Introductions & approval of meeting minutes
Traumatic Brain Injury

Dr. Lance Trexler, *Executive Director*
Rehabilitation Hospital of Indiana

Email questions to: indianatrauma@isdh.in.gov
Improving Health Outcomes following Traumatic Brain Injury through Building a TBI-informed System of Services and Supports and Resource Facilitation
ACL Grant 2018 - 2021

- ISDH Lead Agency

- Goal: improve health care outcomes following TBI
  - Prevent substance abuse, especially opioid misuse
  - Prevent institutionalization, including incarceration and out-of-state residential placement

- Strategies:
  - Research on the Efficacy of Resource Facilitation for Health Outcomes
  - Indiana TBI Advisory Board
  - Mentoring other States
ACL Grant: Project Leadership and Organization

- Dana Fink, ACL: Federal Project Officer
- Katie Hokanson, ISDH: Project Director
- Lance E. Trexler, PhD, RHI: Principal Investigator
  - Devan Parrott, PhD, RHI: Research
  - Laura Trexler, OTR, RHI: Resource Facilitation, Indiana TBI Advisory Board, and Mentoring

Research

TBI Outcomes

State Mentoring

Indiana TBI Advisory Board
Resource Facilitation: Acute to Chronic Care Continuum

- E.G., MENTAL HEALTH, EMPLOYMENT SERVICES
- FOLLOW-UP
- FOLLOW-UP
- FOLLOW-UP
- E.G., PCP, NEUROPSYCHOLOGICAL TREATMENT

---

ACUTE AND CLINICAL SERVICES

COMMUNITY-BASED SERVICES

---

RESOURCE FACILITATION
RF Model

Methodist Trauma Center

St. Vincent’s Trauma Center

TBI Collaborative Care Team

TBI Integrated Care Pathway

BEAM = Basic Everyday Activity Monitoring: Cloud-based interface for monitoring individualized health care metrics for surveillance of risk factors and RF outcome measures
Collaborative Care + RF for TBI Health Outcomes
Trexler, Hammond, Parrott, Trexler, and Ibarra; Indiana ACL grant (2018 – 2021)

Consultants
- PMR
- Neuropsychology
- Occupational Therapy
- Neuropsychiatry

Primary Care Provider

Patient

Resource Facilitator

Feedback to MD
Decision support
Care coordination

Negotiate tx plan
Provide follow-up and treatment adjustment

Motivate adherence to tx
Monitor response to tx
Ongoing Assessment
Provide access to services and supports

Monthly case supervision
Treatment adjustment
Manage treat-to-target
ACL Grant Team

- Katie Hokanson, MHA, Director, Trauma and Injury Prevention, ISDH
  - Jeremy Funk, MS, Trauma and Injury Epidemiologist
- Devan Parrott, PhD, Director, RHI Research, Training and Outcomes Center
  - Data Analyst
  - Research Associate
- Laura Trexler, OTR, ACL Grant Resource Facilitation Program Manager
  - 2 Resource Facilitators
ACL Grant Consultants

- Flora Hammond, MD, FACRM, Chair, Department of PMR, IU School of Medicine and RHI.
- Summer Ibarra, PhD, Clinical Director, RHI Departments of Rehabilitation Neuropsychology and Resource Facilitation
- Jess Fann, MD, MPH, Professor, Department of Psychiatry and Behavioral Sciences, University of Washington
- Stephen Sutter, President, CreateAbility Concepts, Indianapolis
ACL Grant: Research

- **Hypotheses:**
  - **Primary:** Subjects who receive RF will demonstrate better health outcomes
    - Health-related quality of life
    - Level of disability
  - **Secondary:**
    - Subjects who receive RF will demonstrate less opioid misuse
    - Subjects who receive RF will have lower incidence of incarceration

- **Methods:**
  - RCT with blinded outcome assessors at end of treatment and at 3-month follow-up
  - Prospectively recruit 150 TBI from the trauma center
  - Randomize 100 to RF and 50 to follow-up as usual
  - 12 months of RF and 3 month follow-up
ACL Grant: Indiana TBI Advisory Board

- Goals for the Board
  - Indiana TBI State Plan
  - TBI Needs and Resources Survey
  - Input on ACL Grant and Sustainability

- Task Forces:
  - Consumer Task Force
  - Criminal Justice Task Force
ACL Grant 2018 - 2021: Mentoring

- Annual National Webinar on Resource Facilitation
- Workgroups:
  - Using Data to Connect People to Services
  - Transition and Employment
Traumatic Brain Injury and Opioid Addiction:
An Unrecognized Risk, Consequence, and Barrier to Effective Treatment

Lance E. Trexler, PhD, FACRM
Rehabilitation Hospital of Indiana
Indiana University School of Medicine
Indiana Prevalence of Traumatic Brain Injury

- 2,472 Annual hospitalizations for just Traumatic Brain Injury
- 66,410 Hoosiers living with Disability associated Traumatic Brain Injuries
- CDC has determined that moderate to severe brain injury is a lifelong condition

Economic Impact of Resource Facilitation: Workforce Re-entry Following Traumatic Brain Injury, Srikant Devaraj, PhD, Michael Hicks, PhD, Brandon Patterson Graduate Research Assistant, Center for Business and Economic Research, Miller College of Business, Ball State University, February 21, 2017.
Narcotics Prescription During Inpatient TBI Rehabilitation

- TBIMS Acute TBI Rehabilitation (10 sites; n = 2,103)
- 72% sample received narcotics:
  - Highest frequency of medications studied
  - 1st 2 days: 55%
  - Last 2 days: 45%
  - % in sample received
    - Scheduled: 26%
    - PRN: 63%
- Used equally across FIM groups

% received among the other agents

<table>
<thead>
<tr>
<th>Narcotic</th>
<th>Count</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>oxycodone</td>
<td>864</td>
<td>37%</td>
</tr>
<tr>
<td>acetaminophen (APAP) + hydrocodone</td>
<td>688</td>
<td>30%</td>
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<tr>
<td>morphine</td>
<td>205</td>
<td>9%</td>
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<tr>
<td>fentanyl</td>
<td>145</td>
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<tr>
<td>tramadol</td>
<td>142</td>
<td>6%</td>
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<tr>
<td>hydromorphone</td>
<td>85</td>
<td>4%</td>
</tr>
<tr>
<td>propoxyphene N + APAP</td>
<td>84</td>
<td>4%</td>
</tr>
<tr>
<td>codeine</td>
<td>48</td>
<td>2%</td>
</tr>
<tr>
<td>methadone</td>
<td>44</td>
<td>2%</td>
</tr>
<tr>
<td>APAP + codeine</td>
<td>14</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>meperidine</td>
<td>4</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>meperidine (4; &lt;1%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>buprenorphine</td>
<td>4</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>propoxyphene N (4; &lt;1%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Opioids and TBI: Discharge Data from RHI

