

KENTUCKY TRAUMA REGISTRY REPORT 2009

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Trauma
Registry
2009**

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Forward

The Kentucky Trauma Registry (KTR) Report 2009 is a publication of the Kentucky Injury Prevention and Research Center (KIPRC). This report presents trauma data submitted to the National Trauma Data Bank (NTDB) from the state's Level 1 and Level 3 trauma facilities: the University of Kentucky Hospital (UK), the University of Louisville Hospital (UL), Kosair Children's Hospital (KO), Ephraim McDowell Regional Medical Center (EMDRMC), and Taylor Regional Medical Center (TRMC). The NTDB collects uniform data from hospitals that are verified by the American College of Surgeons (ACS) as trauma centers. Statewide data collection from ACS-verified hospitals is critical to the completeness of the Kentucky traumatic injury data and especially on Kentucky motor vehicle injuries that are the leading cause of major traumatic injuries in the state. In response to a legislative initiative, Kentucky is expanding the number of trauma registry data reporting facilities to a projected 12 facilities by year 2012. All these facilities are required to report in compliance with the NTDB standards as a condition of their new status. Trauma hospitals are required to submit particular data elements to the Kentucky Trauma Registry (KTR) system that are periodically reported to the NTDB system. The Kentucky Injury Prevention and Research Center (KIPRC) operates the KTR system. KIPRC received funding from the Kentucky Transportation Cabinet and the Foundation for a Healthy Kentucky to analyze the statewide trauma registry data and provide more detailed profile of the traumatic injuries treated in the Kentucky trauma facilities. This report is intended to provide a baseline for assessment of the input from newly verified facilities in subsequent years.

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<http://www.kiprc.uky.edu/projects/trauma/index.html>

Introduction

Kentucky law (KRS 311A.010) defines “trauma” as a single or multi-system life-threatening or limb-threatening injury requiring immediate medical or surgical intervention or treatment to prevent death or permanent disability.

The body of this report is summary data for trauma cases seen at the Kentucky trauma centers in 2009. The registry does not include any trauma data from other Kentucky hospitals unless individuals were transferred from another hospital to one of the trauma centers. It is important to note that these data thus represent only the most serious survivable injuries and not all traumatic injuries in the state. Trauma cases leading to death at the scene of the event are obviously not part of the reported data. Data for trauma sustained in Kentucky but treated in out-of-state facilities are not available. Border areas are thus under-represented in this report. A broad overview of the hospital care provided to Kentucky residents whose primary diagnosis was some form of physical trauma is provided in the Kentucky Inpatient and Emergency Department Traumatic Injury Data Report available at <http://www.kiprc.uky.edu/projects/trauma/index.html>.

Kentucky’s Reporting Trauma Centers in 2009:

- Kosair Children’s Hospital - Louisville
- University of Louisville Hospital - Louisville
- University of Kentucky Chandler Medical Center – Lexington
- Ephraim McDowell Regional Medical Center - Danville
- Taylor Regional Medical Center - Campbellsville

Research Findings

In 2009, a total of 6,778 patients were reported in the Kentucky Trauma Registry. UK reported 2,917 cases, including both children and adults, or 43.04% of all KTR cases. UL reported 2,690 trauma patients or 39.69% of the total, KO saw 869 (12.82%), TRMC treated 180 patients (2.66%), and EMDRMC reported 122 cases (1.80%) (Table 1).

Demographic information included gender, age, race, and ethnicity. Males comprised 67.14% of KTR patients (Table 2), reflecting the predominance of males in the injury categories classified by the American College of Surgeons as trauma. ACS trauma classification excludes hip fractures, the most common traumatic injury in older adults, and a category that is therefore predominantly female. Thus, KTR demographics are strikingly different from those of the related report on traumatic injuries as a whole, in which males and females are roughly equally represented (see KY Inpatient and ED Trauma Data Reports at <http://www.kiprc.uky.edu/projects/trauma/index.html>). The same issue of inclusion criteria influences the distribution of trauma cases by age group. Whereas the statewide hospitalization data for traumatic injury (including hip fractures) is skewed towards older age groups, the KTR data is concentrated in working-age adults (Table 4), with over half (51.5%) aged 25-64 (Figure 1).

The NTDB standard requires the collection of county or state of residence only when a zip code is not available. The 2009 KTR data had only 20 (0.3%) records with missing zip codes. The county of residence was calculated based on a zip-to-county algorithm that may misclassify counties where zip codes cross county lines. An improvement of the algorithm will be undertaken for the next report. County-specific data must be read with the caveat that we are only reporting on Kentucky facilities, so patients from the northern and southern tiers of counties, who often receive trauma care in Ohio and Tennessee respectively, are underrepresented in the current data (Tables 6 and 7). Fayette and Jefferson counties had the highest numbers of patients, reflecting the population size of the counties (Table 6). Rural Appalachian counties typically have the highest rates of injury per 1,000 population (Table 7).

The ethnicity variable was not populated well, with 56% missing values. About 84% of the patients were white and 9% black. The distribution of trauma patients by race and ethnicity is presented in Table 3.

Trauma is to some extent a seasonal phenomenon, with higher incidence during the summer months (Table 5 and Figure 2). July and August had the highest number of incidents leading to treatment in the trauma facilities, mainly due to the increased number of motor vehicle traffic collision injuries among 15-24 and 35-44 age groups.

