Congratulations Dr. Adams!!!
Updates

Katie Hokanson, Director of Trauma and Injury Prevention

Email questions to: indianatrauma@isdh.in.gov
Trauma-related legislation

• House Bill 1571
  – Allows a coroner, in certain circumstances, to make available an autopsy report to the peer review committee of a hospital at which the decedent was treated immediately before death.
  – Signed by governor April 24.
Coroners lacking Data Sharing Agreements for INVDRS

- Franklin
- Hendricks
- Jefferson
- Jennings
- Knox
- Miami
- Noble
- Owen
- Posey
- Sullivan
- Switzerland
- Vanderburgh
- Vigo
- Warren
- Warrick
- Wells
- White
Division staffing updates

- Mandy Billman
  - Overdose Surveillance Educator Epidemiologist
- Paravdeep “Pravy” Nijjar
  - Registry Coordinator
- Brittany Armstrong
  - Records Consultant
- Raven Helmick
  - PDO Epidemiologist
- Anita McCormick-Peyton
  - Records Consultant
- Patricia Dotson
  - Records Consultant
- Vincent Gallagher
  - Intern

Email questions to: indianatrauma@isdh.in.gov
*NEW* Public Health Public Safety Conference

Save the Date
Wednesday, September 27
8:30 a.m. - 4:30 p.m.

Ritz Charles
12156 North Meridian Street
Carmel, IN 46032

Email questions to: indianatrauma@isdh.in.gov
2017 Labor of Love Infant Mortality Summit

JW Marriott, 10 S. West Street, Indianapolis
Wednesday, November 15, 2017

Labor of Love Infant Mortality Summit

Addressing the Effect of Opioids for Indiana’s Moms and Babies

Email questions to: indianatrauma@isdh.in.gov
2017 Labor of Love Infant Mortality Summit

Join us!
November 15, 2017 • JW Marriott
10 S. West Street, Indianapolis, IN 46204

Our Speakers

Jennifer Walton, MD, MPH
Infectious Disease and HIV/AIDS Prevention

Paula Arnell, MD, MHA
Chief Medical Officer, Marion County

Michael C. Lu, MD, MPH
Assistant Professor, Department of Pediatrics, University of Washington

Michael Warner, MD, MPH
Medical Director, Indiana Department of Health

Maria Del Rio, MD
Associate Professor, Vanderbilt University

Jim McClone
Assistant Professor, Indiana University School of Public Health

Jim Sheila
Assistant Professor, Indiana University School of Public Health

New Exhibit Area: Opioid Epidemic and Its Effects
This year, the Labor of Love Infant Mortality Summit is providing a special area to allow organizations on the forefront of fighting Indiana’s opioid epidemic and its effects on infant mortality to showcase products and services used in the fight against opioid addiction while highlighting best practices.

For registration and additional information, visit: www.infantmortalitysummit-indiana.org

Email questions to: indianatrauma@isdh.in.gov
2018 EMS Medical Director’s Conference

5th annual EMS Medical Directors’ Conference
Friday, April 27, 2018
Ritz Charles
12156 N. Meridian Street
Carmel, IN 46032
8am - 5pm

Get notified when registration opens!
Send your contact information to:
indianatrauma@isdh.in.gov

Email questions to: indianatrauma@isdh.in.gov
Grant activities

- National Violent Death Reporting System (NVDRS)
  - Applied for year 4 (of 5)
- Prescription Drug Overdose: Prevention for States
  - Applied for year 2 (base and supplement)
  - Applied for an additional supplement
- Enhanced State Surveillance of Opioids
  - Originally awarded but not funded, funding starts September 1
  - Applied for supplement
- First Responder Comprehensive Addiction and Recovery Act
  - Applied

Email questions to: indianatrauma@isdh.in.gov
GRANT OPPORTUNITY ANNOUNCEMENT: NALOXONE KITS

Email questions to: indianatrauma@isdh.in.gov
Purpose

• Expand the distribution of naloxone kit across state.
• Increase education about the state law that provides immunity for lay responders to carry & administer naloxone.
• Funding through both state and federal funds.
Naloxone kit distribution

- Division established a grant opportunity announcement that went out to all Local Health Departments (LHDs) on August 8.
  - Applications are due September 1.
  - Funding for kits will be from mid-September to April 2018.
Drug overdose prevention website
Scott County INSPECT Report on Controlled Substance Prescriptions
Indiana Scheduled Prescription Electronic Collection and Tracking Program

Controlled Substance Prescriptions Dispensed, Indiana and Scott County

<table>
<thead>
<tr>
<th></th>
<th>2016 Q2</th>
<th>2016 Q3</th>
<th>2016 Q4</th>
<th>2017 Q1</th>
<th>2017 Q2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indiana</td>
<td>559.88</td>
<td>654.06</td>
<td>644.41</td>
<td>587.54</td>
<td>606.09</td>
</tr>
<tr>
<td>Scott</td>
<td>870.03</td>
<td>821.51</td>
<td>786.73</td>
<td>804.75</td>
<td>841.64</td>
</tr>
</tbody>
</table>

June 2017

<table>
<thead>
<tr>
<th></th>
<th>Indiana</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Prescriptions Dispensed</td>
<td>1,364,327</td>
<td>5,880</td>
<td></td>
</tr>
<tr>
<td>Doses Dispensed</td>
<td>89,840,249</td>
<td>394,857</td>
<td></td>
</tr>
</tbody>
</table>

2017 Quarter 2

<table>
<thead>
<tr>
<th></th>
<th>Indiana</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Prescriptions Dispensed</td>
<td>4,012,150</td>
<td>19,984</td>
<td></td>
</tr>
<tr>
<td>Doses Dispensed</td>
<td>264,302,884</td>
<td>1,351,655</td>
<td></td>
</tr>
</tbody>
</table>

Average Number of Controlled Substance Doses Dispensed per Prescription

<table>
<thead>
<tr>
<th></th>
<th>2017 Q1</th>
<th>2017 Q2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indiana</td>
<td>66.26</td>
<td>65.88</td>
</tr>
<tr>
<td>Scott</td>
<td>68.68</td>
<td>67.64</td>
</tr>
</tbody>
</table>

Average Controlled Substance Doses Dispensed Per Person, 2017 Quarter 2

- **Indiana**: 39.93 Doses
- **Scott**: 56.93 Doses

On average each person in Scott County received **56.93 doses of prescribed controlled substances** during 2017 quarter 2, which is higher than the **Indiana state average of 39.93 doses.**
2018 ISTCC & ITN Meetings

- *NEW* Location: Indiana Government Center – South, Conference Room B.
- Webcast still available.
- Time: 10:00 A.M. EST.
- Dates:
  - February 16
  - April 20
  - June 15
  - August 17
  - October 19
  - December 14

Email questions to: indianatrauma@isdh.in.gov
Child Passenger Safety Update
Booster Bashes for 2017:

• **14 completed events:**
  • Vanderburgh- April 6
  • Lawrence- April 7 and 14
  • Vigo- April 25
  • Cass- May 10, 11, and 19
  • Harrison- May 15
  • Clinton- June 3
  • Madison- June 7
  • Delaware- June 28 and 30
  • Vermillion- August 1
  • La Porte- August 2
  • Madison- August 14

• **12 events remaining:**
  • Madison- August 19
  • St. Joseph- September 4, 7, 28; October 2, 12, 19, 23, and 26
  • La Porte- September 23
  • Harrison- September (date TBD)
Booster Bash (continued):

- **Data:**
  - 715 booster seats have been handed out to communities and parents.
  - Demographical data is collected via Automotive Safety Program Check-up Form during each appointment.
  - Data on child passenger\booster seats usage is being gathered and calculated.
CPST Scholarship Reimbursement Program

• Data:
  – Data is being collected & evaluated from post evaluation surveys.

• 12 technicians have utilized program:
  – Expected to have 25 additional techs due to completed classes by end of September.
Safety Shower:

- Completed events:
  - Good Samaritan Trauma Services on May 9:
    - Pilot launch of program reached 25 new mothers
    - More than 60 people attended the event.
  - St. Vincent Evansville on August 15:
    - Reached 26 new mothers.

