

Indiana Trauma Registry

Statewide Quarter 3 Data Report

July 1, 2017—September 30, 2017

9,996 Incidents

100 Total Hospitals Reporting

Level I and II:	10 facilities	51.0% of data
Level III:	12 facilities	15.8% of data
(Non-Trauma) Hospitals:	77 facilities	33.2% of data

For Quarter 3 2017 which spanned from July 1, 2017—September 30, 2017 there were 9,996 incidents reported to the Indiana Trauma Registry at the Indiana State Department of Health. There were 100 hospitals that reported data, of which 10 were level I or II trauma centers, 12 were level III trauma centers and 77 were non-trauma centers. There were 2 hospitals that either started to report again or were new to reporting during this quarter compared to the previous quarter, while 2 hospitals dropped off from reporting. A map of the state with the reporting hospitals can be found on page 17. Trauma centers represented 66.8% of the data. There were 3,539 incidents reported for July, 3,328 reported for August, and 3,129 incidents reported for September.

The content of this report has changed due to suggestions and additions requested by the Indiana State Trauma Care Committee at the April 21, 2017 meeting. Explanations of the changes requested and adapted from the ISTCC meeting can be found on page 18.

Some general reminders include that the blue columns represent an Indiana average, red columns represent level I and II trauma centers, green columns represent level III trauma centers and orange non-trauma centers. If a single percent is listed above a group of bars, the percent listed represents the average for Indiana. If a number is listed above a group of bars, it represents the count for Indiana. The category ‘All Transfers’ denotes the patient group where ED Disposition = Transferred to Another Hospital. **The category ‘Linked Transfers’ represents the patient group for whom the initial hospital and final hospital information could be linked.**

Definitions:

Direct Admit: Patient is admitted directly to the hospital and does not spend time in Emergency Department. The ED Length of Stay should reflect a direct admittance.

External Cause of Injury: ICD-10-CM codes that are used to describe the mechanism or external factor that caused the injury event.

Trauma Type: The classification of the force applied to the body. Trauma type categories include blunt, penetrating, thermal, and other trauma.

Injury Severity Score: An anatomical scoring system defined as the sum of the three highest squared maximum Abbreviated Injury Scale (AIS) values to account for multiple injuries in the six body regions.

Formulas:

Acronyms:

ED: Emergency Department	MVC: Motor Vehicle Collision
ICU: Intensive Care Unit	OR: Operating Room
ISS: Injury Severity Score	Ps: Probability of Survival
LOS: Length of Stay	Level I, II and III: Verified and In
NTC: Non-trauma Center	Process Trauma Centers
	CAHs: Critical Access Hospital

Calculations:

$Ps = 1/(1+e^{-b})$ where $b=b_0+b1(RTS) + b2(ISS) + b3(Age\ Index)$

Total GCS = Verbal GCS + Motor GCS + Eye GCS

$RTS = 0.94 * GCS + 0.73 * SBP + 0.29 * RR$

$ISS = (AIS)^2 + (AIS)^2 + (AIS)^2$



Indiana State
Department of Health
Trauma and Injury Prevention

Indiana Trauma Registry

Statewide Quarter 3 Data Report

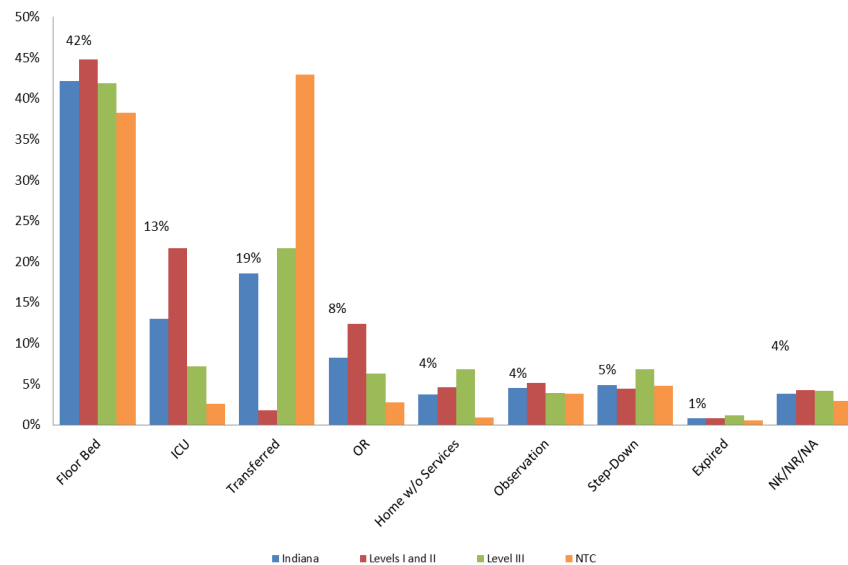
July 1, 2017—September 30, 2017

9,996 Incidents

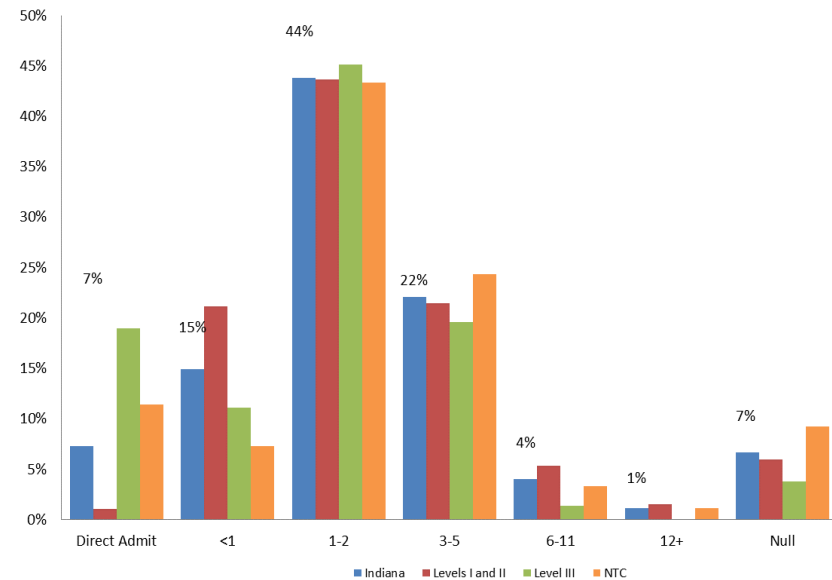
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ED Disposition by Percentage



ED Length of Stay (Hours)



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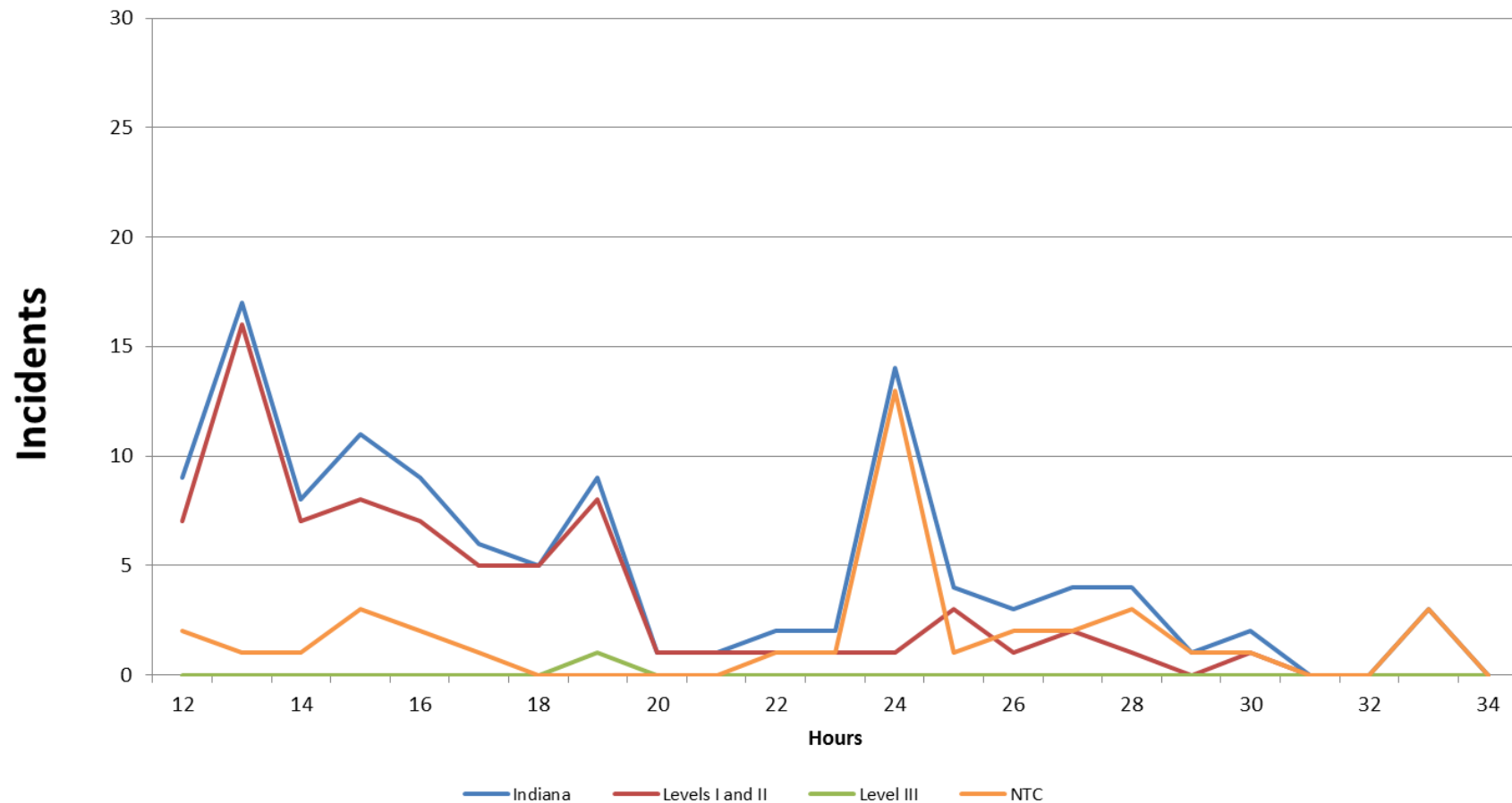
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ED Disposition for ED LOS >12 Hours



N=115

*No cases expired

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ED LOS > 12 Hours, N=115

Facilities	38 Level I and II 77 Non-trauma Centers	Region	16 North; 65 Central; 20 South; 14 Unknown/Out of State
Average Distance from Scene to Facility	20.5 Miles	ISS	56 (1-8 cat); 39 (9-15 cat); 8 (16-24), 4 (25-44) , 8 (No ISS)
Transport Type	80 Ambulance; 22 Private Vehicle; 1 Police ; 6 Unknown	GCS Motor	5 (1 cat); 2 (5 cat); 92 (6 cat); 16 (unknown)
Cause of Injury	35 Transport; 55 Falls; 5 Inanimate mechanical force; 1 animate mechanical forces, 1 Heat, 18 Not Identified	RTS—Systolic	0 (2-3) ;105 (4) 10 (unknown)
Signs of Life	110 Yes 5 No	RTS—Resp. Scale	0 (0-1) ; 1(2); 102 (3); 3 (4); 9 (unknown)
Age	48.08 Years (1-95 Years)	Resp. Assistance	10 Yes; 91 No; 7 Unknown
Gender	51 Female; 64 Male	ED LOS Hours	115 (12-34)
Interfacility Transfer	21 Yes; 94 No	ED Disposition	48 Floor; 10 Home without services; 3 ICU; 6 Observation; 13 OR; 13 Step Down; 17 Transferred; 0 Unknown

-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).

Indiana Trauma Registry

Statewide Quarter 3 Data Report

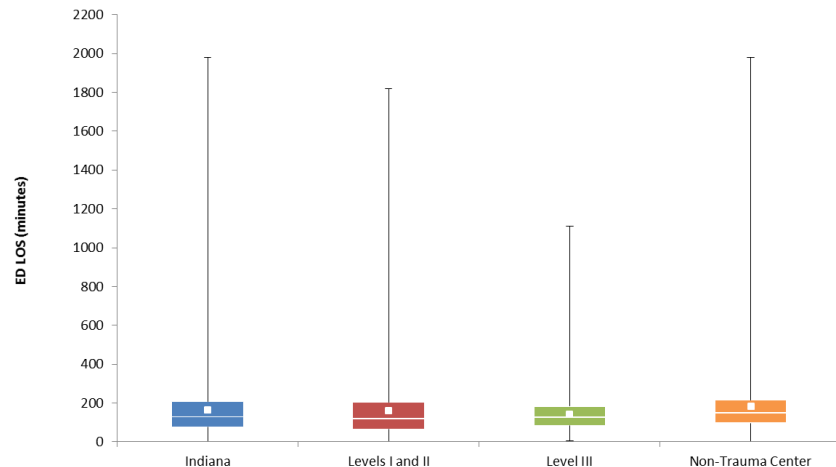
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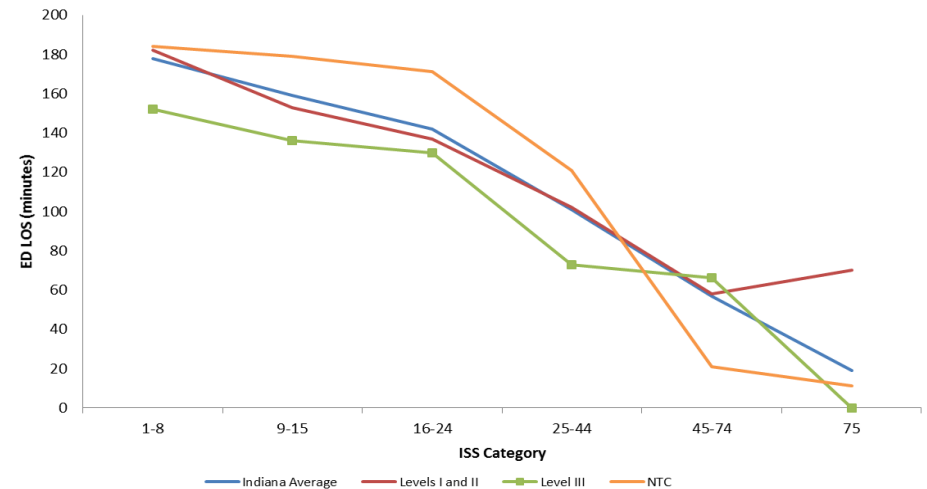
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ED LOS (Minutes) - All Patients



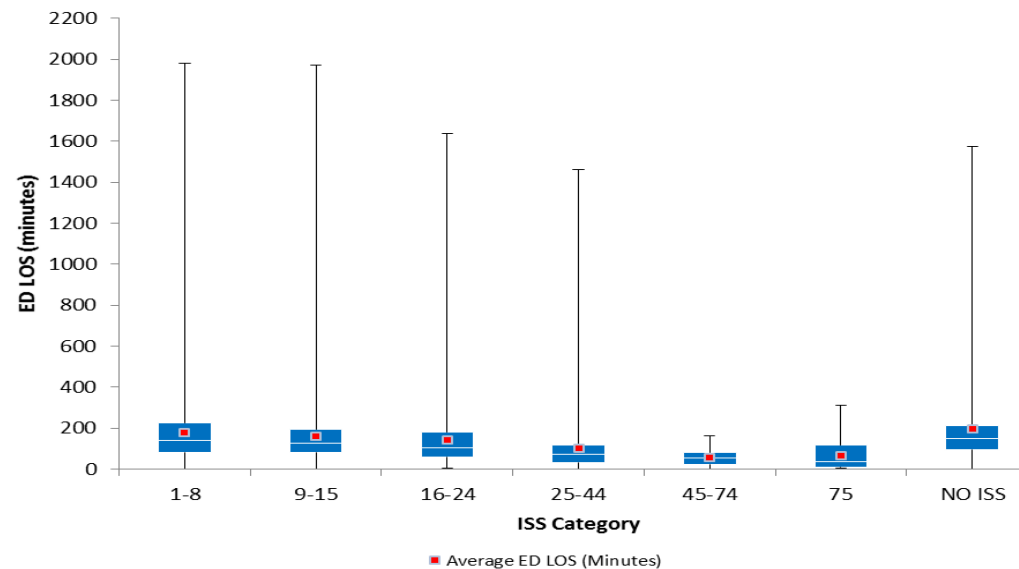
ED LOS (Minutes) by ISS



A table with all the values for ED LOS is found on page 52.

Note for EDLOS by ISS, there were 21 cases with ISS of 75; none were at a non-trauma center.

ED LOS (Minutes) by ISS



A table with values for ED LOS by ISS may be found on page 52

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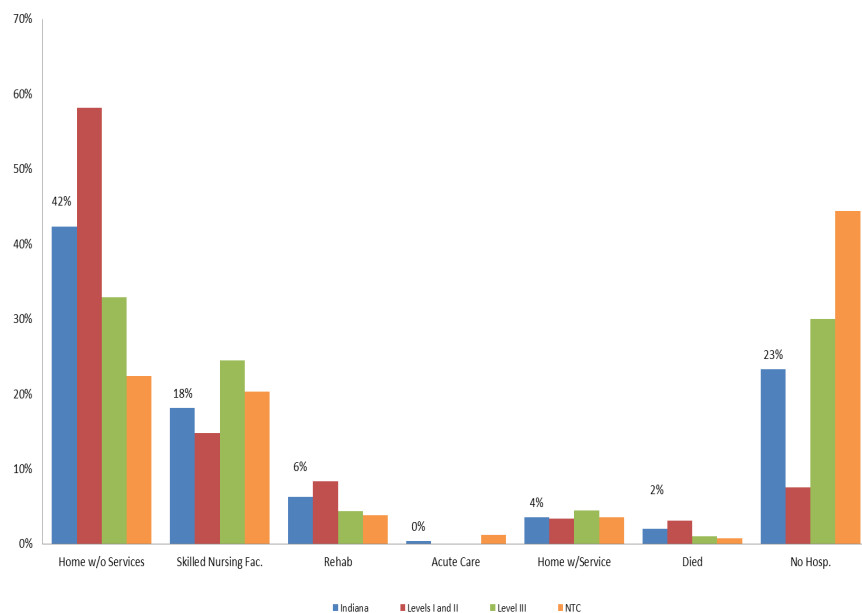
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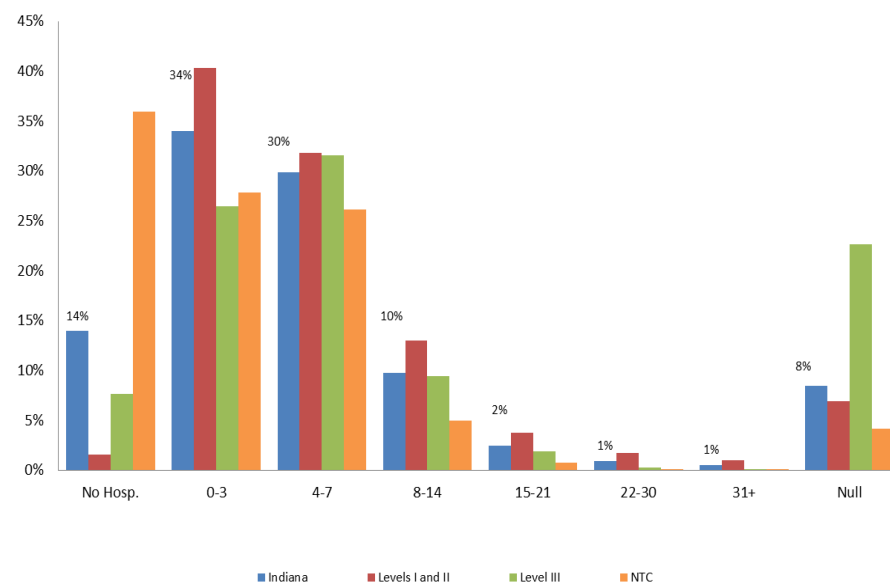
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Hospital Disposition



Hospital Length of Stay (days)



Hospital dispositions with <1% included: Another institution, Null, Psychiatric Hospital, Long-Term Care Hospital and Intermediate Care

Indiana Trauma Registry

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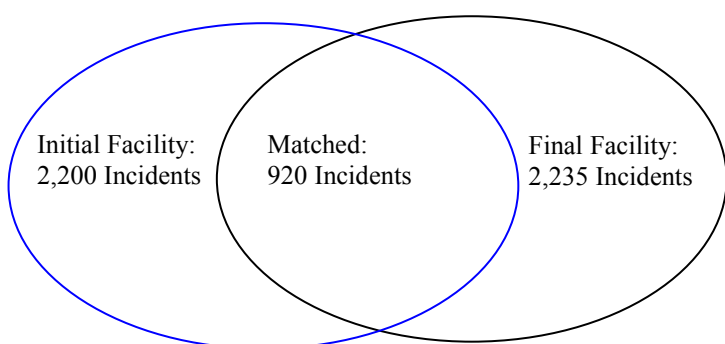
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For Quarter 3 2017, of the 9,996 incidents reported to the Indiana Trauma Registry, 2,200 cases that had an ED Disposition of “Transferred to another acute care facility” at the initial facility or that had the Inter-Facility Transfer equal to “Yes” at the Trauma Center. Of those transferred, 920 cases were probabilistically matched. The linked cases make up 9.2% of the Q2 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.



The initial facility in which transfers come from may be considered Critical Access Hospitals (CAHs). All Indiana CAHs are considered Rural, and must meet additional requirements to have a CAH designation, such as having no more than 25 inpatient beds and being located in a rural area. Facilities that are highlighted indicate that these facilities reported data for Quarter 3 2017.

Within this transfer data section, the purple columns represent the transfer cases and the single percentages represent the percent for the transfer cases. For two demographic variables, patient age groupings and gender, the Indiana average is included to provide more insight to this transfer population.

