UTAH
PEDIATRIC
TRAUMA NETWORK

Utah Pediatric Trauma Network

Northwest States Trauma Conference
April 25, 2024

Katie W. Russell, MD

I have no disclosures

The vision of the Utah Pediatric Trauma Network is to establish a Statewide network, inclusive of ***all regions and hospitals in Utah****. The Network will collectively implement injury prevention initiatives, evidence-based best practices, and transfer guidelines* ***to improve outcomes*** *for the pediatric victims of trauma, and to* ***decrease the financial and personal cost*** *to the citizens and families of the State of Utah.*

UTAH | PEDIATRIC TRAUMA NETWORK

Contents lists available at ScienceDirect

Journal of Pediatric Surgery

journal homepage: www.elsevier.com/locate/jpedsurg

Preventable transfers in pediatric trauma: A 10-year experience at a level I pediatric trauma center☆

Stephen J. Fenton [a,*], Justin H. Lee [a], Austin M. Stevens [a], Kyle C. Kimbal [b], Chong Zhang [c], Angela P. Presson [c], Ryan R. Metzger [a], Eric R. Scaife [a]

[a] *Division of Pediatric Surgery, University of Utah School of Medicine, Primary, Children's Hospital, Salt Lake City, UT, United States*
[b] *University of Utah School of Medicine, Salt Lake City, UT, United States*
[c] *Division of Epidemiology, University of Utah School of Medicine, Salt Lake City, UT, United States*

UTAH PEDIATRIC TRAUMA NETWORK

Preventable transfers in pediatric trauma: A 10-year experience at a level I pediatric trauma center☆

- 10-year retrospective review
- Preventable transfer
  - DC <36 hours without surgery or imaging

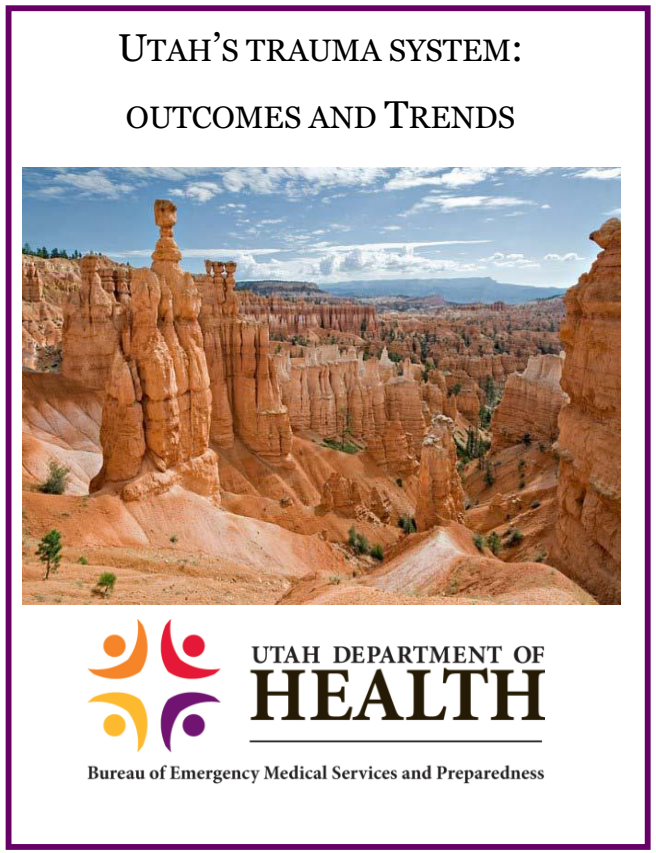
Preventable transfers in pediatric trauma: A 10-year experience at a level I pediatric trauma center☆

- 1699 preventable transfers (26.6% of total)
- Median distance 37 miles (0.1-603 miles)
- Median ISS 5
- 22% transported by air
  - Mean transport charge $18,574
- 64% TBIs (25% ortho)
- 62% mechanism fall
- 29% DC from ED

1/4

Preventable

UTAH | PEDIATRIC TRAUMA NETWORK



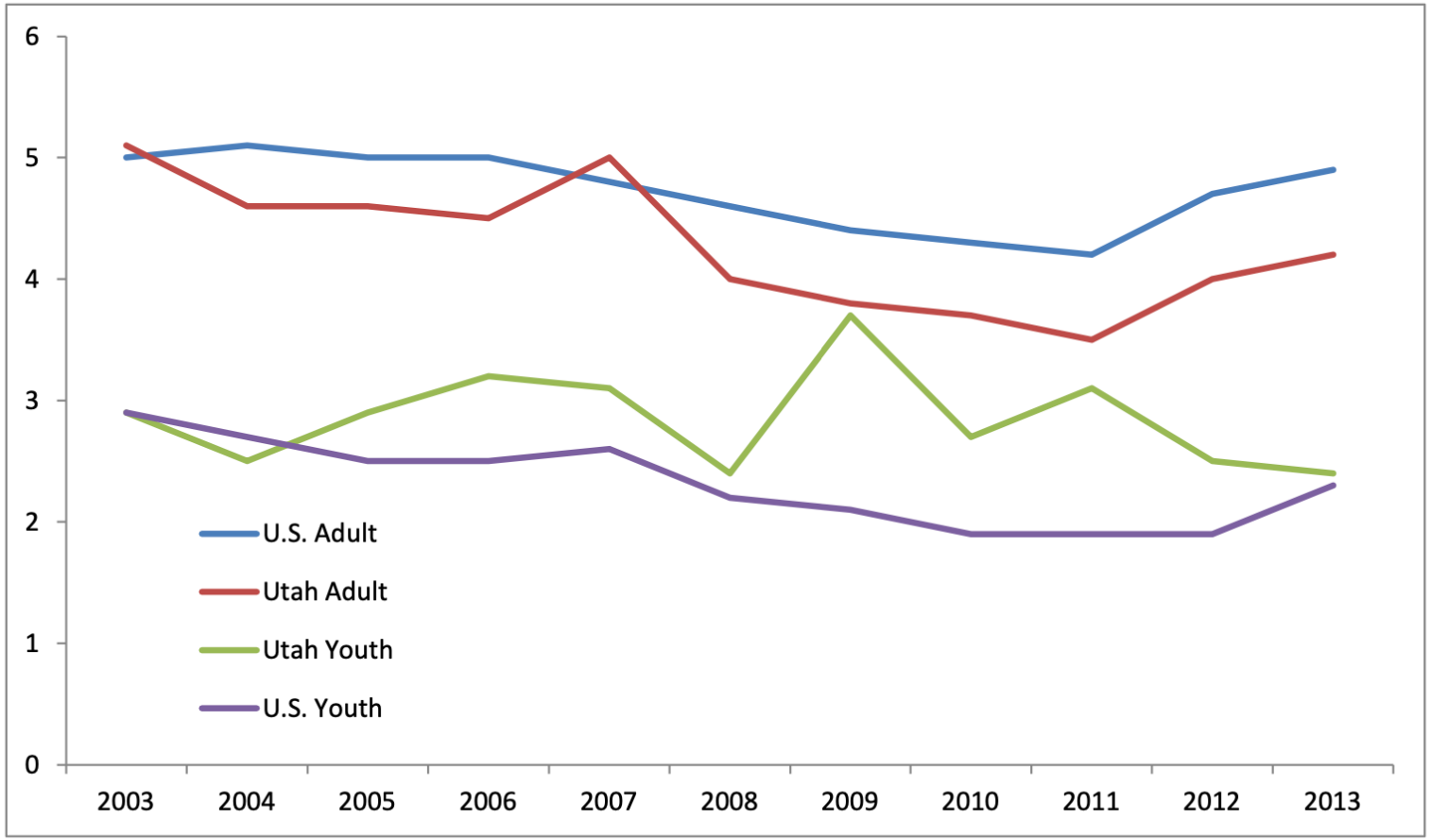


Figure 8. Utah and NTDB CFR Trends by Age Group, 2003-2013

Pediatric case fatality rate higher than the national average, while it was not in adult trauma

UTAH | PEDIATRIC TRAUMA NETWORK

2018 Joint Resolution

Bill Sponsor:

Sen. Iwamoto, Jani

Floor Sponsor:

Rep. Ward, Raymond P.

Substitute Sponsor: Sen. Iwamoto, Jani

Drafting Attorney: Daniel M. Cheung

Fiscal Analyst: Gary K. Ricks

Enrolled Copy **S.J.R. 6**

JOINT RESOLUTION ENCOURAGING THE REDUCTION OF PEDIATRIC DEATHS FROM INJURY AND ILLNESS

2018 GENERAL SESSION

STATE OF UTAH

Chief Sponsor: Jani Iwamoto

House Sponsor: Raymond P. Ward

"This concurrent resolution of the Legislature and the governor encourages the Utah Department of Health to convene **a multi-stakeholder Pediatric and Trauma Quality Assurance Network** to advise the department on triage, transport, transfer, and treatment of ill and injured pediatric patients in Utah."