- One year of discharges from October 22, 2016 to October 22, 2017
- Diagnosis of TBI
- Sample size = 232

- 149 (64%) on an opioid
- 47 (31%) on multiple opioids
Deaths Due to Accidental Poisonings

- N = 14,398 with TBI - 1,519 died (11%) - 4.4% (67) AP deaths
- AP death 11x more likely than general population
- Associated factors after controlling for age:
  - non-minority
  - previously married
  - EtOH/drug problem use (PTI & LKF)
  - > EtOH use
  - Better function
  - living alone
  - private residence
  - arrests in past year

<table>
<thead>
<tr>
<th>n</th>
<th>Accidental poisoning by:</th>
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<tbody>
<tr>
<td>14</td>
<td>Unspecified drug</td>
</tr>
<tr>
<td>13</td>
<td>Opiates and related narcotics*</td>
</tr>
<tr>
<td>11</td>
<td>Analgesics antipyretics and antirheumatics *</td>
</tr>
<tr>
<td>6</td>
<td>Methadone*</td>
</tr>
<tr>
<td>7</td>
<td>Psychostimulants</td>
</tr>
<tr>
<td>6</td>
<td>Alcohol +</td>
</tr>
<tr>
<td>2</td>
<td>Other specified analgesics and antipyretics*</td>
</tr>
<tr>
<td>2</td>
<td>Local anesthetics</td>
</tr>
<tr>
<td>1</td>
<td>Aromatic analgesics, not elsewhere classified*</td>
</tr>
<tr>
<td>1</td>
<td>Other specified sedatives and hypnotics</td>
</tr>
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<td>1</td>
<td>Agents affecting blood constituents</td>
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<tr>
<td>1</td>
<td>Agents acting on muscles &amp; respiratory system</td>
</tr>
<tr>
<td>1</td>
<td>Other specified drugs</td>
</tr>
<tr>
<td>1</td>
<td>Other specified gases and vapors</td>
</tr>
</tbody>
</table>
Traumatic Brain Injury is a Significant and Unrecognized Risk Factor for Opioid Misuse

- People with TBI have a high rate of premorbid substance abuse
- TBI often results in headache or orthopedic injuries for which they are prescribed opioids (70%)
- TBI frequently results in impairment of:
  - Memory – people forget that they have taken their pain medication, and therefore take it again.
  - Impaired judgement, self-regulation, and impulsivity which may lead to overuse of pain medication
- Prescribers unaware they are prescribing to someone with a TBI and the implications
CDC-ISDH Project Leadership

- Rachel Kossover-Smith, CDC: Federal Project Officer
- Katie Hokanson, ISDH: Project Director
- Lance E. Trexler, PhD, RHI, IUSM: Principal Investigator
  - Flora Hammond, MD; IUSM and RHI
  - John Corrigan, PhD; Ohio State University
  - Shashank Davè, MD; IUSM and RHI
CDC Rapid Response Project: Reducing Opioid Misuse and Overdose in People with TBI

- **Project 1:** Development of TBI-Opioid Practice Recommendations
  - Overview of TBI as a risk factor for opioid misuse
  - How to screen for TBI
  - Recommendations for managing opioids
  - Where to find brain injury services and supports

- **Project 2:** Insert TBI screening into INSPECT:
  - Promote awareness of how has TBI
  - Prospective surveillance
    - Analysis of prescribing trends
    - Ongoing training and education
CDC Rapid Response Project: Reducing Opioid Misuse and Overdose in People with TBI

**Project 3: Training and Education to Disseminate TBI-Opioid Practice Guidelines**

- One day (live, recorded or both) conference for
  - Prescribers, health care professionals, especially TBI
  - Mental health and SUD providers
  - Criminal justice
  - Local Coordinating Councils
- One hour overview webinar
- Publication of Recommendations in peer-reviewed journal

- Awareness of the increased risk for opioid misuse following TBI
- Training providers on:
  - Screening and identification of TBI,
  - How to upload the results of the OSU-TBI-ID into INSPECT,
  - How to check for the history of TBI as a risk factor in INSPECT,
  - Detailed review of the TBI-OPR, and
  - Where to find brain injury resources and supports.
CDC Rapid Response Project: Reducing Opioid Misuse and Overdose in People with TBI

- **Project 4:** TBI and Opioid Products
  - Factsheets
  - Social media
  - Emails

- **Project 5:** Opioid Surveillance through INSPECT
  - OSU-TBI-ID utilization
  - Prevalence of TBI in INSPECT and where
  - Impact of training on prescribing
  - Pilot data for future funding
Questions or Comments?

Funding for this presentation was made possible (in part) by the Administration for Community Living. The views expressed in written conference materials or publications and by speakers and moderators do not necessarily reflect the official policies of the Department of Health and Human Services, nor does the mention of trade names, commercial practices, or organizations imply endorsement by the U.S. Government.
Updates

Katie Hokanson, Director of Trauma and Injury Prevention

Email questions to: indianatrauma@isdh.in.gov
• Congratulations Memorial Hospital & Health Care Center, Jasper!
  – Level III Adult Verification.
Division staffing updates

- Madeline Tatum
  - Records Consultant
- No longer with the division
  - Dawn Smith
    - Public Health Associate

Email questions to: indianatrauma@isdh.in.gov
Stroke center list

- IC 16-31-2-9.5
  - Compile & maintain a list of Indiana hospitals that are stroke certified.
  - https://www.in.gov/isdh/27849.htm

Email questions to: indianatrauma@isdh.in.gov
<table>
<thead>
<tr>
<th>Hospital Name</th>
<th>Location</th>
<th>Level of Stroke Certification</th>
<th>Name of Certifying Entity</th>
<th>Transfer Agreement With</th>
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<tbody>
<tr>
<td>Baptist Health Floyd</td>
<td>New Albany</td>
<td>Primary Stroke Center</td>
<td>Healthcare Facilities Accreditation Program</td>
<td>Baptist Health Louisville</td>
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<tr>
<td>Bluffton Regional Medical Center</td>
<td>Bluffton</td>
<td>Primary Stroke Center</td>
<td>The Joint Commission</td>
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<tr>
<td>Lutheran Health Network</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community Hospital Anderson</td>
<td>Anderson</td>
<td>Advanced Primary Stroke Center</td>
<td>The Joint Commission</td>
<td>St. Vincent Hospital and Health Care Center, IU Health Methodist</td>
</tr>
<tr>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
Firework injury reporting

• No longer required!
  – Starting July 1, IC 35-4-7-7 has eliminated the requirement of fireworks injuries reporting.

Email questions to: indianatrauma@isdh.in.gov
Who is still reporting?