- Program included education on:
  - Safe sleep
  - Child passenger safety
  - Fire safety
  - Breastfeeding
  - WIC
  - Medicaid enrollment
  - Pet safety
Automotive Safety Program Zoo Clinic:

- Held on June 22 at Indianapolis Zoo:
  - Funds from ISDH were used to purchase free or reduced car seats for event.
  - Total number of inspections/seats distributed out:
    - Inspections: 151 English, 101 Spanish.
    - Seat Distributions: 127 English, 83 Spanish.
  - Total inspections were 252 with 210 seats given out.
Fall Prevention Update

Indiana State Department of Health
Stepping On:

- *Stepping On* is a high-level, evidence-based program proven to reduce falls and build confidence in older adults.
  - Developed in Australia originally:
    - WI developed an American version, yielding a 50% reduction in falls.
Stepping On (continued):

• Held August 1-3 at ISDH:
  – 4 trauma centers attended and will have 3-year licensure:
    • Community Hospital Anderson
    • St. Vincent Anderson
    • IU Health Bloomington
    • Memorial Hospital of South Bend
    • University of Indianapolis Center for Aging and Community
    • Indiana State Department of Health
Stepping On (continued):

- IU Health Methodist, IU Health Arnett, and Franciscan Health Crown Point are current license holders.
- ISDH will be the main licensure holder.
Contact Information:

Preston Harness, MPH, CPST
Injury Prevention Program Coordinator
Indiana State Department of Health
Division of Injury & Trauma Prevention

PHarness@isdh.IN.gov
(317) 232-3121

Email questions to: indianatrauma@isdh.in.gov
Problem Statement

- Data from EMRs must be keyed into ImageTrend manually
Health Information Hub

- Health Information Hub (HIH) value proposition
  - Patient demographics and clinical data flow into ImageTrend
  - Saves time by reducing keystrokes
  - Improve accuracy of data
  - Increased productivity
  - Reduce number of re-abstracted records

- [Trauma News - June 8th, 2015](#)
Health Information Hub

- Vendor Agnostic Message Broker
  - Epic
  - Cerner
  - Meditech
  - Allscripts
  - Ect.,
Health Information Hub - HL7 Interface
Health Information Hub

LIVE DEMO
Regional Updates
Regional updates

- District 1
- District 2
- District 3
- District 4
- District 5
- District 6
- District 7
- District 10

Email questions to: indianatrauma@isdh.in.gov
Subcommittee Update
Designation Subcommittee

Dr. Lewis Jacobson, Trauma Medical Director
St. Vincent Indianapolis Hospital

Email questions to: indianatrauma@isdh.in.gov
Trauma Designation
Subcommittee Update

August 14, 2017
Lewis Jacobson, MD, FACS
Committee Chair

Dr. Ben Zarzaur, Lisa Hollister, Dr. Scott Thomas, Dr. Stephanie Savage, Dr. Emily Fitz, Jennifer Konger, Jennifer Mullen, Judi Holsinger, Kelly Blanton, Missy Hockaday, Wendy St. John, Katie Hokanson, Ramzi Nimry
ISDH Trauma Designation
Subcommittee Meeting Agenda
08/17/17

1. One Year Reviews
   a. Community Health Network Anderson
Community Health Network Anderson

- Located: Anderson, Indiana
- Seeking: Level III adult trauma center status
- The one year review was reviewed and no deficiencies were discovered by the subcommittee
- Consultation Visit: May 2016
- Verification visit scheduled for: July 11 & 12, 2017
<table>
<thead>
<tr>
<th>Facility Name</th>
<th>City</th>
<th>Level</th>
<th>Adult / Pediatric</th>
<th>“In the Process” Date*</th>
<th>1 Year Review Date**</th>
<th>ACS Consultation Visit Date</th>
<th>ACS Verification Visit Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Hospital Anderson</td>
<td>Anderson</td>
<td>III</td>
<td>Adult</td>
<td>06/20/2014</td>
<td>08/21/2015</td>
<td>May 2016</td>
<td>07/11-07/12, 2017</td>
</tr>
<tr>
<td>Reid Health</td>
<td>Richmond</td>
<td>III</td>
<td>Adult</td>
<td>12/18/2015</td>
<td>February 2017</td>
<td>02/02-02/03, 2016</td>
<td>06/13-06/14, 2017</td>
</tr>
<tr>
<td>Terre Haute Regional Hospital</td>
<td>Terre Haute</td>
<td>II</td>
<td>Adult</td>
<td>12/18/2015</td>
<td>February 2017</td>
<td>09/08-09/09, 2016</td>
<td>08/29-08/30, 2017</td>
</tr>
<tr>
<td>Union Hospital</td>
<td>Terre Haute</td>
<td>III</td>
<td>Adult</td>
<td>02/26/2016</td>
<td>April 2017</td>
<td>09/01-09/02, 2016</td>
<td>06/29-06/30, 2017</td>
</tr>
<tr>
<td>Memorial Hospital &amp; Health Care Center</td>
<td>Jasper</td>
<td>III</td>
<td>Adult</td>
<td>08/24/2016</td>
<td>October 2017</td>
<td>05/16-05/17, 2017</td>
<td>May 2018</td>
</tr>
</tbody>
</table>

*Date the EMS Commission granted the facility “In the process” status
**Date the Indiana State Trauma Care Committee (ISTCC) reviewed the 1 year review documents. This date is based on the first ISTCC meeting after the 1 year date.

Facility is part the two year mark for their “In the Process” status.

Updated on: Thursday, August 17, 2017
Subcommittee Update
Performance Improvement Subcommittee

Dr. Stephanie Savage,  *Trauma Medical Director*
IU Health Methodist

Email questions to: [indianatrauma@isdh.in.gov](mailto:indianatrauma@isdh.in.gov)
ISDH Performance Improvement Subcommittee May 2017 update

Committee Members: **Chair** Stephanie Savage, MD, Amanda Rardon, Amelia Shouse, Andy VanZee, Angela Cox-Booe, Annette Chard, Bekah Dillon, Brittanie Fell, Carrie Malone, Christy Claborn, Chuck Stein, Dawn Daniels, Dusten Roe, Emily Grooms, Jennifer Homan, Jennifer Mullen, Jodi Hackworth, Kelli Vannatter, Kelly Mills, Kristi Croddy, Latasha Taylor, Lesley Lopossa, Lindsey Williams, Lisa Hollister, Lynne Bunch, Marie Stewart, Mark Rohlfing, Mary Schober, Merry Addison, Michele Jolly, Michelle Moore, Michelle Ritchey, Missy Hockaday, Olivia Roloff, Peter Jenkins, MD, Regina Nuseibeh, Rexene Slayton, Sarah Quaglio, Spencer Grover, Tammy Robinson, Tracy Spitzer, Wendy St. John

**ISDH Staff:** Katie Hokanson, Ramzi Nimry, Camry Hess
Hospital Reporting Indiana Trauma Registry — overall excellent reporting — we will continue to try and capture smaller facilities
PI Update – May 2017

ED Length of Stay – Time to Orders Written

*ED LOS was calculated using ED/Acute Care Discharge (Orders Written) for July 2016 and later.
PI Update – May 2017

ED Length of Stay – Time to ED Departure

Percent of Patients Transferred from ED at non-verified Trauma Center Hospitals in <2 Hours

*ED LOS was calculated using ED/Acute Care Discharge (Physical Exit) for July 2016 and later.
PI Update – May 2017

Transfer Delays
- Few centers are actually reporting data on transfer delays

- Will start focusing on the need to report in district meetings

![Graph showing transfer delay distribution]
Transfer Delays

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMS Issue</td>
<td>23%</td>
</tr>
<tr>
<td>Null</td>
<td>21%</td>
</tr>
<tr>
<td>Other</td>
<td>23%</td>
</tr>
<tr>
<td>Receiving Hospital Issue</td>
<td>20%</td>
</tr>
<tr>
<td>Referring Hospital Issue</td>
<td>9%</td>
</tr>
<tr>
<td>Referring Hospital Radiology</td>
<td>1%</td>
</tr>
<tr>
<td>Physician Decision Making</td>
<td>3%</td>
</tr>
<tr>
<td>Weather or Natural Factors</td>
<td>1%</td>
</tr>
<tr>
<td>Blank</td>
<td>0%</td>
</tr>
</tbody>
</table>
PI Update – May 2017

Trauma Registry Quiz
- Participation poor recently (29% in April)
- Requesting hospitals to stress importance of quiz
  - Standardize codes/ensure data quality
- Registrars asked to forward real cases for discussion in recurring quizzes
- Survey to determine how quiz may be more helpful/identify barriers to participation
PI Update – May 2017

Indiana Trauma Transfer Guidelines

- Additional changes made at most recent PI meeting

- Will forward for committee review and discussion
Next Meetings

July 11 from 10:00-11:00am EST at the ISDH (Larkin Conference Room or via conference call line). **CANCELED**

September 12 from 10:00-11:00am EST at the ISDH (Larkin Conference Room or via conference call line).