UTAH | PEDIATRIC TRAUMA NETWORK

UTAH | PEDIATRIC TRAUMA NETWORK

Public – Private Partnership

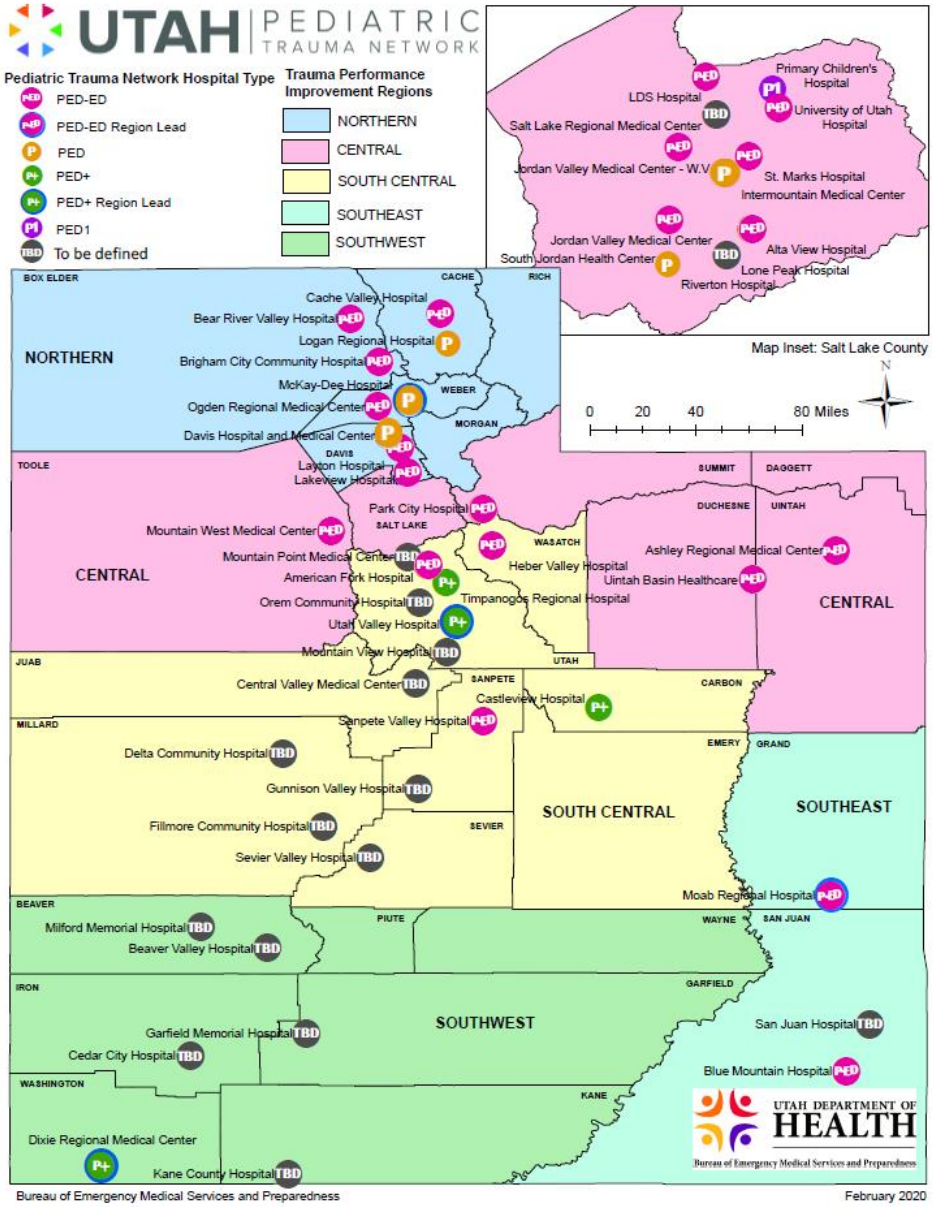
UTAH DEPARTMENT OF HEALTH

Intermountain Primary Children's Hospital
The Child First and Always®

Finalized February 2019

BUILT RELATIONSHIPS

UTAH | PEDIATRIC TRAUMA NETWORK



HEALTH
UNIVERSITY OF UTAH

Intermountain® Healthcare

MOUNTAINSTAR Healthcare

LIFEPOINT HOSPITALS®

Steward®

100% PARTICIPATION

UTAH | PEDIATRIC TRAUMA NETWORK

SELF-CATEGORIZATION

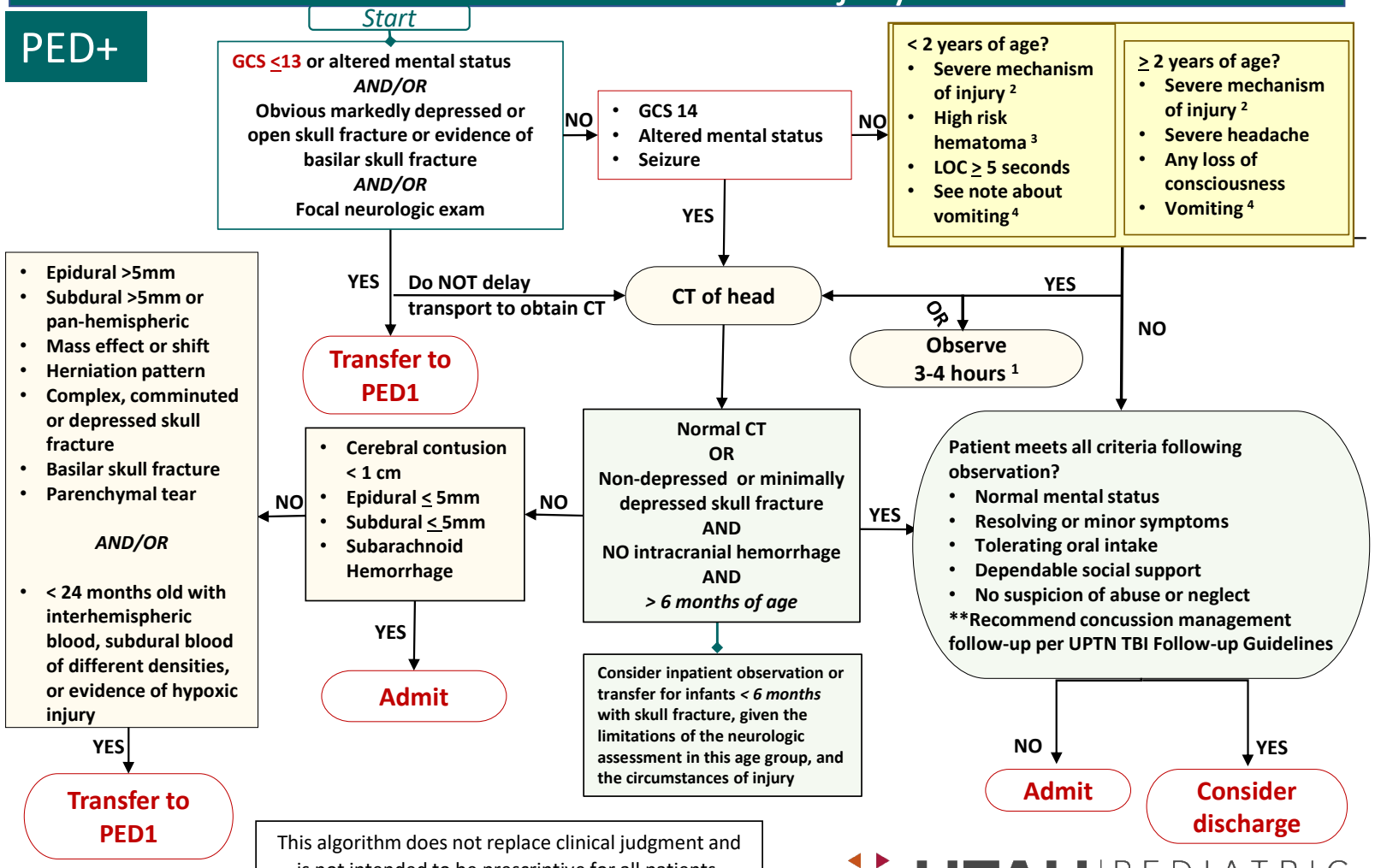
	PED-ED	PED	PED+	PED1
Pediatric equipment in the Emergency Department “Essential Pediatric Equipment” > 90%	x	x	x	x
PALS credentialed staff and providers (or equivalent / Board Certification)	x	x	x	x
Designated Pediatric Emergency Care Coordinator	x	x	x	x
Completes National Pediatric Readiness Assessment every 4 years	x	x	x	x
Hospital disaster plan includes pediatric components	x	x	x	x
Pediatric-specific inpatient rooms in hospital		x	x	x
Pediatric providers; pediatricians, general practitioners		x	x	x
Ability to observe < 24 hours		x	x	x
Pediatric Emergency Care Coordinator (MD or RN)		x	x	x
Pediatric Emergency Care Coordinator (MD and RN)			x	x
Pediatric inpatient unit			x	x
Pediatric Hospitalists			x	x
Pediatric Radiologist available			x	x
Child Life			x	x
Admit ≥ 24 hours			x	x
Peds ICU capabilities			x	x
Board-certified physicians who are proficient in pediatric care as it pertains to their specialty. (e.g., EM, surgery, ortho, anesthesia, neuro, radiologist, ICU MD)			x	x
Trauma surgeon dedicated to a single center while on-call				x
Board-certified child abuse pediatricians on medical staff				x
ACS Verified Level I or II Pediatric Trauma Center				x

GUIDELINE CREATION

UTAH | PEDIATRIC TRAUMA NETWORK

2023 Pediatric Traumatic Brain Injury (TBI) Clinical Guideline
Isolated Blunt Head Injury*

PED+



This algorithm does not replace clinical judgment and is not intended to be prescriptive for all patients.

UTAH | PEDIATRIC TRAUMA NETWORK

UTAH | PEDIATRIC TRAUMA NETWORK

EAST 2017 PLENARY PAPER

Big for small: Validating brain injury guidelines in pediatric traumatic brain injury

Asad Azim, MD, Faisal S. Jehan, MD, Peter Rhee, MD, Terence O'Keeffe, MD, Andrew Tang, MD, Gary Vercruysse, MD, Narong Kulvatunyou, MD, Rifat Latifi, MD, *and* **Bellal Joseph, MD**, *Tucson, Arizona*

UTAH | PEDIATRIC TRAUMA NETWORK

Brain Injury Guidelines			
Variables	**BIG 1**	**BIG 2**	**BIG 3**
LOC	Yes/No	Yes/No	Yes/No
Neurologic examination	Normal	Normal	Abnormal
Intoxication	No	No/Yes	No/Yes
CAMP	No	No	Yes
Skull Fracture	No	Non-displaced	Displaced
SDH	$\leq$ 4mm	5 - 7 mm	$\geq$ 8 mm
EDH	$\leq$ 4mm	5 - 7 mm	$\geq$ 8 mm
IPH	$\leq$ 4mm, 1 location	3 – 7 mm, 2 locations	$\geq$ 8 mm, multiple locations
SAH	Trace	Localized	Scattered
IVH	No	No	Yes
	THERAPEUTIC PLAN		
Hospitalization	No Observation (6hrs)	Yes	Yes
RHCT	No	No	Yes
NSC	No	No	Yes

Propensity score matching 160 BIG 1 kids with and without NSG

-No surgery
-Less repeat CT in no-NSG

UTAH | PEDIATRIC TRAUMA NETWORK

Abdominal Injury Guidelines

MORE DETAILS →

Brain Injury Guidelines

MORE DETAILS →

Burn Injury Guidelines

MORE DETAILS →

Cervical Spine Injury Guidelines

MORE DETAILS →

Chest Injury Guidelines

MORE DETAILS →

Child Physical Abuse Guidelines

MORE DETAILS →

Facial Trauma Guidelines

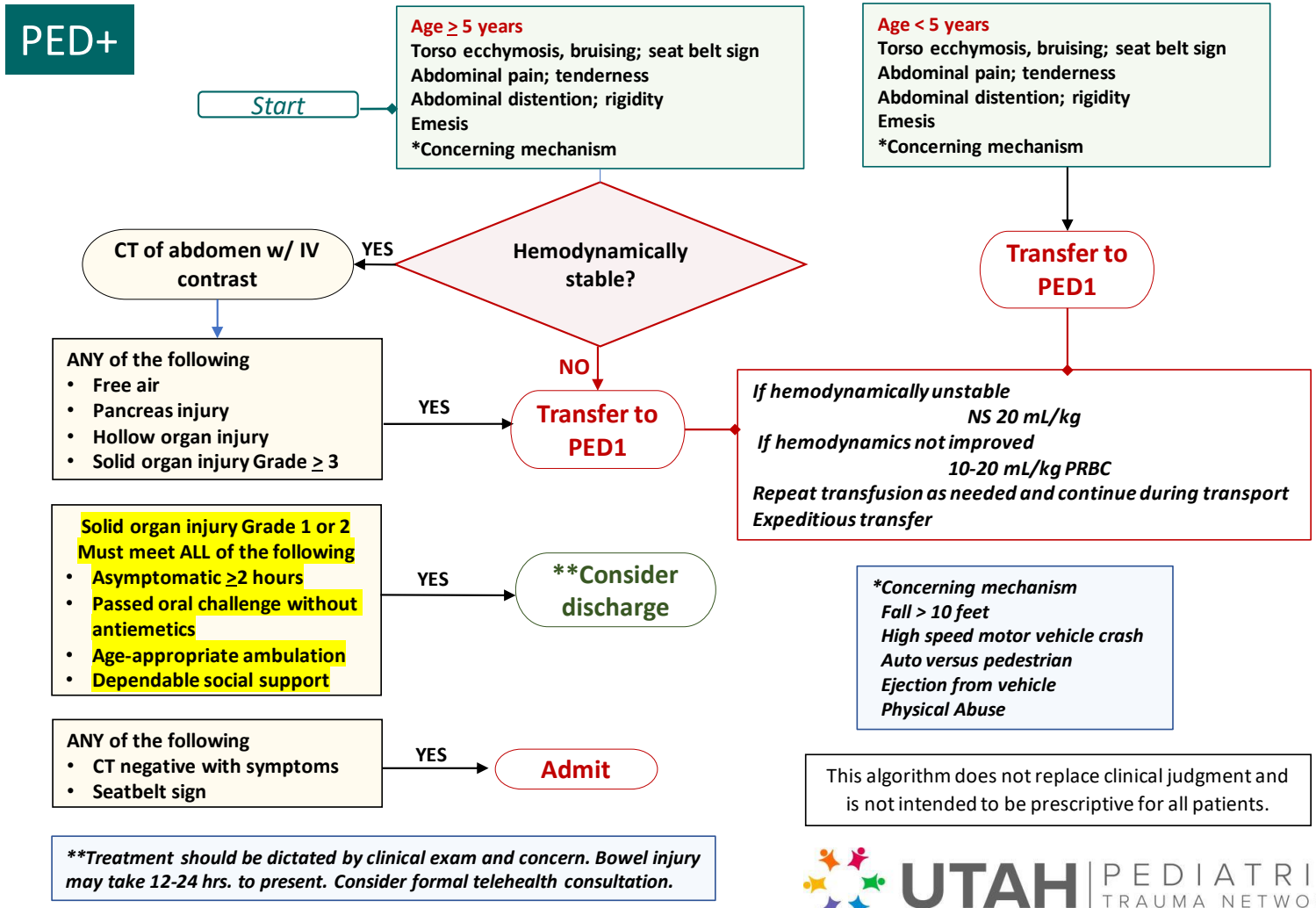
MORE DETAILS →

Massive Transfusion Guidelines

MORE DETAILS →

UTAH | PEDIATRIC TRAUMA NETWORK

2023 Pediatric Abdominal Injury Clinical Guideline
Isolated Blunt Abdominal Injury



UTAH | PEDIATRIC TRAUMA NETWORK

UTAH | PEDIATRIC TRAUMA NETWORK

2023 Pediatric Abdominal Injury Clinical Guideline
Isolated Blunt Abdominal Injury

Updated APSA Blunt Liver/Spleen Injury Guidelines

Admission

- **ICU Admission Indicators**
  - Abnormal vital signs after initial volume resuscitation
- **ICU**
  - Activity - Bedrest until vitals normal
  - Labs – q6hour CBC until vitals normal
  - Diet – NPO until vital signs normal and hemoglobin stable
- **Ward**
  - Activity - No restrictions
  - Labs - CBC on admission and/or 6 hours after injury
  - Diet – Regular diet