1. Deaconess-Gateway ED
2. Community-Gary
3. Jay Co Hospital
4. St. Joseph-Mishawaka
5. St. Vincent Anderson
6. IU Health - Riley Hospital for Children
7. Dukes Memorial (2)
8. RediMed, Fort Wayne
9. Adams Health Network
10. FPN Express Care
11. IU Health Riley Physicians-Bedford
12. Lutheran Health-St. Joe
13. IU Urgent Care-Lafayette
14. Clark Memorial Hospital
15. Eye Center of So IN
16. St. Catherine East Chicago
17. LaPorte Hospital
18. Franciscan Express Care
19. St. Vincent Urgent Care
20. Lutheran ER Fort Wayne
21. Community Hospital South
22. Community Hospital North
23. IU Health Arnett Hospital

Email questions to: indianatrauma@isdh.in.gov
Who is still reporting?

24. Franciscan Health
25. Parkview-Whitley
26. Eskenazi Pediatric Outpatient
27. IU Health - Ball Memorial
28. St. Vincent-Warrick
29. Hancock Immediate Care
30. MedCheck-Greenwood
31. Immediate Care
32. Elkhart Urgent Care
33. St. Vincent Noblesville
34. Hendricks Regional Health
35. Memorial Hospital South Bend
36. Franciscan Express Care
37. Porter Regional Hospital
38. Schneck Medical Center
39. Baptist Health-Floyd
40. Franciscan-Hammond
41. Major Health Partners
42. Franciscan Health - Crown Point

Email questions to: indianatrauma@isdh.in.gov
Indiana State Department of Health

It’s a team effort:
Creating a county’s overdose rapid response plan

Tuesday, August 21
10-11 a.m. (EDT)

The Indiana State Department of Health is hosting a live webcast on the Overdose Response Pilot Project, a program that assesses local health department (LHDs) and county stakeholder capabilities and response readiness for a drug overdose event. An overview of the project will be provided, as well as successes, challenges, takeaways, and information about the new open grant cycle. This webcast will be specifically tailored to LHDs in Indiana.

Email questions to: indianatrauma@isdh.in.gov
Labor of Love
Helping Indiana Reduce Infant Death

Home / Logistics / Program / Sponsors

Labor of Love Summit 2018
Healthy Babies Start with Healthy Moms

Race to 2024

Wednesday, November 14, 2018

JW Marriott | 10 S. West Street, Indianapolis, IN 46204

#INlaboroflove

Email questions to: indianatrauma@isdh.in.gov
Midwest Injury Prevention Alliance (MIPA) Summit

- Save the Date!
  - November 29 & 30

Email questions to: indianatrauma@isdh.in.gov
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>8:00 a.m. – 9:00 a.m.</td>
<td>Registration and Networking Breakfast</td>
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<tr>
<td>9:00 a.m. – 9:15 a.m.</td>
<td>Welcome &amp; Opening Remarks</td>
<td>General Session</td>
</tr>
<tr>
<td>9:15 a.m. – 10:15 a.m.</td>
<td>General Session</td>
<td></td>
</tr>
<tr>
<td>10:15 a.m. – 10:30 a.m.</td>
<td>Networking Break</td>
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</tr>
<tr>
<td>10:30 a.m. – 12:00 p.m.</td>
<td>Talking to Diverse Communities/Technology Track</td>
<td>Prescription Drug Overdose</td>
</tr>
<tr>
<td>12:00 p.m. – 1:30 p.m.</td>
<td>Lunch &amp; Networking Break</td>
<td></td>
</tr>
<tr>
<td>1:30 p.m. – 3:00 p.m.</td>
<td>Preparing for a Career in Injury Prevention</td>
<td>Occupational Injury</td>
</tr>
<tr>
<td>3:00 p.m. – 3:15 p.m.</td>
<td>Networking Break</td>
<td></td>
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<tr>
<td>3:15 p.m. – 5:30 p.m.</td>
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<td>Older Adult Falls</td>
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<tr>
<td>5:30 p.m. – 5:30 p.m.</td>
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<td></td>
</tr>
<tr>
<td>Time</td>
<td>Session</td>
<td>Location</td>
</tr>
<tr>
<td>----------------------</td>
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<td>-------------------</td>
</tr>
<tr>
<td>8:00 a.m. – 9:00 a.m.</td>
<td>Breakfast &amp; Committee Meetings</td>
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</tr>
<tr>
<td>9:00 a.m. – 9:15 a.m.</td>
<td>Networking Break</td>
<td></td>
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<tr>
<td>9:15 a.m. – 10:15 a.m.</td>
<td>General Session</td>
<td></td>
</tr>
<tr>
<td>10:15 a.m. – 10:30 a.m.</td>
<td>Networking Break</td>
<td></td>
</tr>
<tr>
<td>10:30 a.m. – 12:00 p.m.</td>
<td>Distracted Driving Track, Child Injury Track, Violence Prevention</td>
<td>Location: Distracted Driving Track, Location: Child Injury Track, Location: Violence Prevention</td>
</tr>
<tr>
<td>12:00 p.m. – 2:00 p.m.</td>
<td>LUNCH &amp; CLOSING KEYNOTE PRESENTATION:</td>
<td></td>
</tr>
</tbody>
</table>
IPAC & INVDRS

• Remaining 2018 meeting date:
  – September 21
  • Discussing Stop the Bleed at IPAC

Email questions to: indianatrauma@isdh.in.gov

Indiana State
Department of Health
Division grant activities

- Administration for Community Living (ACL) – Traumatic Brain Injury (TBI).
  - Awarded & funded!
  - Partnering with the Rehabilitation Hospital of Indiana.
- ACL – Evidence-Based Falls Prevention Program.
  - Not funded.
- Comprehensive Opioid Abuse Site-based Program (COAP)
  - Category 6: Public Safety, Behavioral Health & Public Health Information-Sharing Partnerships.

Email questions to: indianatrauma@isdh.in.gov
Division grant activities

- **Opioid Crisis response grant**
  - Assisted Preparedness division.

- **HRSA – Rural Communities Opioid Response Program**
  - Partnered with Fayette County.
  - Worked with ISDH HIV/STD/hepC division.
  - Submitted application end of July.

- **HRSA – Partnership for Disaster Health Response**
  - Dr. Box provided letter of support from ISTCC/ISDH.

- **BJA STOP School Violence Prevention and Mental Health Grant**
  - Submitted application mid-July.

Email questions to: indianatrauma@isdh.in.gov
INSPECT STATEWIDE INTEGRATION ANNOUNCEMENT

Effective August 24, 2017 Indiana will begin steps to implement a statewide, comprehensive platform for healthcare professionals to review patients’ controlled-substance prescription history more quickly and efficiently. This platform supports Indiana’s Prescription Drug Monitoring Program (INSPECT) and transfers data into electronic health records (EHR) and pharmacy management systems. Statewide integration of the INSPECT platform is a key component of Indiana’s ongoing efforts to address the opioid crisis.