CAH List

Adams Memorial Hospital	Perry County Memorial Hospital
Cameron Memorial Community Hospital	Pulaski Memorial Hospital
Community Hospital of Bremen	Putnam County Hospital
Decatur County Memorial Hospital	Rush Memorial Hospital
Dukes Memorial Hospital	Scott Memorial Hospital
Gibson General Hospital	St. Vincent – Clay Hospital
Greene County General Hospital	St. Vincent – Dunn Hospital
Harrison County Hospital	St. Vincent – Frankfort Hospital
IU Health – Bedford Hospital	St. Vincent – Jennings Hospital
IU Health – Blackford Hospital	St. Vincent – Mercy Hospital
IU Health – Paoli Hospital	St. Vincent – Randolph Hospital
IU Health – Tipton Hospital	St. Vincent - Salem Hospital
IU Health – White Memorial Hospital	St. Vincent - Warrick Hospital
Jasper County Hospital	St. Vincent – Williamsport Hospital
Jay County Hospital	Sullivan County Community Hospital
Margaret Mary Community Hospital	Union Hospital Clinton
Parkview LaGrange Hospital	Woodlawn Hospital
Parkview Wabash Hospital	

Rural List

Columbus Regional Hospital	King’s Daughters’ Health
Daviess Community Hospital	Kosciusko Community Hospital
Fayette Regional Health System	Major Hospital
Franciscan Health-Michigan City	Marion General Hospital
Franciscan Health-Crawfordsville	Memorial Hospital (Logansport)
Good Samaritan Hospital	Memorial Hospital & Health Care Center
Henry Community Health	Parkview Noble Hospital
IU Health – La Porte Hospital	Reid Health
IU Health – Starke Hospital	St. Joseph’s Regional Medical Center –
Schneck Medical Center	

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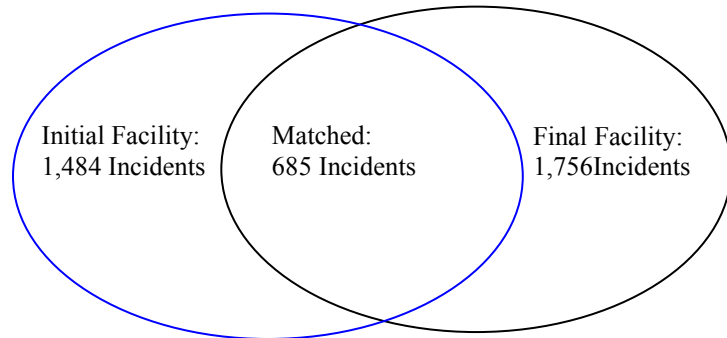
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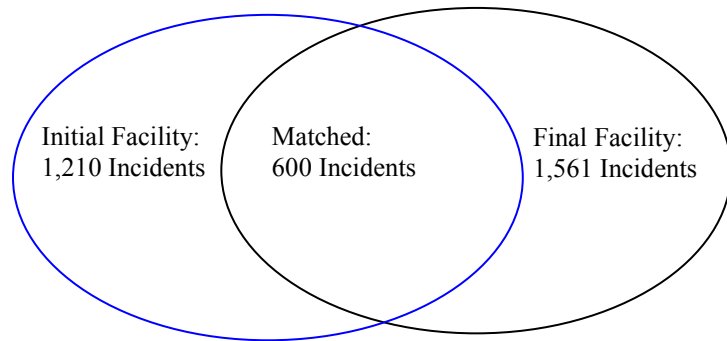
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Historical Links

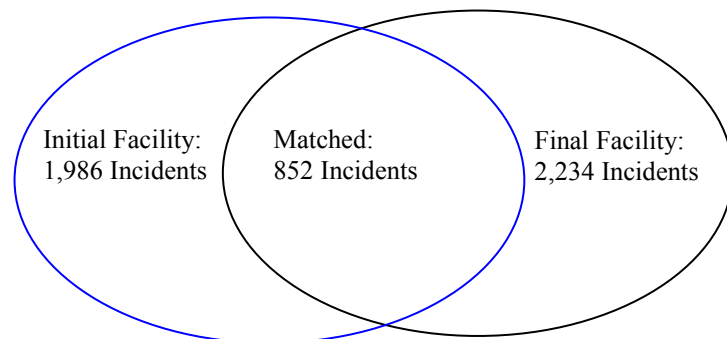
For Quarter 4, 2016, of the 8,916 incidents reported to the Indiana Trauma Registry, 1,484 cases that had an ED Disposition of “Transferred to another acute care facility” at the initial facility or that had the Inter-Facility Transfer equal to “Yes” at the Trauma Center. Of those transferred, 685 cases 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.



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.



For Quarter 2 2017, of the 9,990 incidents reported to the Indiana Trauma Registry, 1,986 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, 852 cases were probabilistically matched. The linked cases make up 8.5% of the Q2 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.



Indiana Trauma Registry

Statewide Quarter 3 Data Report

July 1, 2017—September 30, 2017

9,996 Incidents

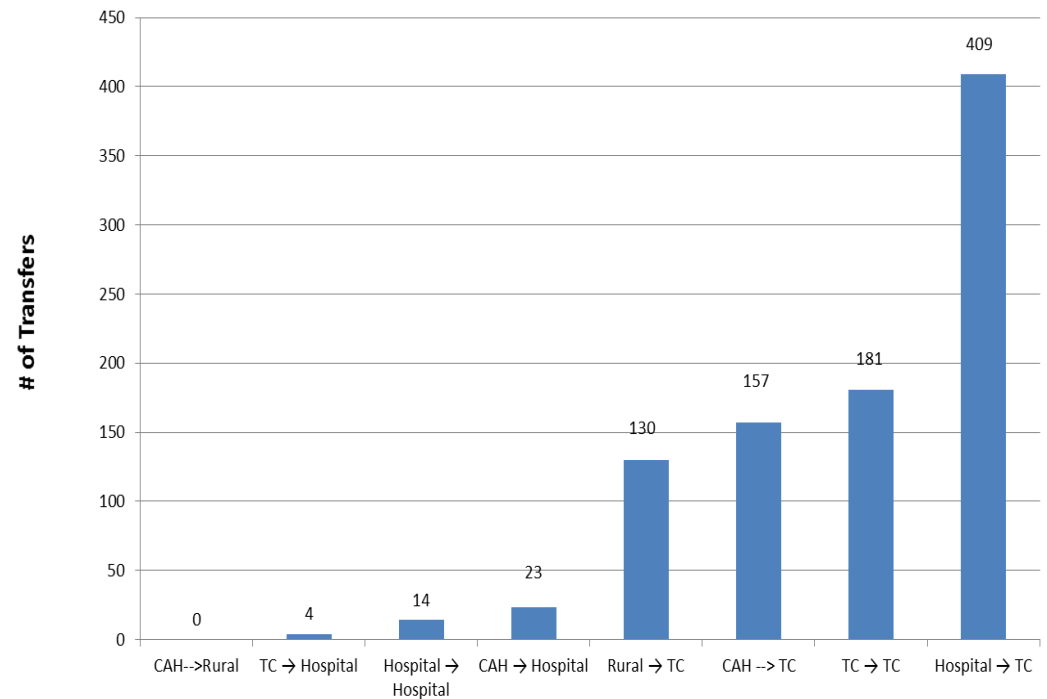
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Facility to Facility Transfers

For Transfer Patients:		
Initial Hospital Type	Final Hospital Type	Incident Count
Hospital	Hospital	14
Critical Access Hospital	Rural Hospital	0
Critical Access Hospital	Hospital	23
Critical Access Hospital	Trauma Center	157
Rural Hospital	Trauma Center	130
Trauma Center	Trauma Center	181
Hospital	Trauma Center	409

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

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For Linked Transfer Patients:

For Transfer Patients:				
	All Transfer Patients	Critical*	Physiological Critical**	ISS Critical***
Number of Patients	920	289	234	91
EMS Notified to Scene	7.83 minutes	7.88 minutes	7.47 minutes	8.65 minutes
EMS Scene Arrival to Departure	16.19 minutes	15.43 minutes	15.67 minutes	14.8 minutes
EMS Scene Departure to Initial Hospital ED Arrival	17.67 minutes	15.9 minutes	15.11 minutes	16.1 minutes
Initial Hospital ED Arrival to Departure	2 hours 8 minutes	1 hours 49 minutes	1 hours 51 minutes	1 hour 45 minutes
Initial Hospital ED Departure to Final Hospital ED Arrival	2 hours 1.3 minutes	1 hours 48 minutes	1 hours 52 minutes	1 hour 35.5 minutes
TOTAL TIME	4 hours 9.3 minutes	3 hours 38.7 minutes	3 hours 43.5 minutes	3 hours 21.3 minutes

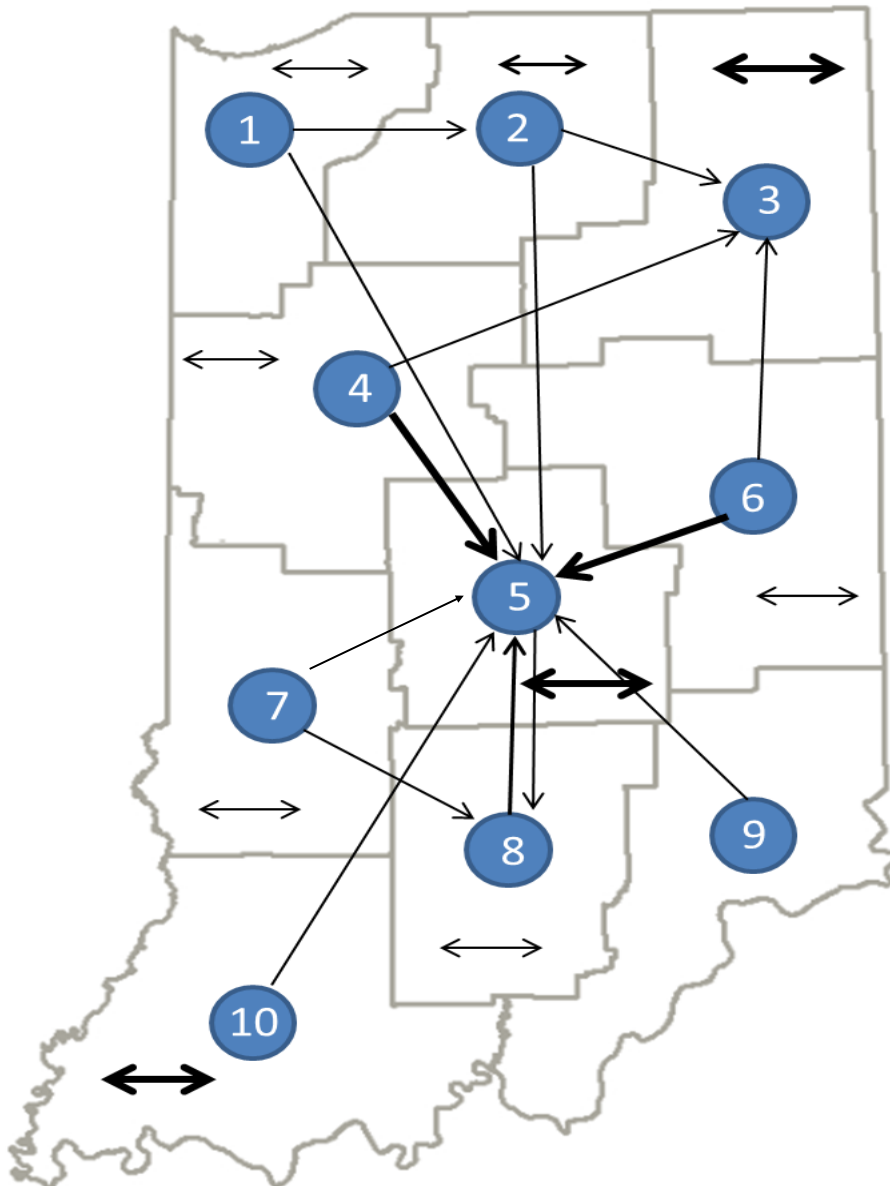
*Critical patient is defined as having a GCS ≤ 12 , OR Shock Index > 0.9 OR ISS > 15 at the initial hospital.

**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 having an ISS > 15 at the initial hospital

9,996 Incidents

33.2% of data



For Transfer Patients:

11

Indiana Trauma Registry

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For Transfer Patients:

	All Transfer Patients	<i>Critical*</i>	<i>Physiological Critical**</i>	<i>ISS Critical***</i>
Number of Patients	920	289	234	91
Total Time	4 hours 9.3 minutes	3 hours 38.7 minutes	3 hours 43.5 minutes	3 hours 21.3 minutes
Total Mileage	50.8	53.8	54.2	55.7
Injury Scene to Initial Hospital Mileage***	7.6	6.9	6.5	9
Initial Facility to Final Facility Mileage	43.2	46.9	47.7	46.7

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

Region	Injury Scene to Initial Facility Mileage [†]	Initial Facility to Final Facility Mileage	Total Mileage	Drive Count	Air Count
Indiana Average	7.6	43.2	50.8	798	122
North Region	5.5	32	37.5	215	15
Central Region	8.6	50.9	59.5	444	89
South Region	7.5	33.3	40.8	139	18

*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

Indiana Trauma Registry

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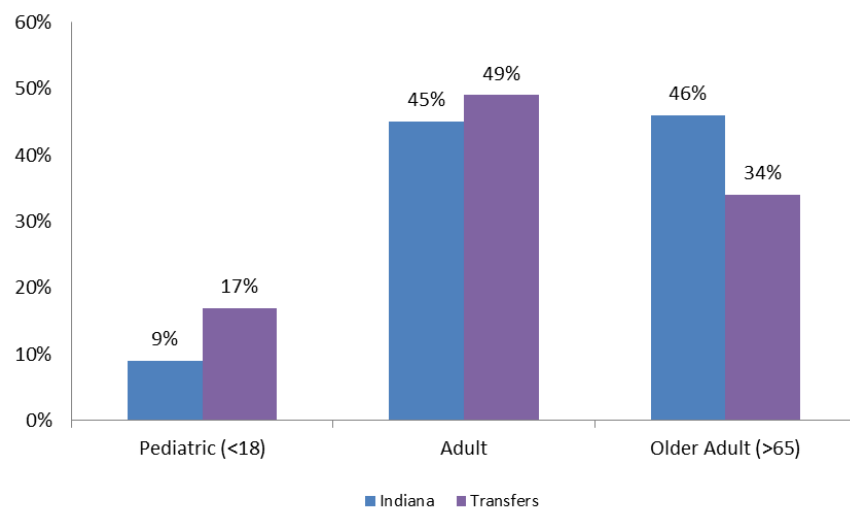
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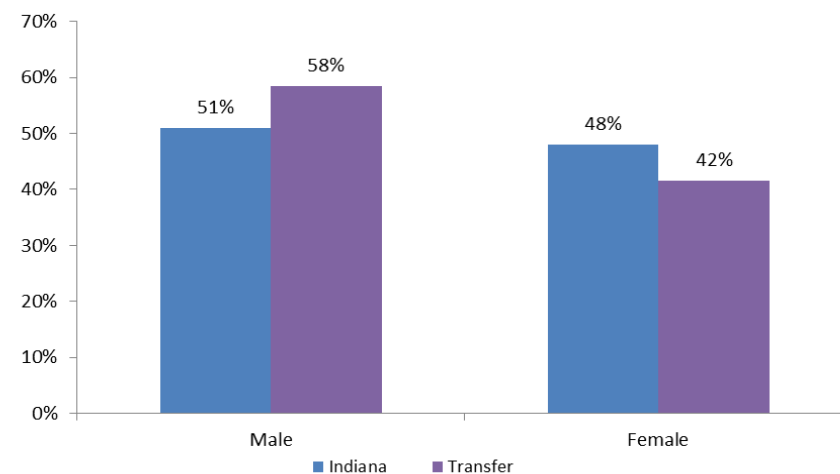
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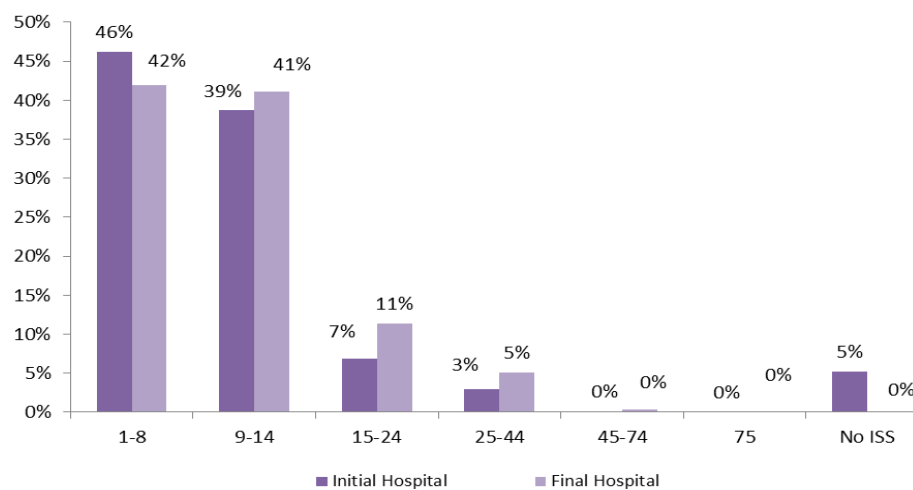
Patient Age Groupings



Patient Gender



Injury Severity Score (ISS)



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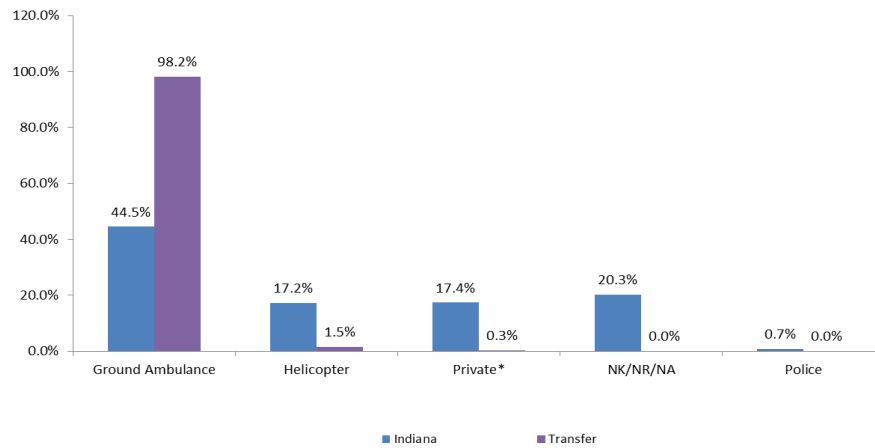
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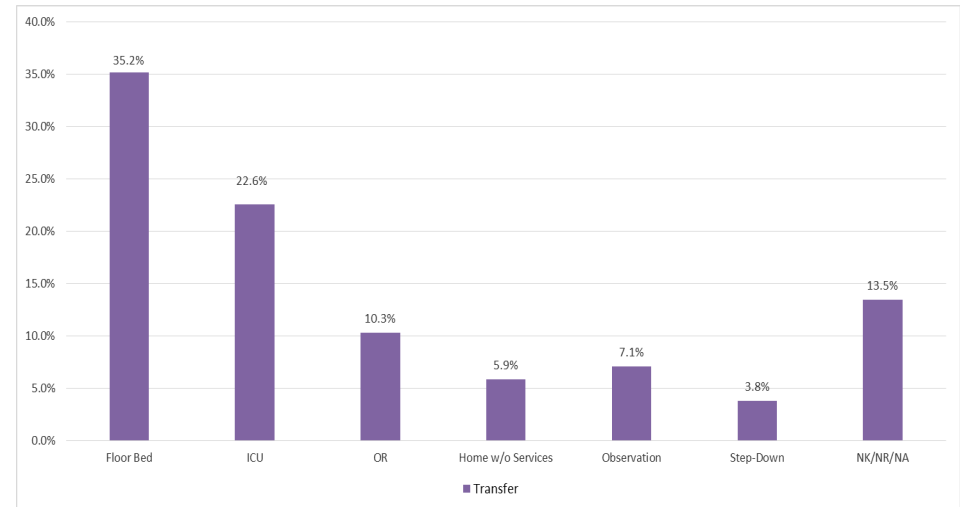
Transport Mode— Final Hospital



<1% Transport Mode: Police, Other

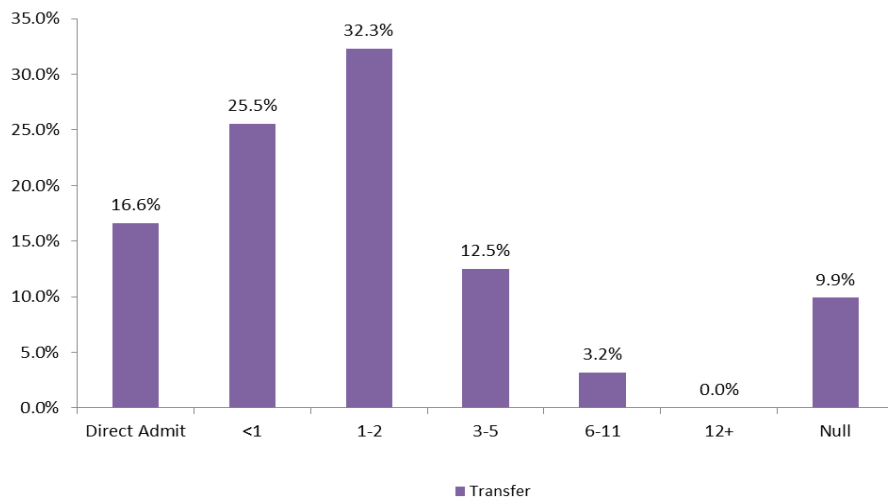
* Indicates Private/ Public Vehicle, Walk-in

ED Disposition by Percentage- Final Hospital

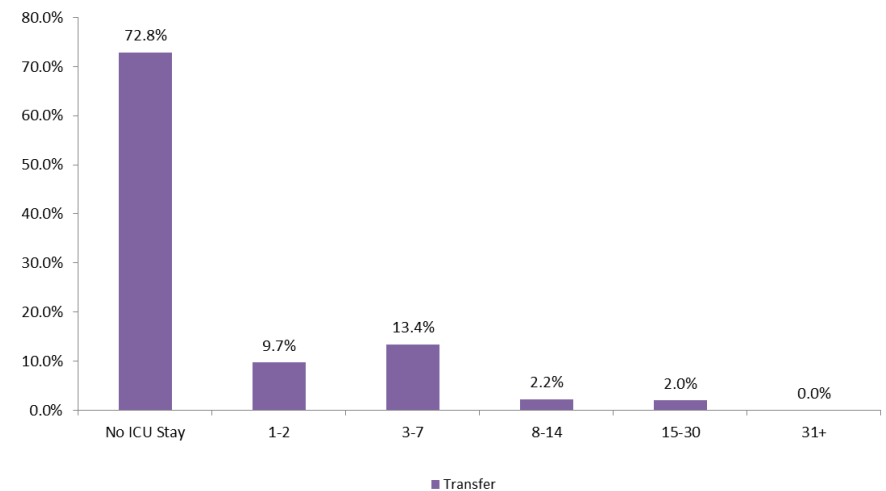


<1% : Transferred, Expired, AMA, Other

ED Length of Stay (hours)- Final Hospital



ICU Length of Stay (days)- Final Hospital



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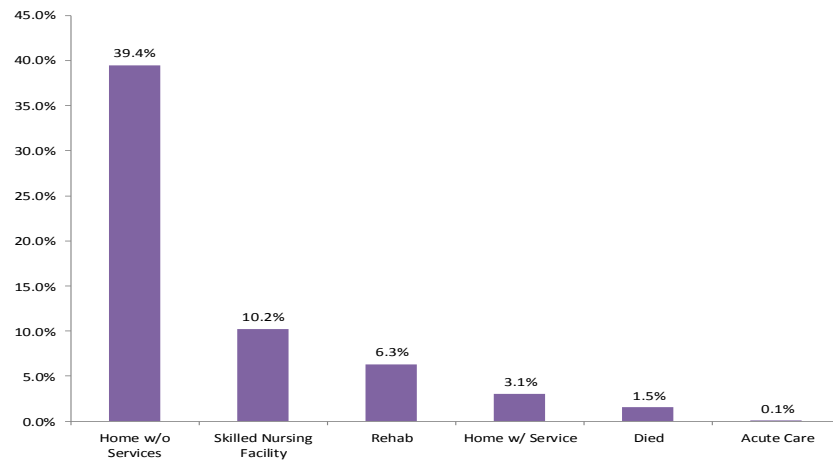
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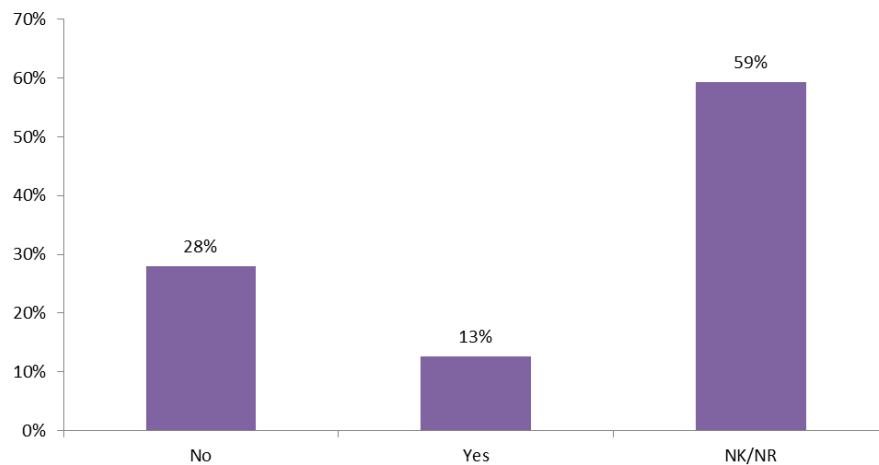
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Discharge Disposition— Final Hospital