Procedures

- **Transfusion**
  - Unstable vitals after 20 mL/kg bolus of isotonic IVF
  - Hemoglobin < 7
  - Signs of ongoing or recent bleeding
- **Angioembolization or Operative Exploration**
  - Signs of ongoing bleeding despite pRBC transfusion
  - Angioembolization is not indicated for contrast blush on admission CT without unstable vitals
  - Operative exploration may be indicated when additional procedures or information needed

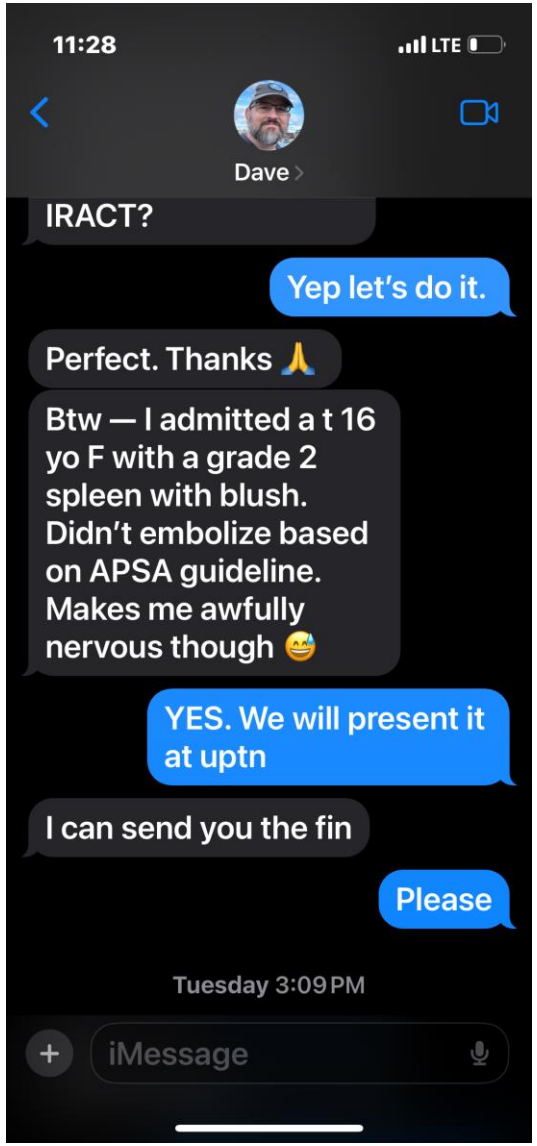
Set Free

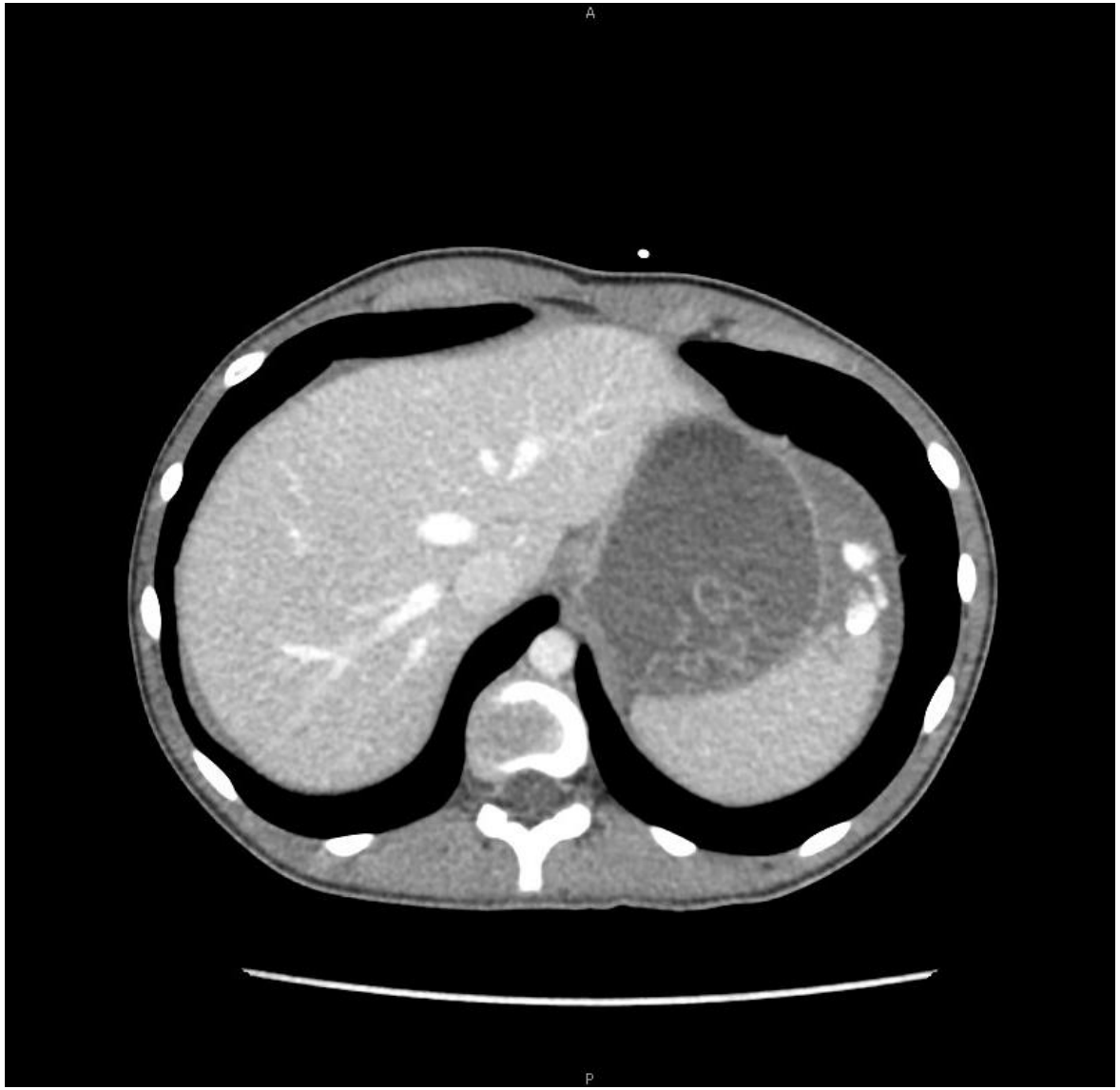
- Based on clinical condition **NOT** injury severity (grade)
- Tolerating a diet
- Minimal abdominal pain
- Normal vital signs

Aftercare

- **Activity Restriction**
  - Restricting activity to grade plus 2 weeks is safe
  - Shorter restrictions may be safe but there is inadequate data to support decreasing these recommendations
- **Follow up Imaging**
  - Routine imaging is not indicated in asymptomatic patients with low grade injuries
  - Consider imaging for ***symptomatic*** patients with prior high grade injuries

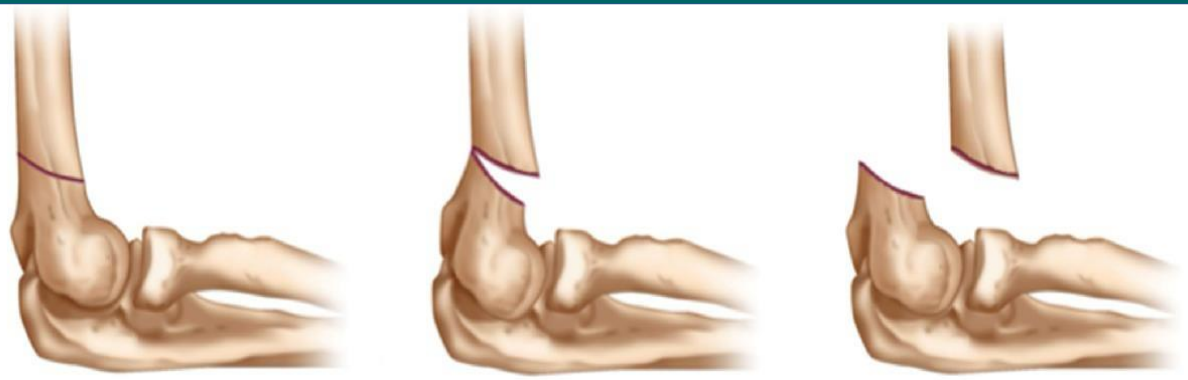
https://doi.org/10.1016/j.jpedsurg.2023.03.012
https://www.jpedsurg.org/article/S0022-3468(23)00225-7/fulltext#%20





UTAH | PEDIATRIC TRAUMA NETWORK

2023 Supracondylar Humerus Fracture Clinical Guideline

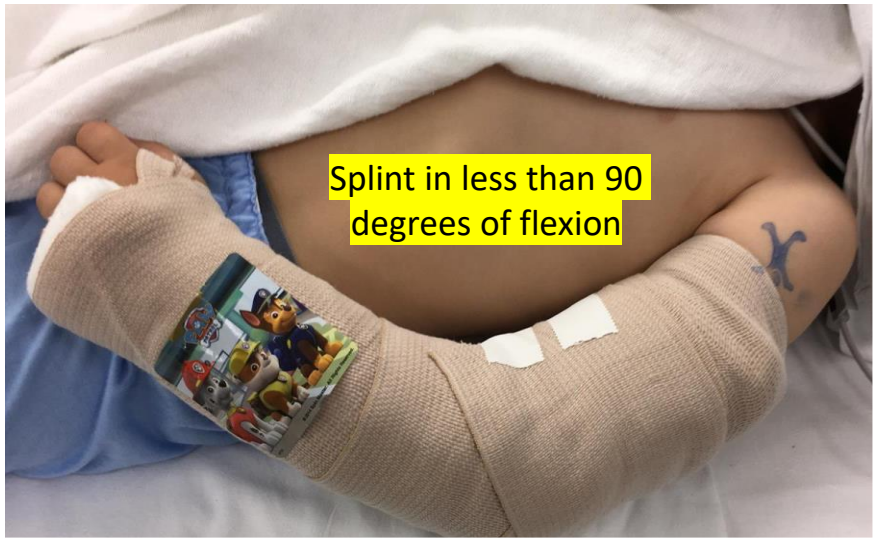


Type I Type II Type III

Type I	Non-displaced
Type II A	Intact posterior cortex, hinged in extension. No rotation or translation.
Type II B	Intact posterior cortex, hinged in extension, with some degree of rotational displacement or translation.
Type III	Complete displacement.