Integration Process

1. Follow the instructions and complete ALL of the following (only authorized decision makers at the healthcare entity should fill out these forms):
   - Integration Request Form (located on the right of this page)
   - End User License Agreement (will be emailed to you within 24 hours)
   - PMP Gateway Licensee Questionnaire (will open in a new window)

Primary Point of Contact

* indicates required field

First Name*      Last Name*

Primary Point of Contact Email Address*

Job Title

Phone Number*

Email questions to: indianatrauma@isdh.in.gov
Resources for Optimal Care of the Injured Patient

stakeholder comment

- Comment portal: [https://www.facs.org/quality-programs/trauma/vrc/stakeholder-comment](https://www.facs.org/quality-programs/trauma/vrc/stakeholder-comment)

- Monthly ACS webinars on this topic. Changes are presented.
  - Contact COTVRC@facs.org to be added to the listserv.

- Link to the previous webinars
  - Educational webinars and tutorials → monthly trauma center Q&A Webinars.
    - [https://www.facs.org/quality-programs/trauma/vrc/resources](https://www.facs.org/quality-programs/trauma/vrc/resources)

Email questions to: indianatrauma@isdh.in.gov
ACS Clinical & Technical Revisions - Trauma Registry

• 2019 – first year ACS will make BOTH clinical and technical transitions.

• Trauma Vendor Alliance
  – Creating a set of state-specific data collection “channels”.
  – Currently gathering all expected state-specific clinical revisions for 2019.

Email questions to: indianatrauma@isdh.in.gov

Indiana State Department of Health
## “In the Process” of ACS Verification Trauma Centers

<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>Elkhart General Hospital</td>
<td>Elkhart</td>
<td>III</td>
<td>Adult</td>
<td>03/15/2018</td>
<td>April 2019</td>
<td>N/A</td>
<td>May 2019</td>
</tr>
</tbody>
</table>

*Date the EMS Commission granted the facility “In the process” status.

**Date the Indiana State Trauma Care Committee (ISTCC) reviewed/reviews the 1 year review documents. This date is based on the first ISTCC meeting after the 1 year date.

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

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Email questions to: [indianatrauma@isdh.in.gov](mailto:indianatrauma@isdh.in.gov)
Regional Updates

Email questions to: indianatrauma@isdh.in.gov
Regional updates

- District 2
- District 3
- District 4
- District 6
- District 7
- District 8
- District 10

Email questions to: indianatrauma@isdh.in.gov
EMS Medical Director Updates

Dr. Michael Kaufmann, *EMS Medical Director*
Indiana Department of Homeland Security

Email questions to: indianatrauma@isdh.in.gov
State of the State: EMS/IDHS

Indiana State Trauma Care Committee Update
August 2018

Michael A. Kaufmann, MD, FACEP, FAEMS

EMS Medical Director
Indiana Department of Homeland Security
<table>
<thead>
<tr>
<th>Certification/Licensure</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training Institutions</td>
<td>117</td>
</tr>
<tr>
<td>Supervising Hospitals</td>
<td>91</td>
</tr>
<tr>
<td>Providers</td>
<td>833</td>
</tr>
<tr>
<td>Vehicles</td>
<td>2,600</td>
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<tr>
<td>Personnel</td>
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<tr>
<td>EMR</td>
<td>4,975</td>
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<tr>
<td>EMT</td>
<td>14,133</td>
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<tr>
<td>Advanced EMT</td>
<td>578</td>
</tr>
<tr>
<td>EMT- Paramedic</td>
<td>4,408</td>
</tr>
<tr>
<td>Primary Instructor</td>
<td>566</td>
</tr>
</tbody>
</table>

EMS Certifications/Licensure
EMS System Metrics

- Total Ambulances in state 2,022
  - D1 – 363
  - D2 - 145
  - D3 - 111
  - D4 - 120
  - D5 - 492
  - D6 - 301
  - D7 - 84
  - D8 - 49
  - D9 - 245
  - D10 - 112
- Total ALS non-transport vehicles 584
- Total Rotocraft statewide 52

333 Provider Agencies required to report into ImageTrend
EMS Registry

- Historical scarcity of prehospital patient care data to support effective decision-making.
- NEMSIS was designed to provide a uniform national EMS dataset, with standard terms, definitions and values, along with a national EMS database containing aggregated data from all states for certain data elements.
- You see a patient and enter data into your ePCR.
- ePCR uploads to ImageTrend (State EMS Registry)
- State EMS Registry uploads to NEMSIS
EMS System Metrics

• Providers NOT reporting by district.
  • D1 – 7/23 NOT reporting
  • D2 – 4/35 NOT reporting
  • D3 – 5/26 NOT reporting
  • D4 – All reporting (23/23)
  • D5 – 14/67 NOT reporting
  • D6 – 10/58 NOT reporting
  • D7 – 2/14 NOT reporting
  • D8 – 3/8 NOT reporting
  • D9 – 9/35 NOT reporting
  • D10 – 2/17 NOT reporting
• Total ALS non-transport vehicles 584
• Total Rotocraft statewide 52

333 Provider Agencies required to report into ImageTrend
4/18/2018

V3 is looking better!!!

WHERE IS THE V2 DATA FROM Q4-2017?????

5/16/2018

V2 MUCH BETTER

V3 MUCH IMPROVED!!!!
Agencies Not Reporting Data

- District 1
  - Blue Angels EMS LLC
  - Cedar Lake VFD
  - Jasper County Sheriff's Office
  - Kurtz Ambulance Service Inc
  - Lake County Special Trauma and Rescue
  - Superior Air Ambulance, Inc
  - Superior Air-Ground Ambulance Service of Indiana Inc

- District 2
  - Bristol FD
  - Liberty Township VFD
  - Starke County Ambulance Service
  - Warren Township VFD

District 3
NEMSIS

- Green for the first time!
- Submitting V3 Data

46%
Indiana EMS Quality Improvement Program

- Started 6/2018
- EMS Registry
- EMS Compass Indicators
  - Hypoglycemia
  - Med Error
  - Peds Respiratory
  - Seizure
  - Stroke
  - Trauma
  - Pain
  - Safety
State of Indiana EMS CQI Report

State of Indiana
EMS System Quality Improvement Report
July 2018

Michael A. Kaufmann, MD, FACEP, FAEMS
State EMS Medical Director
Dimitri Georgakopoulos
Patients Meeting CDC Step 1 or 2 or 3 Criteria Originating from a 911 Request Transported to a Trauma Center - April 2018 (411 Reports)

- Patients transported to a trauma center, 331, 81%
- Patient not transported to a trauma center or disposition hospital capability not reported, 79, 19%
Pain Assessment of Injured Patients Originating from a 911 Request - April 2018

- Patients with pain scale value present, 3464, 64%
- Patients with no pain scale value recorded, 1921, 36%
Naloxone Heat Mapping Project
Naloxone Heat Mapping

- Data pages shared with four pilot cities:
  - Indianapolis
  - Richmond
  - Muncie
  - Columbus
  - Evansville
- Currently in active use phase
  - Feedback
  - User review delivered
  - Awaiting Feedback
- Making preparations for public launch slated for 8/2018
Naloxone Sustainability

Working with FSSA and the IHA to secure funding for EMS provider agencies who administer naloxone to Medicaid members.