November 14 from 10:00-11:00am EST at the ISDH (Larkin Conference Room or via conference call line).
Trauma Recovery Model

Dr. Ben Zarzaur, Trauma Medical Director
Eskenazi Health

Email questions to: indianatrauma@isdh.in.gov
Injury Aftermath:
Its not just a broken leg

Ben Zarzaur, MD, MPH
Associate Professor of Surgery
Trauma Medical Director, Eskenazi Health
Director, Center for Outcomes Research in Surgery
Indiana University School of Medicine
No Disclosures
<table>
<thead>
<tr>
<th>Characteristic</th>
<th>1983 to 1992</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total injuries, No.</td>
<td>24,340</td>
</tr>
<tr>
<td>Mean age (SD), years</td>
<td>27.9 (13.5)</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
</tr>
<tr>
<td>Male, %</td>
<td>50</td>
</tr>
<tr>
<td>Female, %</td>
<td>50</td>
</tr>
<tr>
<td>Ability</td>
<td></td>
</tr>
<tr>
<td>Beginner, %</td>
<td>19</td>
</tr>
<tr>
<td>Low intermediate, %</td>
<td>13</td>
</tr>
<tr>
<td>Intermediate, %</td>
<td>43</td>
</tr>
<tr>
<td>Advanced, %</td>
<td>18</td>
</tr>
<tr>
<td>Expert, %</td>
<td>4</td>
</tr>
<tr>
<td>Racer, %</td>
<td>2</td>
</tr>
</tbody>
</table>

SD = standard deviation

Davidson TM, Laliotis AT WMJ 1996
The Injury
<table>
<thead>
<tr>
<th>Outcome</th>
<th>Overall % (n)</th>
<th>ORIF % (n)</th>
<th>EF ± Limited IF % (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient reported a lot of difficulty...†</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>With ankle stiffness</td>
<td>35.0 (28)</td>
<td>31.0 (13)</td>
<td>39.5 (15)</td>
</tr>
<tr>
<td>With ankle swelling</td>
<td>28.8 (23)</td>
<td>28.6 (12)</td>
<td>29.0 (11)</td>
</tr>
<tr>
<td>With ankle pain</td>
<td>32.5 (26)</td>
<td>33.3 (14)</td>
<td>31.6 (12)</td>
</tr>
<tr>
<td>Wearing different shoes‡</td>
<td>42.5 (34)</td>
<td>54.8 (23)</td>
<td>29.0 (11)</td>
</tr>
<tr>
<td>Running one block</td>
<td>72.5 (58)</td>
<td>66.7 (28)</td>
<td>79.0 (30)</td>
</tr>
<tr>
<td>Climbing a ladder</td>
<td>35.0 (28)</td>
<td>33.3 (14)</td>
<td>36.8 (14)</td>
</tr>
<tr>
<td>Doing usual recreational activities</td>
<td>43.8 (35)</td>
<td>38.1 (16)</td>
<td>50.0 (19)</td>
</tr>
</tbody>
</table>
Aftermath
Physical

- **Non-weight bearing**
  - Must use crutches
  - Can not pick up and walk with my children
  - Can not stand in the shower
  - Stairs become a real danger/hassle
  - Can not drive a manual transmission vehicle
  - Can not operate

- **Pain**
  - Initially not bad
  - Post op nearly unbearable when standing
    - Kidney stone worse

- **Increased Metabolism**
  - Lost weight
  - Always hungry
    - Problem when you are non-weight bearing unless you live in the kitchen
Resources
Resources

• Financial
  – Copays
  – Hospital bills
  – Emergency room bills
    • Out of network
  – Transportation
  – Lost income
  – Increased child care costs
Isolating
But, I knew all of this...
The Study of Change

Health trajectories represent the patterns of health and attempt to describe the dynamic course of health and illness.
Quality of Life and Functional Ability Scale

Pre-Injury Factors
- Individual Level
  - Demographic
    - Age
    - Gender
    - Race
  - Health
    - Physical
    - Mental
  - Social
    - Marital Status
    - Perceived support
- Socioeconomic Status
  - Income
  - Educational Attainment
  - Occupational Class
  - Wealth
  - Relative Social Rank
- Neighborhood Level
  - Demographic
    - Age
    - Gender
    - Race
  - Health
    - Physical
    - Mental
  - Social
  - Socioeconomic Status
    - Income
    - Educational Attainment
    - Occupational Class
    - Wealth
    - Relative Social Rank

Post-Injury Major Life Events
- Economic
- Social
- Environmental
- Physical Health (Non-injury related)
- Mental Health

Post-Injury Treatment
- Acute Medical Care
  - Inpatient
  - Outpatient
- Rehabilitation
  - Inpatient
  - Outpatient
- Mental Health Treatment
  - Post-Traumatic Stress Disorder
  - Drug/Alcohol
  - Depression
- Future Interventions

Phase of Recovery
- Pre-Injury
- Injury
- Acute
- Recovery
- Rehabilitation
- Stable

Trajectory of Quality of Life and Functional Ability
KEEP CALM AND CHECK YOUR ASSUMPTIONS
What about patients with moderate to severe non-neurologic injury treated at trauma centers?
Methods

• 500 Adults
  – injury severity score > 10, but without traumatic brain injury or spinal cord injury were enrolled in the study.
• A baseline quality of life survey (SF-36) was administered at the time of admission and repeated at 1, 2, 4 and 12 months after injury
• Group based trajectory modeling was used (GBTM) to identify quality of life trajectories
  – Physical Component Score (PCS)
  – Mental Component Score (MCS)
Brief Digression
One Pattern

Time since radiation therapy

Prostate-specific antigen level

Time since radiation therapy
Two Patterns
RESULTS: PCS TRAJECTORIES

- PCS had 3 distinct trajectories.
  - **Trajectory 1** (10.3%) is characterized by a lower baseline PCS, followed by no improvement over time.
  - **Trajectory 2** (65.6%) has a drastic decline in PCS 1 month after injury, but shows slow consistent improvement over time.
  - **Trajectory 3** (24.1%) also has a sharp decline in PCS but has a rapid recovery and reaches near-baseline levels of health by month 12.
RESULTS: PCS TRAJECTORIES

<table>
<thead>
<tr>
<th>PCS Trajectory</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, mean (SD)</td>
<td>50 (13)</td>
<td>38 (14)</td>
<td>31 (12)</td>
</tr>
<tr>
<td>Female (%)</td>
<td>42.0</td>
<td>34.9</td>
<td>33.0</td>
</tr>
<tr>
<td>Race/Ethnicity (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>66.0</td>
<td>51.6</td>
<td>39.8</td>
</tr>
<tr>
<td>Black</td>
<td>34.0</td>
<td>47.8</td>
<td>58.3</td>
</tr>
<tr>
<td>Hispanic</td>
<td>0.0</td>
<td>0.0</td>
<td>1.9</td>
</tr>
<tr>
<td>Blunt (%)</td>
<td>86.0</td>
<td>76.4</td>
<td>70.9</td>
</tr>
<tr>
<td>ISS, mean (SD)</td>
<td>21 (12)</td>
<td>21 (10)</td>
<td>19 (10)</td>
</tr>
</tbody>
</table>
RESULTS: MCS TRAJECTORIES

- MCS had 5 distinct trajectories.
  - **Trajectory 1** (9.5%), has a low MCS at baseline and continues to have low scores throughout the rest of the study.
  - **Trajectory 2** (14.4%) has a large decrease in MCS post-injury and does not recover over the next twelve months.
  - **Trajectory 3** (22.7%) has an initial decrease in MCS early after injury, followed by continuous recovery.
  - **Trajectory 4** (19.1%) has a steady decline in MCS across most of the study.
  - **Trajectory 5** (34.3%) has consistently high MCS across all phases of recovery.
RESULTS: MCS TRAJECTORIES

<table>
<thead>
<tr>
<th>SF-36 Mental Health Composite Score Trajectories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MCS Trajectories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, mean (SD)</td>
</tr>
<tr>
<td>Female (%)</td>
</tr>
<tr>
<td>Race/Ethnicity (%)</td>
</tr>
<tr>
<td>White</td>
</tr>
<tr>
<td>Black</td>
</tr>
<tr>
<td>Hispanic</td>
</tr>
<tr>
<td>Blunt (%)</td>
</tr>
<tr>
<td>ISS, mean (SD)</td>
</tr>
</tbody>
</table>
Implications

• Not all patients experience the same pattern of recovery

• Certain endpoints may be more relevant for specific subpopulations of patients
  – Mental health may be more affected over the long-term than physical health
  – Functioning may decline more over time rather than improve (elderly)
  – Patients may have relapses of functional difficulties
    • % of pain free days rather than absolute pain level may be more important
    • Difficult to assess with static, fixed-interval measurements
Is it possible to modify the post injury outcome trajectory?
WHAT CAN I DO?!!
Quality of Life and Functional Ability Scale

Post-Injury Treatment
• Acute Medical Care
  • Inpatient
  • Outpatient
• Rehabilitation
  • Inpatient
  • Outpatient
• Mental Health Treatment
  • Post-Traumatic Stress Disorder
  • Drug/Alcohol
  • Depression
• Future Interventions
Collaborative Care

• GRACE
  – Target population: older, frail, low income
    Interdisciplinary team interacted with primary care physician
  – Intervention Group
    • Improvement in quality of life
    • Lower ED and hospital utilization rates

• PREVENT
  – Target population: Dementia
  – Less depression
  – Less anxiety
  – Caregivers and participants
Vision

To change hundreds of thousands of lives at a time.
What do we need to do change hundreds of thousands of lives at time?
Innovative and Scalable Healthcare Solutions
Significance

• Millions of injured people every year
  – “Classic” trauma
  – Elective surgery
• Huge potential impact
  – Overall quality of life
  – Healthcare utilization
Gap

Does collaborative care work in a dynamic recovery situation?
Aims

• Evaluate the ability of the TMH intervention to improve the physical recovery of the older injured patient.