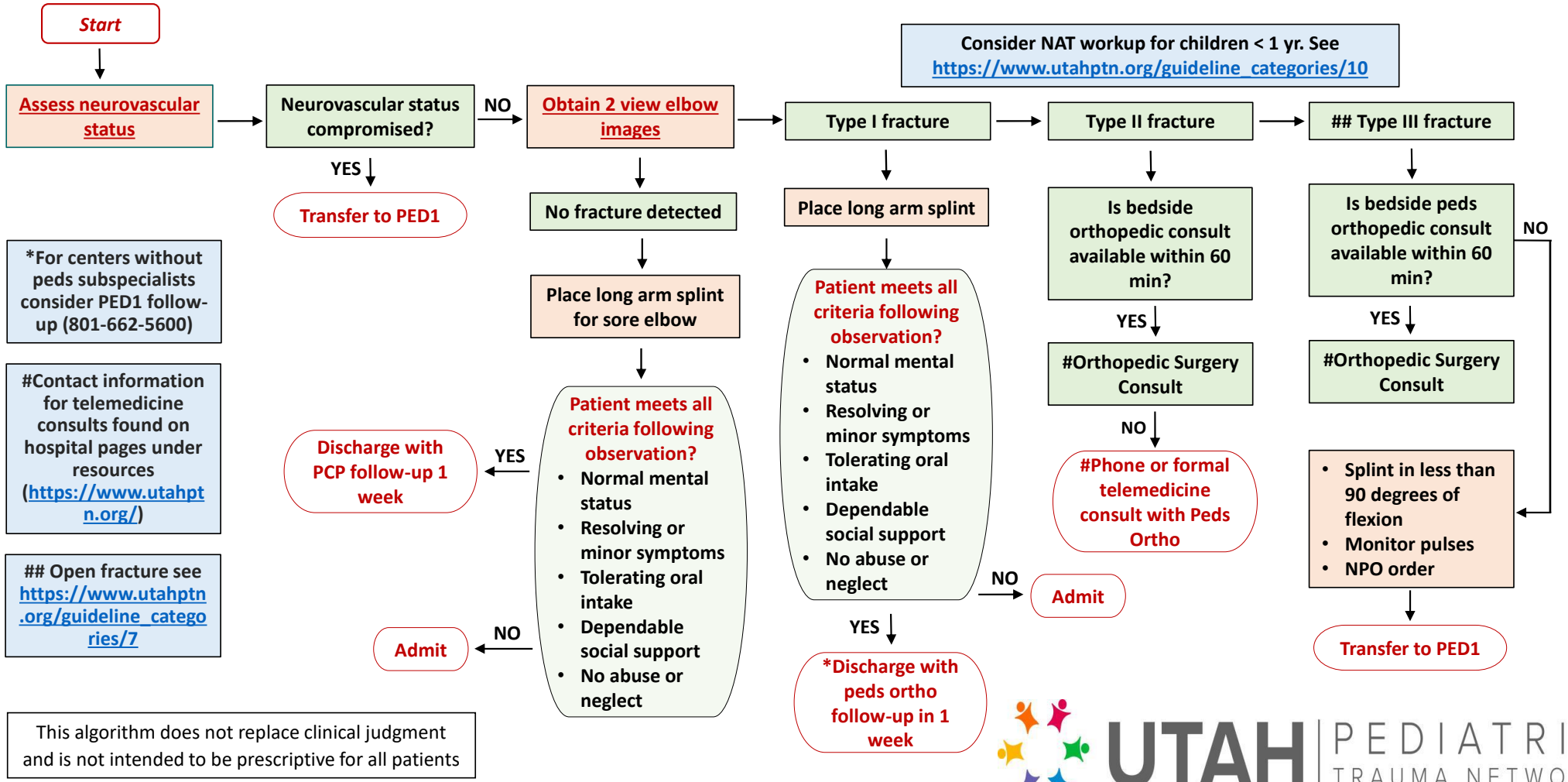
Assessing the reliability of the modified Gartland classification system for extension-type supracondylar humerus fractures
T. Teo, E. Schaeffer, +8 authors C. Reilly
Published 1 December 2019
Medicine
Journal of Children's Orthopaedics

DOI:10.1302/1863-2548.13.190005Corpus ID: 209892435



UTAH | PEDIATRIC TRAUMA NETWORK

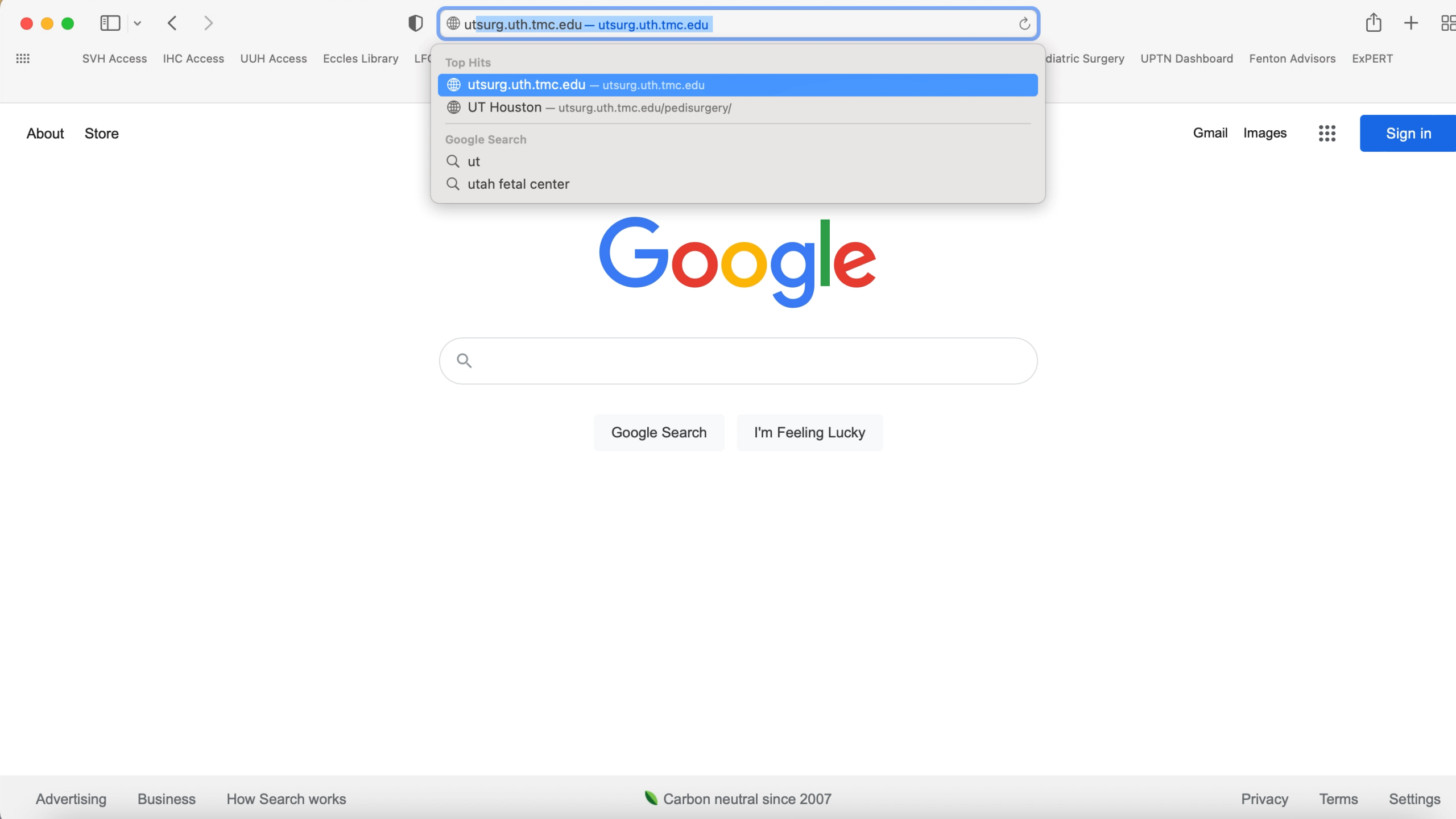
PED+ 2023 Pediatric Supracondylar Humerus Fracture Clinical Guideline



UTAH PEDIATRIC TRAUMA NETWORK

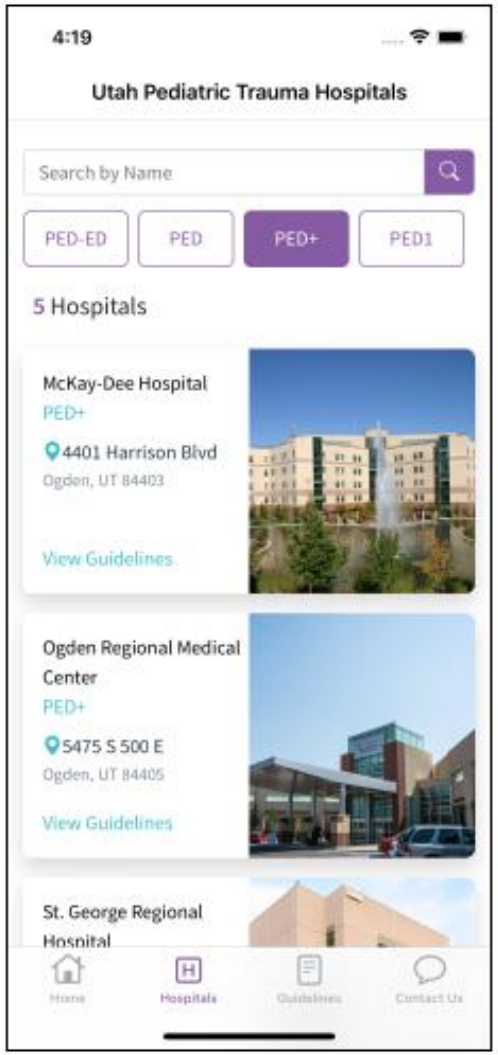
UTAH PEDIATRIC TRAUMA NETWORK

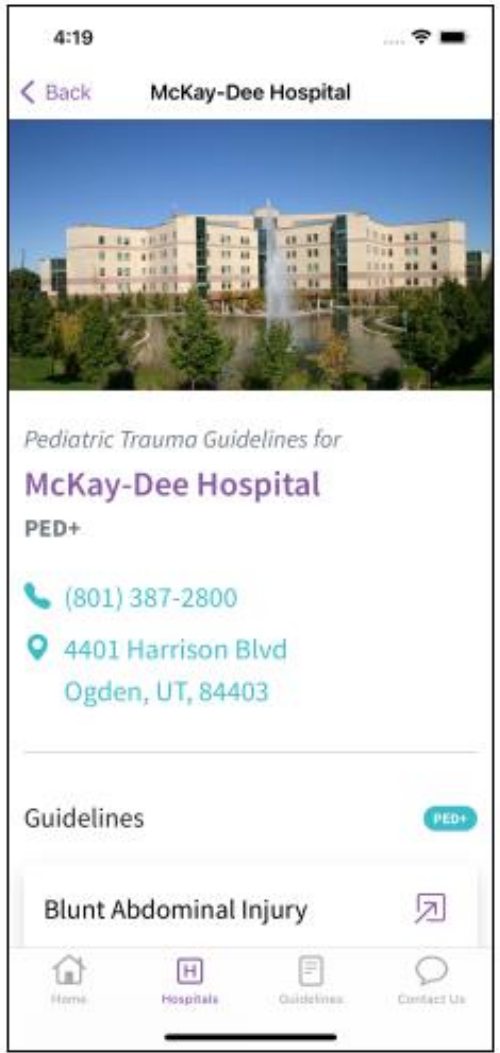
INFORMATION SHARING

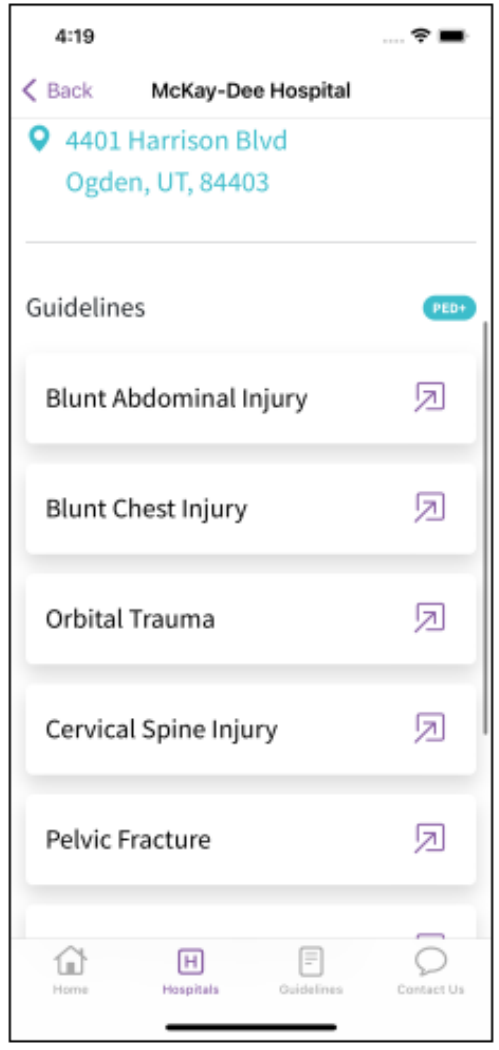

utsurg.uth.tmc.edu — utsurg.uth.tmc.edu
SVH Access
IHC Access
UUH Access
Eccles Library
diatric Surgery
UPTN Dashboard
Fenton Advisors
ExPERT
Top Hits
utsurg.uth.tmc.edu — utsurg.uth.tmc.edu
UT Houston — utsurg.uth.tmc.edu/pedisurgery/
Google Search
ut
utah fetal center
About
Store
Gmail
Images
Sign in
Google
Google Search
I'm Feeling Lucky
Advertising
Business
How Search works
Carbon neutral since 2007
Privacy
Terms
Settings