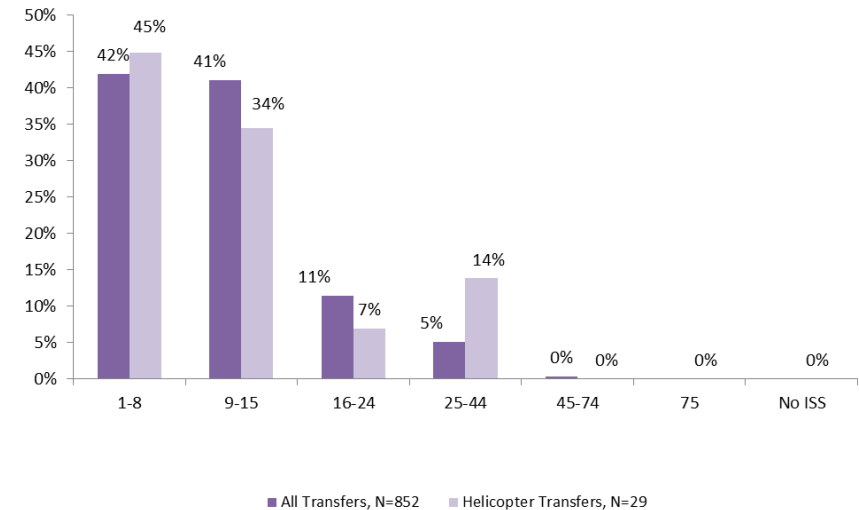


<1%: Acute care, AMA, another inst. Correctional, long-term care, hospice, psych hospital, no hospital stay

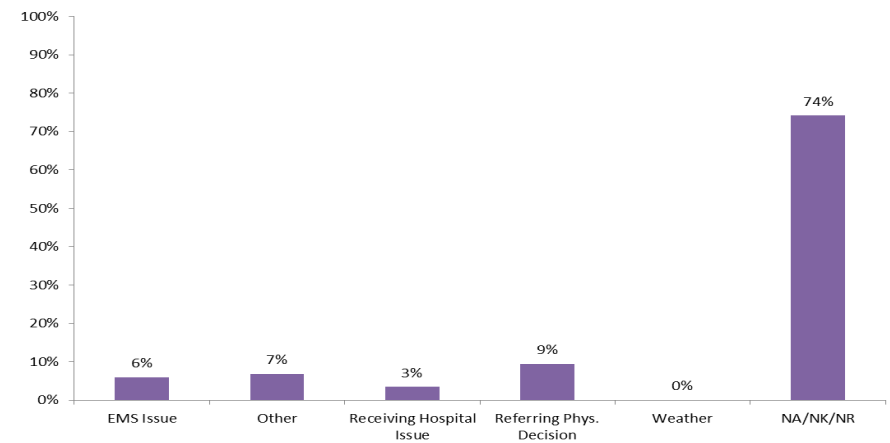
Transfer Delay Indicated- Initial Hospital



Helicopter Transfers by ISS— Final Hospital



Initial Facility Transfer Delay Reason



<1%: Receiving hospital radiology, missing

9,996 Incidents

(Non-Trauma) Hospitals: 77 facilities 33.2% of data

Indiana State Department of Health

Indiana Trauma Registry

Hospitals Reporting Trauma Data Quarter 3
July 1, 2017 - September 30, 2017

I II 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

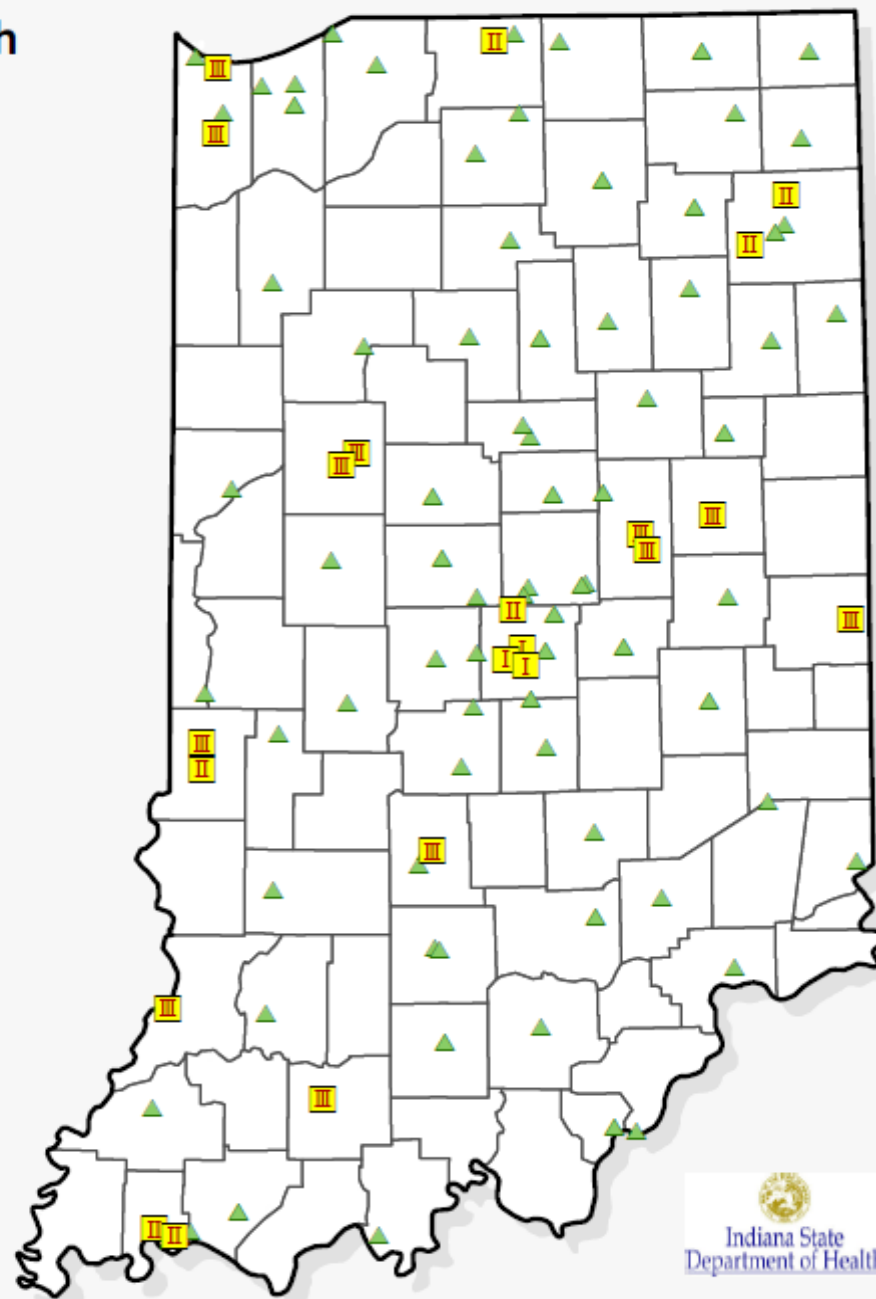
III Level III Trauma Centers

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
IU Health Bloomington Hospital
Memorial Hospital and Health Care Center
Methodist Hospitals - Northlake Campus
Reid Hospital & Health Care Services
St Vincent Anderson
Union Hospital Terre Haute

▲ Non-Trauma Hospitals

78 Non-Trauma Hospitals

Hospital categories include Verified and "In the Process"
Trauma Centers as of June 30, 2017.



Map Author: ISDH Trauma & Injury Prevention, ISDH PHG - April, 2018

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Requests and Changes to the Report from Trauma Care Committee members at the February 2017 ISTCC meeting:

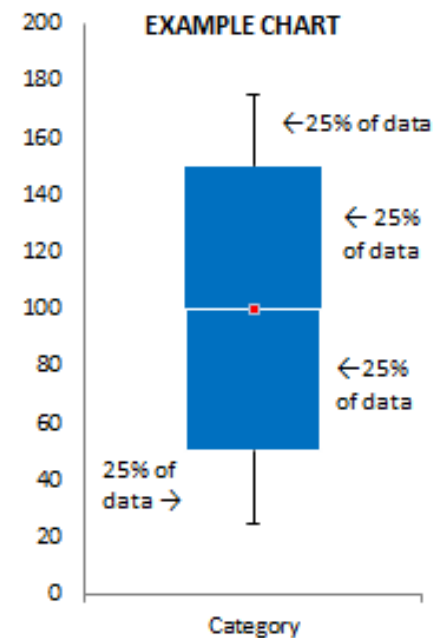
General Report:

- ED LOS is calculated using ED Acute Care Admission Date/Time and ED Acute Care Discharge Date/Time (Orders Written)
- Hospital LOS is calculated using Hospital Admission Date/Time and Hospital Discharge Date/Time (Orders Written)
- Trauma type and probability of survival will not be included in the statewide report until the CDC finalizes their guidelines on how to categorize those variables.
- Pages 45-51 have caterpillar plots with the ED LOS for critical transfer patients.
- Signs of Life: The two field values for this variable are: 1) Arrived with no signs of life, 2) Arrived with signs of life. A patient with no signs of life is defined as having none of the following: organized EKG activity, pupillary responses, spontaneous respiratory attempts or movement, and unassisted blood pressure. This usually implies the patient was brought to the ED with CPR in progress.

Example Bar and Whisker Plot:

-Bar and whisker plots were requested at the November 2013 ISTCC meeting in order to show more than just an average ED LOS and ED LOS by ISS. The bar and whisker plots represent the four quartiles of data, as illustrated on the example graph to the right. The blue boxes each contain 25% of the values and the error bars each represent where 25% of the values fell. The median is represented in the middle of the two blue boxes with the white line. The red dot in the center indicates the average for that category. The cap on the error bars indicates the minimum and maximum of each category and all the values fall within the two caps.

-For the ED LOS bar and whisker plots to the right, the average is represented by the white dot and the color boxes reflect the hospital type. The ED LOS by ISS plots on the next page follow the same layout and the red dots indicate the average for each of the ISS categories.



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Supplemental Report

The Supplemental Report (pages 19-55) contains demographic information, data that stays nearly constant from quarter to quarter, and reference tables and maps.

Definitions:

Emergency Department Length of Stay (ED LOS): The time from ED Admission to ED Discharge (Physical Exit). This changed to time from ED Admission to ED Discharge (Orders Written) beginning with Quarter 3 2016 data (July 1, 2016—September 30, 2016). There is a 120 minute performance improvement filter that is tracked for various hospital groups.

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Trauma Type: The classification of the force applied to the body. Trauma type categories include blunt, penetrating, thermal, and other trauma.

Injury Severity Score: An anatomical scoring system defined as the sum of the three highest squared maximum Abbreviated Injury Scale (AIS) values to account for multiple injuries in the six body regions.

Signs of Life: The two field values for this variable are: 1) Arrived with no signs of life, 2) Arrived with signs of life. A patient with no signs of life is defined as having none of the following: organized EKG activity, pupillary responses, spontaneous respiratory attempts or movement, and unassisted blood pressure. This usually implies the patient was brought to the ED with CPR in progress.

Acronyms:

E-code: External Cause of Injury	MVC: Motor Vehicle Collision
ED: Emergency Department	OR: Operating Room
ICU: Intensive Care Unit	Ps: Probability of Survival
ISS: Injury Severity Score	CAHs: Critical Access Hospital
LOS: Length of Stay	

Calculations:

$Ps = 1/(1+e^{-b})$ where $b=b_0+b1(RTS) + b2(ISS) + b3(Age\ Index)$

Total GCS = Verbal GCS + Motor GCS + Eye GCS

$RTS = 0.94*GCS + 0.73*SBP + 0.29*RR$

$ISS = (AIS)^2 + (AIS)^2 + (AIS)^2$



Indiana State
Department of Health
Trauma and Injury Prevention

Indiana Trauma Registry

Statewide Quarter 3 Data Report

July 1, 2017—September 30, 2017

9,996 Incidents

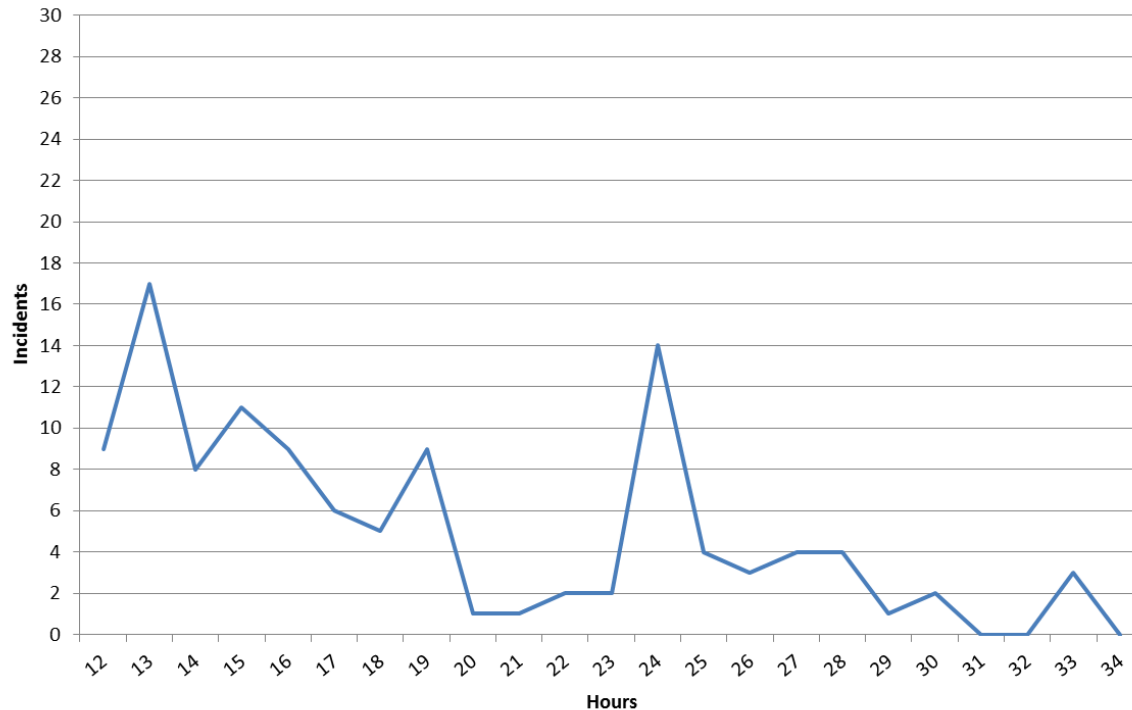
100 Total Hospitals Reporting

Level I and II: 10 facilities 51.0% of data

Level III: 12 facilities 15.8% of data

(Non-Trauma) Hospitals: 77 facilities 33.2% of data

ED LOS ≥ 12 Hours



N=115

ED Length of Stay ≥ 12 Hours

Hour	Count	Hour	Count
12th	9	24th	14
13th	17	25th	4
14th	8	26th	3
15th	11	27th	4
16th	9	28th	4
17th	6	29th	1
18th	5	30th	2
19th	9	31st	0
20th	1	32nd	0
21st	1	33rd	3
22nd	2	34th	0
23rd	2	35th	0

Indiana Trauma Registry

Statewide Quarter 3 Data Report

July 1, 2017—September 30, 2017

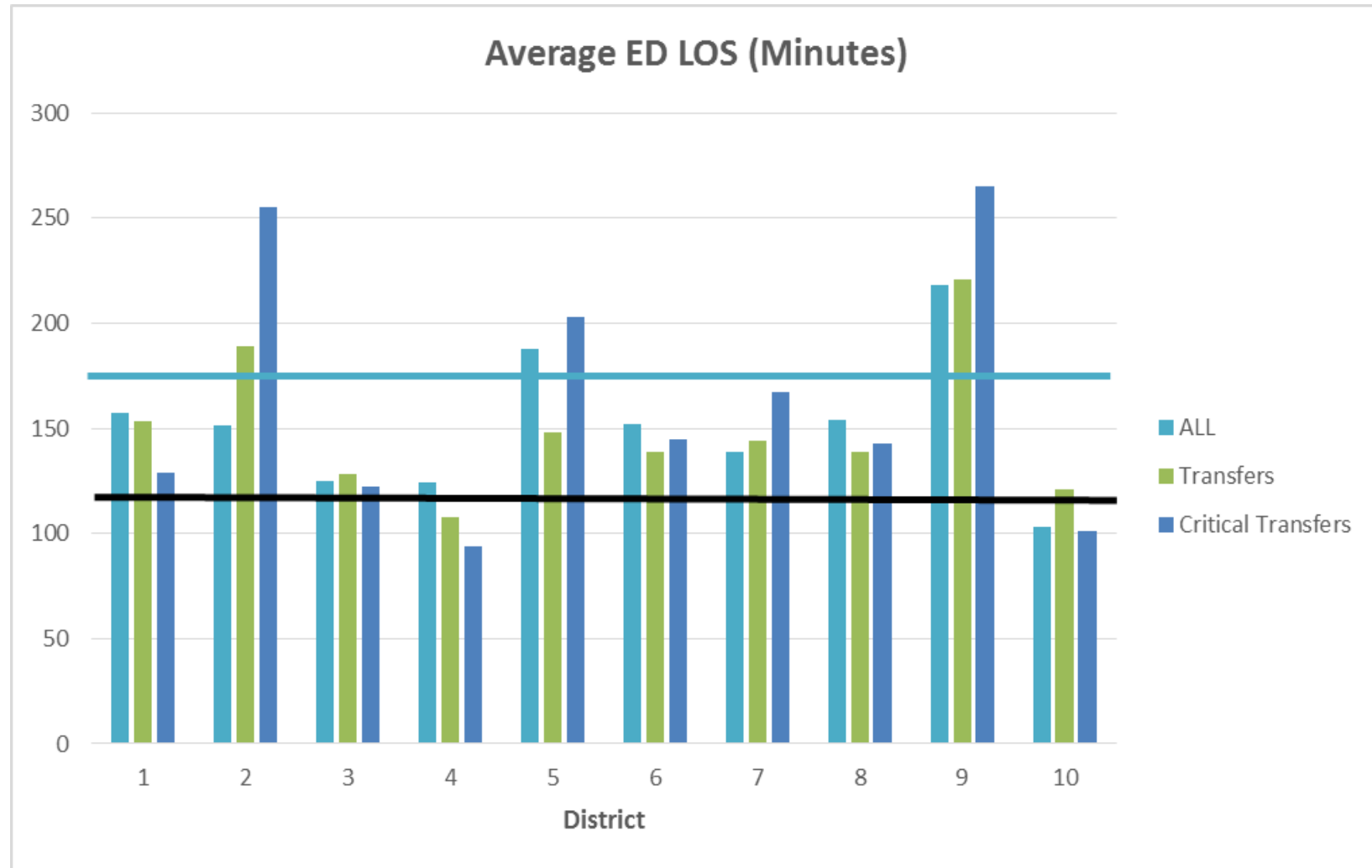
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*Black line represents the 120 minute performance improvement filter

**Blue line represents the state average

Indiana Trauma Registry

Statewide Quarter 3 Data Report

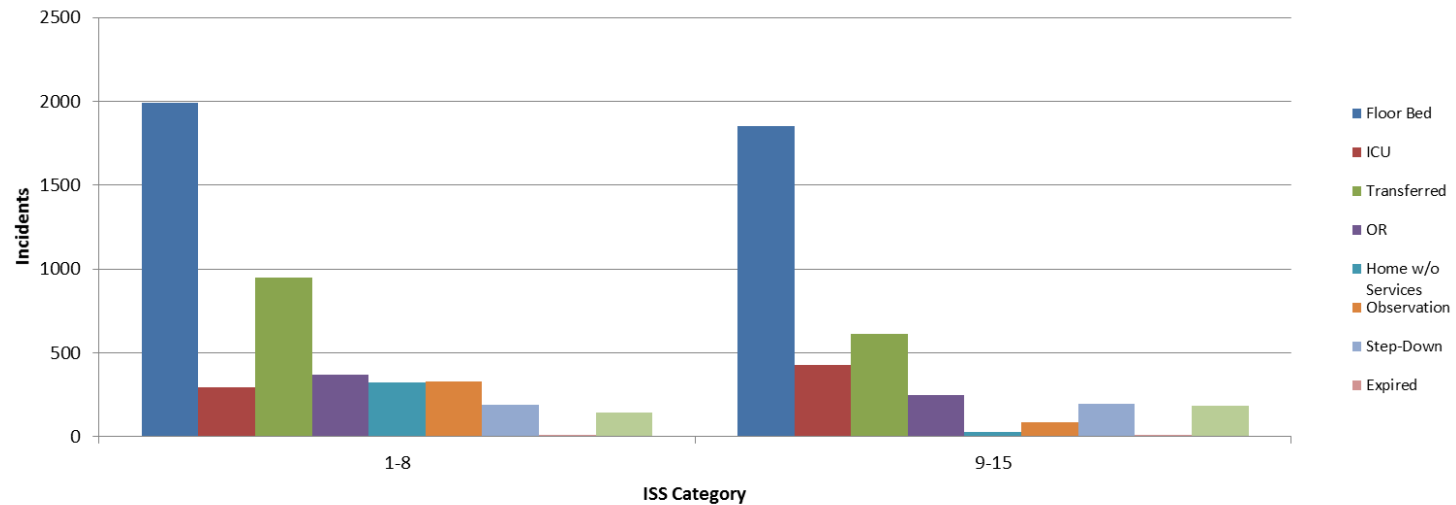
July 1, 2017—September 30, 2017

9,996 Incidents

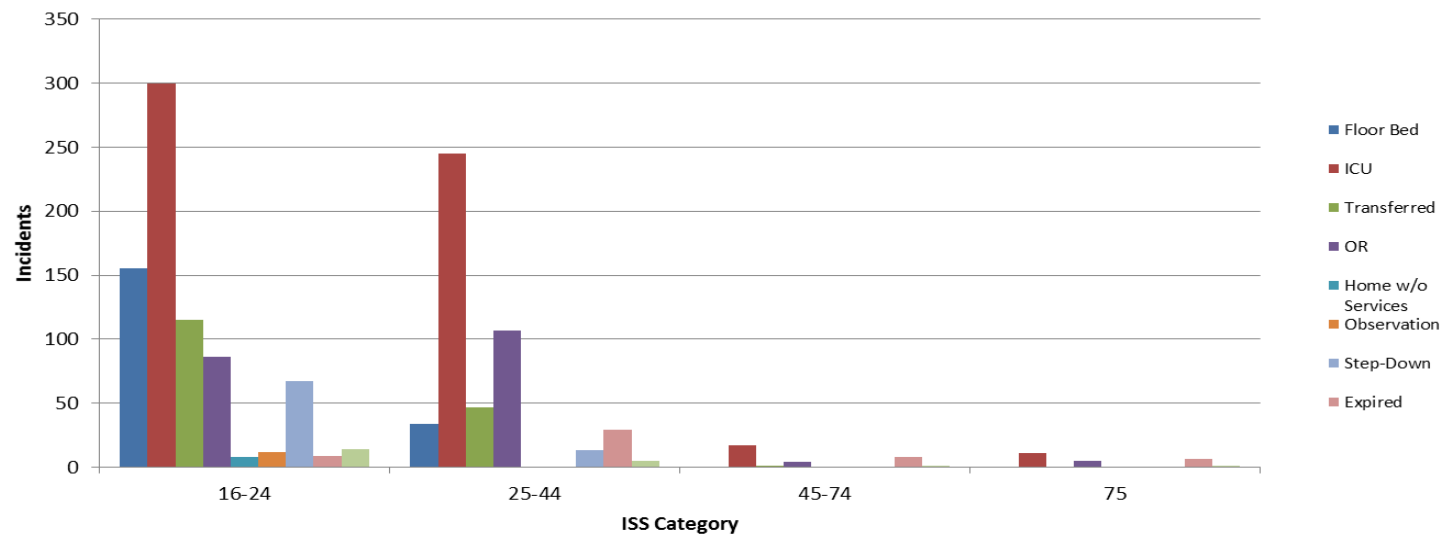
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ED Disposition by ISS 1-15



ED Disposition by ISS 16-75



ED Disposition <1%: Expired, AMA; Home with services; Other (Jail, Mental Institution, etc.). Please note the difference in axis scale between the top and bottom graphs.