Pilots in Ripley and Montgomery Counties

Designed to secure a sustainable supply of naloxone.
Rule Making Update

- 836 IAC 1-1-5 Reports and records
- Authority: IC 16-31-2-7; IC 16-31

- Adopted the NEMSIS V3 data elements.
- May 2018 - Passed a proposal submitted by IDHS/EMS to require run sheets to be submitted within 24 hours of run completion.
- Has gone to Indiana Office of Management and Budget
- Tentative Approval

- Now going to the Governor’s Office and Budget Director for consideration
- EMS Commission now ready to enforce reporting with $500 fines per occurrence.
Rule Making Update

- Stroke Draft Rule
  - Passed May 2018 Commission meeting
- Rule 2.2. Certification of Ambulance Service Providers - Stroke Field Triage and Transport Destination Protocol
  - Submitted to OMB for consideration and fiscal impact review
Model Guidelines

- Developed by NASEMSO in November 2017
- Evidence Based
- EMS Compass Quality Indicators
- NEMSIS Database Referenced
- Complete Protocol Manual

- Available for use
- Suspected Overdose
- Stroke
- IFT Stroke
- Anaphylaxis/Allergic Reaction
- Chest Pain
EMS-C

- Emergency Medical Services for Children
  - Elizabeth Weinstein, MD
  - Margo Knefelkamp

- EMS Division of IDHS will be asking each EMS provider organization to identify a pediatric representative to focus on pediatric care within each organization.

- This position will be identified on the EMS provider organization paperwork.

- Future ask will be to have a designated pediatric emergency specialist on the EMS Commission
Workforce Development

- Working to identify barriers restricting EMTs and Paramedics from entering the workforce in Indiana.
- Looking at licensing and certification process to remove obstacles.
- Looking for ways to align Indiana with other organizations such as NREMT to simply the continuing education and certification/licensure process.
- REPLICA
REPLICA

• The Recognition of EMS Personnel Licensure Interstate CompAct (REPLICA) is the nation’s first and only multi-state compact for the Emergency Medical Services profession.

• REPLICA provides qualified EMS professionals licensed in a "Home State" a legal "Privilege To Practice" in "Remote States".

• Home States are simply a state where an EMT or Paramedic is licensed;

• Remote States are other states that have adopted the REPLICA legislation
Brokered Medicaid

- NOT A IDHS/EMS Initiative – This is FSSA
- FSSA has contracted with Southeast Trans (SET) as the State’s Medicaid broker for transportation
- This applies to Non-Emergent Medical Transport (NEMT)
  - This is traditional Medicaid
  - Fee-for-service Medicaid
  - DOES NOT apply to managed care
- Significantly impacting EMS and Hospitals
- Roll-out deadline extended to July 1 / September
- Printed documentation is currently being developed
- Town Hall style meetings currently being delivered
- FAQ available for more information
- https://www.in.gov/fssa/ompp/5481.htm
HEMS Guidelines

• A patient has a significant need of equipment or medical personnel for critical care (to prevent or manage ongoing deterioration that is an imminent threat to life, limb or organ) available from air medical transport and which cannot be provided via ground transport

• A patient has significant potential to require a time-critical intervention and an air medical transport will deliver the patient to an appropriate facility faster than ground transport

• A patient is located in a geographically isolated area that would make ground transport impossible or greatly delayed

• Local EMS resources are exceeded or are unavailable to transport to the closest appropriate facility without compromising response to the primary service area. This also includes disaster and mass causality incidents.
HEMS Guidelines

• Organ and/or organ recipient requires air transport to the transplant center in order to maintain viability of time-critical transplant

• For trauma patients, those with two or more of the following criteria have demonstrated an improved outcome with helicopter EMS utilization. This is better known as the Air Medical Prehospital Triage (AMPT) Score.
  
  1. GCS < 14
  2. RR < 10 or > 29
  3. Unstable Chest
  4. Paralysis
  5. Hemo/Pneumothorax
  6. Multisystem Trauma
  7. Physiologic Criteria + Anatomic Criteria (had to have one from each category)

J Brown, Journal of Trauma Acute Care Surg 2017
Safety for EMS Providers

- Safety must become a priority!
  - Develops practical ways to implement the recommendations included in National EMS Culture of Safety Strategy.
  - Review the latest information, research, and best practices on EMS patient and practitioner safety.
  - Develop and publish consensus statements on the issues of EMS patient and practitioner safety as guidance to EMS agencies and practitioners.
  - Raises awareness of the importance of EMS patient and practitioner safety within the EMS industry
  - Identify additional steps that the EMS industry can take to improve EMS patient and practitioner safety
Stop The Bleed

The Indiana Department of Homeland Security is proud to be a supporting partner of the Stop the Bleed Program.
Stop the Bleed is a national campaign with two main goals:
• Inform and empower the general public to become trained on basic trauma care.
• Increase bystander access to bleeding control kits.
Disaster and Mass Casualty Preparedness

- 64% of EMS Providers have never responded to a disaster
- 51% of EMS Managers have never responded to a disaster
- EMS Practitioners are the group of healthcare providers MOST likely to be called to respond to a local disaster.
- 40% of EMS provider agencies are NOT part of a local or regional healthcare coalition.
- 32% of EMS practitioners say they are never required to receive training on triage and treatment for MCIs.
- The biggest obstacle to EMS preparedness, according to NAEMT survey is the cost – 75% cite lack of funding as a barrier.
March 19, 2018

Dear Public Safety Partners,

The Indiana Department of Homeland Security and the Indiana State Department of Health are cooperatively distributing this letter to affirm our support and emphasize our shared desire to see the current collaboration toward the building of district Healthcare Coalitions (HCC) continue. We believe it is imperative for emergency management, EMS, public health, and healthcare to all work together to build these coalitions into organizations that will strengthen our state’s ability to provide critical health and medical services to the public when disaster strikes.

For many years, hospitals and public health departments across Indiana’s 10 preparedness districts have worked to build response capabilities and strengthen their resiliency in the face of emergencies. Similarly, local emergency management and first responder organizations have worked together through district planning councils and task forces to prepare for and respond to disasters.