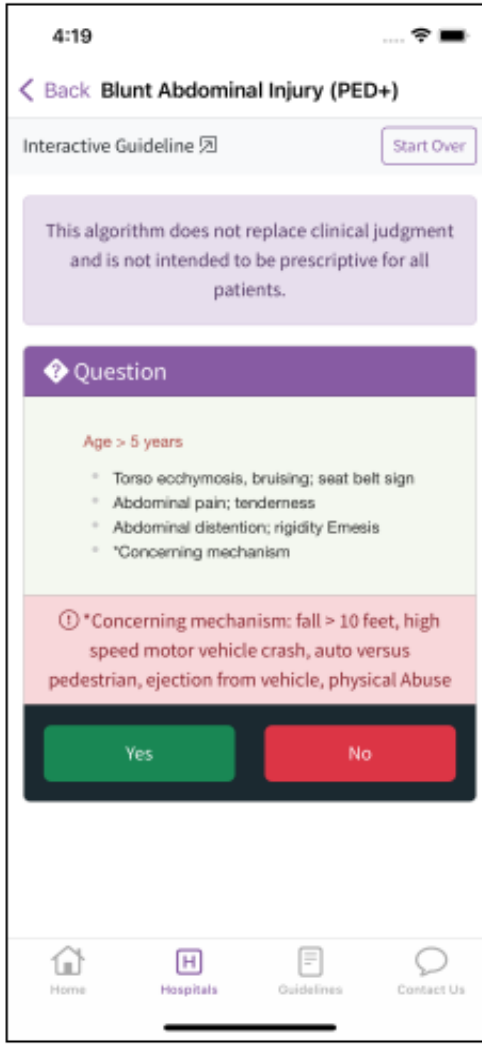
Mobile App


4:18
Utah Pediatric Trauma Network
UTAH PEDIATRIC TRAUMA NETWORK
The vision of Utah Pediatric Trauma Network is to establish a Statewide network, inclusive of all regions and hospitals in Utah. We wish to collectively implement injury prevention initiatives, develop evidence-based best practices for medical management of injury, improve the outcomes for the victims of trauma, and decrease the financial and personal cost to the citizens and families of the State of Utah.
Home
Hospitals
Guidelines
Contact Us


4:19
Utah Pediatric Trauma Hospitals
Search by Name
PED-ED
PED
PED+
PED1
5 Hospitals
McKay-Dee Hospital
PED+
4401 Harrison Blvd
Ogden, UT 84403
View Guidelines
Ogden Regional Medical Center
PED+
5475 S 500 E
Ogden, UT 84405
View Guidelines
St. George Regional Hospital
Home
Hospitals
Guidelines
Contact Us


4:19
Back
McKay-Dee Hospital
Pediatric Trauma Guidelines for
McKay-Dee Hospital
PED+
(801) 387-2800
4401 Harrison Blvd
Ogden, UT, 84403
Guidelines
PED+
Blunt Abdominal Injury
Home
Hospitals
Guidelines
Contact Us


4:19
Back
McKay-Dee Hospital
4401 Harrison Blvd
Ogden, UT, 84403
Guidelines
PED+
Blunt Abdominal Injury
Blunt Chest Injury
Orbital Trauma
Cervical Spine Injury
Pelvic Fracture
Home
Hospitals
Guidelines
Contact Us


4:19
Back
Blunt Abdominal Injury (PED+)
Interactive Guideline
Start Over
This algorithm does not replace clinical judgment and is not intended to be prescriptive for all patients.
Question
Age > 5 years
Torso ecchymosis, bruising; seat belt sign
Abdominal pain; tenderness
Abdominal distention; rigidity Emesis
*Concerning mechanism
*Concerning mechanism: fall > 10 feet, high speed motor vehicle crash, auto versus pedestrian, ejection from vehicle, physical Abuse
Yes
No
Home
Hospitals
Guidelines
Contact Us

Utah Pediatric Conference 2023

Pediatric trauma care providers including physicians, clinical nurses, nursing leadership, administrators, emergency medical services providers, data analysts and registrars are invited to join us for the one-day conference.

When is the conference?

Friday, October 27, 2023

Where is the conference?

Blair Education Center

900 Round Valley Dr,
Park City, UT 84060

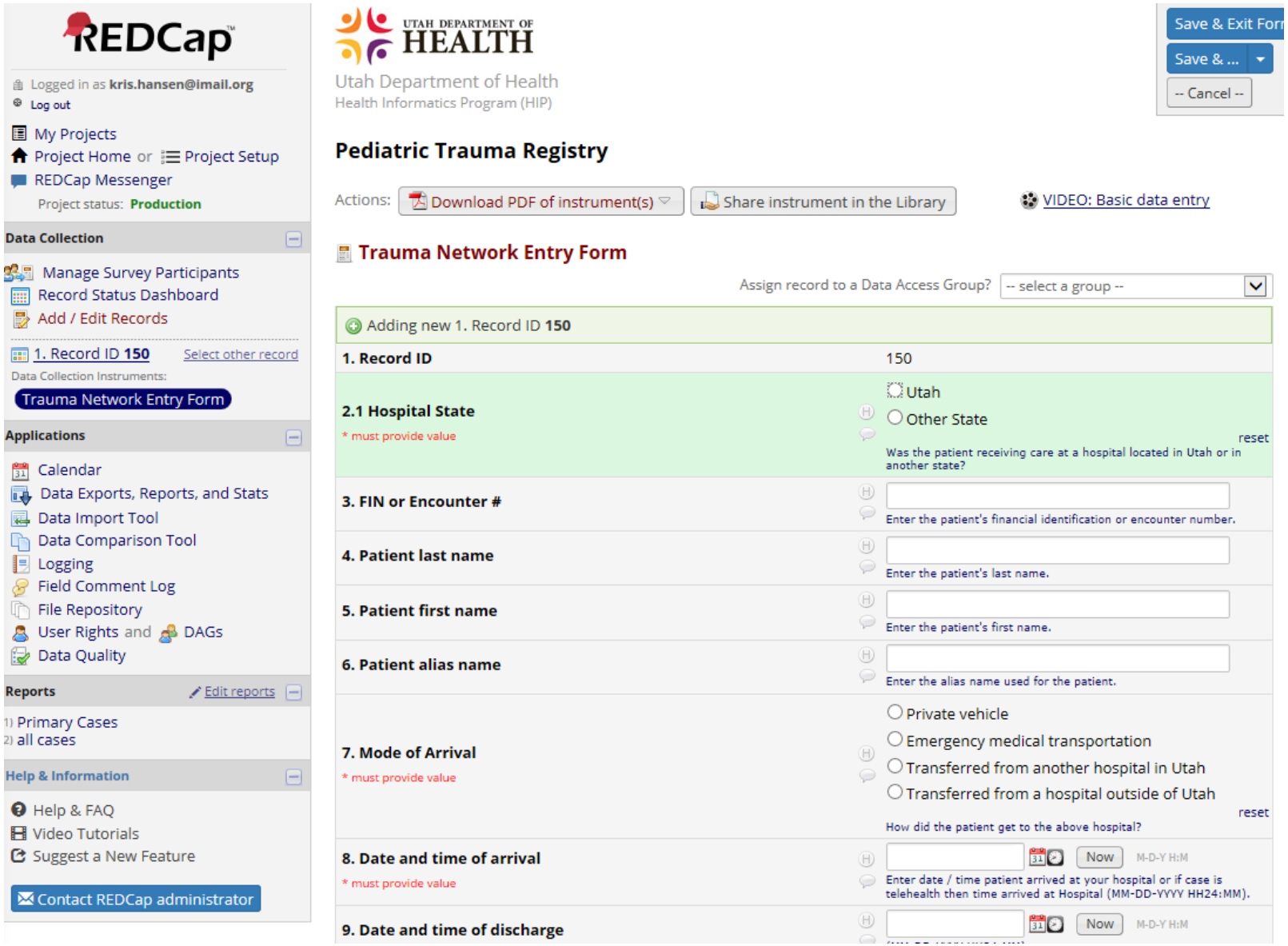
173

Attendees

UTAH | PEDIATRIC TRAUMA NETWORK

ANALYSIS

UTAH | PEDIATRIC TRAUMA NETWORK



UTAH PEDIATRIC TRAUMA NETWORK

The Utah Pediatric Trauma Network, a statewide pediatric trauma collaborative can safely help nonpediatric hospitals admit children with mild traumatic brain injury

Stephen J. Fenton, MD, FACS, FAAP, Robert A. Swendiman, MD, MPP, MSCE, Matthew Eyre, MSN, Kezlyn Larsen, BS, *and* **Katie W. Russell, MD**, *Salt Lake City, Utah*

UTAH | PEDIATRIC TRAUMA NETWORK

The Utah Pediatric Trauma Network, a statewide pediatric trauma collaborative can safely help nonpediatric hospitals admit children with mild traumatic brain injury

- Retrospective review UPTN database 2019-2021
- Compare very mild/mild/complicated mild TBI admitted to PED 1 and non-PED 1 centers

UTAH | PEDIATRIC TRAUMA NETWORK

The Utah Pediatric Trauma Network, a statewide pediatric trauma collaborative can safely help nonpediatric hospitals admit children with mild traumatic brain injury

- More children admitted to non-PED 1 centers
- Those children are getting younger over time
- Less very mild TBI coming to PED 1

UTAH | PEDIATRIC TRAUMA NETWORK

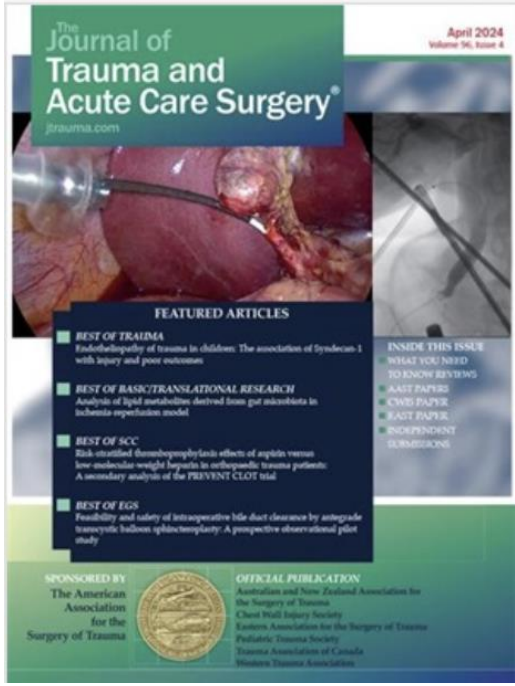
Journal of Trauma and Acute Care Surgery, Publish Ahead of Print
DOI: 10.1097/TA.0000000000004261

USE OF A STATEWIDE SOLID ORGAN INJURY PROCOTCOL TO OPTIMIZE TRIAGE, TREATMENT, AND TRANSFER FOR PEDIATRIC ABDOMINAL TRAUMA

Robert A. Swendiman, MD MPP MSCE[a], Katie W. Russell, MD[a], Kezlyn Larsen, BA[a],

Matthew Eyre, MSN[b], Stephen J. Fenton, MD[a]

USE OF A STATEWIDE SOLID ORGAN INJURY PROCOTCOL TO OPTIMIZE TRIAGE, TREATMENT, AND TRANSFER FOR PEDIATRIC ABDOMINAL TRAUMA