• Evaluate the ability of the TMH intervention to improve the psychological recovery of the older injured patient.

• Evaluate the ability of the TMH intervention to reduce acute health care utilization of the older injured patient.
Inclusion/Exclusion Criteria

Inclusion

• Adult age 50 years and older
• Admitted to Methodist or Eskenazi Hospitals
• English speaking
• Able to provide consent or have LAR to provide consent
• Access to a telephone
• ISS of 10 or greater

Exclusion

• Self-reported diagnosis of cancer with short life expectancy
• History of dementing illness or other neurodegenerative disease
• Significant traumatic brain injury (Head AIS>2, or GCS<13 at time of enrollment)
• Spinal cord injury with persistent neurological deficit at enrollment
• Pregnant women
• Reside more than 100 miles from Indianapolis
• Incarcerated at time of enrollment
• Develop a stroke as a new event during hospitalization
Recovery

Adjust Collaborative Care Protocols

Bi-Weekly Contact

HABC-M and Population Health Software
Conclusion

• Not all patients will follow the same recovery trajectory
  – After trauma or after elective surgery

• Multimodal interventions with
  – Sensing
  – Feedback loops
  – Collaborative care models

• Potential to be scalable
  – Standard tools, interventions, software
Crisis Text Lines

Michael Dunn, Crisis & Suicide Line Supervisor
Families First

Email questions to: indianatrauma@isdh.in.gov
Crisis Text Lines
Providing Immediate Emotional Support to Teenagers or Anyone in Crisis or Experiencing Suicide Thoughts.
Three 24/7 Crisis Text Lines

o Community Health Network
  • Text HELPNOW to 20121

o Families First’s Crisis & Suicide Intervention Service
  • Text CSIS to 839863

o IU Health
  • Text SAFE2TALK to 85511
These Free Crisis Text Lines Are Available to Anyone in Crisis and to Help Reduce and Prevent Suicide.

- Trained professionals and volunteer Clinical Associates (CAs) from the Crisis and Suicide Intervention Service (CSIS) of Families First Indiana, Inc. are available 24/7 to respond to texts.

- Accredited by the American Association of Suicidology

- Member of the National Suicide Prevention Lifeline Network
CSIS Volunteer CA Staff Training

- Undergo an extensive interview and assessment
- Submit to a background check
- Complete 40 hours of classroom instruction including a 15-hour Applied Suicide Intervention Skills Training (ASIST) workshop
- Experience on-the-job preparation
- Receive quarterly training updates
- Quality Assurance Monitoring
Data Collected

- Phone number
- School
- Address
- City
- State
- First name
- Gender identity
  - Female
  - Male
  - Unknown
- Age
- Zip code
- Issue 1
- Issue 2
- Issue 3
- Type of interaction
  - No response
  - Obscene visitor
  - Opted-out
  - Prank visitor
- Visitor served in military
  - No
  - Yes
Data Collected

• How learned of text line
  ▪ Billboard
  ▪ Brochure/Poster
  ▪ Connect to Help 211
  ▪ Family
  ▪ Friend
  ▪ Internet
  ▪ Other
  ▪ Phone book
  ▪ Physician/Therapist
  ▪ Police/Law Enforcement
  ▪ School
  ▪ TV/Radio
  ▪ Unknown
  ▪ Veterans crisis line
  ▪ Visited previously
Data Collected

• Visitor Marital Status
  - Divorced
  - Married
  - Separated
  - Significant other
  - Single
  - Unknown
  - Widowed/Widower

• Current professional mental health help
  - No
  - Unknown
  - Yes

• Specify professional mental health help being received

• Visitor household
  - Couple-no kid(s) in home
  - Couple-with kid(s) in home
  - Extended-two family home
  - Non relative
  - Single-no kid(s) in home
  - Single parent home
  - Single-with kid(s) in home
  - Unknown
Data Collected

- Did visitor express that he/she felt reassurance as a result of visit?
  - No
  - Yes

- Level of service: information/support
  - Support accepted
  - Support rejected

- Level of service: Referral
  - Referral(s) accepted
  - Referral(s) rejected

- Level of service: active rescue: 911
  - No
  - Yes

- Level of service: advocacy/assistance (APS, CPS, etc)
  - No
  - Yes
Data Collected
Problem/Crisis

- Substance abuse
  - Alcohol
  - Cocaine
  - Crack
  - Heroin
  - Pills or Rx medications
  - Gambling
  - Other Addiction
  - Social media/gaming/texting
  - Sexual addiction

- Economic
  - General financial
  - Homeless/shelter
  - Tenant/Landlord complaint
  - Utilities
  - Holliday assistance
  - Unemployment
  - Other employment issue
  - Lack of insurance
Data Collected
Problem/Crisis

- Mental Health
  - Grief/Bereavement
  - Depressed
  - Anxiety
  - Suicidal
  - Homicidal
  - Incorrigible youth

- Counseling/Support group search
- Medication question/supply
- Self-injury with no intent to die
- Eating disorder
- Loneliness
- Anger control problem
- Chronic mental illness
Data Collected
Problem/Crisis

- Social/Interpersonal
  - Personal adjustment
  - Love/Romance
  - Custody/Visitation
  - Legal problem/issue
  - Government/legal information
  - Divorce/Breakup

- Human trafficking
- Verbal/emotional abuse
- Bullied
- Sexual identity
- Sexual activity
- Parenting issue
Data Collected
Problem/Crisis

• Victimization
  ▪ Adult abuse/neglect
  ▪ Child abuse/neglect
  ▪ Crime victim
  ▪ Domestic violence
  ▪ Natural disaster victim
  ▪ Harassment/Stalking
  ▪ Rape survivor/sexual assault
  ▪ Other
  ▪ Prior childhood abuse

• Physical Health
  ▪ Acute illness/disability
  ▪ Chronic illness/disability
  ▪ Pregnancy
  ▪ Abortion
  ▪ Family Planning
  ▪ STD testing
  ▪ Insomnia
What Happens When CSIS is Texted to 839863?

Visitor CSIS

CSIS Hi, thanks for texting the Crisis Text line. One of us will respond shortly. To speak with a counselor immediately all 800-273-8255 (To opt out text STOP) 19:34

CSIS For information on your privacy rights please go to: http://www.preventionpaystext.com/policies/ 19:34

CSIS So that we can help you better please text your first name, gender, age, zip code, how you found out about us, and (for students) what school you attend. 19:34

Safe2Talk  Hi Aubrey. My name's Jordan. Thanks for trusting me. What may I help you with tonight? 19:38

Safe2Talk  Are there Aubrey? 19:43

Visitor  Hi Jordan. I've been depressed for 3 months now and yesterday I almost died. I just feel completely worthless and alone 19:45
What Happens When CSIS is Texted to 839863?

CSIS  I’m sorry you’ve been struggling Aubrey. What were the circumstances regarding your almost dying yesterday? 19:47

Visitor I almost fell out of a barn door on the third floor. 19:48

CSIS  On accident? 19:48

Visitor Yes. I tripped because of my cat. 19:49

CSIS  So you're both okay now? 19:49
What Happens When CSIS is Texted to 839863?

Visitor Yes 19:50

CSIS So feeling depressed now for 3 months. What happened 3 months ago that may have caused these feelings? 19:51

Visitor Um well there was this boy i liked and then my friend went out with him but i dont think thats the reason. I honestly dont know. 19:53

CSIS Please tell me why you feel you are depressed Aubrey. 19:54
What Happens When CSIS is Texted to 839863?

