Indiana Trauma Care Committee Meeting
November 8, 2013
HOSPITALS REPORTING TO THE INDIANA TRAUMA REGISTRY – QUARTER 2

**District 1**
Methodist Northlake
Methodist Southlake
**St. Anthony – Crown Point**
**St. Margaret - Dyer**

**District 2**
Community Hospital of Bremen
Elkhart General
Memorial Hospital South Bend
Pulaski Memorial Hospital

**District 3**
Cameron Memorial
Lutheran
Parkview Huntington
Parkview LaGrange
Parkview Noble
Parkview Regional Medical Center
Parkview Whitley
Hospitals Reporting to the Indiana Trauma Registry – Quarter 2

**District 4**
- Franciscan St. Elizabeth – Lafayette Central
- Franciscan St. Elizabeth – Lafayette East
- IU Health – Arnett
- IU Health – White Memorial

**District 5**
- St. Francis – Indianapolis
- St. Francis - Mooresville
- Hendricks Regional Health
- IU Health – Methodist
- IU Health – Riley for Children
- Johnson Memorial
- Major Hospital
- St. Vincent - Indianapolis
- Wishard Health Services
- Witham Health Services
- Witham at Anson
Hospitals reporting to the Indiana Trauma Registry – Quarter 2

**District 6**
Community Hospital of Anderson & Madison Co.
Henry County
IU Health – Ball Memorial
IU Health – Tipton
Marion General
Reid Hospital
St. Vincent Anderson

**District 7**
St. Vincent - Clay
Sullivan County Community
Terre Haute Regional
Union Hospital

**District 8**
IU Health - Bedford
IU Health – Bloomington
Monroe Hospital
Schneck Medical Center
HOSPITALS REPORTING TO THE INDIANA TRAUMA REGISTRY – QUARTER 2

District 9
Scott Memorial

District 10
Daviess Community
Deaconess
Gibson General
Good Samaritan
Memorial Hospital & Health Care Center
Perry County Memorial
St. Mary’s Medical Center
St. Mary’s Warrick
HOSPITALS TRAINED ON THE TRAUMA REGISTRY (YTD)

- Bluffton Regional
- Cameron Memorial
- Community Hospital of Anderson & Madison
- Daviess Community
- Gibson General
- Good Samaritan
- Greene County
- IU Health – Bedford
- IU Health – North
- IU Health – Tipton
- King’s Daughters’

- Marion General
- Methodist Southlake
- Monroe Hospital
- Porter Valparaiso
- Scott Memorial
- St. Margaret – Hammond
- St. Mary’s Warrick
- St. Vincent Anderson
- St. Vincent – Clay
- St. Vincent – Dunn
- St. Vincent – Jennings
- Union – Clinton
QUARTER 2 2013 STATEWIDE REPORT

- 6,056 incidents
- April 1, 2013 to June 30, 2013
- 51 total hospitals reporting
  - 8 trauma centers
  - 43 hospitals
EXAMPLE: HOSPITAL-SPECIFIC REPORTS

Quarter 2 2013 data from 04/01/2013 - 06/30/2013
6056 Incidents Statewide and 51 Hospitals Reporting

Patient Age Groupings (Years)

Hospital A

Indiana Average

Patient Age Groupings

Trauma Center

Non-Trauma Center
Patient Demographics

Patient Age

Patient Age Groupings

Patient Gender

Patient Race

<1% Race - Asian, Native Hawaiian or Other Pacific Islander, American Indian or Alaska Native
ED: Disposition / Length of Stay

ED Disposition by Percentage

- Floor Bed: 43%
- ICU: 17%
- Transferred: 14%
- OR: 10%
- Home w/o Services: 2%
- Observation: 5%
- Step-Down: 2%
- Expired: 1%
- NK/NR/NA: 5%

ED Length of Stay (Hours)

- <1: 4%
- 1-2: 29%
- 3-5: 39%
- 6-11: 9%
- 12+: 1%
- Null: 17%

ED Disposition by Count

- Floor Bed: 1569
- ICU: 1055
- Transferred: 877
- OR: 754
- Home w/o Services: 468
- Observation: 151
- Step-Down: 92
- Expired: 58
- NK/NR/NA: 340

Average ED Length of Stay

<table>
<thead>
<tr>
<th></th>
<th>Minutes</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indiana</td>
<td>199.07</td>
<td>3.32</td>
</tr>
<tr>
<td>Trauma</td>
<td>188.07</td>
<td>3.13</td>
</tr>
<tr>
<td>Non-Trauma</td>
<td>213.89</td>
<td>3.55</td>
</tr>
</tbody>
</table>
EDDisposition by ISS

ED Disposition by ISS (Trauma Center)