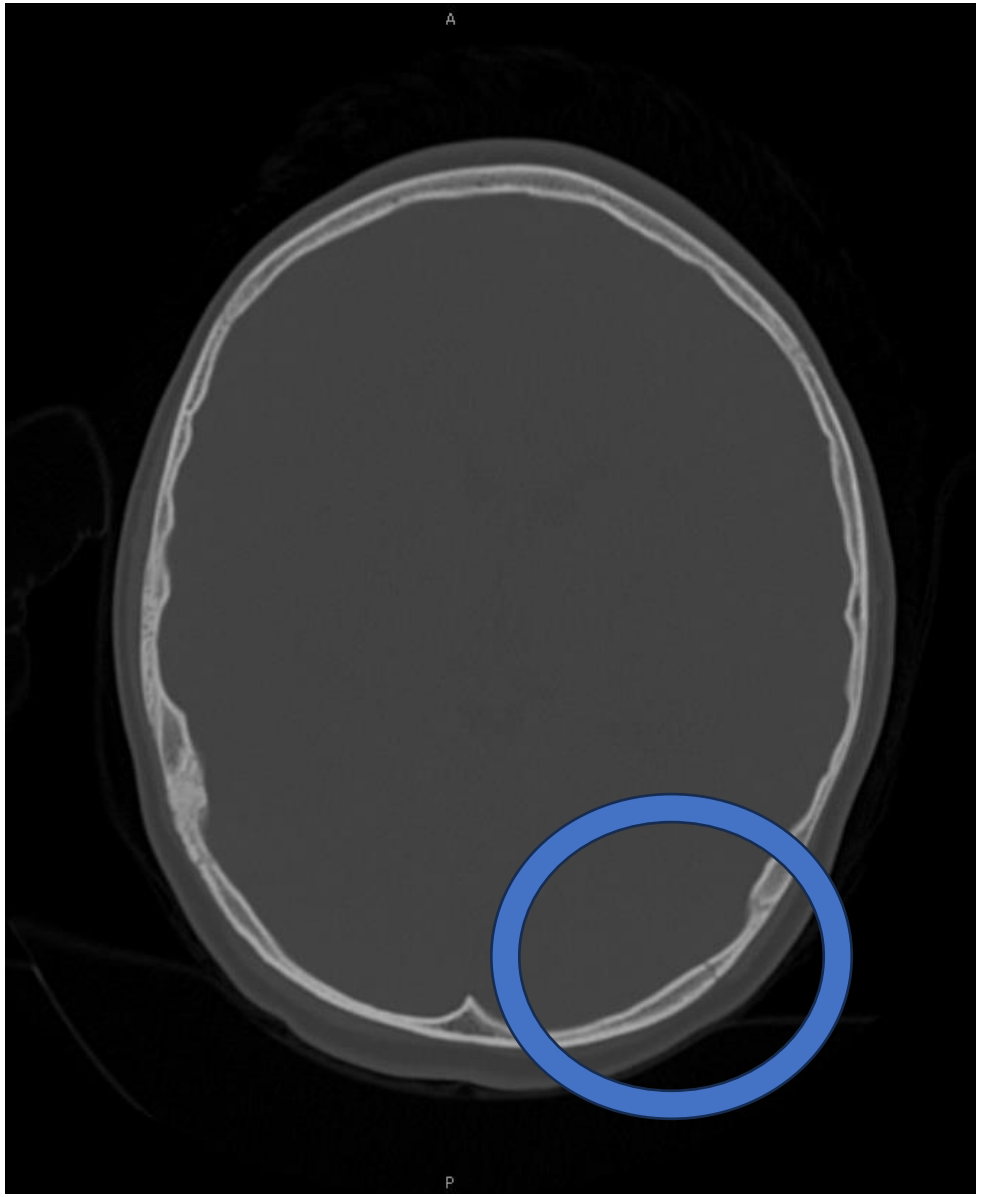
- 172 blunt solid organ injuries
- 48 low-grade injuries
  - 16 stayed at non-PED1
- 124 high-grade injuries
  - 39 stayed at non-PED1
    - 6 angioembolization, 1 transfusion prior to procedure
    - 5 splenectomy (NS compared to PED1, 10.3% v 4.8%)

UTAH | PEDIATRIC TRAUMA NETWORK

UPTN IN ACTION

6 YO male was opening a new box of Legos and the scissors slipped and cut his finger

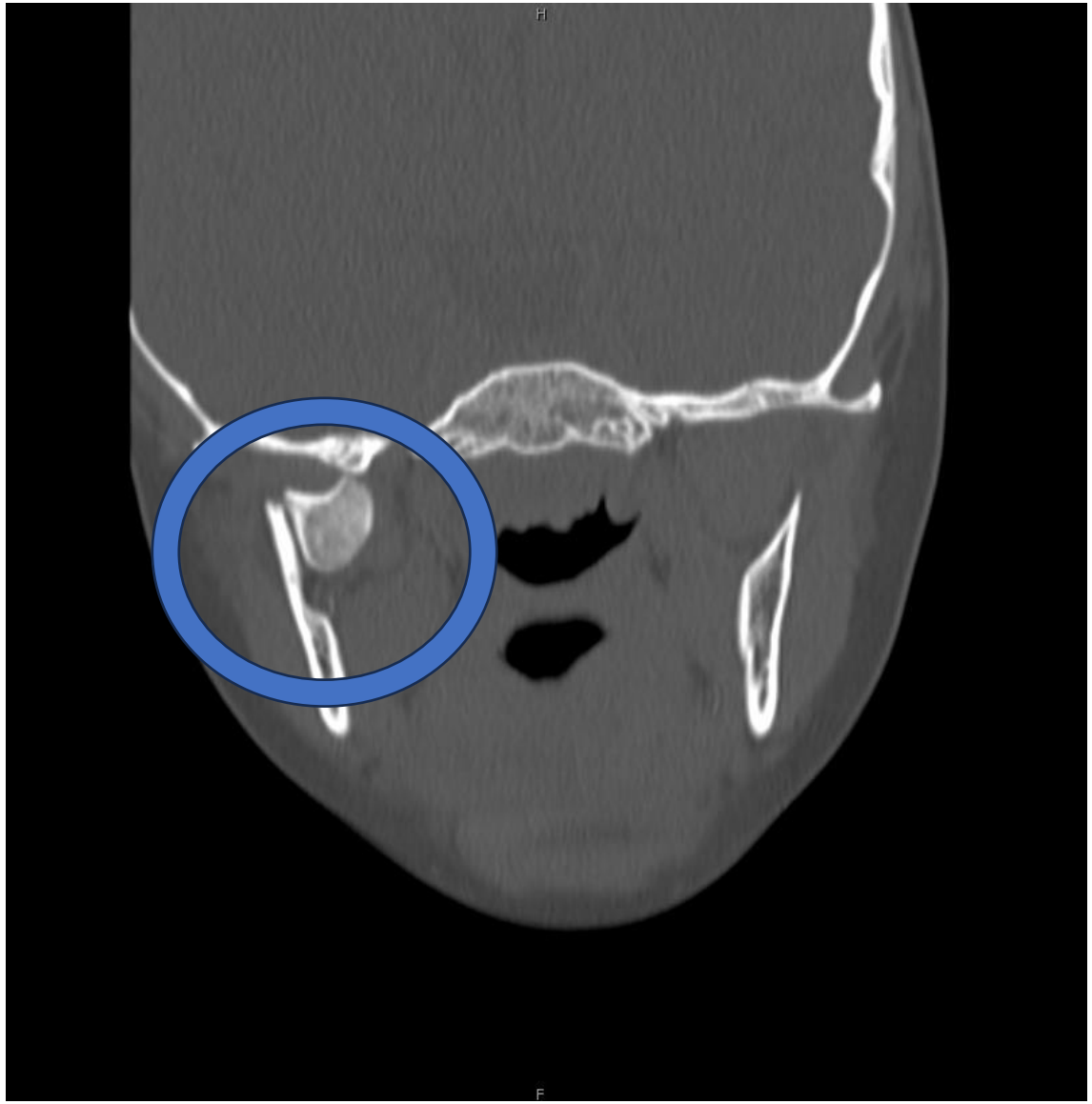
Neuro intact



6 YO male fell of his bike and hit his head with +LOC

GCS 14
Boggy hematoma

UTAH | PEDIATRIC TRAUMA NETWORK



4 YO male fell off her brother's shoulders

GCS 15
TMJ pain

UTAH | PEDIATRIC TRAUMA NETWORK

SISTER PROGRAM

Teletrauma

UTAH | PEDIATRIC TRAUMA NETWORK

Journal of Trauma and Acute Care Surgery, Publish Ahead of Print
DOI: 10.1097/TA.0000000000004241

A Pediatric Teletrauma Program Pilot Project: Improves Access to Pediatric Trauma Care and Timely Assessment of Pediatric Traumas

R. Scott Eldredge[abc] MD, Zachary Moore[d], Julia Smith[e] MSN, CPNP, Kasey Barnes[e] MS, Sidney P Norton[e] MBA, Kezlyn Larsen[a], Benjamin E. Padilla[c] MD, Robert A. Swendiman[a] MD, Stephen J. Fenton[a] MD, Katie W. Russell[a] MD

UTAH | PEDIATRIC TRAUMA NETWORK

A Pediatric Teletrauma Program Pilot Project: Improves Access to Pediatric Trauma Care and Timely Assessment of Pediatric Traumas

151 consults

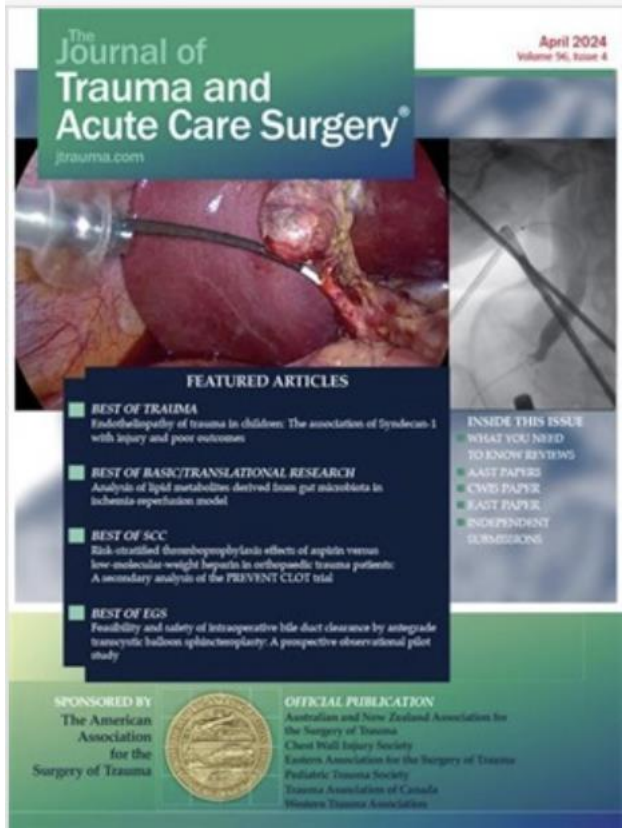
Median age 8 years
[IQR:3 -12]
62% (93/151) Male

Injury subtype

70% Head trauma

18% Abdominal Trauma

24% Other Trauma



UTAH | PEDIATRIC TRAUMA NETWORK

A Pediatric Teletrauma Program Pilot Project: Improves Access to Pediatric Trauma Care and Timely Assessment of Pediatric Traumas

Discharge PH

54 patients

36%

Admitted PH

43 patients

29%

Transfer PTC

54 patients

36%

UTAH | PEDIATRIC TRAUMA NETWORK

A Pediatric Teletrauma Program Pilot Project: Improves Access to Pediatric Trauma Care and Timely Assessment of Pediatric Traumas

Discharge PH

54 patients

36%

Admitted PH

43 patients

29%

Outcomes

- 64% avoided transfer
- Mean distance – 129 miles
- 3 patients subsequently transferred to PTC

UTAH | PEDIATRIC TRAUMA NETWORK

UPTN SUMMARY

UTAH | PEDIATRIC TRAUMA NETWORK

Teletrauma Program

15

Protocols

Program Manager

5

Conferences

100%

Participation

Website

Mobile App

7

Videos

12

Meetings

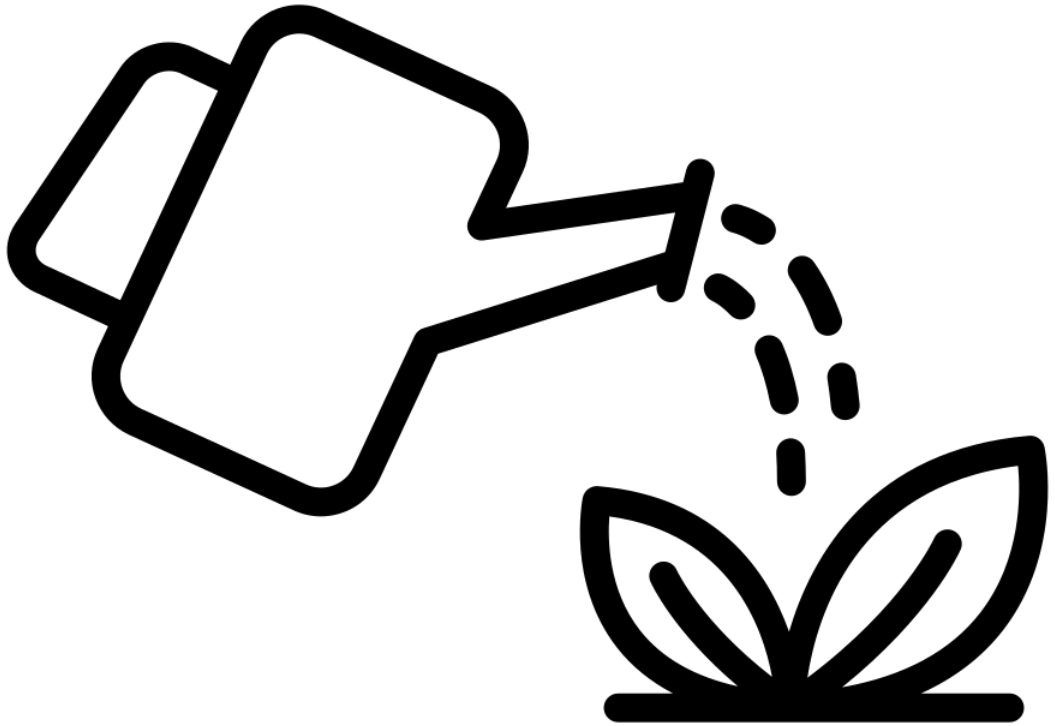
3

Publications

Funding

Next Steps

- Grow the local Network
- Optimize the data
- Find partners
- Funding
- Create national program