Visitor I honestly don't know. I hasn't been as bad lately. 19:55

CSIS You mentioned you feel completely worthless and alone. Who else knows you’re feeling this way? 19:56

Visitor No one. 19:58

CSIS Are you in a lot of emotional pain? 19:59

Visitor I haven't been lately 19:59
What Happens When CSIS is Texted to 839863?

CSIS  When it has been worse, has the mental anguish been so severe you think about ending your life? 20:00

Visitor Yes 20:01

CSIS  And when you think about taking your life, what method have you thought about? 20:02

Visitor Theres been many. 20:03

CSIS  Would you mind sharing them with me please? 20:03
What Happens When CSIS is Texted to 839863?

Visitor Hanging. Drowning. Jumping off of something high. theres more. 20:05

CSIS Thanks. Have you ever attempted to kill yourself? If so, how recently? 20:06

Visitor I have. I dont remember when. 20:08

CSIS What kind of help did you receive? Were you hospitalized or what happened? 20:09
What Happens When CSIS is Texted to 839863?

Visitor: I didn’t get any help because no one knew 20:10

CSIS: What kind of help do you feel you need? 20:11

Visitor: I really just need someone to rant too and tell everything 20:12

CSIS: Is that why you’re visiting tonight? 20:13

Visitor: Yeah kinda. And I saw the poster and thought I need to find my own help. My grandma made a remark that I’m messed up and need therapy because I told her I was reading a book about suicide. 20:15
What Happens When CSIS is Texted to 839863?

CSIS  Who is an adult you trust and feel won't judge you? 20:16
Visitor  No one. I hate everyone pretty much 20:17
CSIS  Why do you suppose that is? 20:18
Visitor  Idk. 20:18
CSIS  Do you hate yourself too? 20:19
Visitor  Sometimes. 20:19
CSIS  Well please go ahead and rant and tell me everything since you don't have anyone you feel you can share your feelings with. That's why I'm here. 20:22
What Happens When CSIS is Texted to 839863?

Visitor Please hold on im at a concert lol 20:23

CSIS I’m sorry Aubrey. Help me understand...I thought you didn't have any friends and you felt all alone. 20:25

Visitor I do. Im with my family 20:25

CSIS How would you like me to help you? 20:26

Visitor What do you mean? 20:39

CSIS What would you like to have happen tonight as a result of your visit? 20:42
What Happens When CSIS is Texted to 839863?

CSIS Are you still there Aubrey? If I don’t hear from you soon I may have to disconnect so that i can serve other clients 20:47

Visitor I would like to have a better outlook on my life i guess. Sorry 20:49

CSIS I can't provide you that. Only you have the power to make things happen by opening up to a trusted adult who can assist you in feeling better about yourself. 20:51

Visitor I know 20:52
What Happens When Safe2Talk is Texted to 85511?

CSIS Why not take the anonymous & confidential mental health screening at 20:52

CSIS www/mhascreening.org 20:52

CSIS Then print out the suggestions and use them as the basis to talk to a trusted adult about the way you are feeling.20:52

Visitor I'll try it 20:52

CSIS It's a first step for getting help for yourself. 20:53

Visitor I know 20:53
What Happens When Safe2Talk is Texted to 85511?

CSIS Thanks Aubrey. Can I turn you loose and know and be assured that you won’t do any harm to yourself in any way tonight? 20:54

Visitor Yes. 20:55

CSIS Aubrey please take good care of yourself because you are WORTH it. I'm glad we met and I wish you the best. Goodnight. 20:56

Visitor Me too. Good night 20:56
Questions?
Stigma – About the term “Suicide”

• For reasons we assume are related to the stigma and taboo surrounding suicide, the word “suicide” is subject to many qualifications that typically suggest both intent and outcome:

  - Die by suicide
  - Died by suicide
  - Attempt suicide
  - Attempted suicide
  - Suicidal behavior
  - Para-suicidal behavior (as in, like suicide but not quite)
  - Sometimes, self-harm behaviors done without any apparent thoughts of suicide.
Stigma – About the term “Suicide”

• We in the suicide prevention community are passionate about using language that does not stigmatize those who die by suicide or attempt suicide or stigmatize their loved ones.

• Unfortunately, this language is different from the terms that ordinary folks commonly use. Suicide is used as an action word in this workshop and various verb forms are used. For example
  - To suicide
  - Suiciding
  - Suicided

There are no such words—but perhaps there ought to be.
Stigma – About the term “Suicide”

• The first problem with the casual use of these terms is that their accuracy is very hard to determine. Did a person who suicided:

  ❑ Want to **die**?

  ❑ Want to **avoid** life?

  ❑ Want to **attempt** suicide?

  ❑ Or, want to **show** that they were in a lot of pain by **acting** as if they were suiciding?

• With these qualifications being added to suicide, an assumption is made about intent but that assumption may never be noticed.

  ❑ The use of suicide as a verb, by itself and without qualifications, at least makes the question of intent obvious.
Stigma – About the term “Suicide”

• The second problem with traditional terms is that they perpetuate stigma and taboo. Consider the word ‘murder.’ One might think ‘murder’ has equally strong stigma and taboo associated with it. However murder, murdering, and murdered are words. Murdering is also a very complex behavior with many different and unusual motivations. Rather than try to resolve them all with qualifications, it is acceptable to just say “murder” and figure out what might be involved as best one can by the context.

We propose the same for “suicide:” just use the word and figure out what might be involved as best one can by the context or surrounding situation.
Stigma – About the term “Suicide”

- It’s not at all uncommon to hear someone say or read in a news account that someone “commited” suicide. This is a pervasive term. Yet the word “commit” often has negative connotations. Think of what else the word “commit” is used for. Somebody
  - Commited murder
  - Commited rape
  - Commited robbery
  - Commited a sin

- What is the common denominator? The word “commited” in combination with a noun, often signifies a crime or another act of wrongdoing, such as
  - Commited adultery.
Stigma – About the term “Suicide”

• A person who survives suicide or dies by suicide is experiencing
  - Deep emotional pain
  - Hopelessness
  - Mental illness
  - All of the above

• Such pain does not make someone a criminal. Just as it does not make her/him
  - Weak
  - Cowardly
  - Selfish
  - Crazy
  - Attention seeking

• For all of these reasons, we will use the term “died by suicide,” a neutral, factual term.
About Families First

**OUR MISSION**
To create healthier communities by strengthening families and individuals during life challenges and changes.

**OUR VISION**
A community of healthy, capable and loving families.

**OUR PASSION**
Families First believes that strong families are the foundation of a healthy, productive society.
BECAUSE OF FAMILIES FIRST, COUNTLESS NUMBERS OF

- marriages have been salvaged
- children have been spared the loss of their families and entry into foster care
- older and challenged adults have remained independent in their own homes rather than in nursing homes
- violent and/or chemically dependent adults have gotten the treatment they needed to live safely and productively within their families and community
- people have become better parents, spouses, daughters, sons, and employees
- families have reconciled or been reunified
- crises have been deescalated
- deaths by suicide have been prevented
Families First

Mike Dunn
Crisis & Suicide Line Supervisor

michaeld@familiesfirstindiana.org

www.familiesfirstindiana.org

“There is no health without mental health”
American College of Surgeons - Committee on Trauma Update

Dr. Scott Thomas, Trauma Medical Director
Memorial Hospital of South Bend

Email questions to: indianatrauma@isdh.in.gov
Quarter 1 Trauma Registry Data Report

Camry Hess, Database Analyst
Indiana State Department of Health

Email questions to: indianatrauma@isdh.in.gov
District 1
Community Hospital – Munster
Franciscan Health – Crown Point
Franciscan Health – Dyer
Franciscan Health - Hammond
Franciscan Health – Michigan City
Franciscan Health - Rensselaer
IU Health – La Porte
Methodist Hospital Northlake
Methodist Hospital Southlake
Portage Hospital

Porter Regional Hospital (Valparaiso)
St Catherine Hospital (East Chicago)
St. Mary Medical Center (Hobart)
Valparaiso Medical Center

Email questions to: indianatrauma@isdh.in.gov
District 2
Community Hospital of Bremen
Elkhart General Hospital
IU Health – Starke Hospital
Kosciusko Community Hospital
Memorial Hospital South Bend
Pulaski Memorial Hospital
St. Joseph Regional Medical Center (Mishawaka)
St. Joseph Regional Medical Center (Plymouth)

Hospitals reporting to the Indiana Trauma Registry - Quarter 1 2017

Email questions to: indianatrauma@isdh.in.gov
Hospitals reporting to the Indiana Trauma Registry - Quarter 1 2017