*A table with values for ED Disposition by ISS is found on page 54.

Indiana Trauma Registry

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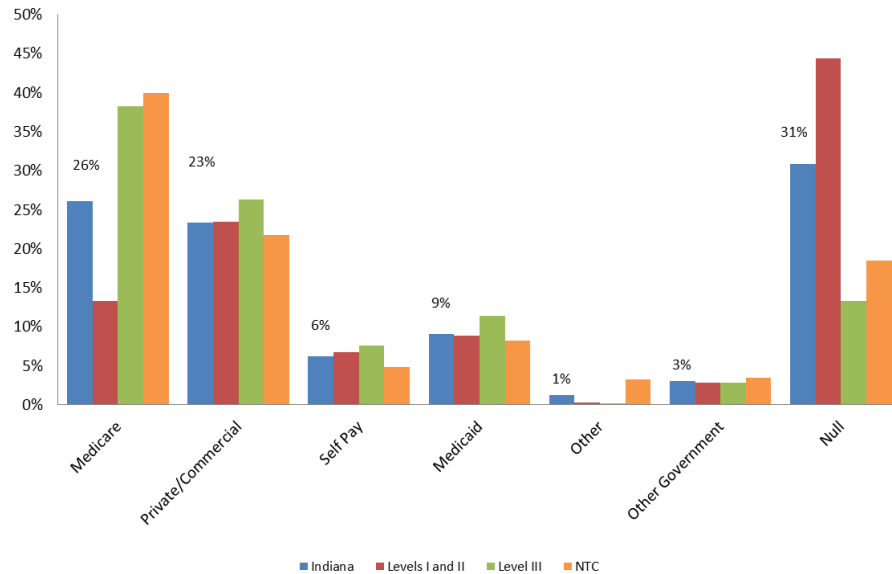
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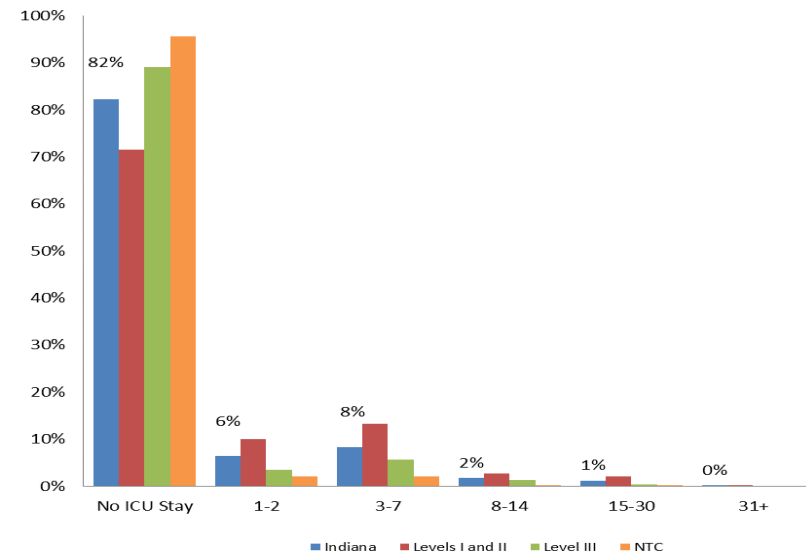
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Primary Payer Mix



ICU Length of Stay (Days)



Indiana Trauma Registry

Statewide Quarter 3 Data Report

July 1, 2017—September 30, 2017

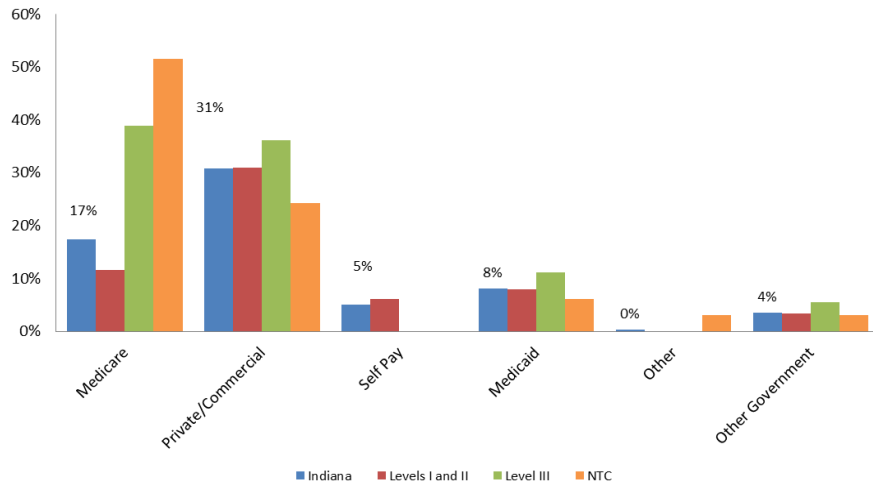
9,996 Incidents

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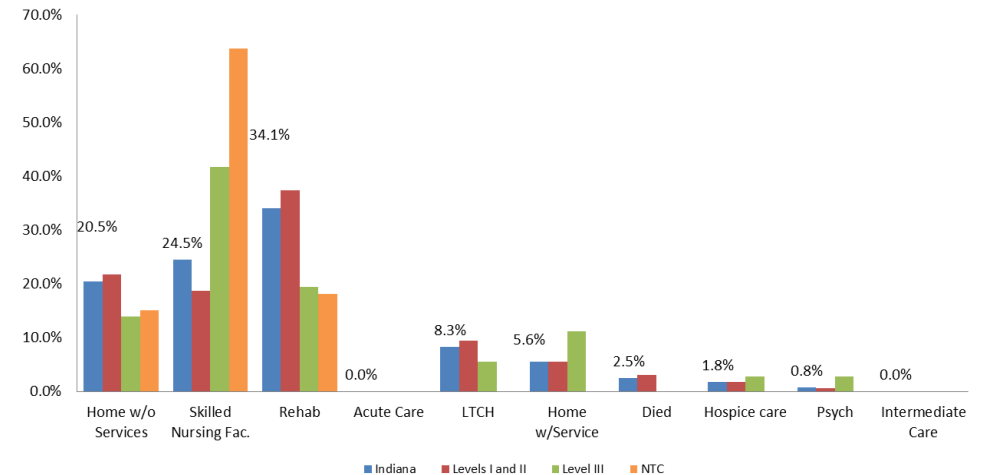
Level I and II:	10 facilities	51.0% of data
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Hospital Length of Stay > 15 days, N=396

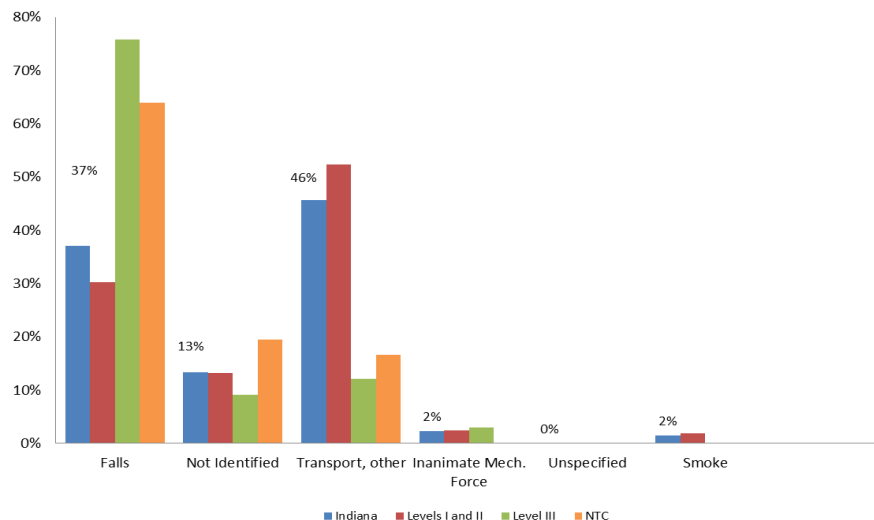
Primary Payer Mix



Hospital Disposition



Cause of Injury



Another Institution includes any other medical facility not defined in the other categories.

Cause of Injury is based on ICD-10-CM codes as of January 1, 2016. The categories for this variable include:

- Transport
- Falls
- Inanimate Mechanical Forces
- Animate Mechanical Forces
- Drowning
- Breathing
- Electricity/Radiation
- Smoke
- Heat
- Venom
- Forces of Nature
- Overexertion and Travel
- Unspecified
- Poisoning
- Not Identified

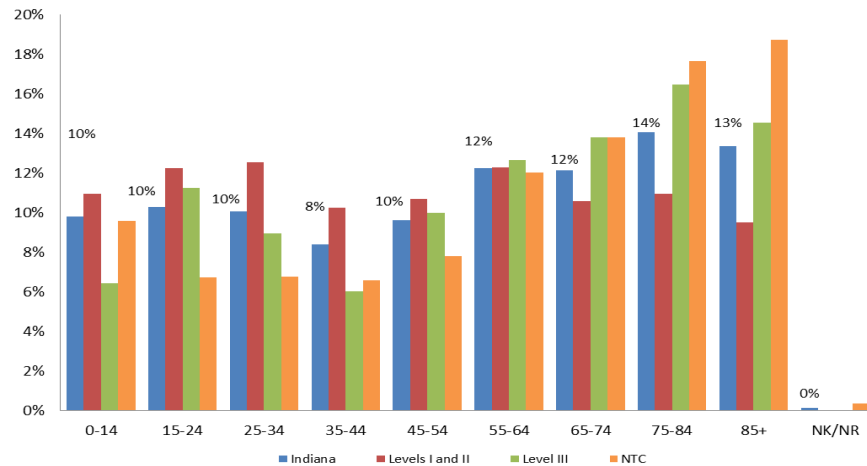
Indiana Trauma Registry

Statewide Quarter 3 Data Report July 1, 2017—September 30, 2017 9,996 Incidents

100 Total Hospitals Reporting

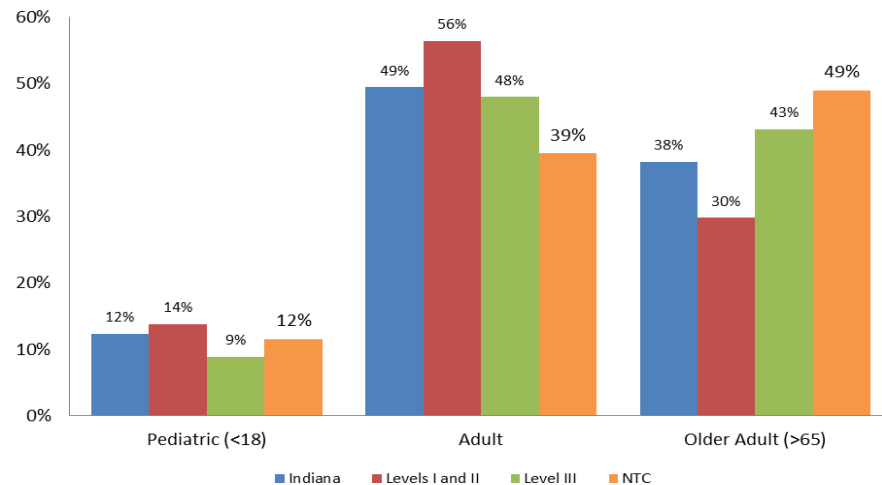
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(Non-Trauma) Hospitals:	77 facilities	33.2% of data

Patient Age (Years)



There were 12 unknown ages.

Patient Age Groupings



Age Group	Indiana	Level I and II	Level III	NTC
0-14	978	559	101	318
15-24	1026	625	177	224
25-34	1005	639	141	225
35-44	837	523	95	219
45-54	961	545	157	259
55-64	1224	626	199	399
65-74	1214	539	217	458
75-84	1403	558	259	586
85+	1336	485	229	622
NK/NR	12	0	0	12
Total	9996	5099	1575	3322

Age Group	Indiana	Level I and II	Level III	NTC
Pediatric (<18)	1226	704	140	382
Adult	4939	2876	756	1307
Older Adult (>65)	3819	1519	679	1621
Total	9984	5099	1575	3310

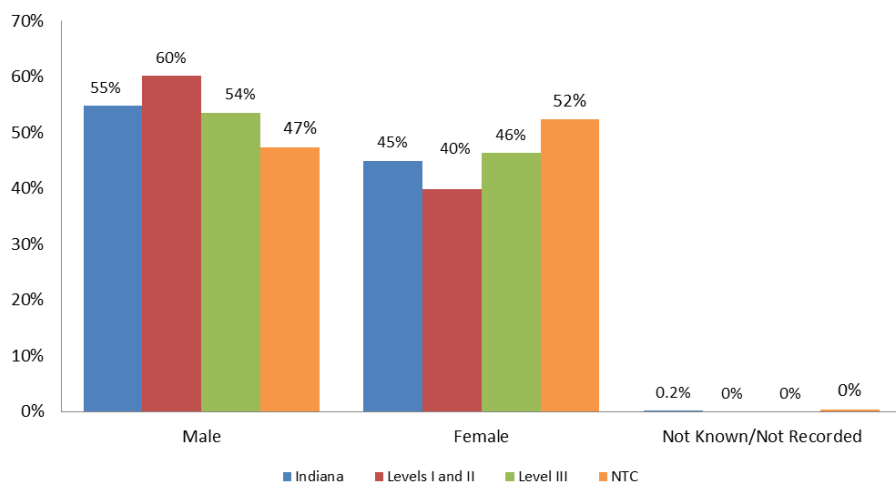
Indiana Trauma Registry

Statewide Quarter 3 Data Report July 1, 2017—September 30, 2017 9,996 Incidents

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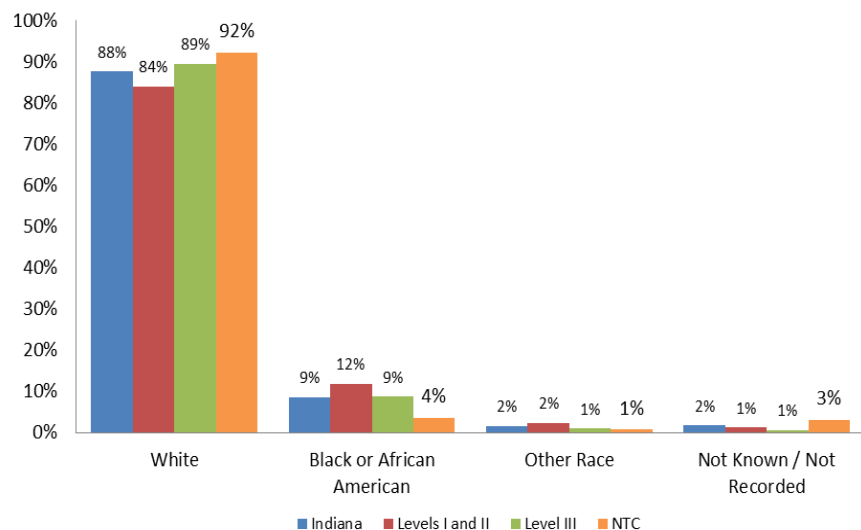
Level I and II:	10 facilities	51.0% of data
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(Non-Trauma) Hospitals:	77 facilities	33.2% of data

Patient Gender



Gender	Indiana	Level I and II	Level III	NTC
Male	5483	3069	844	1570
Female	4498	2030	731	1737
Unknown	15	0	0	11
Total	9996	5099	1575	3318

Patient Race



Race	Indiana	Level I and II	Level III	NTC
White	8748	4283	1407	3058
Black or African American	854	600	136	118
Other	155	117	15	23
Not Known/Not Recorded	172	61	8	103
American Indian or Alaska Native	9	4	1	4
Asian	49	29	7	13
Native Hawaiian or Pacific Islander	9	5	1	3
Total	9996	5099	1575	3322

<1% Race - Asian, Native Hawaiian or Other Pacific Islander, American Indian or Alaska Native

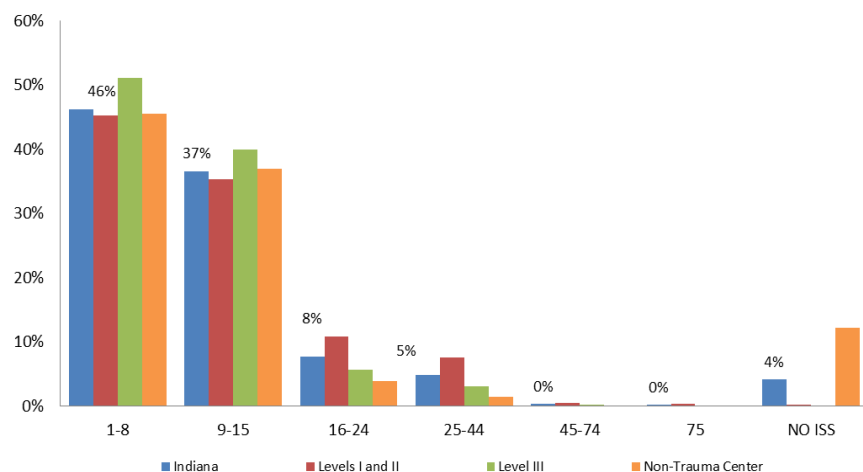
Indiana Trauma Registry

Statewide Quarter 3 Data Report July 1, 2017—September 30, 2017 9,996 Incidents

100 Total Hospitals Reporting

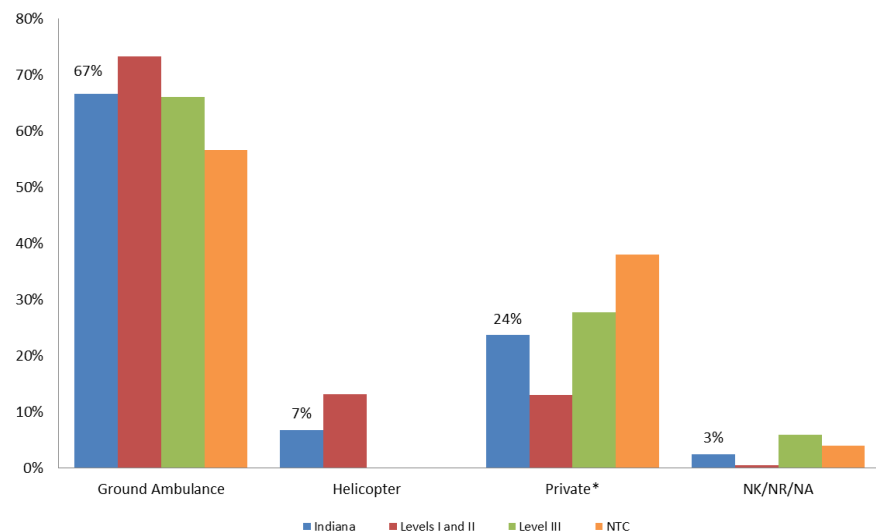
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Injury Severity Score (ISS)



There were 26 and 28 cases in the 45-74 and 75+ categories, respectively

Transport Mode



ISS Category	Indiana	Level I and II	Level III	NTC
1-8	4622	2304	805	1513
9-15	3657	1803	628	1226
16-24	767	552	88	127
25-44	480	383	49	48
45-74	31	26	3	2
75	23	21	1	1
No ISS	416	10	1	405
Total	9996	5099	1575	3322

Transport Mode	Indiana	Level I and II	Level III	NTC
Ground Ambulance	6655	3733	1041	1881
Helicopter	677	673	1	3
Private	2362	663	436	1263
NK/NR/NA	250	25	94	131
Police	30	5	2	23
Other	22	0	1	21
Total	9996	5099	1575	3322

<1% Transport Mode: Police, Other

* Indicates Private/ Public Vehicle, Walk-in

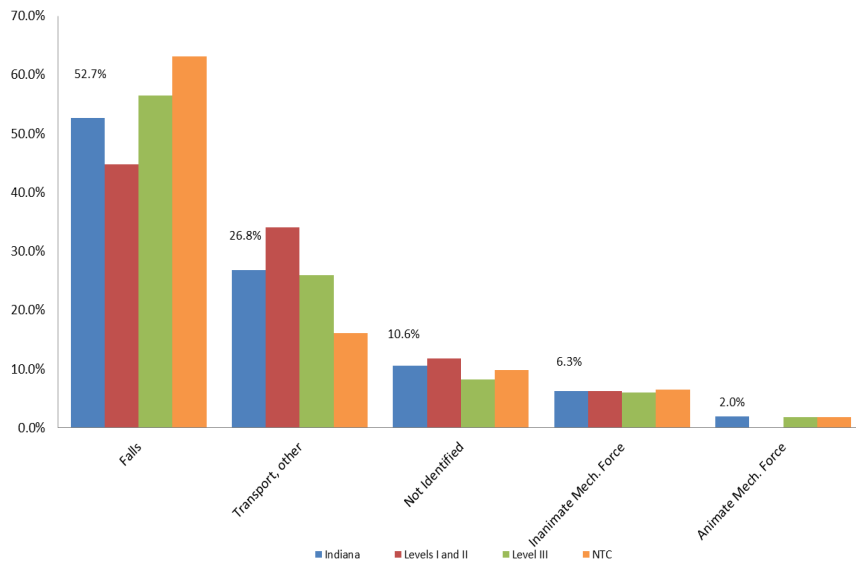
Indiana Trauma Registry

Statewide Quarter 3 Data Report July 1, 2017—September 30, 2017 9,996 Incidents

100 Total Hospitals Reporting

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Cause of Injury



<1% Cause of Injury Categories: Smoke, Heat, Unspecified, Electricity/Radiation, Forces of Nature, Drowning, Breathing, Venom, Noxious Substances, Overexertion and Travel, and Poisoning