Counts

Floor Bed | ICU | Transferred | OR | Home | Observation | Step-Down | Expired | NK/NR/NA
---|---|---|---|---|---|---|---|---
NO ISS | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0
75 | 0 | 5 | 0 | 3 | 0 | 0 | 0 | 3
45-74 | 0 | 7 | 0 | 0 | 1 | 0 | 0 | 1
25-44 | 18 | 175 | 0 | 46 | 0 | 1 | 1 | 13
15-24 | 75 | 191 | 3 | 46 | 0 | 2 | 4 | 6
9-14 | 606 | 296 | 53 | 146 | 11 | 38 | 22 | 5
1-8 | 865 | 203 | 29 | 218 | 81 | 121 | 31 | 6

ED Disposition by ISS (Non-Trauma Center)

Counts

Floor Bed | ICU | Transferred | OR | Home | Observation | Step-Down | Expired | NK/NR/NA
---|---|---|---|---|---|---|---|---
NO ISS | 23 | 2 | 41 | 1 | 1 | 1 | 3 | 2
75 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1
45-74 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0
25-44 | 2 | 10 | 21 | 5 | 0 | 0 | 5 | 0
15-24 | 11 | 16 | 36 | 4 | 2 | 7 | 3 | 5
9-14 | 484 | 41 | 220 | 46 | 5 | 32 | 31 | 3
1-8 | 535 | 55 | 436 | 95 | 39 | 100 | 55 | 4

Legend: NO ISS = No Injury Score, NK/NR/NA = Not Known/Not Recorded/Not Available
PATIENT OUTCOMES

ED LOS by ISS

<table>
<thead>
<tr>
<th>ISS Category</th>
<th>Indiana Average</th>
<th>Trauma Center</th>
<th>Non-Trauma Center</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-8</td>
<td>203.3</td>
<td>186.4</td>
<td>222.6</td>
</tr>
<tr>
<td>9-14</td>
<td>204.3</td>
<td>200.7</td>
<td>208.9</td>
</tr>
<tr>
<td>15-24</td>
<td>189.4</td>
<td>185.0</td>
<td>206.1</td>
</tr>
<tr>
<td>25-44</td>
<td>149.2</td>
<td>149.7</td>
<td>145.9</td>
</tr>
<tr>
<td>45-74</td>
<td>114.1</td>
<td>117.4</td>
<td>53.0</td>
</tr>
<tr>
<td>75</td>
<td>85.4</td>
<td>92.0</td>
<td>13.0</td>
</tr>
<tr>
<td>No ISS</td>
<td>180.1</td>
<td>331.0</td>
<td>168.3</td>
</tr>
</tbody>
</table>

Primary Payer Mix

- Medicare: 29%
- Self Pay: 17%
- Medicaid: 15%
- Blue Cross/Blue: 10%
- Workers Comp: 8%
- No Fault Auto: 3%
- Other Government: 2%
- Other: 1%
- Null: 12%

Probability of Survival (Ps)

- Ps < 50%: 1% Indiana, 2% Trauma, 0% Non-Trauma
- Ps >= 50%: 56% Indiana, 65% Trauma, 42% Non-Trauma
- Unable to calculate Ps: 43% Indiana, 32% Trauma, 58% Non-Trauma

ICU Length of Stay (Days)

- No ICU Stay: 80% Indiana, 9% Trauma, 8% Non-Trauma
- 1-2: 2% Indiana, 2% Trauma, 8% Non-Trauma
- 3-7: 2% Indiana, 1% Trauma, 2% Non-Trauma
- 8-14: 1% Indiana, 1% Trauma, 0% Non-Trauma
- 15-30: 0% Indiana, 1% Trauma, 0% Non-Trauma
- 31+: 0% Indiana, 0% Trauma, 0% Non-Trauma

Due to the many data points required to calculate Ps, not every patient has a calculated Ps. This graph represents 2789 incidents with calculated Ps.
HOSPITAL DISPOSITION / LENGTH OF STAY

Hospital Length of Stay (Days)

Hospital LOS by Ps

Hospital Disposition

*<1% Hospital Disposition: Intermediate Care Center, Hospice Care, AMA
## Transfer Patient Data

### For Transfer Patients:

<table>
<thead>
<tr>
<th>Probability of Survival</th>
<th>ED Length of Stay (minutes)</th>
<th>ED Length of Stay (hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ps &lt;50% (n=2)</td>
<td>74.00</td>
<td>1.23</td>
</tr>
<tr>
<td>Ps &gt;50% (n=291)</td>
<td>157.46</td>
<td>2.62</td>
</tr>
<tr>
<td>Unable to calculate Ps (n=461)</td>
<td>151.24</td>
<td>2.52</td>
</tr>
</tbody>
</table>