United States of America
State Boundary
Road
River
National Capital
State Capital
City or Town
0
300 KM
0
300 Miles
©2007 Geology.com
U.S.A.
MEXICO
CANADA
Pacific Ocean
Atlantic Ocean
Gulf of Mexico
Victoria
Seattle
Olympia
Spokane
Portland
Salem
Eugene
Yakima
Vancouver
Lewiston
Missoula
Great Falls
Helena
Butte
Billings
Minot
Bismarck
Fargo
Grand Forks
Regina
Swift Current
Winnipeg
Boise
Idaho Falls
Twin Falls
Medford
Klamath Falls
Sheridan
Casper
Rock Springs
Cheyenne
Buffalo
Rapid City
Pierre
Sioux Falls
Scottsbluff
Omaha
Lincoln
Sioux City
Mason City
Ames
Des Moines
Madison
St. Paul
Minneapolis
Duluth
Ironwood
Marquette
Green Bay
Marinette
Milwaukee
Chicago
Mankato
Eureka
Redding
Chico
Reno
Elko
Carson City
Sacramento
Oakland
San Francisco
San Jose
Modesto
Ely
Salt Lake City
Provo
Monterey
Fresno
Visalia
Las Vegas
Bakersfield
Santa Maria
Los Angeles
San Bernardino
San Diego
Flagstaff
Phoenix
Mexicali
Tucson
Fort Collins
Boulder
Denver
Grand Junction
Colorado Springs
Pueblo
Durango
Monticello
Marble Canyon
Santa Fe
Albuquerque
Roswell
Las Cruces
Carlsbad
El Paso
Guymon
Amarillo
Canadian
Tulsa
Oklahoma City
Wichita Falls
Dallas
Texarkana
Big Spring
Odessa
Waco
Temple
Austin
San Antonio
Del Rio
Laredo
Houston
Galveston
Beaumont
Baton Rouge
New Orleans
Dodge City
Wichita
Topeka
Kansas City
Jefferson City
St. Louis
Springfield
Bloomington
Fort Wayne
Indianapolis
Chicago
Lansing
Ann Arbor
Detroit
Cleveland
Columbus
Cincinnati
Louisville
Owensboro
Frankfort
Poplar Bluff
Fayetteville
Little Rock
Hot Springs
Pine Bluff
Memphis
Nashville
Knoxville
Chattanooga
Huntsville
Birmingham
Greenville
Shreveport
Jackson
Montgomery
Mobile
Tallahassee
Pensacola
Atlanta
Augusta
Macon
Savannah
Albany
Columbia
Charleston
Greenville
Asheville
Charlotte
Raleigh
Greensboro
Roanoke
Richmond
Norfolk
Washington, D.C.
Baltimore
Harrisburg
Pittsburgh
Erie
Buffalo
Rochester
Albany
Toronto
Kingston
Ottawa
Montreal
Quebec
Timmins
Amos
Fredericton
Augusta
Bangor
Portland
Concord
Boston
Providence
Hartford
New York City
Trenton
Philadelphia
Wilmington
Dover
Annapolis
Jacksonville
Gainesville
Daytona Beach
Orlando
Tampa
Sarasota
West Palm Beach
Lake Superior
Lake Michigan
Lake Huron
Lake Erie
Lake Ontario
Mississippi
Missouri
Arkansas
Red
Rio Grande
Pecos
Canadian
Colorado
Hermosillo
Chihuahua
Anchorage
Honolulu
RUSSIA
ALASKA
CANADA
HAWAII
0
500 KM

Montana Preventable Transfers

- 10-year retrospective review of all transfers from MT
- Preventable
  - DC <48 hours without surgery or imaging
- Possibly preventable
  - DC <7 days with injuries that could have been managed with resources at the level 1 adult center with pediatric capabilities
  - We reviewed these patients with the local Trauma Medical Director