Cause of Injury	Indiana	Level I and II	Level III	NTC
Falls	5266	2281	890	2095
Not Identified	2682	1740	409	533
Transport	1056	601	129	326
Inanimate Mech. Force	631	320	95	216
Animate Mech. Force	196	107	29	60
Smoke	71	30	15	26
Heat	34	7	4	23
Unspecified	33	3	0	30
Electric/Radiation	8	3	4	1
Nature	1	1	0	0
Overexertion	14	5	0	9
Total	9996	5099	1575	3322

Indiana Trauma Registry

Statewide Quarter 3 Data Report

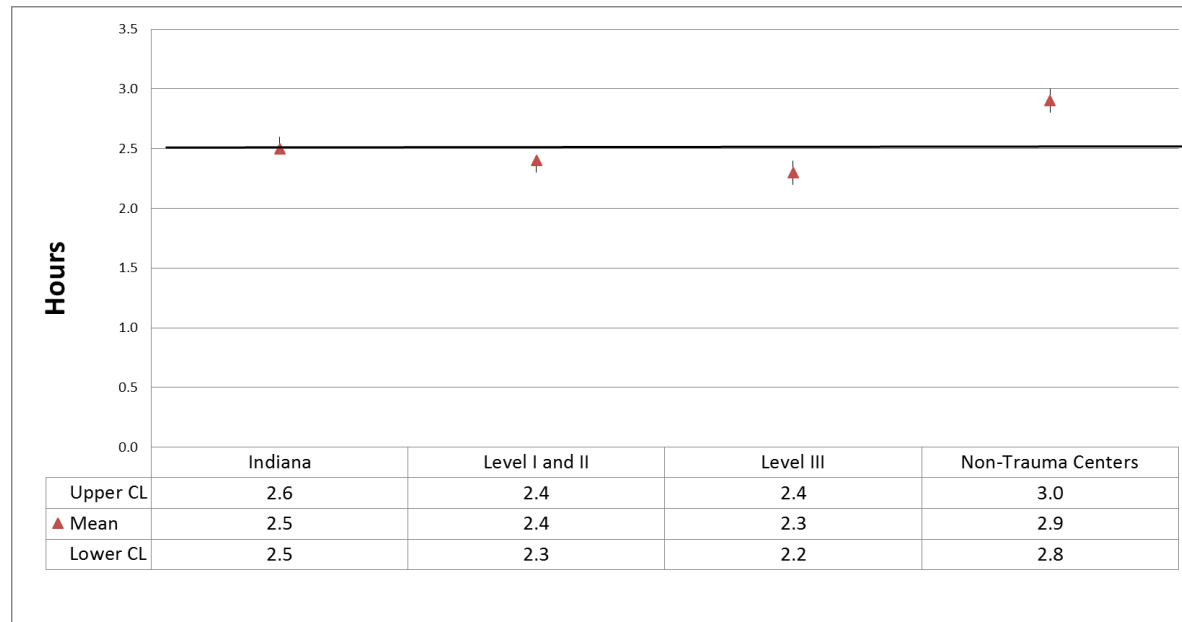
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All Patients Average ED LOS (Hours)



The purpose of the caterpillar graphs is to compare different groups to the average ED LOS. The Indiana mean is the comparison group, which is represented by the black line.

The ED LOS for these graphs was modeled using time-to-event analysis. The purposes of using this analysis were to account for censoring (death) and to see how variables influence ED LOS. The outcome variable was ED LOS and the independent variables were total GCS and age. If total GCS was missing but manual total GCS was recorded, then the manual total GCS was used. These two variables were used because they were the most similar to variables used in the published, peer-reviewed literature on ED LOS. Both were significant in the model. Increasing total GCS and age led to a slightly shorter ED LOS. Hospitals that did not have enough incidents with total GCS or age could not be modeled.

In the chart on the left, note the trauma center average is above the mean and the non-trauma center is below the mean. The mean, 95% confidence limit and lower confidence limit are listed for each group.

In the chart on the right, the data is for the trauma centers. The trauma center average is in the first column on the left side. The information for each trauma center has been assigned a random number for confidentiality. The mean, 95% confidence limit and lower confidence limit are listed for each group.

Indiana Trauma Registry

Statewide Quarter 3 Data Report

July 1, 2017—September 30, 2017

9,996 Incidents

100 Total Hospitals Reporting

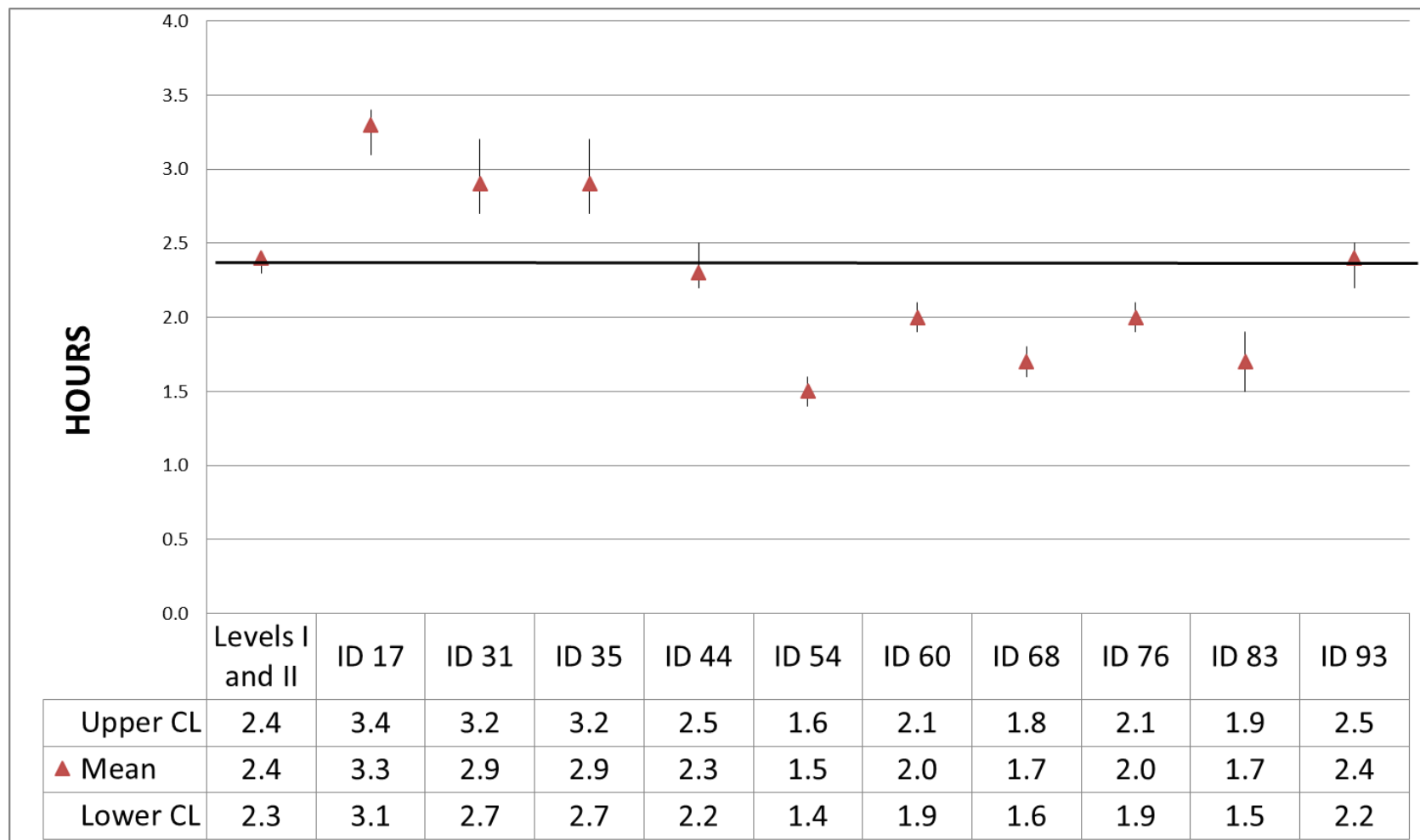
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All Patients

Level I and II Trauma Centers ED LOS (Hours)



Indiana Trauma Registry

Statewide Quarter 3 Data Report

July 1, 2017—September 30, 2017

9,996 Incidents

100 Total Hospitals Reporting

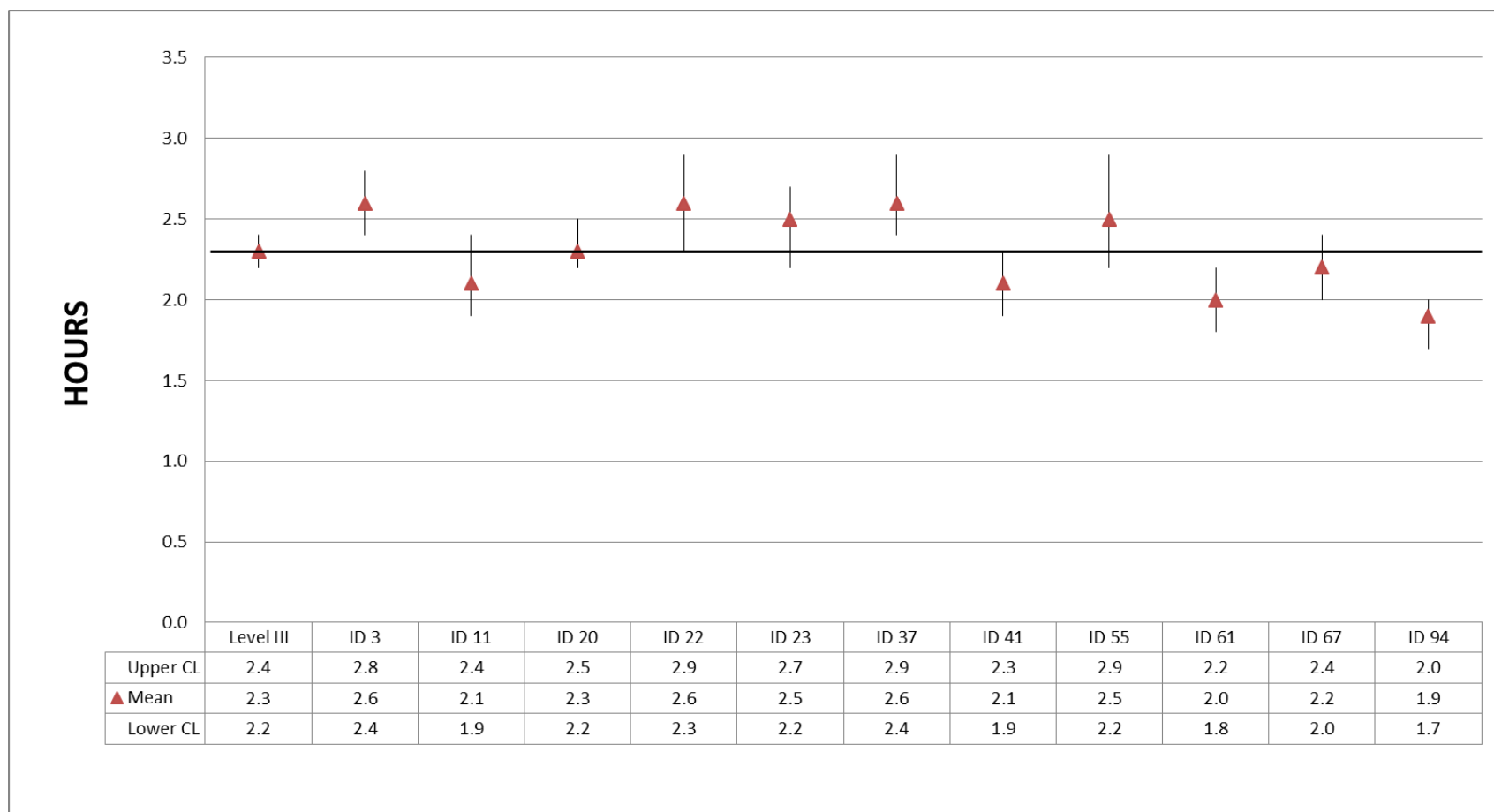
Level I and II: 10 facilities 51.0% of data

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All Patients

Level III Trauma Centers ED LOS (Hours)



Indiana Trauma Registry

Statewide Quarter 3 Data Report

July 1, 2017—September 30, 2017

9,996 Incidents

100 Total Hospitals Reporting

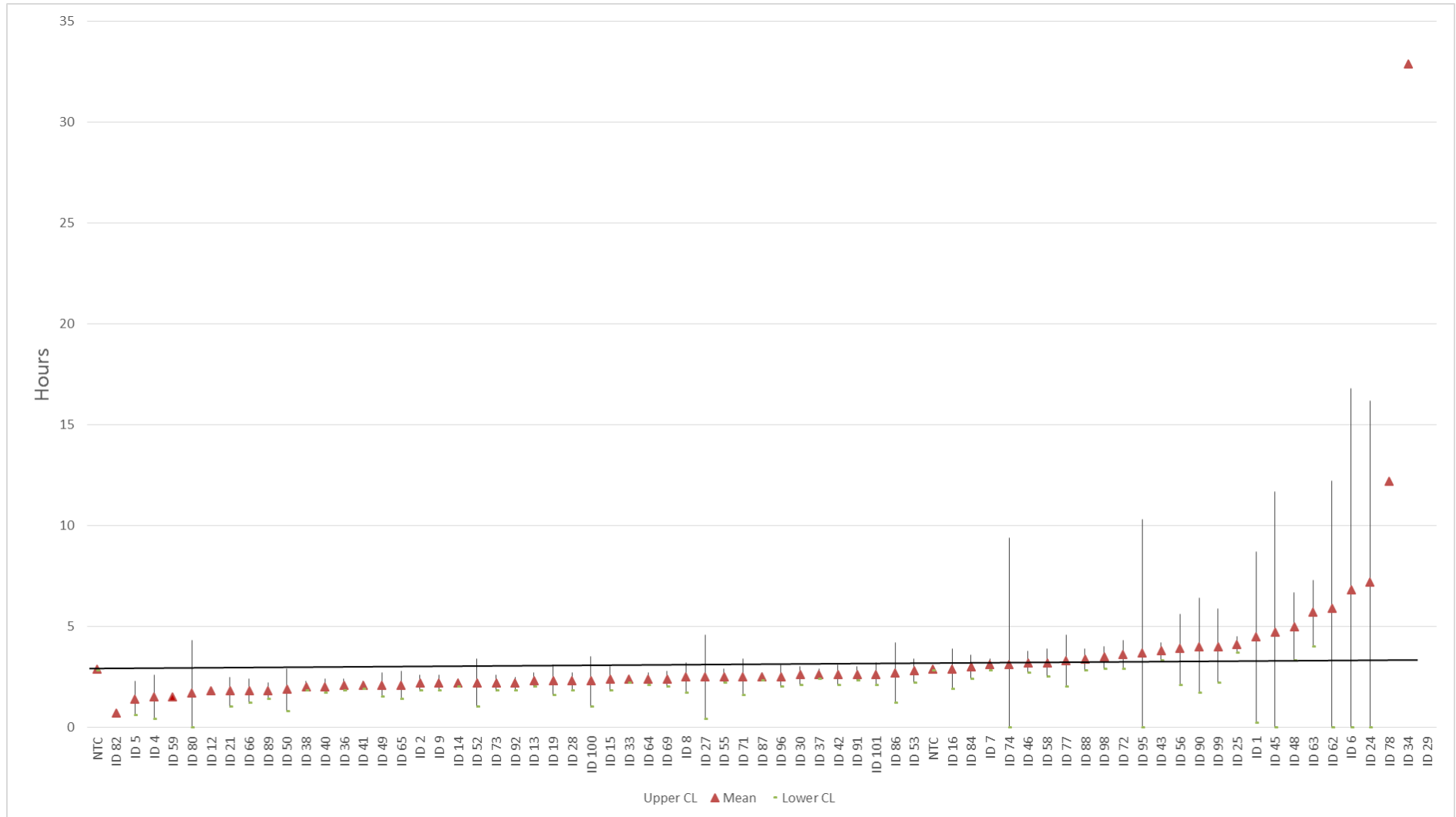
Level I and II: 10 facilities 51.0% of data

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All Patients

Non-trauma Centers ED LOS (Hours)



Indiana Trauma Registry

Statewide Quarter 3 Data Report

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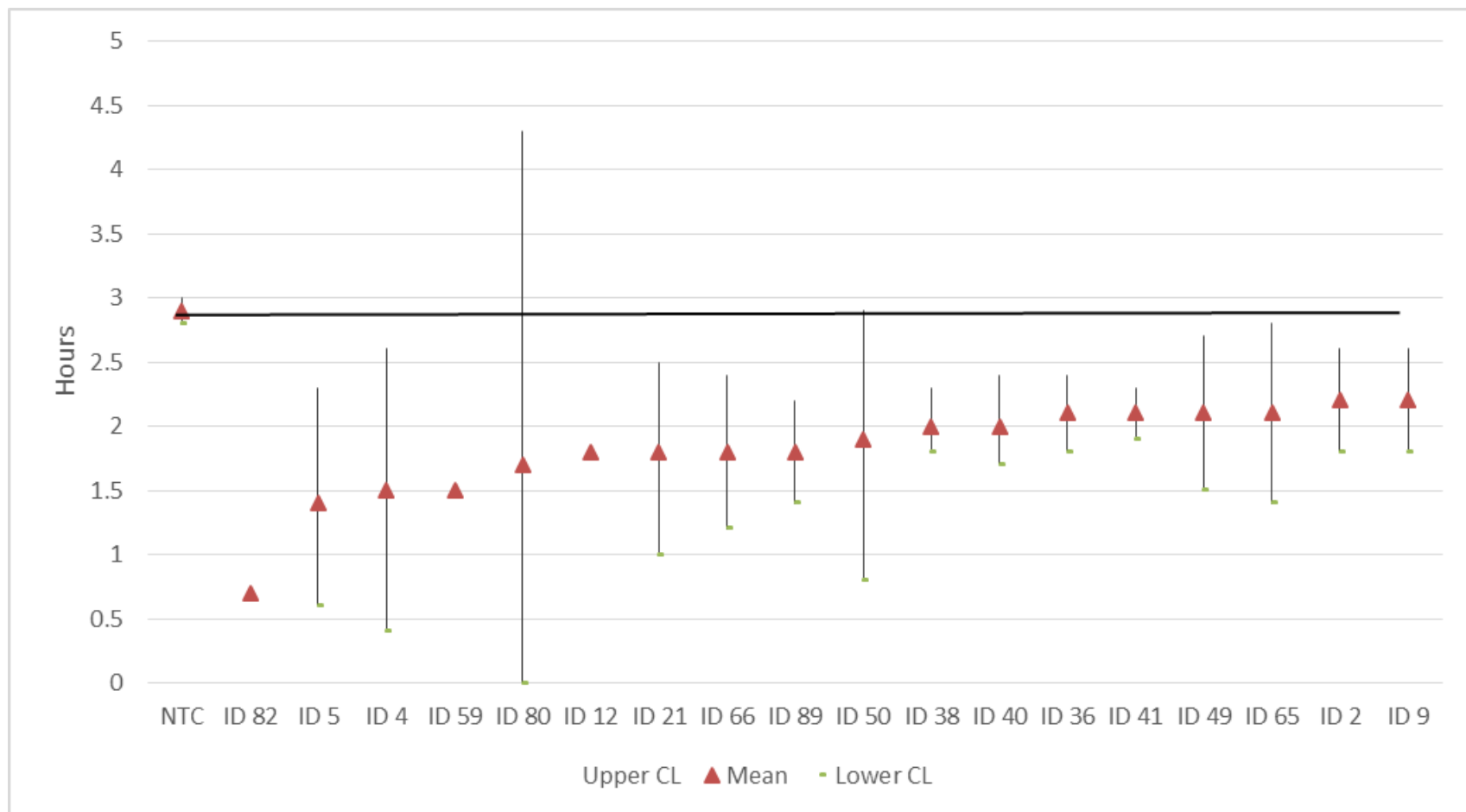
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All Patients

Non-Trauma Centers- Average ED LOS (Hours)



Indiana Trauma Registry

Statewide Quarter 3 Data Report

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9,996 Incidents

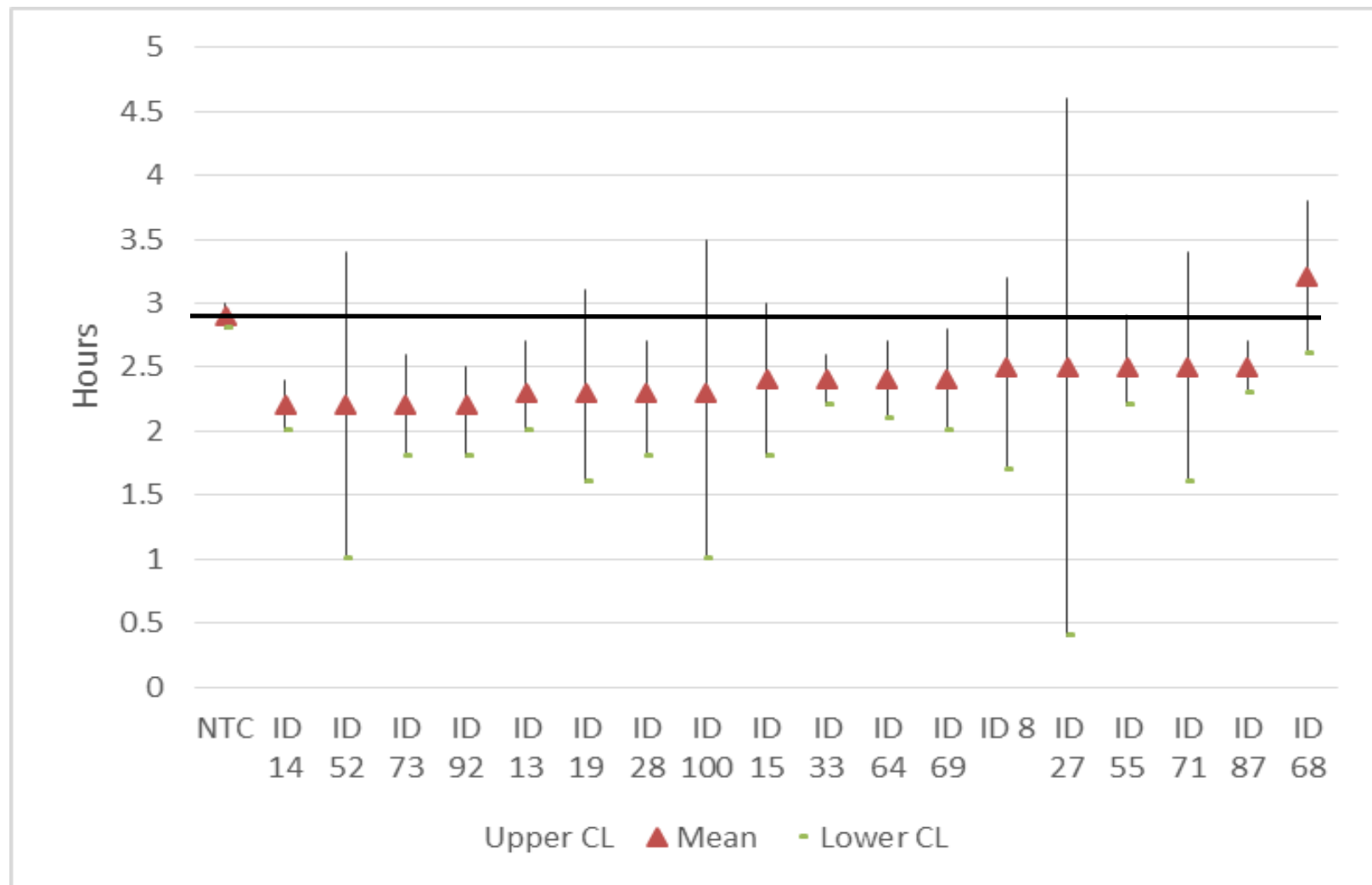
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All Patients Non-Trauma Centers- Average ED LOS (Hours)