### Hospital to Hospital Transfer

- **Percentage of hospital to hospital transfer times per category**

  - 0-10: 1%
  - 11-20: 4%
  - 21-30: 9%
  - 31-40: 12%
  - 41-50: 10%
  - 51-60: 6%
  - 61-70: 4%
  - 71-80: 3%
  - 81-90: 2%
  - 91-100: 1%
  - 101-110: 1%
  - 111-120: 1%
  - >120: 4%

- **Note:** Hospital to hospital transfer time is for patients initially at a hospital and then transferred to a trauma center.
TRANSFER PATIENT DATA

- 355 Cases Linked
  - 205 by Patient’s First & Last Name
  - 150 by Patient’s DOB & Injury Date

- 6,056 cases reported Q2 2013
  - 2,204 potential for linkage
    - 717 cases transferred OUT from NON-trauma centers
    - 1,424 cases transferred IN to Trauma Centers

- Linked cases make up 14% of Q2 2013 data
  - All 10 public health preparedness districts represented
TRANSFER PATIENT DATA - AVERAGES

8 minutes

16 minutes
TRANSFER PATIENT DATA - AVERAGES

16 minutes

2 Hours
48 minutes
TRANSFER PATIENT DATA - AVERAGES

56 minutes

Ground: 68 minutes
Air: 39 minutes

Total: 4 hours 24 minutes
TRANSFER PATIENT DATA – PATIENT OUTCOMES

Final Hospital - ED Disposition

- Floor Bed: 42%
- ICU: 27%
- OR: 12%
- Direct Admit: 9%
- Observation Unit: 6%
- Home w no.: 2%
- Expired: 1%
- Transferred to: 1%

Final Hospital - Hospital Disposition

- Home w no. Home services: 66%
- Skilled Nursing Facility: 13%
- Rehab / Long-Term Care: 10%
- Expired: 3%
- Home w Home Services: 3%
- Acute Care Hospital: 1%

Final Hospital - Hospital LOS (Days)

- 0 - 3: 62%
- 4 - 7: 22%
- 8 - 14: 10%
- 15 - 21: 3%
- 22 - 30: 2%
- 31+: 0%
- NULL: 0%
Critical Patient defined as:
- ISS > 15
- OR
- GCS ≤ 12
- OR
- Shock Index > 0.9
CRITICAL 

PATIENT TRANSFER DATA - AVERAGES

16 minutes

2 Hours
CRITICAL PATIENT TRANSFER DATA - AVERAGES

49 minutes

Ground: 60 minutes
Air: 39 minutes

Total: 3 hours 27 minutes
Final Hospital - ED Disposition

Final Hospital - Hospital Disposition

Final Hospital - Hospital LOS (Days)
# Transfer Data – Comparison of All Trauma Transfers vs. Critical Trauma Transfers

<table>
<thead>
<tr>
<th>Event Description</th>
<th>All Transfer Patients</th>
<th>Critical Transfer Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMS Notified to Scene</td>
<td>8 minutes</td>
<td>8 minutes</td>
</tr>
<tr>
<td>EMS Scene Arrival to Departure</td>
<td>16 minutes</td>
<td>14 minutes</td>
</tr>
<tr>
<td>EMS Scene Departure to Initial Hospital ED Arrival</td>
<td>16 minutes</td>
<td>16 minutes</td>
</tr>
<tr>
<td>Initial Hospital ED Arrival to Departure</td>
<td>2 hours 48 minutes</td>
<td>2 hours</td>
</tr>
<tr>
<td>Initial Hospital ED Departure to Final Hospital ED Arrival</td>
<td>56 minutes</td>
<td>49 minutes</td>
</tr>
<tr>
<td><strong>TOTAL TIME:</strong></td>
<td>4 hours 24 minutes</td>
<td>3 hours 27 minutes</td>
</tr>
</tbody>
</table>
Transfer Data – Comparison of All Trauma Transfers vs. Critical Trauma Transfers

**Final Hospital - ED Disposition**

- All Transfer Patients: 42%
- Critical Transfer Patients: 27%
- Floor Bed: 12%
- ICU: 6%
- OR: 9%
- Observation: 1%
- Direct Admit: 2%
- Expired: 0%
- Home w/ no Home Services: 0%
- Skilled Nursing Facility: 10%
- Rehab / Long-Term Care: 3%
- Expired: 3%
- Home w/ Home Services: 3%

**Final Hospital - Hospital Disposition**

- All Transfer Patients: 66%
- Critical Transfer Patients: 13%
- Home w/ no Home Services: 13%
- Skilled Nursing Facility: 10%
- Rehab / Long-Term Care: 3%
- Expired: 3%
- Home w/ Home Services: 3%