The many accomplishments of the districts over the years are not measured by the number of plans written, exercises conducted, or equipment purchased, but rather by the collaborative relationships that have been forged, allowing for you to respond to a wide range of disasters both within and outside our state borders.
Promotion

- IDHS/ISDH hosted a series of regional town hall style meetings to further promote EMS participation and overall collaboration with regards to disaster preparedness.
  - July 17th in Plymouth Indiana
  - July 25th in Lawrence Indiana
  - August 16th in Seymour Indiana
- Discuss DPC and HCC structure and function
- Encourage EMS participation in the HCC
  - Member of the Core 4 – Hospitals, Public Health, EMA and EMS
  - CDC Funding is dependent upon EMS participation
EP-HIT-18-001

• “Partnership for Disaster Health Response Cooperative Agreement”

• Grant Purpose:
  • Develop demonstration projects that address health care preparedness challenges
  • Establish best practices for improving disaster readiness across the health care delivery system
  • Show the potential effectiveness and viability of a Regional Disaster Health Response System (RDHRS)

• Award:
  • $3,000,000 (6M award to two separate entities across the county)
  • Application deadline of 8/15/2018
ASPR aims to better identify and address gaps in coordinated patient care during disasters through the establishment and maturation of a Regional Disaster Health Response System (RDHRS.)

The primary objectives of the RDHRS are to:

- Improve bidirectional communication and situational awareness of the medical needs and issues of the response between healthcare organizations and local, state, regional, and federal partners;
- Leverage, build, or augment the highly specialized clinical capabilities critical to unusual hazards or catastrophic events; and
- Augment the horizontal (whole of community) integration of key stakeholders that comprise healthcare coalitions with readily accessible and clinical capabilities that are largely missing from the current configuration of such coalitions.
Know the O –EMS and Public Safety Information Card
EMS Field Guide (App Version 1.0)

Beta version ready for distribution.
EMP Grant declined the opportunity to participate.
SHSP Grant application submitted.
Community Paramedicine/MIH

• The time is now to plan and develop the infrastructure for Mobile Integrated Health/Community Paramedicine
  • 836 Rule re-write is under way
  • Alternate reimbursement models are being developed
  • EMS Registry is improving in quantity and quality
  • Local data has proven the benefits of this program
  • Increased medical director involvement
  • Community Health Worker status

• I’ll be focusing greater efforts in the coming days on working with ISDH, FSSA, CMS and our state legislators to further develop and advance the status of community paramedicine/mobile integrated health in our state!
H.R. 3378/S. 2121

  - Since introduction, H.R. 3378 has enlisted a total of 44 bipartisan cosponsors: [https://www.govtrack.us/congress/bills/115/hr3378/details](https://www.govtrack.us/congress/bills/115/hr3378/details)

- **S.2121: Introduced by Sen. Dean Heller (R-NV) in November 2017.** A Senate Finance Committee member, Sen. Heller was joined by fellow Committee member Sen. Michael Bennett (D-CO), who signed on as an original cosponsor. Additional cosponsors include Sen. Catherine Cortez Masto (D-NV), Sen. Tim Scott (R-SC), Sen. Shelley Capito (R-WV), Sen. Todd Young (R-IN), and Sen. Doug Jones (D-AL).

H.R.3378/S.2121 provide for long overdue reform and update of the Medicare Air Ambulance Fee Schedule, which has only seen inflationary updates since introduction in 2002 (and was based on the 1996 Medicare spend on all ambulance reimbursement, ground & air). These bills will:

  - Mandate cost-reporting for all air ambulance services. Failure to report will result in disqualification from initial temporary short-term increases in air ambulance reimbursement (see additional bullet point). Cost-reporting will inform a rebasing of reimbursement, based upon cost data.
  - Mandate quality reporting for all air ambulance services. Failure to report will result in a 10% penalty on air ambulance reimbursement. Quality reporting will inform the creation of a Value-Based Purchasing (VBP) program to incentivize quality improvement in air ambulance services.
  - Provide short-term temporary increases in the 1st three years, for financial relief for air medical services, which are currently funded at 40% below cost. These increases end after rebasing.
FAA Reauthorization & Airline Deregulation Act Revision

- **FAA Authorization is set to expire Sep. 30, 2018.** The House passed FAA Reauthorization (H.R. 4), which included Sec. 412, which creates an advisory committee to review how to segregate charges for air ambulance services between aviation and non-aviation (i.e., healthcare) aspects. Requires DOT to complete rulemaking based upon the advisory committee’s recommendations. Further, Sec. 412(h) revises the Airline Deregulation Act (ADA) to allow expanded state (to include political subdivisions of a state) oversight of anything deemed to be “non-aviation.”

- Senate FAA Reauthorization is being reviewed for passage and has no similar provision.
  - However, Sen. McCaskill (D-MO) introduced S. 2812, which is identical to H.R. 4, Sec. 412, and will offer S. 2812 as an amendment to the Senate FAA bill.

- **ADA revision would have a devastating impact on air medical services, creating the potential for expanded state oversight of aspects of air medical services (rates, routes, and services) which currently fall under DOT oversight due to express federal preemption of state oversight of rates, routes, and services of air carriers.**
  - Air medical services are certificated as Part 135 air carriers. Part 135 certification is required for CMS reimbursement.
  - States could expand authority to control air ambulance rates, service areas, aircraft configuration, and ability to conduct interstate transport of patients.

- ADA revision is primarily supported by insurance commissioners and healthcare insurers who want to exempt air medical services from DOT oversight for the purposes of having greater control over air ambulance services pricing.

- This legislation will not reduce balance billing concerns, as health insurers will likely only pay for healthcare services, and pass on the aviation service costs to the consumer.
Thank you!

- Your input and participation in the Indiana EMS System is vitally important.
- **Mkaufmann@dhs.in.gov**
- 317-514-6985

Indiana Government Center South
302 W. Washington St. Room E238
Indianapolis, Indiana  46204
Safety Shower Toolkit

Jamie Dugan, TEXT
Good Samaritan Hospital

Email questions to: indianatrauma@isdh.in.gov
BABY SAFETY SHOWER

Educating Parents to Prevent Infant Mortality
Infant Mortality

- Indiana ranks as the 42\textsuperscript{nd} worst state in the nation for infant mortality

- In 2013, the Southwest region accounted for the highest infant mortality rate in Indiana
Supporting Partners

Bryson’s Time Out Take Ten
CASA (Court Appointed Special Advocates)
Good Samaritan Hospital & Volunteers
  Hamilton Center
  Healthy Families Program
  Indiana Tobacco Quit Line
  ISDH Division of Trauma & Injury Prevention
  MCH MOMS Helpline
  Memorial Hospital and Health Care Center
  Mouzin Brothers Farms
  Pace Community Action Agency
  Safe Kids Vanderburgh/Warrick
  Samaritan Center
  St. Joseph’s Catholic Church
  St. Vincent Evansville & Volunteers
  Sullivan Civic Center
Sullivan County Community Hospital & Volunteers
Terre Haute Regional Hospital & Volunteers
  Toyota Boshoku Illinois
  Vincennes City Fire
  Vincennes Pet Port
  Vincennes Township Fire
  Vincennes University
Goal: 167 first birthdays