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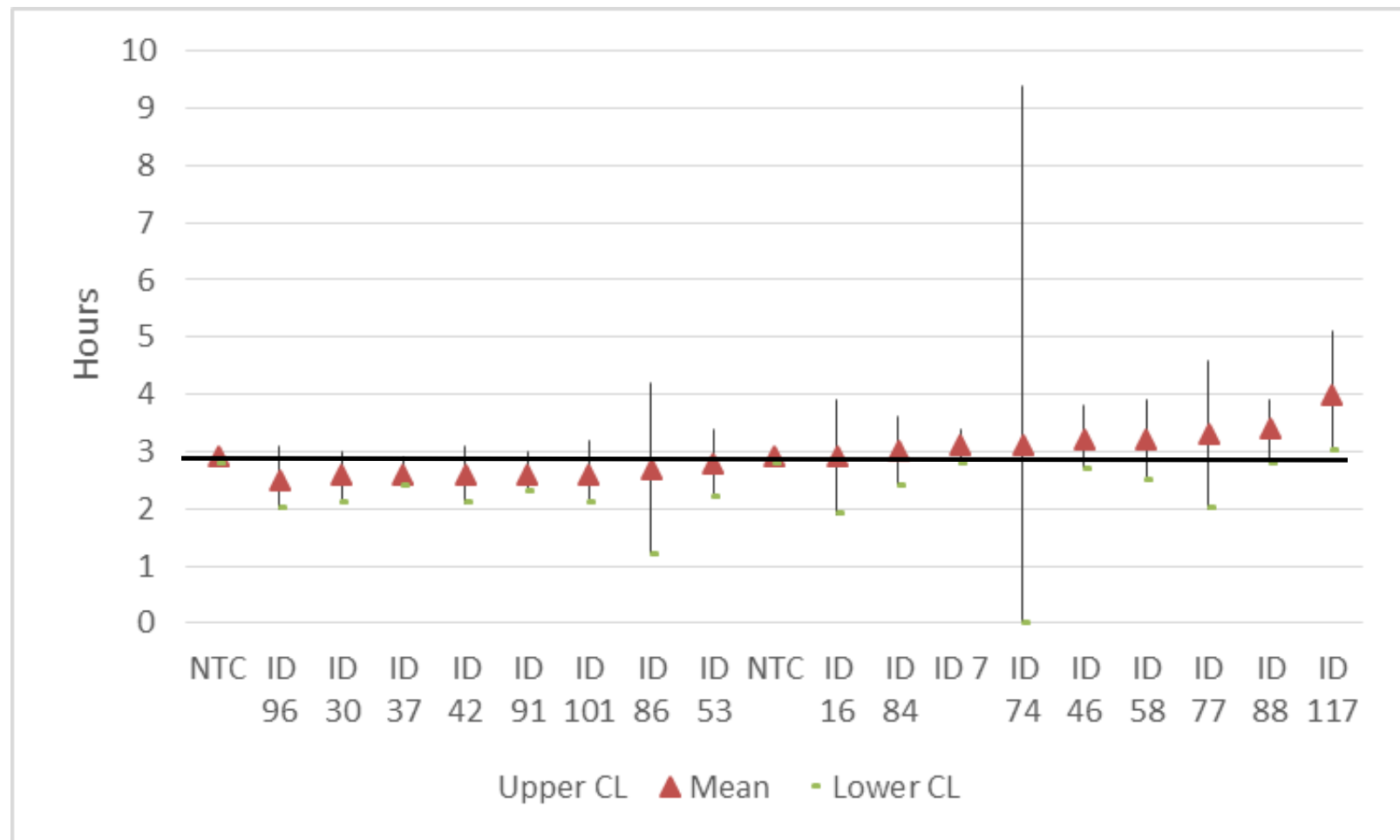
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All Patients Non-Trauma Centers- Average ED LOS (Hours)



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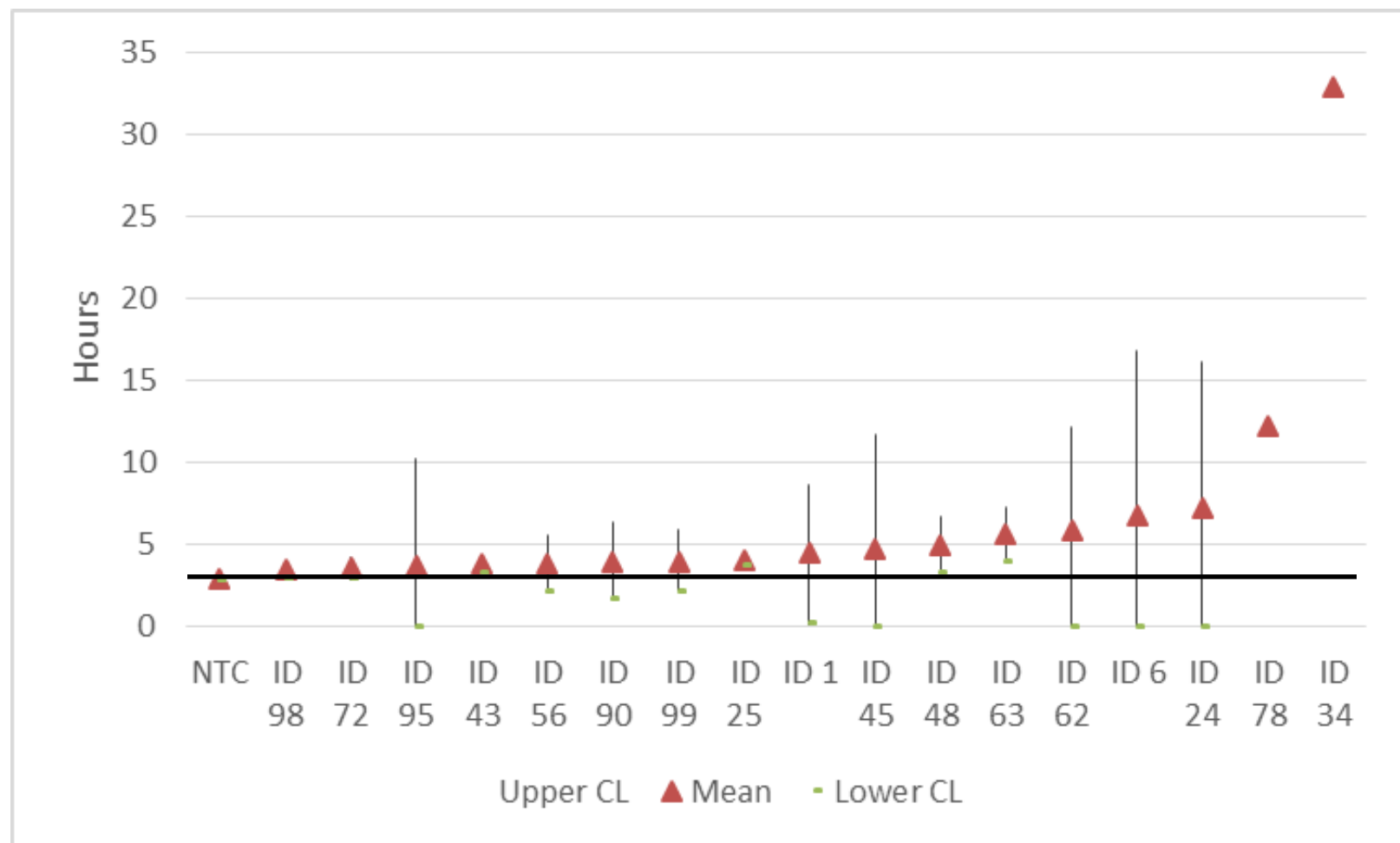
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All Patients Non-Trauma Centers- Average ED LOS (Hours)



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Statewide Quarter 3 Data Report

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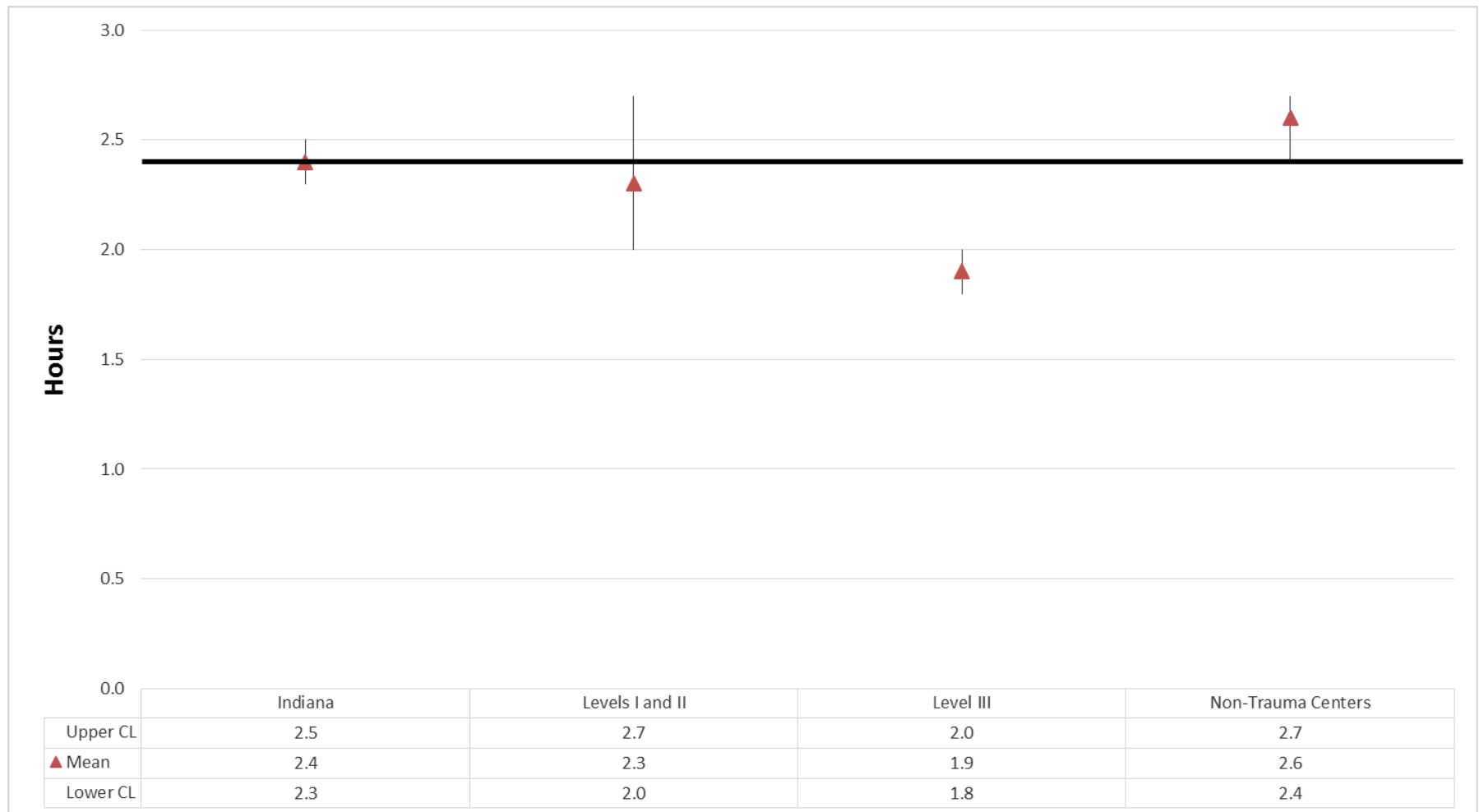
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ED Disposition = Transferred

Average ED LOS (Hours)



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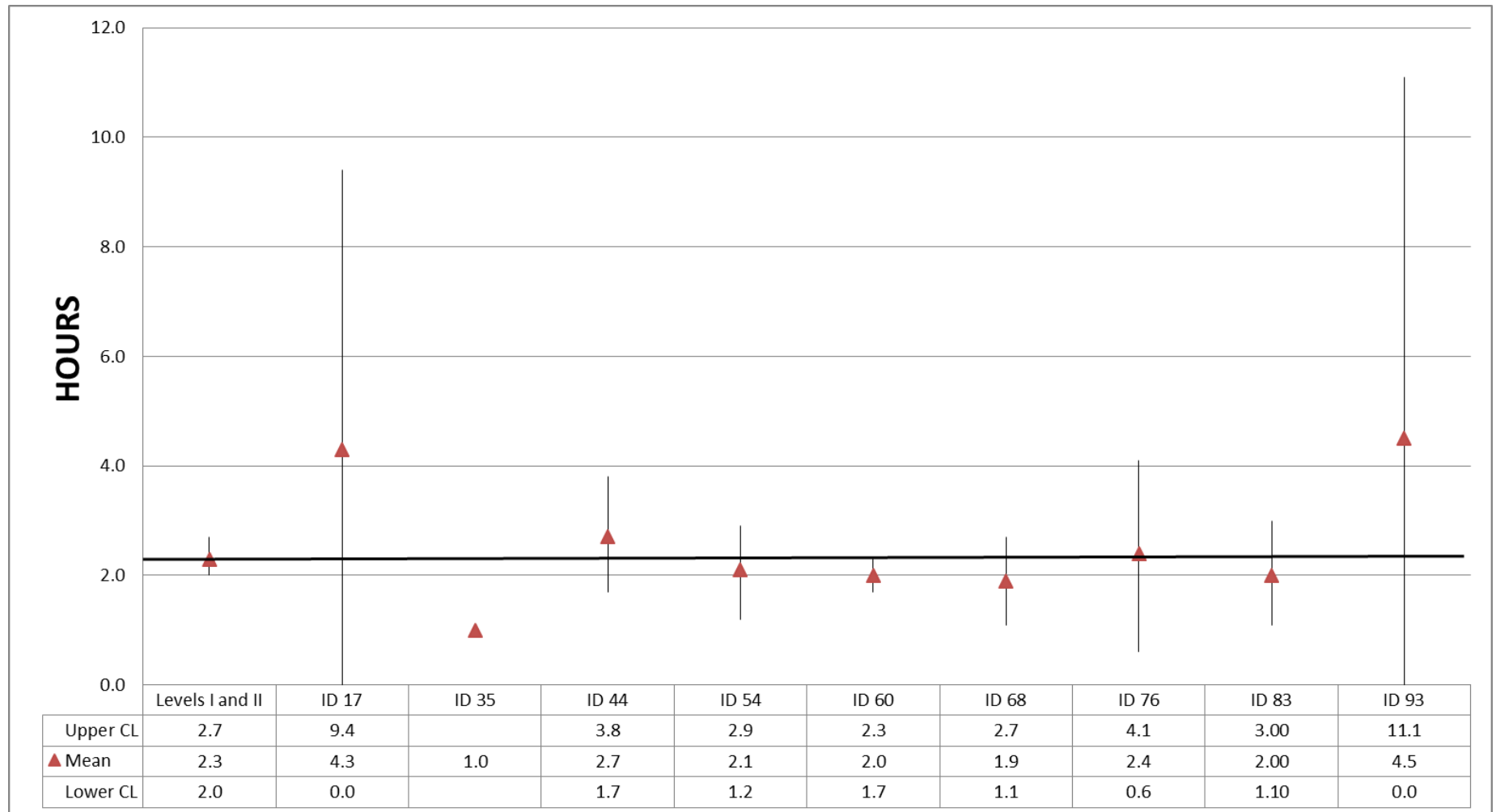
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Level I and II Trauma Centers- Average ED LOS (Hours)



Indiana Trauma Registry

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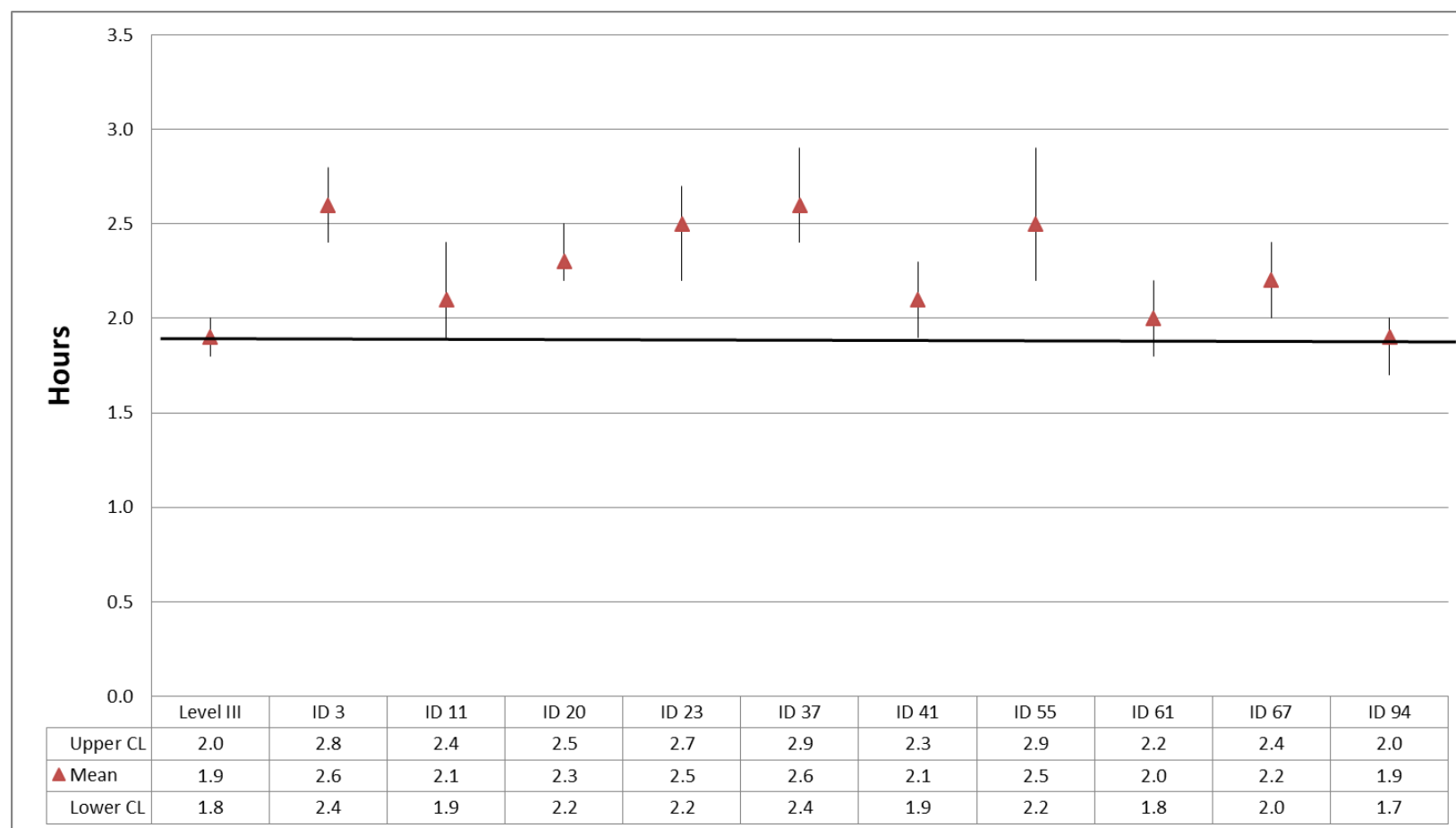
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Level III Trauma Centers- Average ED LOS (Hours)



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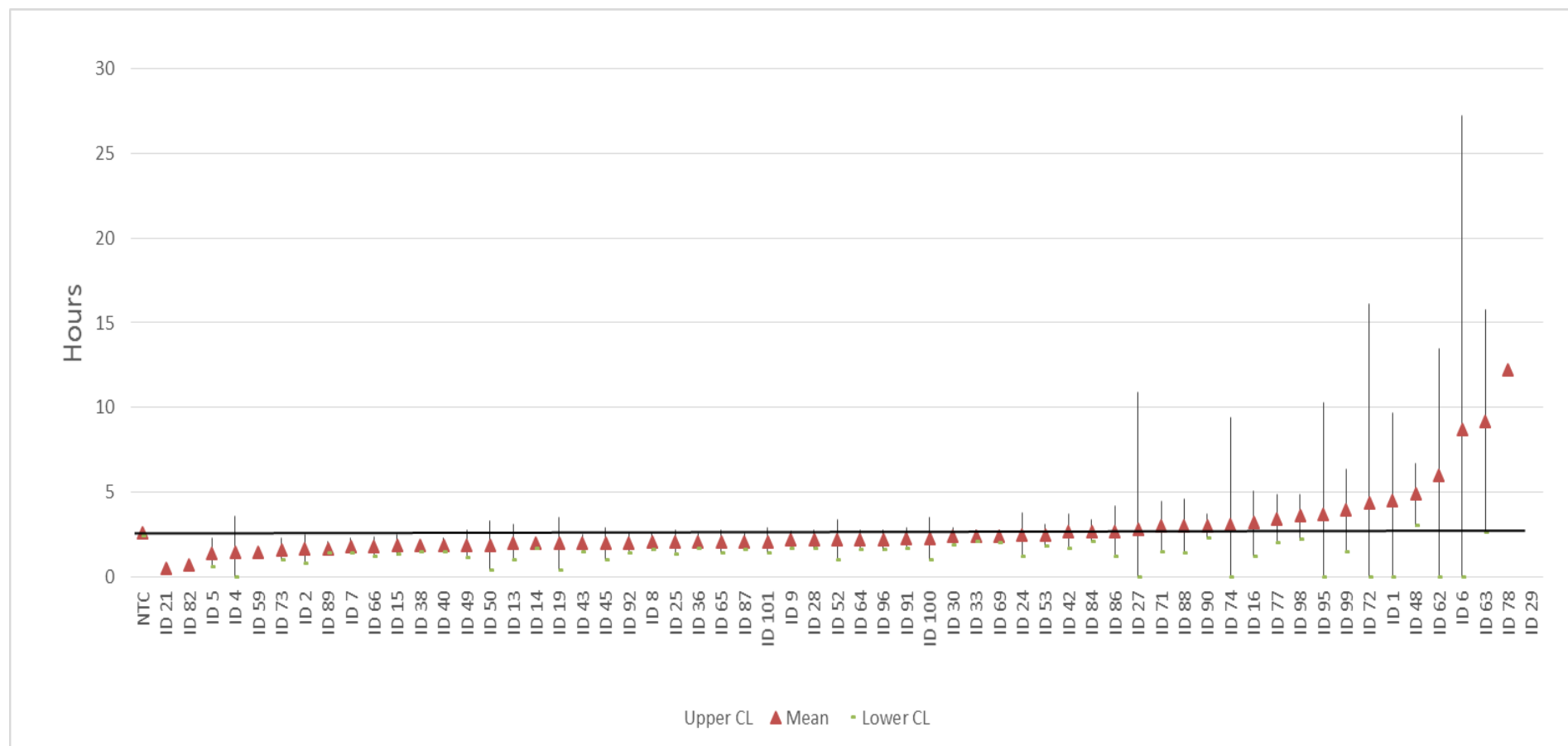
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Non-Trauma Centers