**District 3**
- Bluffton Regional Medical Center
- Cameron Memorial Community Hospital
- DeKalb Health
- **Dukes Memorial Hospital**
- Dupont Hospital
- Lutheran Hospital of Indiana
- Parkview Huntington Hospital
- Parkview LaGrange Hospital
- Parkview Noble Hospital
- Parkview Randallia
- Parkview Regional Medical Center
- Parkview Wabash Hospital
- Parkview Whitley Hospital

**District 4**
- Franciscan Health - Crawfordsville
- Franciscan Health – Lafayette East
- IU Health – Arnett Hospital
- **IU Health – Frankfort Hospital**
- IU Health – White Memorial
- Memorial Hospital (Logansport)
- St. Vincent Williamsport Hospital

*Email questions to: indianatrauma@isdh.in.gov*
### Hospitals reporting to the Indiana Trauma Registry - Quarter 1 2017

**District 5**

| Community East Health Network Community Hospital |
| Community North Health Network Community Hospital |
| Community South Health Network Community Hospital |
| Eskenazi Health |
| Franciscan Health – Indianapolis |
| Franciscan Health – Mooresville |
| Hancock Regional Hospital |
| Hendricks Regional Health |
| IU Health – Methodist Hospital |
| IU Health – North Hospital |
| IU Health – Riley for Children |
| IU Health - Saxony Hospital |
| IU Health – West Hospital |
| Johnson Memorial Hospital |
| Peyton Manning Children’s Hospital at St Vincent |
| Riverview Hospital |
| St. Vincent Fishers Hospital |
| St. Vincent Hospital and Health Services Indianapolis |
| Witham Health Services |
| Witham Health Services at Anson |

Email questions to: [indianatrauma@isdh.in.gov](mailto:indianatrauma@isdh.in.gov)
Hospitals reporting to the Indiana Trauma Registry - Quarter 1 2017

District 6
Community Hospital of Anderson & Madison Co.
Community Howard Regional Health
Henry County Memorial Hospital
IU Health – Ball Memorial Hospital
IU Health – Blackford Hospital
IU Health – Tipton Hospital
Jay County Hospital

Marion General Hospital
Reid Hospital and Health Care Services
St. Vincent Anderson Regional Hospital
St. Vincent Kokomo
St. Vincent Mercy Hospital

Email questions to: indianatrauma@isdh.in.gov
Hospitals reporting to the Indiana Trauma Registry - Quarter 1 2017

**District 7**
Greene County General Hospital
Putnam County Hospital
St. Vincent Clay Hospital
Sullivan County Community Hospital
Terre Haute Regional Hospital
Union Hospital (Terre Haute)
Union Hospital Clinton

Email questions to: indianatrauma@isdh.in.gov
Hospitals reporting to the Indiana Trauma Registry - Quarter 1 2017

District 8
Columbus Regional Hospital
IU Health – Bedford Hospital
IU Health – Bloomington Hospital
IU Health – Paoli Hospital
Monroe Hospital
Schneck Medical Center
St. Vincent Dunn Hospital
St. Vincent Salem Hospital

District 9
Baptist Health Floyd
Clark Memorial Hospital
Dearborn County Hospital
Decatur County Memorial Hospital
King’s Daughters’ Health
Margaret Mary Community Hospital
Scott County Memorial Hospital

Email questions to: indianatrauma@isdh.in.gov
Hospitals reporting to the Indiana Trauma Registry - Quarter 1 2017

**District 10**
- Daviess Community Hospital
- Deaconess Hospital
- Deaconess Gateway Hospital
- Gibson General
- Good Samaritan Hospital
- Memorial Hospital & Health Care Center
- Perry County Memorial Hospital
- St. Vincent Evansville
- St. Vincent Warrick

Email questions to: indianatrauma@isdh.in.gov
Summary of Hospitals Reporting Status - Q1 2017

New to Reporting / Started Reporting Again

- Community Hospital of Anderson & Madison Co.
- Franciscan Health Rensselaer
- Hancock Regional Hospital
- IU Health Frankfort Hospital
- IU Health Tipton Hospital
- Putnam County Hospital
- St. Vincent Evansville
- Terre Haute Regional Hospital
- Woodlawn Hospital

Email questions to: indianatrauma@isdh.in.gov
Summary of Hospitals Reporting Status- Q1 2017

Did not Report

- Dearborn County Hospital
- Decatur County Memorial Hospital
- Dukes Memorial Hospital
- Elkhart General Hospital
- Franciscan Health – Crown Point
- Franciscan Health – Dyer
- Franciscan Health – Hammond
- Franciscan Health – Indianapolis
- IU Health – La Porte
- IU Health – Starke Hospital
- Perry County Memorial Hospital
- Pulaski Memorial Hospital
- Riverview Hospital
- St. Mary Medical Center (Hobart)
- St. Vincent Fishers Hospital
- Sullivan County Community Hospital
- Valparaiso Medical Center

Email questions to: indianatrauma@isdh.in.gov
Quarter 1 2017 Statewide Report

- 7,805 incidents
- January 1 2017 – March 31, 2017
- 92 total hospitals reporting
  - 10 Level I and II Trauma Centers
  - 10 Level III Trauma Centers
  - 72 Non-Trauma Hospitals

Indiana State Department of Health

Email questions to: indianatrauma@isdh.in.gov
ED Disposition / Length of Stay - Page 2

ED Disposition by Percentage

ED Length of Stay (Hours)

Email questions to: indianatrauma@isdh.in.gov
## ED LOS > 12 Hours, N=48

<table>
<thead>
<tr>
<th>Facilities</th>
<th>Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Level I and II</td>
<td>17 North; 16 Central; 9 South; 6 Unknown/</td>
</tr>
<tr>
<td>46 Non-trauma Centers</td>
<td>Out of State</td>
</tr>
<tr>
<td>Average Distance from</td>
<td>ISS</td>
</tr>
<tr>
<td>Scene to Facility</td>
<td>25 (1-8 cat); 16 (9-15 cat); 7 (No ISS)</td>
</tr>
<tr>
<td>12.7 Miles</td>
<td>GCS Motor</td>
</tr>
<tr>
<td>Transport Type</td>
<td>2 (1 cat); 1 (5 cat); 34 (6 cat); 11 (unknown)</td>
</tr>
<tr>
<td>29 Ambulance; 17 Private</td>
<td>RTS—Systolic</td>
</tr>
<tr>
<td>Vehicle; 2 Unknown</td>
<td>4 (3-4)</td>
</tr>
<tr>
<td>Cause of Injury</td>
<td>RTS—Resp. Scale</td>
</tr>
<tr>
<td>4 Transport; 37 Falls; 1</td>
<td>3 (3-4)</td>
</tr>
<tr>
<td>Overexertion; 1 Unspecified;</td>
<td></td>
</tr>
<tr>
<td>5 Not Identified</td>
<td></td>
</tr>
<tr>
<td>Signs of Life</td>
<td></td>
</tr>
<tr>
<td>48 Yes</td>
<td>Resp. Assistance</td>
</tr>
<tr>
<td>Age</td>
<td>22 Yes; 15 No; 11 Unknown</td>
</tr>
<tr>
<td>63.8 Years (1-102 Years)</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>ED LOS Hours</td>
</tr>
<tr>
<td>33 Female; 15 Male</td>
<td>20.5 (12-35)</td>
</tr>
<tr>
<td>Interfacility Transfer</td>
<td></td>
</tr>
<tr>
<td>5 Yes; 43 No</td>
<td>ED Disposition</td>
</tr>
<tr>
<td>Interfacility Transfer</td>
<td>19 Floor; 3 Home without services; 1 ICU;</td>
</tr>
<tr>
<td>Interfacility Transfer</td>
<td>3 Observation; 1 OR; 7 Step Down; 11</td>
</tr>
<tr>
<td>Interfacility Transfer</td>
<td>Transferred; 3 Unknown</td>
</tr>
</tbody>
</table>

-Region was created from injury zip code. Missing = no injury zip or injury zip from out of state.
-Numbers represent counts per category or mean with minimum and maximum in parentheses.
-No signs of life is defined as having none of the following: organized EKG activity, papillary responses, spontaneous respiratory attempts or movement, and unassisted blood pressure. This usually implies the patient was brought to the ED with CPR in progress (2015 Trauma Registry Data Dictionary, page 185).
A table with all the values for ED LOS is found on page 52.

Note for ED LOS by ISS, there were 9 cases with ISS of 75; none were at a non-trauma center.