**Final Hospital - Hospital LOS (Days)**

- All Transfer Patients: 62%
- Critical Transfer Patients: 22%
- 0-3 Days: 22%
- 4-7 Days: 10%
- 8-14 Days: 3%
- 15-21 Days: 2%
- 31+ Days: 0%
- NULL: 0%
QUESTIONS?
ISDH EMS Registry Data

- 5,695 traumatic injury incidents
  - Possible Injury indicated
  - Provider Primary Impression
  - Provider Secondary Impression
  - Complaint Reported by Dispatch is trauma injury
- January 1, 2013 to October 8, 2013
- 29 total providers reporting
- Still in the Pilot Project phase

215,000+ runs in the ISDH EMS Registry
Patient Age Groupings (Years)

Patient Gender

Patient Race

Payer Type

<1% Race: Asian, Native Hawaiian, American Indian/Alaskan Native

*Traumatic Injuries include the following criteria:
Possible Injury indicated, or Provider Primary or Secondary Impression is Traumatic injury, or Complaint Reported by Dispatch is Traumatic injury
**Time to Patient (Minutes)**

- 93.6% of patients were transported within 0.5 minutes.
- 1% were transported in 1.5 minutes.

**Scene Time (Minutes)**

- 34.9% of scene times were recorded as 0-10 minutes.
- 49.9% were recorded as 11-30 minutes.

**Destination Time (Minutes)**

- 65% of destination times were recorded as 6-10 minutes.
- 11.9% were recorded as >15 minutes.

**Time of Call**

- Graph showing frequency count of incidents by hour of call, with a peak around 10 PM.
- Note: Time of call not recorded for 2,217 incidents.

**Scene Time:** Difference in time from arrival at scene to leaving scene.

**Destination Time:** Difference in time from arrival at destination to unit back in service.
### Average Run Mileage

<table>
<thead>
<tr>
<th>Obs</th>
<th>Destination</th>
<th>Miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mileage to Scene</td>
<td>0.9</td>
</tr>
<tr>
<td>2</td>
<td>Mileage to Destination</td>
<td>3.4</td>
</tr>
<tr>
<td>3</td>
<td>Total Mileage</td>
<td>5.1</td>
</tr>
</tbody>
</table>

### Average Run Time

<table>
<thead>
<tr>
<th>Obs</th>
<th>Destination</th>
<th>Minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Time to Scene</td>
<td>8.67</td>
</tr>
<tr>
<td>2</td>
<td>Time to Patient</td>
<td>1.57</td>
</tr>
<tr>
<td>3</td>
<td>Time at Scene</td>
<td>16.13</td>
</tr>
<tr>
<td>4</td>
<td>Time to Destination</td>
<td>17.29</td>
</tr>
<tr>
<td>5</td>
<td>Back in Service</td>
<td>31.44</td>
</tr>
<tr>
<td>6</td>
<td>Total Run Time</td>
<td>68.42</td>
</tr>
</tbody>
</table>

### Primary Role of Unit

- Non-Transport: 9.9%
- Transport: 99.0%
- Rescue: 0.2%
- Supervisor: 0.2%
- Net Recorded: 1.7%

### Level of Transport

- ALS, Level 1: 0.7%
- ALS, Level 1 Emergency: 17.6%
- ALS, Level 2: 2.1%
- BLS: 1.8%
- BLS, Emergency: 5.2%
- NR/NA: 2.2%
Cause of Injury (COI)

- Fall: 35.8%
- Stabbing/Cutting: 21.8%
- Assault: 2.2%
- Pedestrian Traffic: 2.5%
- Motorcycle Accident: 1.7%
- Motor Vehicle Non-Traffic: 26.7%

<1.5% COI: Stabbing/Cutting, Assault, Pedestrian Traffic, Bites, Machinery Accidents, Fire/Flames, Accident, Bicycle Accident, Firearm Injuries

Response Mode to Scene

- No Lights and Sirens: 31.4%
- Lights and Sirens: 83.6%

Incident Location Type

- Home/Residence: 37.8%
- Health Care Facility: 2.7%
- Street or Highway: 32.3%
- Trade or Service: 8.1%
- Public Building: 5.4%
- Place of Recreation or Sport: 2.4%
- Residential Institution: 1.8%
- Not Recorded: 5%

<1% Incident Location Type: Mine or Quarry, Lake/River/Ocean, Place of Recreation of Sport

Transport Mode from Scene

- No Lights or Sirens: 60.3%
- Lights and Sirens: 9.2%
- Not Recorded: 25.5%
QUESTIONS?