Average ED LOS (Hours)



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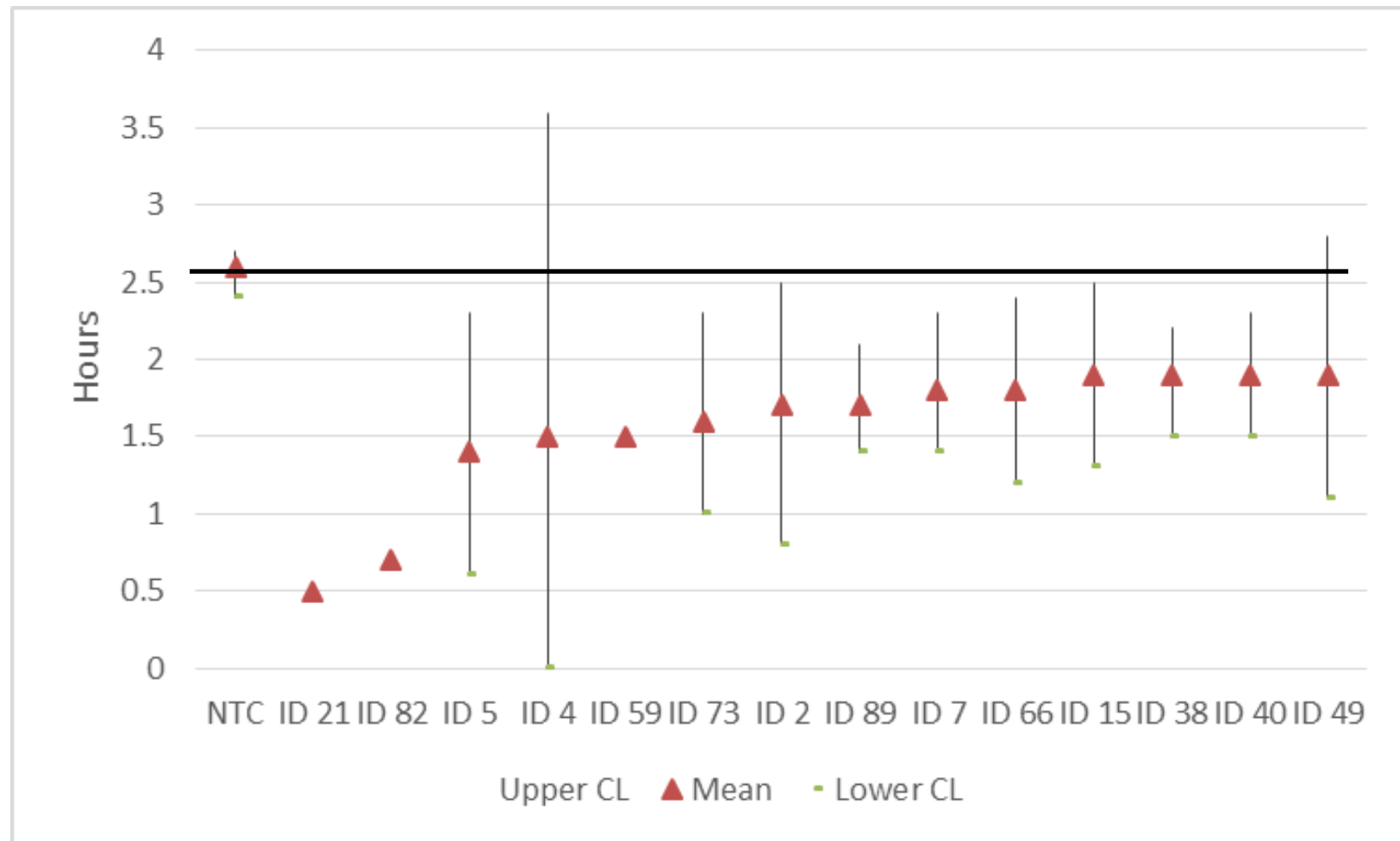
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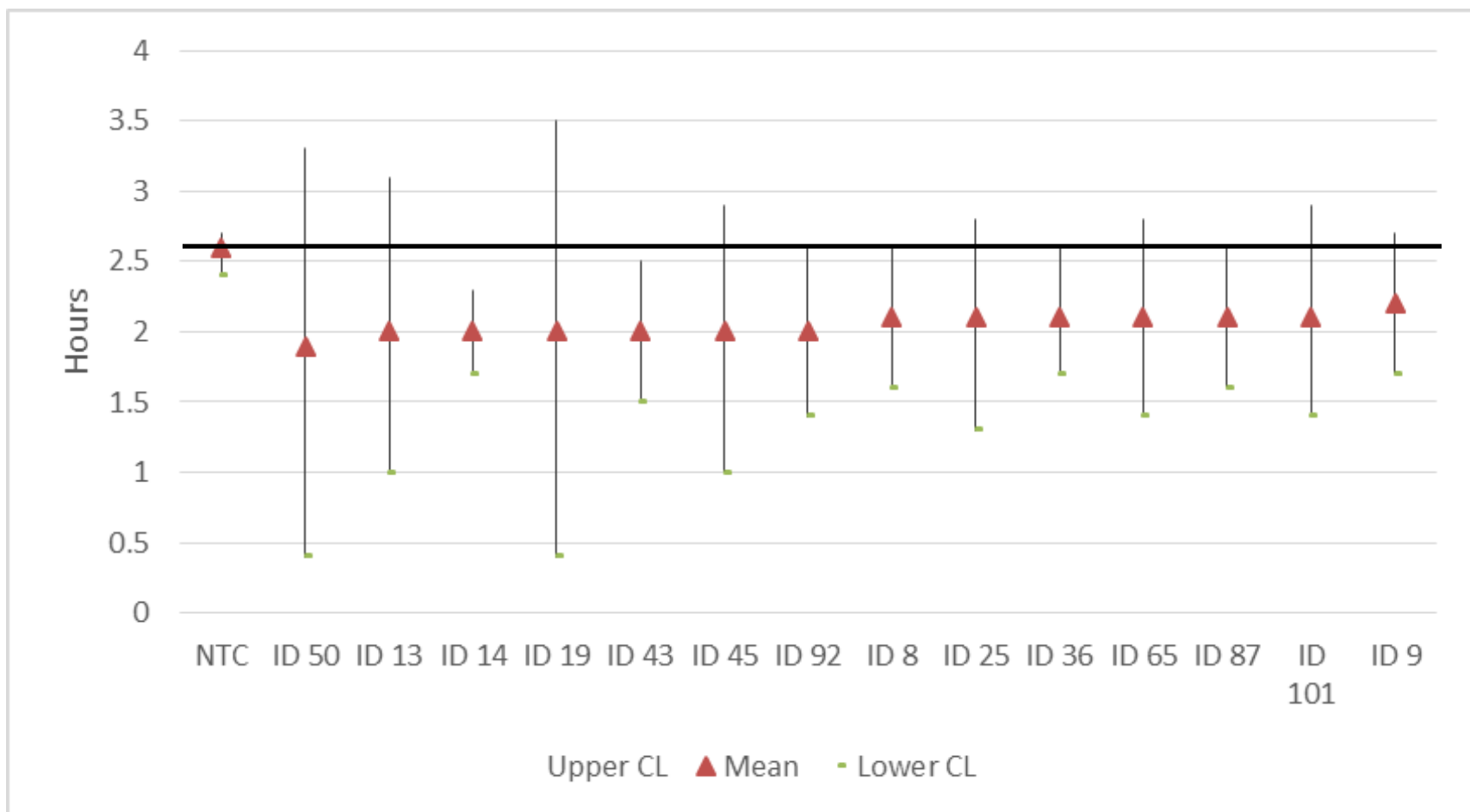
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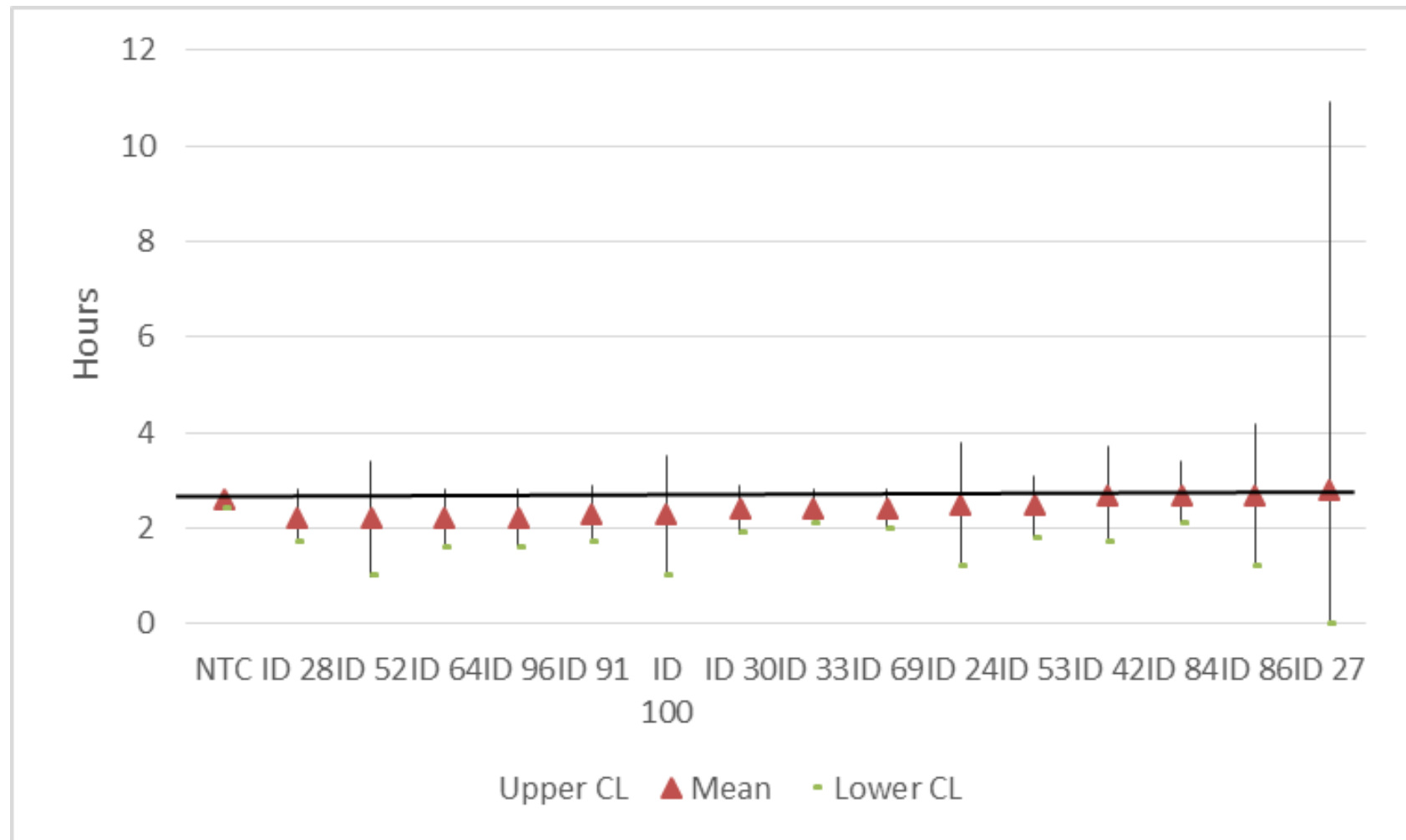
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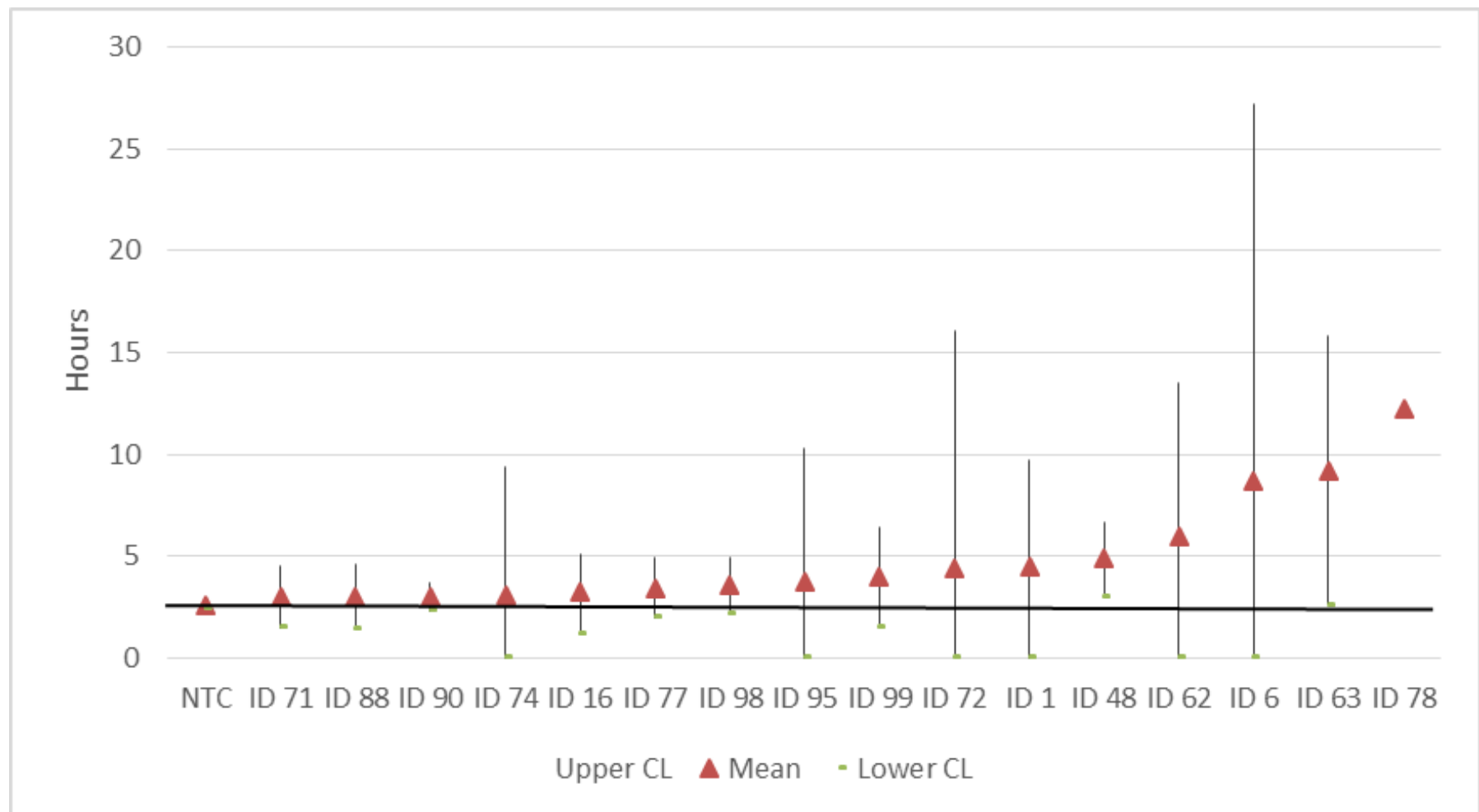
15.8% of data

(Non-Trauma) Hospitals:

77 facilities

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Non-Trauma Centers
Average ED LOS (Hours)



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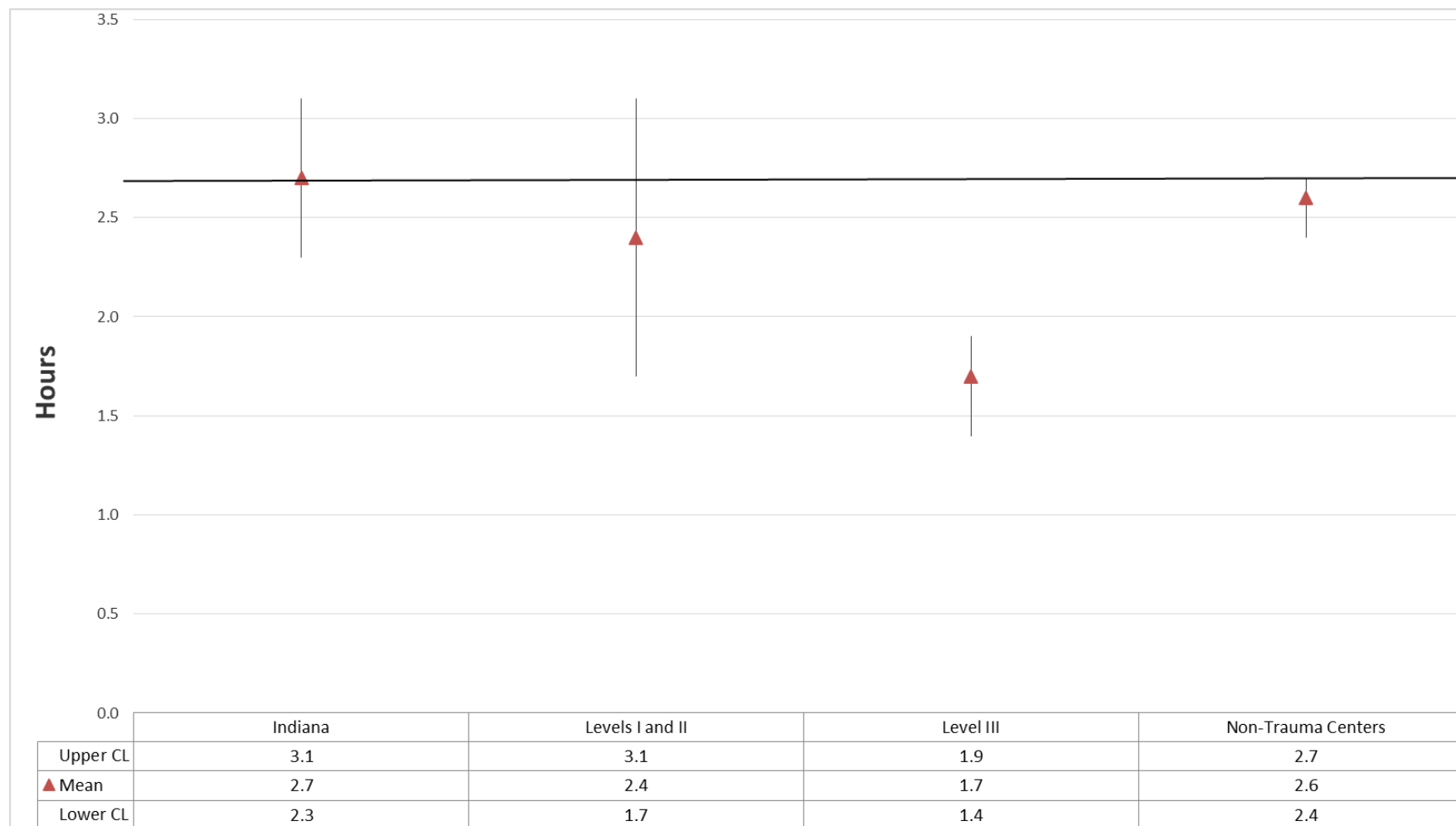
Level I and II: 10 facilities 51.0% of data

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Critical Patients, ED Disposition = Transferred

Average ED LOS (Hours)



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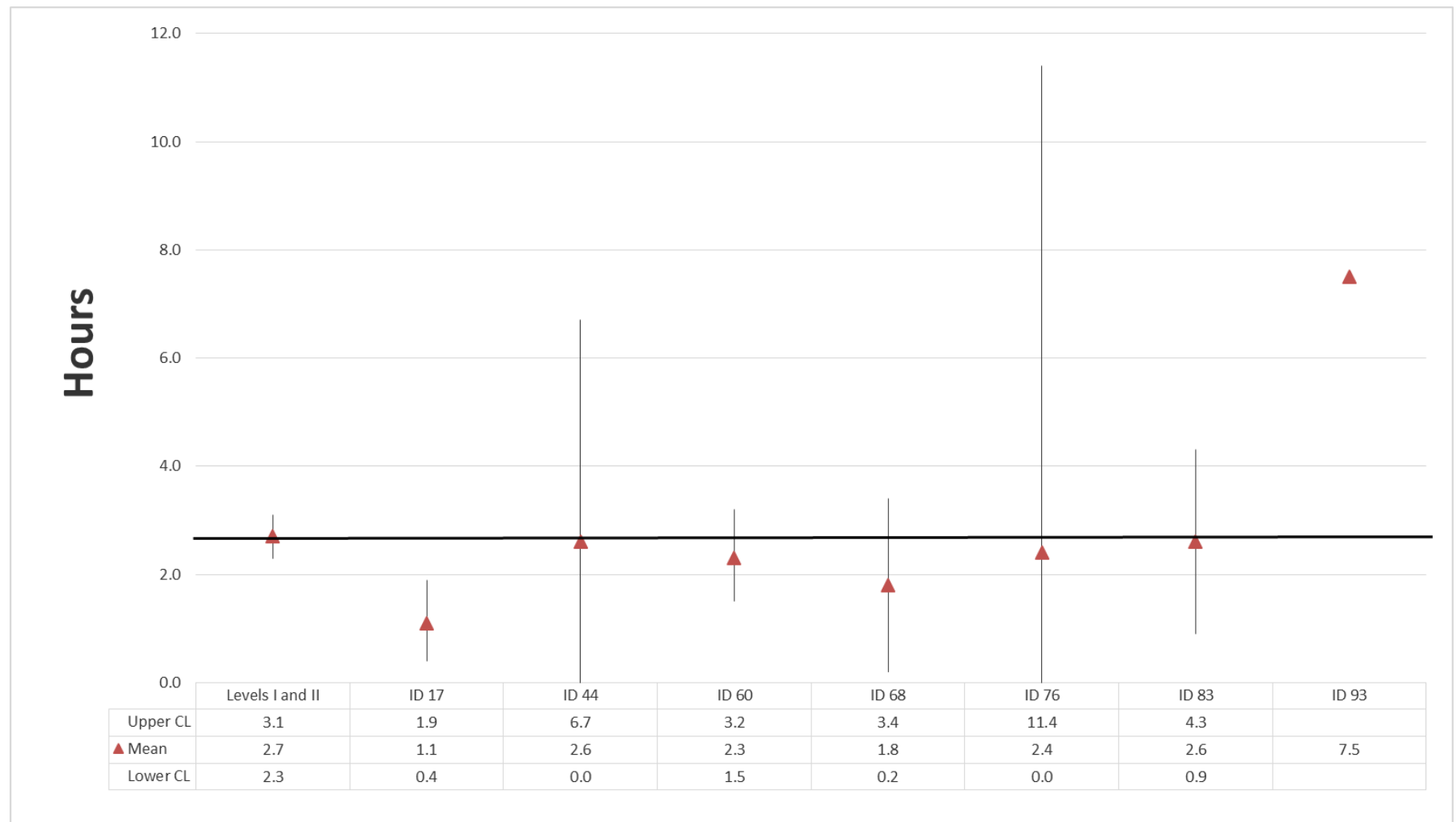
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Critical Patients, ED Disposition = Transferred