A table with values for ED LOS by ISS may be found on page 52.
Hospital dispositions with <1% included: Another institution, Null, Psychiatric Hospital, Long-Term Care Hospital and Intermediate Care.
For Quarter 1 2017, of the 7,805 incidents reported to the Indiana Trauma Registry, 1,210 cases that had an ED Disposition of “Transferred to another acute care facility” at the initial facility or that had the Inter-Facility Transfer equal to “Yes” at the Trauma Center. Of those transferred, 600 cases were probabilistically matched. The linked cases make up 21% of the Q1 2017 data. All public health preparedness districts are represented. The diagram below illustrates the overlap between the transfers reported from the initial facility and from the final facility that can be matched.

<table>
<thead>
<tr>
<th>Indiana Critical Access Hospitals (CAHS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adams Memorial Hospital</td>
</tr>
<tr>
<td>Cameron Memorial Community Hospital Inc</td>
</tr>
<tr>
<td>Community Hospital of Bremen Inc</td>
</tr>
<tr>
<td>Decatur County Memorial Hospital</td>
</tr>
<tr>
<td>Dukes Memorial Hospital</td>
</tr>
<tr>
<td>Gibson General Hospital</td>
</tr>
<tr>
<td>Greene County General Hospital</td>
</tr>
<tr>
<td>Harrison County Hospital</td>
</tr>
<tr>
<td>IU Health Bedford Hospital</td>
</tr>
<tr>
<td>IU Health Blackford Hospital</td>
</tr>
<tr>
<td>IU Health Paoli Hospital</td>
</tr>
<tr>
<td>IU Health Tipton Hospital</td>
</tr>
<tr>
<td>IU Health White Memorial Hospital</td>
</tr>
<tr>
<td>Jasper County Hospital</td>
</tr>
<tr>
<td>Jay County Hospital</td>
</tr>
<tr>
<td>Margaret Mary Community Hospital Inc</td>
</tr>
<tr>
<td>Parkview LaGrange Hospital</td>
</tr>
<tr>
<td>Parkview Wabash Hospital</td>
</tr>
<tr>
<td>Perry County Memorial Hospital</td>
</tr>
<tr>
<td>Pulaski Memorial Hospital</td>
</tr>
<tr>
<td>Putnam County Hospital</td>
</tr>
<tr>
<td>Rush Memorial Hospital</td>
</tr>
<tr>
<td>Scott Memorial Hospital</td>
</tr>
<tr>
<td>St. Vincent – Clay Hospital</td>
</tr>
<tr>
<td>St. Vincent – Dunn Hospital</td>
</tr>
<tr>
<td>St. Vincent – Franklin Hospital</td>
</tr>
<tr>
<td>St. Vincent – Jennings Hospital</td>
</tr>
<tr>
<td>St. Vincent – Mercy Hospital</td>
</tr>
<tr>
<td>St. Vincent – Randolph Hospital</td>
</tr>
<tr>
<td>St. Vincent – Salem Hospital</td>
</tr>
<tr>
<td>St. Vincent – Warrick Hospital</td>
</tr>
<tr>
<td>St. Vincent – Williamsport Hospital</td>
</tr>
<tr>
<td>Sullivan County Community Hospital</td>
</tr>
<tr>
<td>Union Hospital Clinton</td>
</tr>
<tr>
<td>Woodlawn Hospital</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rural Hospitals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Columbus Regional Hospital</td>
</tr>
<tr>
<td>Daviess Community Hospital</td>
</tr>
<tr>
<td>Fayette Regional Health System</td>
</tr>
<tr>
<td>Franciscan Health-Michigan City</td>
</tr>
<tr>
<td>Franciscan Health-Crawfordsville</td>
</tr>
<tr>
<td>Good Samaritan Hospital</td>
</tr>
<tr>
<td>Henry Community Health</td>
</tr>
<tr>
<td>IU Health – LaPorte Hospital</td>
</tr>
<tr>
<td>IU Health – Starke Hospital</td>
</tr>
<tr>
<td>King’s Daughters’ Health</td>
</tr>
<tr>
<td>Kosciusko Community Hospital</td>
</tr>
<tr>
<td>Major Hospital</td>
</tr>
<tr>
<td>Marion General Hospital</td>
</tr>
<tr>
<td>Memorial Hospital (Logansport)</td>
</tr>
<tr>
<td>Memorial Hospital &amp; Health Care Center (Jasper)</td>
</tr>
<tr>
<td>Parkview Noble Hospital</td>
</tr>
<tr>
<td>Reid Health</td>
</tr>
<tr>
<td>St. Joseph’s Regional Medical Center – Plymouth</td>
</tr>
<tr>
<td>Schneck Medical Center</td>
</tr>
</tbody>
</table>

**Email questions to:** indianatrauma@isdh.in.gov
For Quarter 2, 2016, of the 9,188 incidents reported to the Indiana Trauma Registry, 1,676 cases that had an ED Disposition of “Transferred to another acute care facility” at the initial facility or that had the Inter-Facility Transfer equal to “Yes” at the Trauma Center. Of those transferred, 787 cases were probabilistically matched. The linked cases make up 23% of the Q2 2016 data. All public health preparedness districts are represented. The diagram below illustrates the overlap between the transfers reported from the initial facility and from the final facility that can be matched.

For Quarter 3, 2016, of the 8,916 incidents reported to the Indiana Trauma Registry, 1,891 cases that had an ED Disposition of “Transferred to another acute care facility” at the initial facility or that had the Inter-Facility Transfer equal to “Yes” at the Trauma Center. Of those transferred, 734 cases were probabilistically matched. The linked cases make up 18% of the Q3 2016 data. All public health preparedness districts are represented. The diagram below illustrates the overlap between the transfers reported from the initial facility and from the final facility that can be matched.

For Quarter 4, 2016, of the 8,916 incidents reported to the Indiana Trauma Registry, 1,484 cases that had an ED Disposition of “Transferred to another acute care facility” at the initial facility or that had the Inter-Facility Transfer equal to “Yes” at the Trauma Center. Of those transferred, 685 cases were probabilistically matched. The linked cases make up 21% of the Q4 2016 data. All public health preparedness districts are represented. The diagram below illustrates the overlap between the transfers reported from the initial facility and from the final facility that can be matched.

Email questions to: indianatrauma@isdh.in.gov
### Facility to Facility Transfers

<table>
<thead>
<tr>
<th>Initial Hospital Type</th>
<th>Final Hospital Type</th>
<th>Incident Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital</td>
<td>Hospital</td>
<td>1</td>
</tr>
<tr>
<td>Critical Access Hospital</td>
<td>Rural Hospital</td>
<td>2</td>
</tr>
<tr>
<td>Critical Access Hospital</td>
<td>Hospital</td>
<td>7</td>
</tr>
<tr>
<td>Critical Access Hospital</td>
<td>Trauma Center</td>
<td>69</td>
</tr>
<tr>
<td>Rural Hospital</td>
<td>Trauma Center</td>
<td>76</td>
</tr>
<tr>
<td>Trauma Center</td>
<td>Trauma Center</td>
<td>174</td>
</tr>
<tr>
<td>Hospital</td>
<td>Trauma Center</td>
<td>271</td>
</tr>
</tbody>
</table>

### Facility Transfer Type

- Rural = Rural Hospital; TC = ACS Verified or In Process Trauma Center;
- CAH = Critical Access Hospital; Hospital = does not fall into above categories

Email questions to: indianatrauma@isdh.in.gov
## Linked Transfer Patient Averages

### For Linked Transfer Patients:

<table>
<thead>
<tr>
<th>For Transfer Patients:</th>
<th>All Transfer Patients</th>
<th>Critical*</th>
<th>Physiological Critical**</th>
<th>ISS Critical***</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Patients</td>
<td>600</td>
<td>186</td>
<td>156</td>
<td>55</td>
</tr>
<tr>
<td>EMS Notified to Scene</td>
<td>8.1 minutes</td>
<td>7.7 minutes</td>
<td>7.6 minutes</td>
<td>7.3 minutes</td>
</tr>
<tr>
<td>EMS Scene Arrival to Departure</td>
<td>22.2 minutes</td>
<td>32.4 minutes</td>
<td>35.8 minutes</td>
<td>18.7 minutes</td>
</tr>
<tr>
<td>EMS Scene Departure to Initial Hospital ED Arrival</td>
<td>19.7 minutes</td>
<td>16.2 minutes</td>
<td>15.7 minutes</td>
<td>17.1 minutes</td>
</tr>
<tr>
<td>Initial Hospital ED Arrival to Departure</td>
<td>2 hours 8.9 minutes</td>
<td>2 hours 3 minutes</td>
<td>2 hours 3.7 minutes</td>
<td>1 hour 52.6 minutes</td>
</tr>
<tr>
<td>Initial Hospital ED Departure to Final Hospital ED Arrival</td>
<td>2 hours 11.3 minutes</td>
<td>2 hours 5.5 minutes</td>
<td>2 hours 7.1 minutes</td>
<td>1 hour 56.9 minutes</td>
</tr>
<tr>
<td>TOTAL TIME</td>
<td>5 hours 10.2 minutes</td>
<td>5 hours 4.8 minutes</td>
<td>5 hours 9.9 minutes</td>
<td>4 hours 32.6 minutes</td>
</tr>
</tbody>
</table>

*Critical patient is defined as having a GCS \( \leq 12\), OR Shock Index > 0.9 OR ISS > 15 at the initial hospital.

