presented is only from one Level I PTC.
- Next Steps:
  - Collaborate with other verified PTCs within the region to determine a complete picture of preventable transfers from Montana.
  - Utilize the results of these analyses as impetus for the development of a Montana Pediatric Trauma Network.

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References

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