Level I and II Trauma Centers - Average ED LOS (Hours)



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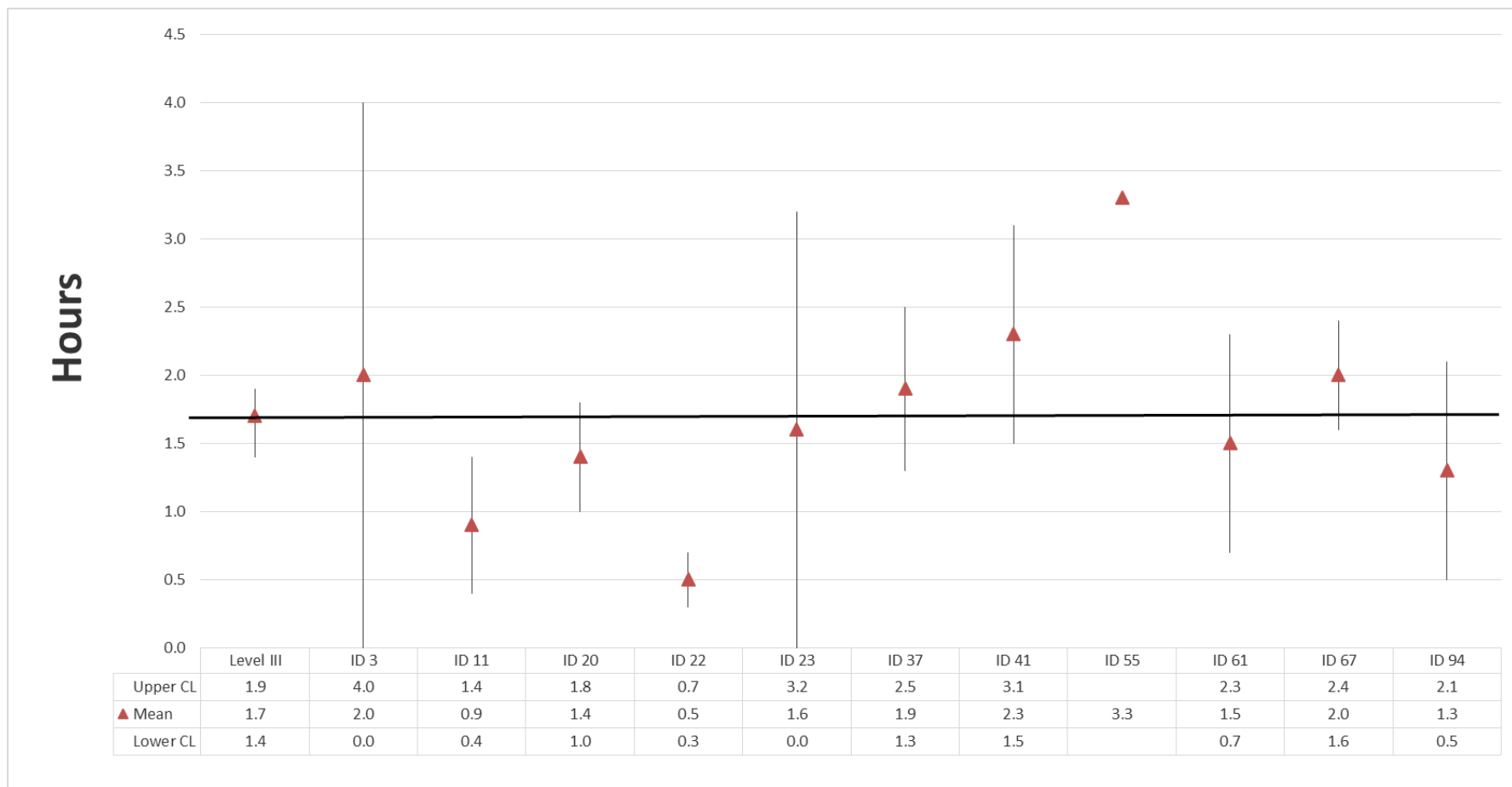
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Critical Patients, ED Disposition = Transferred

Level III Trauma Centers - Average ED LOS (Hours)



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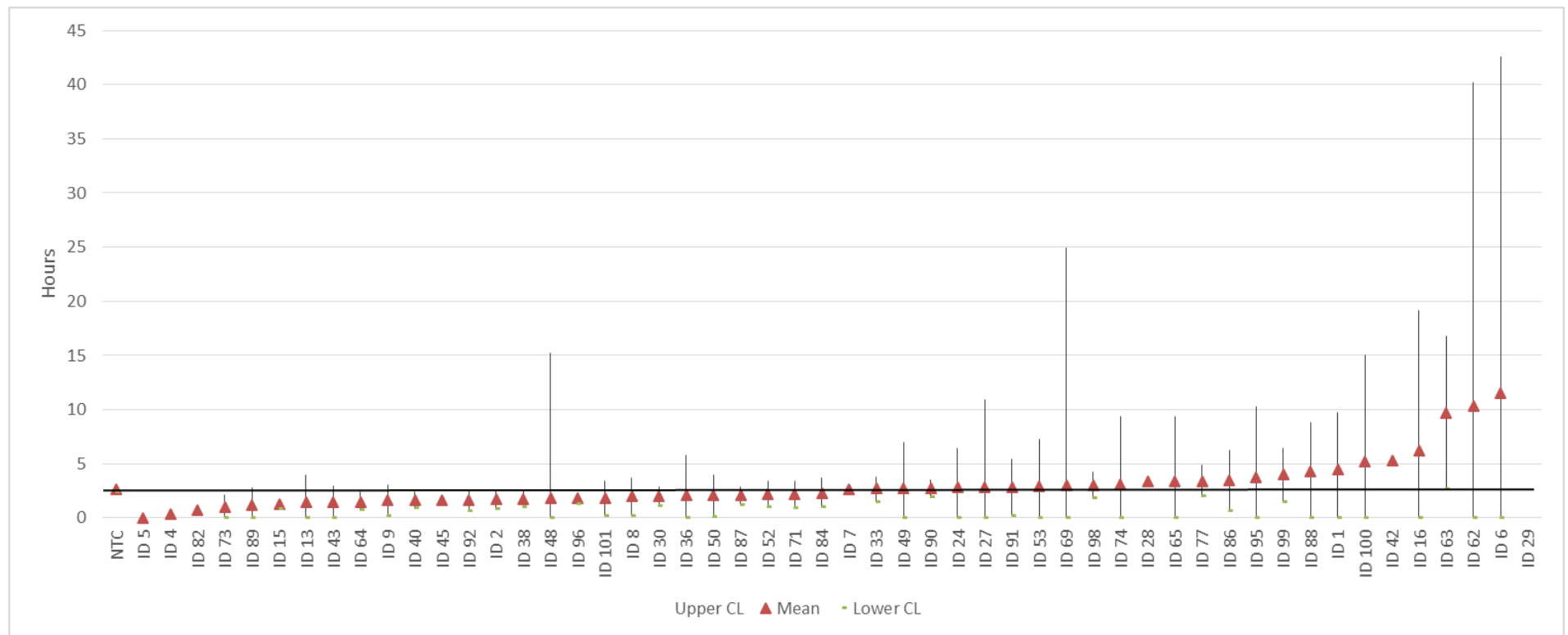
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Non-Trauma Centers - Average ED LOS (Hours)



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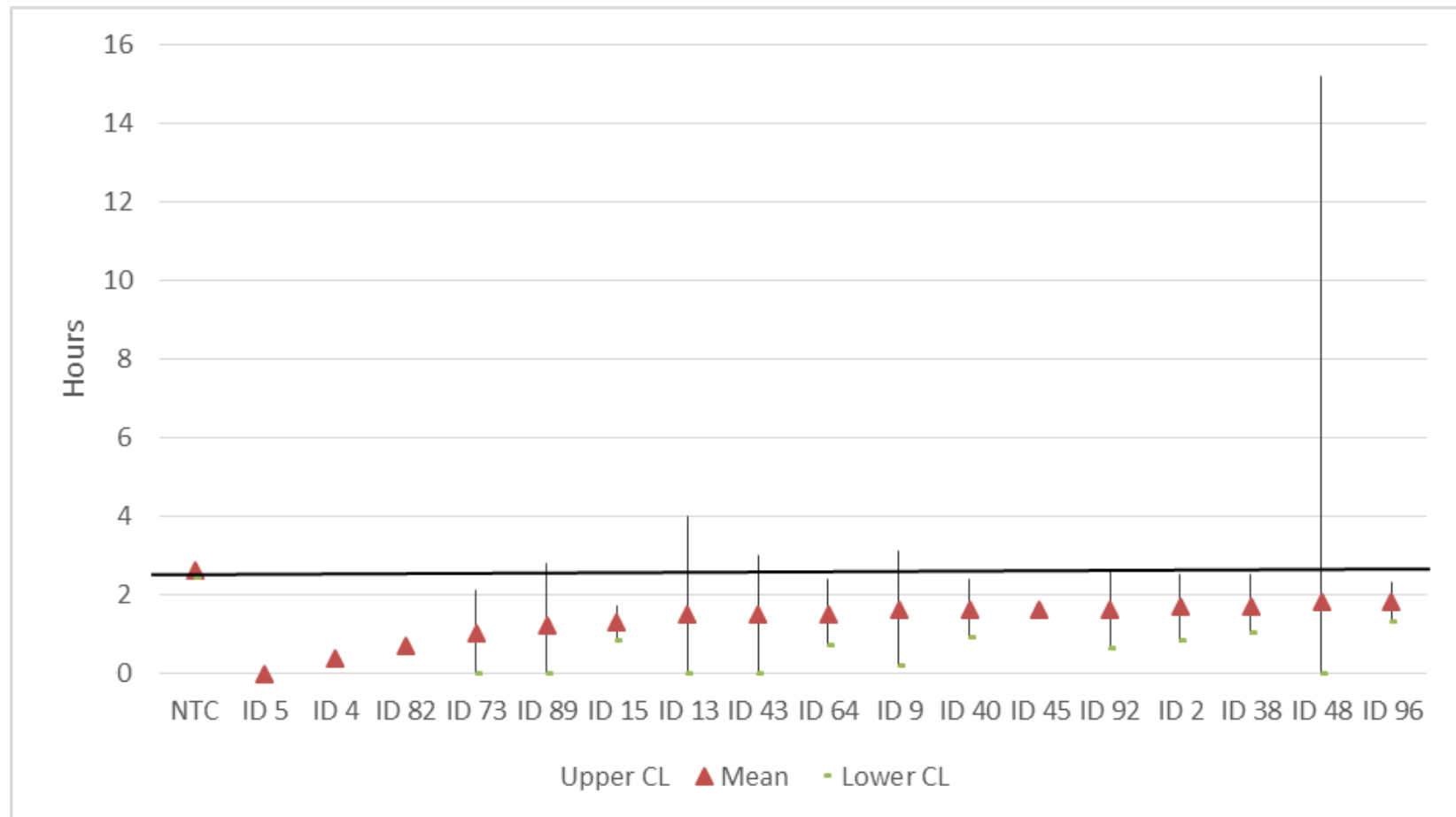
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Critical Patients, ED Disposition = Transferred
Non-Trauma Centers - Average ED LOS (Hours)



Indiana Trauma Registry

Statewide Quarter 3 Data Report

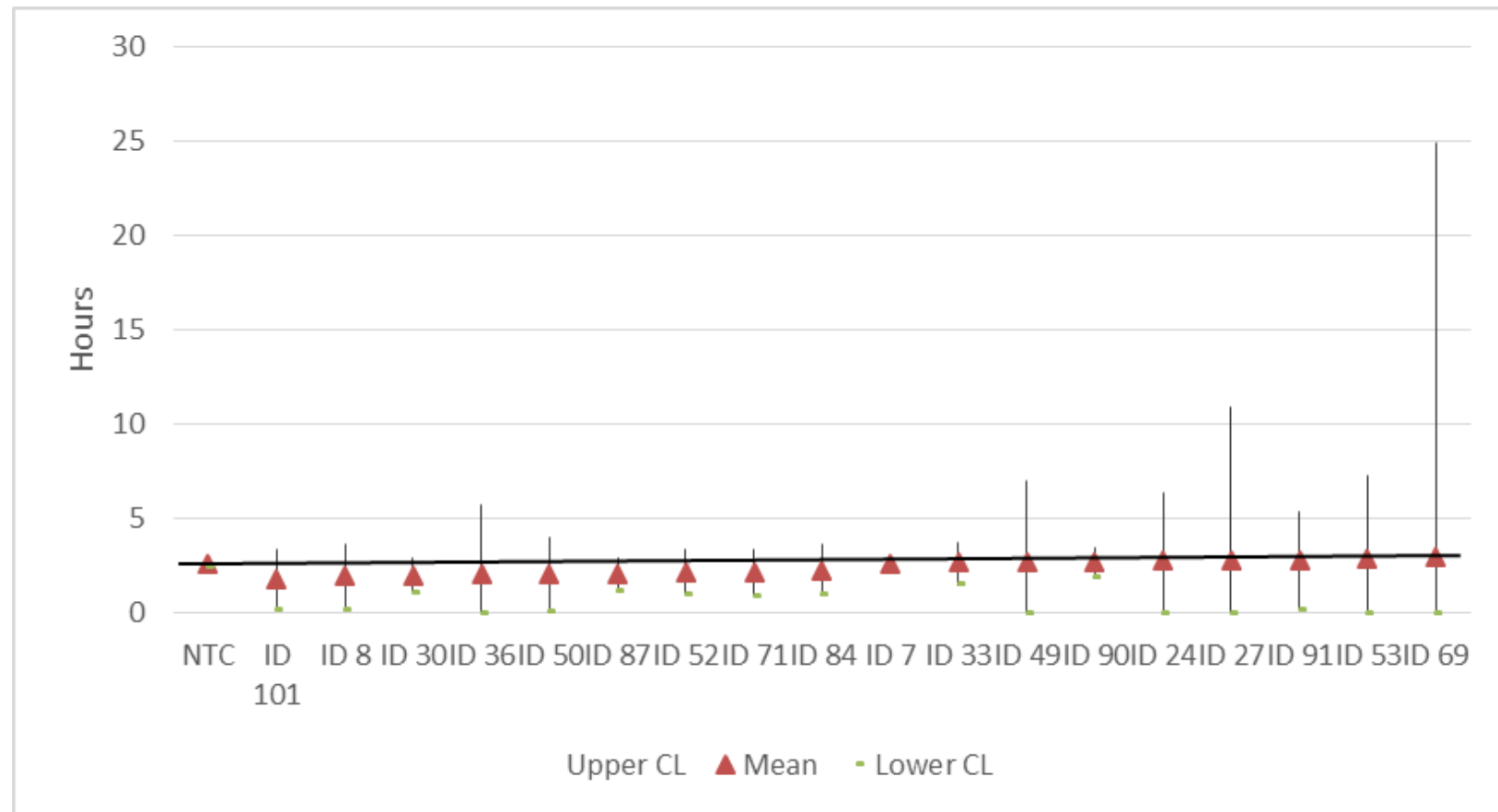
July 1, 2017—September 30, 2017

9,996 Incidents

100 Total Hospitals Reporting

Level I and II:	10 facilities	51.0% of data
Level III:	12 facilities	15.8% of data
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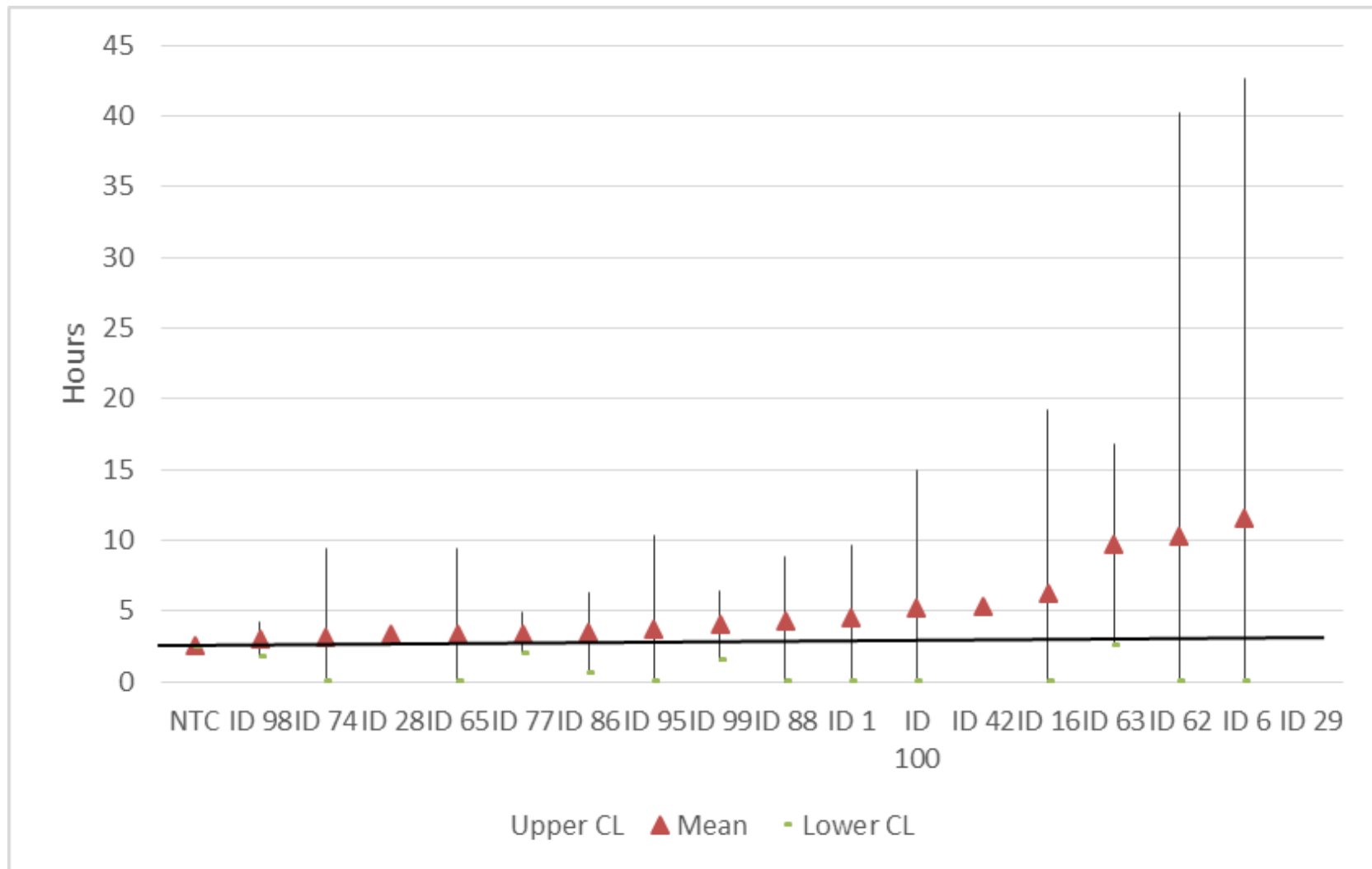
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ED Length of Stay

ED Length of Stay (minutes)				
	Indiana Average	Level I and II	Level III	NTC
N=	8601	4744	1216	2641
Average	164.1	159.6	142.5	182
Std. Deviation	159.7	161.2	88.1	179.6
Minimum	0	0	4	0
Quartile 1	76	64	83	97
Median	129	118	127	148
Quartile 3	206	205	184	217
Maximum	1982	1819	1112	1982

ED Disposition

ED Disposition (count)				
	Indiana	Level I and II	Level III	NTC
Floor Bed	4211	2282	659	1270
ICU	1302	1102	113	87
Transferred	1859	92	341	1426
OR	822	630	99	93
Home w/o Services	371	233	107	31
Observation	449	261	61	127
Step-Down	491	226	107	158
Expired	79	42	19	18
NK/NR/NA	381	219	65	97
AMA	13	9	2	2
Home w/ Services	5	0	0	5
Other	13	3	2	8
Grand total	9996	5099	1575	3322

*A bar graph of ED Disposition is found on page 2.

*A bar graph of ED Length of Stay is found on page 2.

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ED Length of Stay by ISS

ED Length of Stay (minutes)								
ISS Category	Indiana Average	Indiana Average	Level I and II	Level I and II	Level III	Level III	Non-Trauma Centers	Non-Trauma Centers
	Counts	Minutes	Counts	Minutes	Counts	Minutes	Counts	Minutes
1-8	4015	178	2214	182	646	152	1243	184
9-15	3157	159	1683	153	452	136	1055	179
16-24	724	142	543	137	74	130	115	171
25-44	447	101	376	102	42	73	44	121
45-74	30	57	25	58	3	66	2	21
75	19	19	20	70	0	0	1	11
No ISS	204	204	10	82	1	17	211	201

*A Box and Whisker plot of ED Length of Stay by ISS is found on page 5.

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ED Disposition (count) by ISS Category

	Floor Bed	ICU	Transferred	OR	Observation	NK/NR/NA	Step-Down	Home w/o Services	Expired	Other	AMA	Home w/ Services	Total
1-8	1989	293	947	371	331	144	190	325	13	6	11	2	4622
9-15	1855	425	615	246	84	187	198	30	12	1	1	3	3657
16-24	155	300	115	86	12	14	67	8	9	0	1	0	767
25-44	34	245	47	107	0	5	13	0	29	0	0	0	480
45-74	0	17	1	4	0	1	0	0	8	0	0	0	31
75	0	11	0	5	0	1	0	0	6	0	0	0	23
NO ISS	178	11	134	3	22	29	23	8	2	6	0	0	416
Total	4211	1302	1859	822	449	381	491	371	79	13	13	5	9996

*Bar graph of ED Disposition by ISS is found on page 22.

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General Report:

- The caterpillar plots with the anonymous ID's for all patients per hospital may be found on pages 30-36.
- The caterpillar plots with the anonymous ID's for transferred patients per hospital may be found on pages 37-44.
- The caterpillar plots with the anonymous ID's for critical transferred patients per hospital may be found on pages 45-51.
- Reference tables now accompany the graphs for demographic data on pages 25-28 and 52-54.