**Physiological Critical Transfer patient is defined as having a Shock Index > 0.9 OR GCS \( \leq 12\) at the initial hospital.

***ISS Critical Transfer patient is defined as having an ISS > 15 at the initial hospital.

Email questions to: indianatrauma@isdh.in.gov
For Transfer Patients:

<table>
<thead>
<tr>
<th>Public Health Preparedness District Initial Hospital</th>
<th>Public Health Preparedness District Final Hospital</th>
<th>Incident Counts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>15</td>
</tr>
<tr>
<td>1</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>1</td>
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<tr>
<td>2</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
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<td>126</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
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<td>4</td>
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<tr>
<td>4</td>
<td>5</td>
<td>30</td>
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<tr>
<td>5</td>
<td>5</td>
<td>106</td>
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<tr>
<td>6</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>82</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>7</td>
<td>5</td>
<td>48</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td>13</td>
</tr>
<tr>
<td>8</td>
<td>5</td>
<td>39</td>
</tr>
<tr>
<td>8</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>8</td>
<td>10</td>
<td>1</td>
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<tr>
<td>9</td>
<td>5</td>
<td>1</td>
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<tr>
<td>9</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>75</td>
</tr>
</tbody>
</table>

*The thickness of the line indicates the frequency of transfers out of or within the public health preparedness district. The circles represent transfers from a specific PHPD, not of a specific hospital or county.*
## Transfer Patient Data - Page 12

### For Transfer Patients:

<table>
<thead>
<tr>
<th></th>
<th>All Transfer Patients</th>
<th>Critical*</th>
<th>Physiological Critical**</th>
<th>ISS Critical***</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of Patients</strong></td>
<td>600</td>
<td>186</td>
<td>156</td>
<td>55</td>
</tr>
<tr>
<td><strong>Total Time</strong></td>
<td>5 hours 10.2 minutes</td>
<td>5 hours 4.8 minutes</td>
<td>5 hours 9.9 minutes</td>
<td>4 hours 32.6 minutes</td>
</tr>
<tr>
<td><strong>Total Mileage</strong></td>
<td>52.3</td>
<td>59.0</td>
<td>59.9</td>
<td>61.5</td>
</tr>
<tr>
<td><strong>Injury Scene to Initial Hospital Mileage</strong>*</td>
<td>8.2</td>
<td>7</td>
<td>6.7</td>
<td>7.8</td>
</tr>
<tr>
<td><strong>Initial Facility to Final Facility Mileage</strong></td>
<td>44.1</td>
<td>51.9</td>
<td>53.1</td>
<td>53.8</td>
</tr>
</tbody>
</table>

### Estimated Average Distance (miles) by Region (region of final hospital):

<table>
<thead>
<tr>
<th>Region</th>
<th>Injury Scene to Initial Facility Mileage*</th>
<th>Initial Facility to Final Facility Mileage</th>
<th>Total Mileage</th>
<th>Drive Count</th>
<th>Air Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indiana Average</td>
<td>8.2</td>
<td>44.1</td>
<td>52.3</td>
<td>539</td>
<td>61</td>
</tr>
<tr>
<td>North Region</td>
<td>7.9</td>
<td>27</td>
<td>34.9</td>
<td>146</td>
<td>8</td>
</tr>
<tr>
<td>Central Region</td>
<td>8.1</td>
<td>54.4</td>
<td>62.5</td>
<td>321</td>
<td>42</td>
</tr>
<tr>
<td>South Region</td>
<td>8.8</td>
<td>31.3</td>
<td>40.1</td>
<td>72</td>
<td>11</td>
</tr>
</tbody>
</table>

*Critical patient is defined as having a GCS ≤ 12, OR Shock Index > 0.9 OR ISS >15 at the initial hospital.
**Physiological Critical Transfer patient is defined as having a Shock Index > 0.9 OR GCS ≤ 12 at the initial hospital.
***ISS Critical Transfer patient is defined as ISS > 15 at the initial hospital.
*Injury Scene to Initial Facility Mileage location estimated by zip code centroid
Statistics for Estimated Average Distance by Region calculated by Public Health Geographics, Epidemiology Resource Center, ISDH
Transfer Patient Population - Page 15

Discharge Disposition – Final Hospital

- Home with Services: 56.0%
- Skilled Nursing Facility: 14.5%
- Rehab: 11.2%
- Home of Service: 4.1%
- Died: 2.2%
- Acute Care: 0.2%

Helicopter Transfers by ISS – Final Hospital

- 1-8: 42%
- 9-15: 41%
- 16-24: 30%
- 25-44: 26%
- 45-74: 5%
- 75+: 15%

<1%: Acute care, AMA, another inst. Correctional, long-term care, hospice, psych hospital, no hospital stay

Transfer Delay Indicated – Initial Hospital

- Yes: 63%
- No: 27%
- NA/NA: 0%

Initial Facility Transfer Delay Reason

- EMS Issues: 20%
- Other: 33%
- Referring Hospital Issues: 14%
- Referring Physician Decision: 5%
- Weather: 3%
- Other/Misc: 2%

<1%: Receiving hospital radiology, missing

Email questions to: indianatrauma@isdh.in.gov
Higher than Average ED LOS for Transferred Patients

<table>
<thead>
<tr>
<th>Hospital ID</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ID 3</td>
<td></td>
</tr>
<tr>
<td>ID 12</td>
<td></td>
</tr>
<tr>
<td>ID 31</td>
<td></td>
</tr>
<tr>
<td>ID 51</td>
<td></td>
</tr>
<tr>
<td>ID 88</td>
<td></td>
</tr>
<tr>
<td>ID 108</td>
<td></td>
</tr>
<tr>
<td>ID 113</td>
<td></td>
</tr>
<tr>
<td>ID 120</td>
<td></td>
</tr>
</tbody>
</table>

Email questions to: indianatrauma@isdh.in.gov
Hospital that did not report during Q1 2017:
- Adams Memorial Hospital
- Dearborn County
- Decatur County Memorial
- Dukes Memorial
- Elkhart General
- Fayette Regional Health
- Franciscan Health Crown Point
- Franciscan Health Dyer
- Franciscan Health Hammond
- Franciscan Health Indianapolis
- Franciscan Health Munster
- Harrison County
- IU Health Goshen
- IU Health LaPorte
- IU Health Starke
- Perry County Memorial
- Pulaski Memorial
- Riverview Health
- Rush Memorial
- St. Mary Medical Center—Hobart
- St Vincent Fishers
- St. Vincent Jennings
- St. Vincent Randolph
- Sullivan County Community
- Valparaiso Medical Center
Indiana State Department of Health
Indiana Trauma Registry

Hospitals Reporting Trauma Data Quarter 1
January 1, 2017 - March 31, 2017

Level I and II Trauma Centers
- Deaconess Hospital
- Eskenazi Health
- IU Health - Methodist Hospital
- Lutheran Hospital of Indiana
- Memorial Hospital of South Bend
- Parkview Regional Medical Center
- Riley Hospital for Children at IU Health
- St Mary's Medical Center of Evansville
- St Vincent Indianapolis Hospital & Health Services
- Terre Haute Regional Hospital

Level III Trauma Centers
- Community Hospital of Anderson & Madison Co.
- Franciscan St Anthony Health - Crown Point
- Franciscan St Elizabeth Health - Lafayette East
- Good Samaritan Hospital
- IU Health - Arnett Hospital
- IU Health - Ball Memorial Hospital
- Methodist Hospitals - Northlake Campus
- Reid Hospital & Health Care Services
- St Vincent Anderson
- Union Hospital Terre Haute

Non-Trauma Hospitals
- 75 Non-Trauma Hospitals

Hospital categories include Verified and "In the Process" Trauma Centers as of March 31, 2017.
Other Business

Email questions to: indianatrauma@isdh.in.gov
Committee Meeting Dates for 2017

- October 20
- December 15

Email questions to: indianatrauma@isdh.in.gov