- May 2017  Vincennes
- August 2017  Evansville
- November 2017  Vincennes
- January 2018  Jasper
- April 2018  Vincennes
- June 2018  Sullivan
St. Vincent Evansville Baby Safety Shower August 2017

Good Samaritan Baby Safety Shower October 2017
Siblings welcome
Infant CPR
Safe Sleep
Fire Safety
Shower Booths

Car Seat Safety
Infant CPR
Safe Sleep
Fire/Carbon Monoxide Safety
Smoking Cessation
Prenatal Care & Delivery
Medical Financial Assistance
Breastfeeding
Bathing Safety
Opioid Epidemic
OK to visit ER
Domestic Violence
Pet Safety
WIC
Early Head Start
Time Out- Shaken Baby Syndrome
Until next year...
Watch them grow
Certified Passenger Safety Technicians (CPST)
Grow Up with Good Samaritan
Everytime a child is saved from the dark side of life, everytime one of us makes the effort to make a difference in a child’s life, we add light and healing to our own lives.

-Oprah Winfrey
Risk factors for inter-facility transfer patients

Dr. Peter Jenkins, Trauma Surgeon
IU Health – Methodist Hospital

Email questions to: indianatrauma@isdh.in.gov
OUTCOMES OF SEVERELY INJURED PATIENTS TREATED AT NON-TRAUMA CENTERS:

PROJECT UPDATE

Peter C. Jenkins MD, MSc
K12 Emergency Care Research Scholar
National Heart, Lung, and Blood Institute
Outline

1. Review project
2. Identify barriers and opportunities associated with current analysis
3. Future directions
Outline

1. Review project
2. Identify barriers and opportunities associated with analysis
3. Future directions
Review Project: Goals

1. Determine transfer patterns of severely injured patients at non-trauma hospitals

2. Identify patient and injury characteristics associated with transfer to trauma centers

3. Examine outcomes of patients who remain at non-trauma centers
Review Project: Methods

• ISDH data (2013-2015)
• Calculate transfer rate at the population level
• Calculate transfer rate at the hospital level
• Multivariate logistic regression clustered at the hospital level to examine factors associated with:
  • Transfer status
  • Mortality (patients who remain)
Review Project: Results – patient transfer rates

1,255 patients (79 hospitals)

Transfer +/-

N

514 patients (41%)

127 patients (44%)

2013

195 patients (42%)

2014

192 patients (38%)

2015

741 patients (59%)

161 patients (56%)

267 patients (58%)

313 patients (62%)
Review Project: Results – hospital transfer rates

Mean hospital transfer rate = 74%
Median hospital transfer rate = 81%
Review Project: Table 1

Characteristics of severely injured patients admitted to non-trauma centers by transfer status (n=1,255)

<table>
<thead>
<tr>
<th></th>
<th>Remained at non-trauma center</th>
<th>Transferred to trauma center</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, %</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16-25 y</td>
<td>12.2</td>
<td>20.5</td>
<td>&lt;0.00</td>
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<tr>
<td>26-35 y</td>
<td>7.5</td>
<td>13.8</td>
<td></td>
</tr>
<tr>
<td>36-45 y</td>
<td>7.1</td>
<td>10.5</td>
<td></td>
</tr>
<tr>
<td>46-55 y</td>
<td>11.4</td>
<td>16.3</td>
<td></td>
</tr>
<tr>
<td>56-65 y</td>
<td>15.6</td>
<td>13.3</td>
<td></td>
</tr>
<tr>
<td>66-75 y</td>
<td>14.4</td>
<td>10.6</td>
<td></td>
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<tr>
<td>76-85 y</td>
<td>20.1</td>
<td>11.7</td>
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</tr>
<tr>
<td>&gt; 85 y</td>
<td>11.8</td>
<td>3.4</td>
<td></td>
</tr>
<tr>
<td>Missing, n</td>
<td>6</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Female, %</td>
<td>37.0</td>
<td>31.1</td>
<td>0.03</td>
</tr>
<tr>
<td>Race, %</td>
<td></td>
<td></td>
<td>0.03</td>
</tr>
<tr>
<td>White</td>
<td>91.1</td>
<td>92.0</td>
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<tr>
<td>Black</td>
<td>6.9</td>
<td>4.3</td>
<td></td>
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<tr>
<td>Other/Unknown</td>
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<tr>
<td>Primary Payer Source, %</td>
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<tr>
<td>Medicaid</td>
<td>4.6</td>
<td>7.5</td>
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</tr>
<tr>
<td>Medicare</td>
<td>42.2</td>
<td>19.6</td>
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<tr>
<td>Commercial</td>
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<td>32.7</td>
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<tr>
<td>Self pay</td>
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<td>15.5</td>
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<tr>
<td>Other</td>
<td>10.0</td>
<td>17.2</td>
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<tr>
<td>Not known</td>
<td>4.7</td>
<td>7.6</td>
<td></td>
</tr>
</tbody>
</table>
Review Project: Table 1 (cont.)

| Patient injury severity using ISS 98, mean (SD) | 21.7 (8.1) | 20.5 (6.5) | <0.00 |
| Mechanism of Injury, % |  |  | <0.00 |
| Fall | 54.4 | 28.0 |  |
| Motor vehicle collision | 21.2 | 35.0 |  |
| Pedestrian struck | 3.7 | 4.6 |  |
| Transport | 2.6 | 4.5 |  |
| Firearm | 2.4 | 3.7 |  |
| Cut/pierce | 0.6 | 1.6 |  |
| Other bike | 1.6 | 1.1 |  |
| Machine | 0.2 | 1.1 |  |
| Fire/Burn | 2.0 | 12.3 |  |
| Pedestrian other | 0.2 | 0.3 |  |
| Natural | 0.6 | 0.5 |  |
| Overexertion | 0.7 | 0.1 |  |
| Other | 5.1 | 3.9 |  |
| Missing | 4.9 | 3.4 |  |

Chi-square used to calculate p value for categorical variables and t-test used to calculate p value for continuous variables.
## Review Project: OR transfer