Montana Preventable Transfers

132

total transfers

22

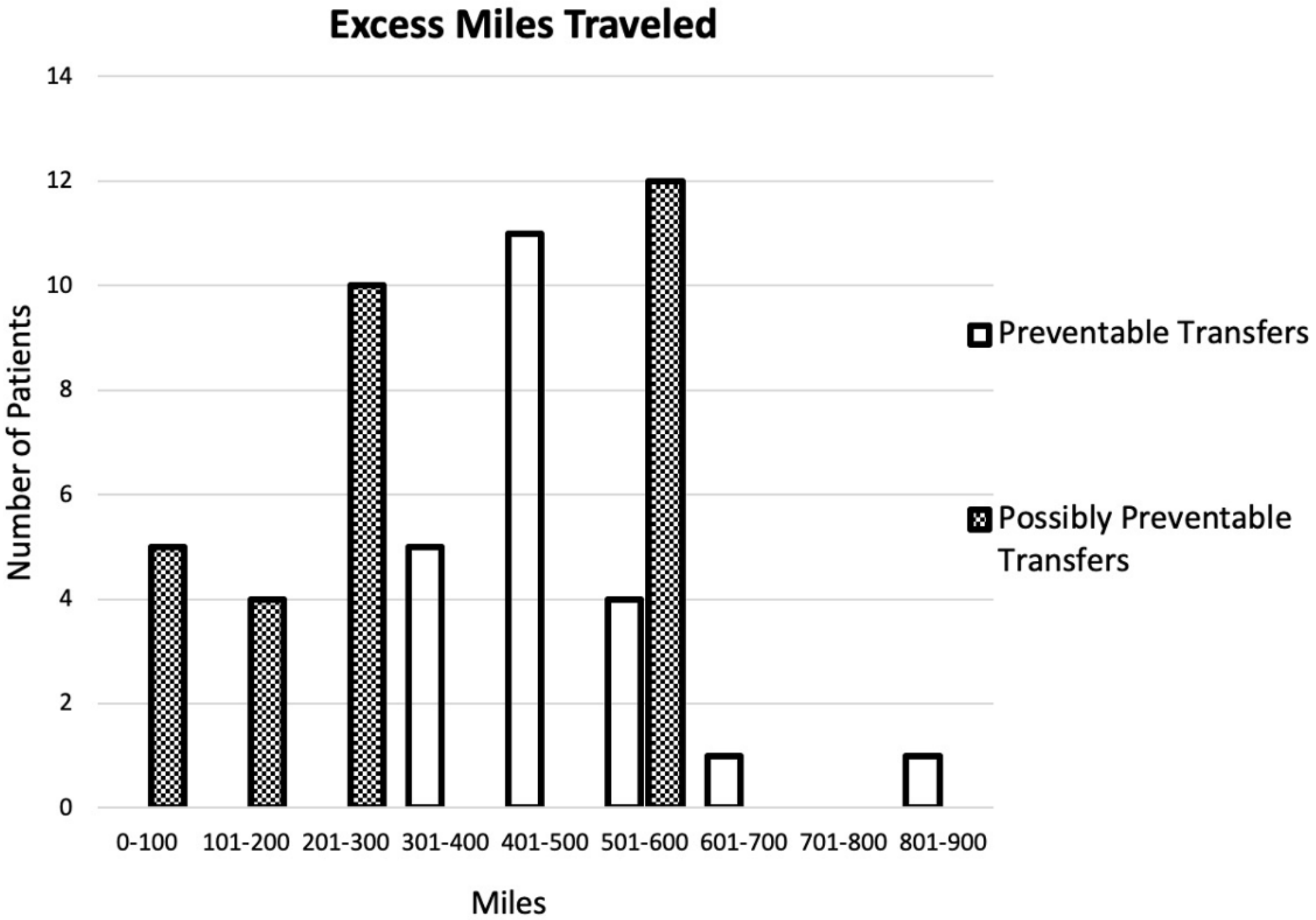
preventable transfers

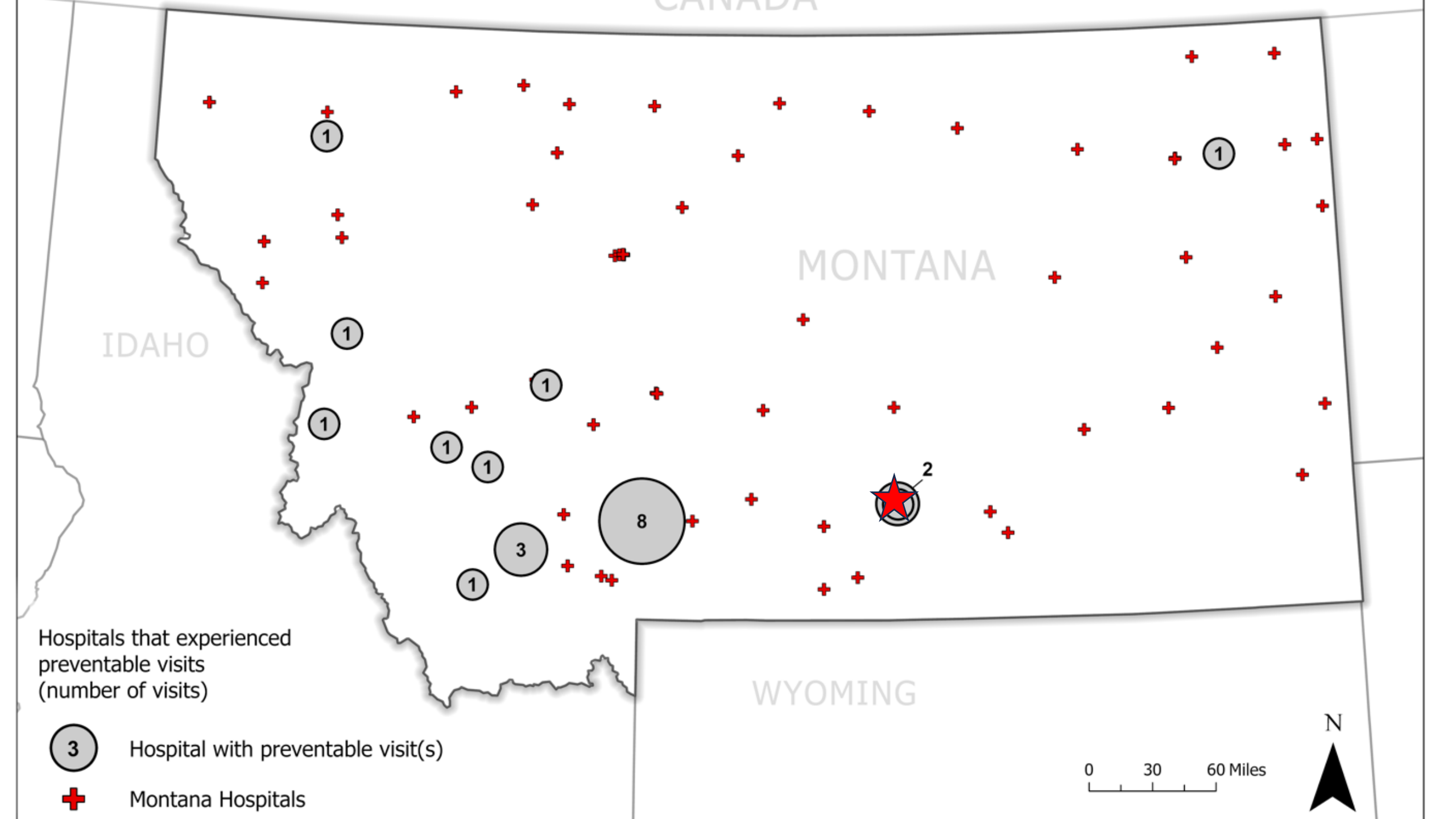
31

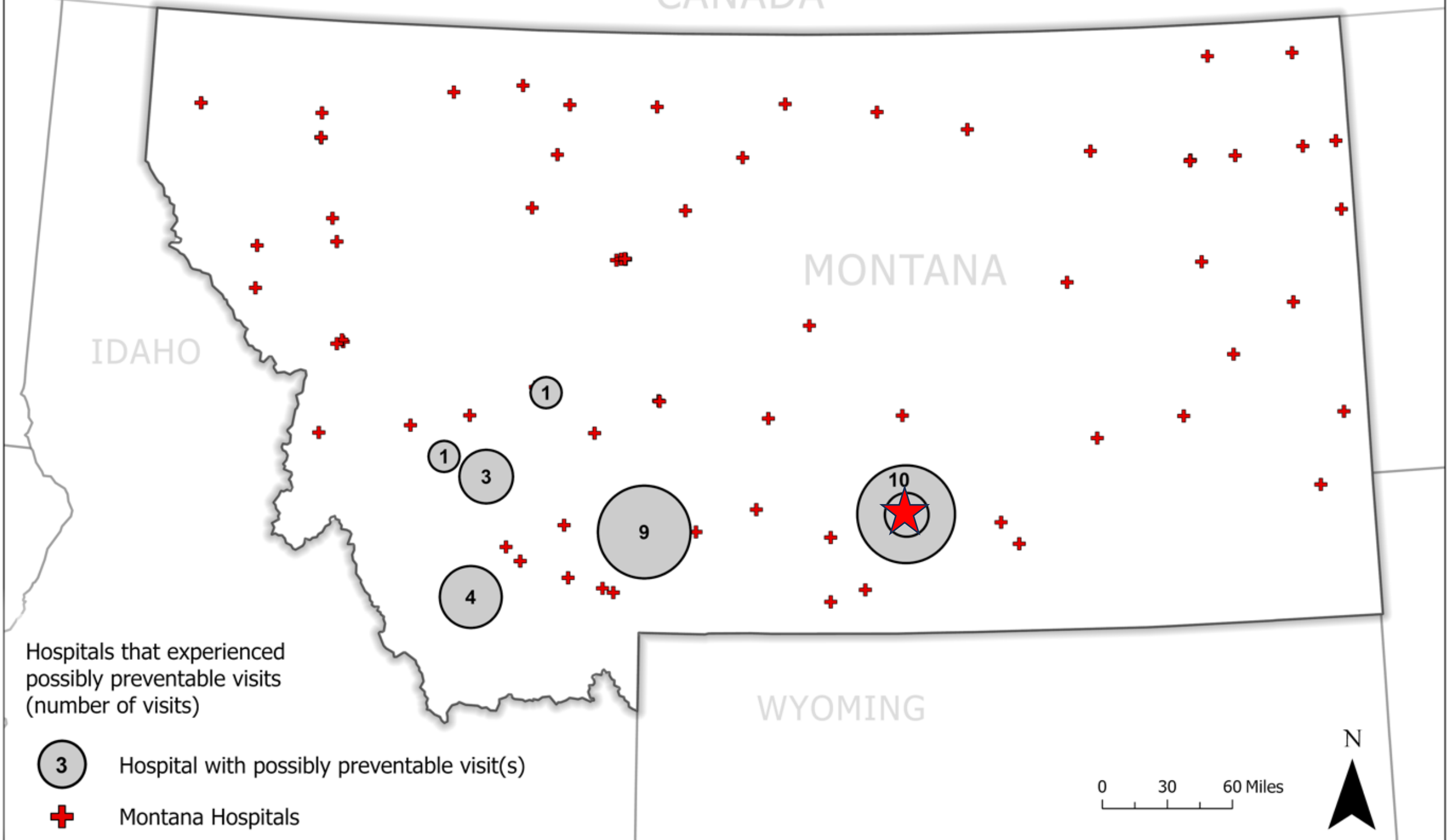
possibly preventable transfers

40%

UTAH | PEDIATRIC TRAUMA NETWORK

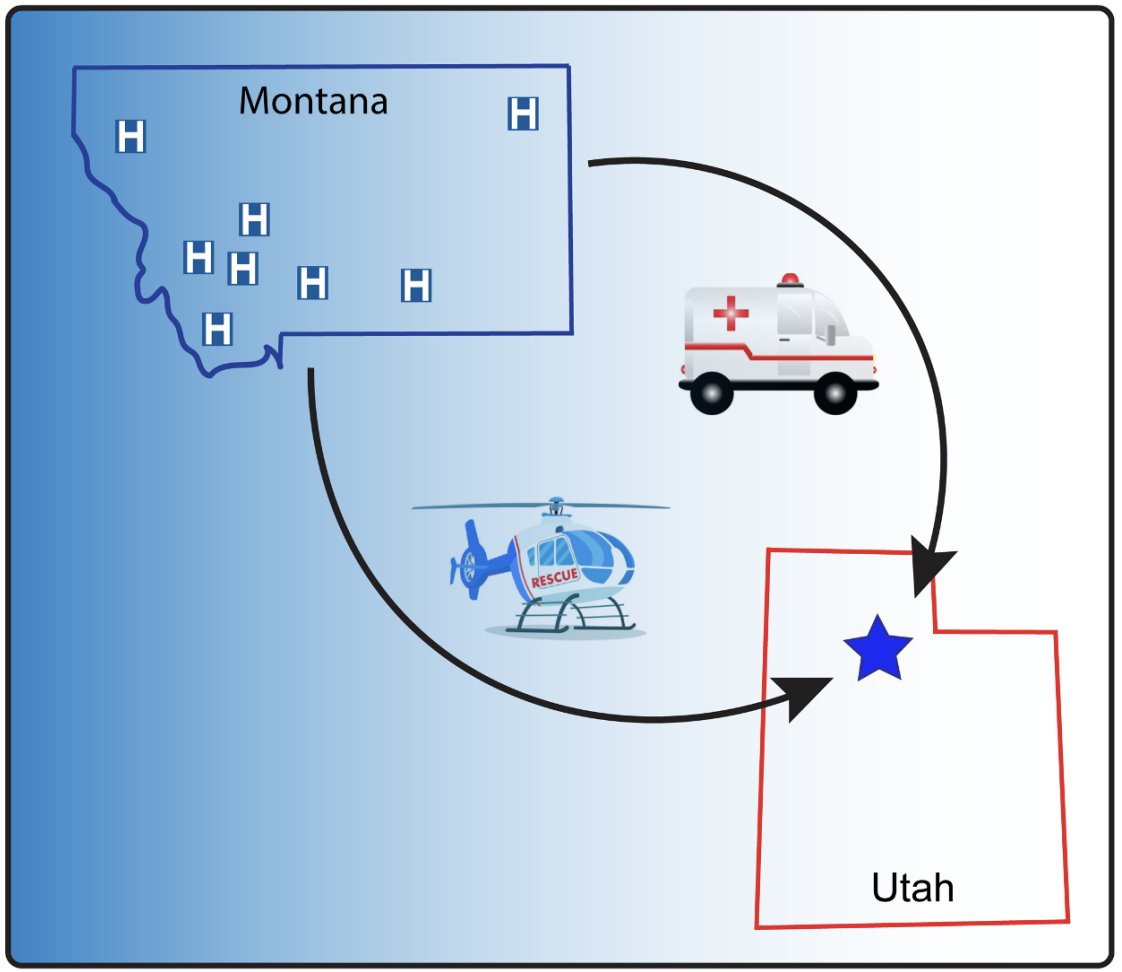

Excess Miles Traveled
14
12
10
8
6
4
2
0
Number of Patients
0-100
101-200
201-300
301-400
401-500
501-600
601-700
701-800
801-900
Miles
Preventable Transfers
Possibly Preventable Transfers


CANADA
MONTANA
IDAHO
WYOMING
1
1
1
1
1
1
2
8
3
1
Hospitals that experienced preventable visits (number of visits)
3
Hospital with preventable visit(s)
Montana Hospitals
N
0
30
60 Miles


CANADA
MONTANA
IDAHO
WYOMING
1
1
3
9
10
4
Hospitals that experienced possibly preventable visits (number of visits)
3
Hospital with possibly preventable visit(s)
Montana Hospitals
N
0
30
60 Miles

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

Analysis of long-distance transfer of pediatric trauma patients from Montana to Level I Pediatric Trauma Center in Utah.



39% of patients who underwent transfer could have received appropriate care at in-state facilities.

Alexander et al. *Journal of Trauma and Acute Care Surgery*.
Month Year [doi]

@JTraumAcuteSurg

The Journal of Trauma and Acute Care Surgery®


United States of America
State Boundary
Road
River
National Capital
State Capital
City or Town
0
300 KM
0
300 Miles
©2007 Geology.com
U.S.A.
MEXICO
CANADA
Pacific Ocean
Atlantic Ocean
Gulf of Mexico
Victoria
Seattle
Olympia
Spokane
Portland
Salem
Eugene
Yakima
Vancouver
Lewiston
Missoula
Great Falls
Helena
Butte
Billings
Minot
Bismarck
Fargo
Grand Forks
Regina
Swift Current
Winnipeg
Duluth
Ironwood
Marquette
Timmins
Amos
Quebec
Fredericton
Montreal
Ottawa
Kingston
Toronto
Portland
Concord
Boston
Providence
Albany
Rochester
Buffalo
Hartford
Trenton
Philadelphia
Wilmington
Dover
Annapolis
Washington, D.C.
Baltimore
Harrisburg
Pittsburgh
Cleveland
Erie
New York City
Detroit
Lansing
Ann Arbor
Chicago
Milwaukee
Madison
Green Bay
Marinette
Minneapolis
St. Paul
Mankato
Sioux City
Mason City
Ames
Des Moines
Omaha
Lincoln
Sioux Falls
Rapid City
Pierre
Sheridan
Casper
Rock Springs
Cheyenne
Scottsbluff
Fort Collins
Boulder
Denver
Colorado Springs
Pueblo
Grand Junction
Durango
Monticello
Cedar City
Salt Lake City
Provo
Boise
Idaho Falls
Twin Falls
Medford
Klamath Falls
Eureka
Redding
Chico
Reno
Elko
Ely
Carson City
Sacramento
Oakland
San Francisco
San Jose
Modesto
Fresno
Visalia
Monterey
Bakersfield
Santa Maria
Las Vegas
Marble Canyon
Los Angeles
San Bernardino
San Diego
Mexicali
Tucson
Santa Fe
Albuquerque
Roswell
Las Cruces
Carlsbad
El Paso
Hermosillo
Chihuahua
Del Rio
San Antonio
Austin
Houston
Galveston
Beaumont
Baton Rouge
New Orleans
Laredo
Corpus Christi
Big Spring
Odessa
Waco
Temple
Dallas
Wichita Falls
Texarkana
Amarillo
Guymon
Tulsa
Oklahoma City
Topeka
Kansas City
Jefferson City
St. Louis
Springfield
Dodge City
Wichita
Poplar Bluff
Fayetteville
Memphis
Nashville
Knoxville
Chattanooga
Huntsville
Birmingham
Montgomery
Mobile
Pensacola
Tallahassee
Jacksonville
Gainesville
Daytona Beach
Orlando
Tampa
Sarasota
West Palm Beach
Miami
Jackson
Shreveport
Greenville
Augusta
Macon
Savannah
Albany
Atlanta
Charleston
Columbia
Greensboro
Raleigh
Asheville
Charlotte
Roanoke
Norfolk
Richmond
Lexington
Louisville
Owensboro
Indianapolis
Fort Wayne
Bloomington
Columbus
Cincinnati
Lake Michigan
Lake Huron
Lake Erie
Lake Ontario
Lake Superior
Mississippi
Missouri
Arkansas
Red
Canadian
Rio Grande
Pecos
Colorado
NORTH DAKOTA
SOUTH DAKOTA
MINNESOTA
WISCONSIN
MICHIGAN
IOWA
NEBRASKA
KANSAS
MISSOURI
ILLINOIS
INDIANA
OHIO
KENTUCKY
TENNESSEE
MISSISSIPPI
ALABAMA
GEORGIA
FLORIDA
SOUTH CAROLINA
NORTH CAROLINA
VIRGINIA
WEST VIRGINIA
PENNSYLVANIA
NEW YORK
VERMONT
NEW HAMPSHIRE
MASSACHUSETTS
RHODE ISLAND
CONNECTICUT
NEW JERSEY
DELAWARE
MARYLAND
WYOMING
COLORADO
NEVADA
IDAHO
OREGON
WASHINGTON
CALIFORNIA
NEW MEXICO
OKLAHOMA
TEXAS
LOUISIANA
ARIZONA
UTAH
MONTANA
ONTARIO
MANITOBA
SASKATCHEWAN
ALBERTA
BRITISH COLUMBIA
QUEBEC
NEW BRUNSWICK
ALASKA
HAWAII
RUSSIA
Anchorage
Honolulu
0
500 KM
150
155
70
60

UTAH | PEDIATRIC TRAUMA NETWORK

UTAH | PEDIATRIC TRAUMA NETWORK

Katie.Russell@hsc.Utah.edu
(801) 557-6295

?