<table>
<thead>
<tr>
<th></th>
<th>Odds Ratio</th>
<th>P-value</th>
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<tbody>
<tr>
<td>Age</td>
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<td></td>
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<tr>
<td>16-25 y</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>26-35 y</td>
<td>0.96</td>
<td>0.87</td>
</tr>
<tr>
<td>36-45 y</td>
<td>0.88</td>
<td>0.66</td>
</tr>
<tr>
<td>46-55 y</td>
<td>0.91</td>
<td>0.61</td>
</tr>
<tr>
<td>56-65 y</td>
<td>0.66</td>
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<tr>
<td>66-75 y</td>
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<td>0.66</td>
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<tr>
<td>76-85 y</td>
<td>0.81</td>
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<td>&gt; 85 y</td>
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</tr>
<tr>
<td>Race</td>
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<tr>
<td>White</td>
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<tr>
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<td>Commercial</td>
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<td></td>
</tr>
<tr>
<td>Medicaid</td>
<td>1.08</td>
<td>0.76</td>
</tr>
<tr>
<td>Medicare</td>
<td>0.47</td>
<td>&lt;0.000</td>
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<tr>
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<tr>
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<td>0.10</td>
</tr>
<tr>
<td>Not known</td>
<td>2.23</td>
<td>0.13</td>
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## Review Project: OR transfer

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<tbody>
<tr>
<td>ISS 98</td>
<td>0.97</td>
<td>0.04</td>
</tr>
<tr>
<td>Pulse Rate</td>
<td>0.99</td>
<td>0.67</td>
</tr>
<tr>
<td>Mechanism of Injury</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blunt</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Burn</td>
<td>9.37</td>
<td>&lt;0.000</td>
</tr>
<tr>
<td>Penetrating</td>
<td>2.03</td>
<td>0.04</td>
</tr>
<tr>
<td>Other</td>
<td>0.73</td>
<td>0.42</td>
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<tr>
<td>Blank</td>
<td>0.96</td>
<td>0.86</td>
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</table>
**Review Project: OR mortality (n=514)**

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<tr>
<th>Age</th>
<th>Odds Ratio</th>
<th>P-value</th>
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</thead>
<tbody>
<tr>
<td>16-25 y</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>26-35 y</td>
<td>1.46</td>
<td>0.54</td>
</tr>
<tr>
<td>36-45 y</td>
<td>0.14</td>
<td>0.02</td>
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<tr>
<td>46-55 y</td>
<td>0.97</td>
<td>0.94</td>
</tr>
<tr>
<td>56-65 y</td>
<td>0.58</td>
<td>0.12</td>
</tr>
<tr>
<td>66-75 y</td>
<td>1.34</td>
<td>0.70</td>
</tr>
<tr>
<td>76-85 y</td>
<td>1.29</td>
<td>0.77</td>
</tr>
<tr>
<td>&gt; 85 y</td>
<td>4.59</td>
<td>0.06</td>
</tr>
<tr>
<td>Male</td>
<td>2.49</td>
<td>0.01</td>
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<table>
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<th>Race</th>
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<th>P-value</th>
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<td>White</td>
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<td>Black</td>
<td>0.31</td>
<td>0.08</td>
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<tr>
<td>Other/Unknown</td>
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<th>Primary Payer Source</th>
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<td>Medicaid</td>
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<tr>
<td>Medicare</td>
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<td>Self pay</td>
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<tr>
<td>Other</td>
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<tr>
<td>Not known</td>
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<td>0.78</td>
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## Review Project: OR mortality (n=514)

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<tr>
<th></th>
<th>Odds Ratio</th>
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<tbody>
<tr>
<td>ISS 98</td>
<td>1.15</td>
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<tr>
<td>Pulse Rate</td>
<td>0.99</td>
<td>0.67</td>
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<tr>
<td>Mechanism of Injury</td>
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<tr>
<td>Blunt</td>
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<tr>
<td>Burn</td>
<td>-</td>
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<tr>
<td>Penetrating</td>
<td>62.85</td>
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<tr>
<td>Other</td>
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<tr>
<td>Hospital transfer rate, tertile</td>
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<tr>
<td>T1 (0%-54%)</td>
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<tr>
<td>T2 (55%-80%)</td>
<td>1.9</td>
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<tr>
<td>T3 (&gt;80%)</td>
<td>9.23</td>
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</table>
Outline

1. Review project
2. Identify barriers and opportunities associated with analysis
3. Future directions
Identify barriers and opportunities associated with analysis

1. Include comorbidities
2. Include hospital variables
3. Evaluate data quality
Identify barriers and opportunities associated with analysis

1. Include comorbidities
   a. Statistical analysis requires 10-20 patients per variable included in a regression model
   b. Comorbidity indexes combine multiple comorbidities into a single variable
   c. Elixhauser and Charleston indexes are most common (ICD-10)
Identify barriers and opportunities associated with analysis

2. Include hospital variables
   a. Necessary for analysis of hospital-level performance
   b. TQIP platform includes hospital variable, but not required field
   c. AHA data (2013-2016) and supplemental survey data

Thanks Ramzi, Elisa, Jill, Missy, and all who participated!!!
Identify barriers and opportunities associated with analysis

3. Evaluate data quality
   a) Missing days (approx 150 patient admissions) from initial analysis
   b) VPN access
   c) Assessed completeness of days represented
Outline

1. Review project
2. Identify barriers and opportunities associated with analysis
3. Future directions
Future directions – short-term

1. “Comparison of Comorbidity Indexes Predicting Trauma Related Mortality”
2. “Outcomes of Severely Injured Patients Treated at Non-trauma Centers”
3. “Influence of Indiana Medicaid Expansion on Trauma Patient Outcomes”
4. “Hospital Variation in Trauma Patient Outcomes at Non-trauma Centers”
Future directions – short-term

1. “Comparison of Comorbidity Indexes Predicting Trauma Related Mortality”
2. “Outcomes of Severely Injured Patients Treated at Non-trauma Centers”
3. “Influence of Indiana Medicaid Expansion on Trauma Patient Outcomes”
4. “Hospital Variation in Trauma Patient Outcomes at Non-trauma Centers”
Future directions – longterm

1. NIH K08 grant proposal (Feb. 2019)
   I. Demonstrate variation among non-trauma hospitals
   II. Identify barriers to optimal patient transport at non-trauma hospitals
   III. ISDH pilot IN-TQIP (feedback & support)

2. Statewide IN-TQIP implementation (2021)
Summary

1. Include trauma comorbidity index when evaluating mortality risk
2. Collect data prospectively using existing hospital fields in trauma registry
3. Present findings to TCC in October
Trauma system planning subcommittee update

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

Email questions to: indianatrauma@isdh.in.gov
Trauma System Planning Subcommittee

- Is there a need for ACS to come back for another site visit?
- Division strategic plan

Email questions to: indianatrauma@isdh.in.gov
2018 ISTCC & ITN Meetings

- Location: Indiana Government Center – South, Conference Room B.
- Webcast still available.
- Time: 10:00 A.M. EST.
- Dates:
  - October 19
  - December 14

Email questions to: indianatrauma@isdh.in.gov
Other Business