Motor vehicle traffic collisions (MVTC) continue to be the leading cause of traumatic injuries in Kentucky (37.3%), followed by falls at 25.2% (Table 8). Most of the injuries in motor vehicle crashes were sustained by vehicle occupants (75.8%), followed by motorcyclists (15.2%), and pedestrians (6.3%) (Table 9). Data on age of children and adolescents admitted for motor vehicle crash-related injuries (437 cases) are presented in greater detail in Table 10. Table 11 describes

the use of protective devices for the pediatric patients injured in motor vehicle traffic collisions: 100 (22.9%) did not have protective devices, in 169 cases (38.7%) the presence or use of a protective device was not documented. Patients aged 15-24 accounted for 22.6% of the MVT-related trauma, followed by those aged 25-34 (17.1%). Falls among those 55-64 years old accounted for 14.2% of all falls treated in trauma centers. Almost one third (76 cases) of the injuries attributed to being struck by or against an object were experienced by the patients 5-14 years of age. The review of the struck by/against injuries in this group showed that 41 (59.3%) of these injuries were due to striking against or struck accidentally in sports (Ecodes E917.0, E917.5). Half of the patients with intentional injuries were young adults ages 15-34 (Table 12).

Tables 13 and 14 present the use of alcohol and drugs among the trauma registry patients. Alcohol use was confirmed in 17.4% of MVTs. Alcohol use was also present in 21.9% of the unintentional injuries due to other transportation, and in 30.0% of the injuries due to assault (Table 13). Illegal drug use was confirmed in 138 (5%) of the MVT collision injuries, and in 7.6% of the unintentional injuries due to other transportation (Table 14).

Work-related injuries were reported in 285 (4.2%) of the trauma registry cases. The work-related indicator is an important new field in the trauma registry data collection. A new field for patient occupation or industry is present but not very informative in 2009 as information on industry was missing for 28% of the work-related trauma injuries, and for 155 (55.4%) the industry was coded as “other services” (Table 17). Tables 15 and 16 show that confirmed use of alcohol and drugs in those with work-related trauma injuries is very low, but a large proportion are not tested or documented.

The mode of transportation by inter-facility transfer is available in Table 18. Helicopter ambulance was used in 671 (23.8%) of the inter facility transfer and in 1,018 (25.7%) of the cases that were not a transfer between facilities. Ground ambulance was used in 4,354 (64.2%) of all trauma injuries transported to trauma facilities in Kentucky.

The time from incident to the arrival at a trauma hospital was up to 1 hour in 39.19% (2,656) of the cases (Table 19). In 41.7% of the cases we were unable to calculate the time to arrival due to the lack of information on the time of incident. In 2.3% of the cases the time of the incident was equal to the time of hospital arrival, raising questions for the accuracy of the information on time of injury and hospital arrival time. In addition, 5.6% of the cases had 1 minute time to hospital arrival; 7.4% had time to hospital equal to 2 min, and 3.2% had 3 min time between the incident and the arrival to hospital. Distribution of the time to hospital by facilities is given in Table 20. In 76.6% of the cases treated at UL the time to hospital could not be calculated because the time of incident was missing (Table 20).

Admission shift is a metric that provides evidence for planning prevention initiatives and staffing trauma care facilities. The busiest time of the day is the 3pm to 11pm shift (Table 21). The distribution of the arrivals at the hospital by shift for UK suggests problems with the accuracy of the information.

The Glasgow coma score (GCS) rates patients with regard to the severity of symptoms associated with brain injury. Of the 6,142 patients for whom GCS was reported, 15.0% had

scores of 13 or lower, indicating some degree of brain involvement. The proportion at the lowest reported level (3) was highest at UK (7.95%, or 323 out of 2,917 UK patients total), followed by UL (6.17%), and KO (2.53%) (Table 24). Additional information on the Eye, Verbal, and Motor Glasgow Coma Scores is presented in Table 22 for pediatric patients under age of 2 years and in Table 23 for patients older than 2 years.

Most trauma patients (80.8%) were discharged in less than a week, 1.4% stayed between one to four weeks, and 17.8% were treated for more than one month. Details on the length of hospital stay by hospital are presented in Table 25. MVTC were responsible for by far the largest number of aggregated inpatient days (17,219), followed by falls (9,276) and injuries due to other transportation (3,619) (Figure 3).

The primary method of payment was not well documented for the UK and EMDRMC facilities. The primary source of payment for the majority of the KO patients was Medicaid (51%), followed by private/commercial insurance (42.5%) (Table 26). The most common primary pay source (32.2%) for patients at TRMC was Medicare. The payment sources for the UL patients were more diverse, with the largest proportion (20.1%) going through no fault automobile payment, 15% Medicare, 14.8% self pay, and 14.5% private/commercial insurance.

The largest majority of the patients were discharged to home (77.8%), 6.5% were discharged to another type of rehabilitation or long-term facility, 6.2% were discharged to an intermediate care facility, 4.0% expired, 2.8% were discharged to a skilled nursing facility, 1.7% went home under organized home health service, 0.6% were transferred to a short-term general hospital for inpatient care, 0.4% left against medical advice, and less than 5 patients were transferred to hospice care. Table 27 gives more details on the patient discharge status by trauma facility.

The Injury Severity Score (ISS) is an anatomical rating system that provides numerical values for patients with multiple and varying injuries. The National Trauma Data Bank characterizes ISS scores of 1-9 as mild, 10-15 as moderate, 16-24 as severe, and over 24 as very severe. Using this metric, 53.6% of trauma registry injuries were mild, 17.2% moderate, 16.2% severe, and 12.8% very severe. ISS was missing for 0.1% of the patients. For details by hospital, refer to Table 28.

Tables and Figures

Table 1: KY Trauma Registry patient distribution by hospital

Facility	Frequency	Percent
Kosair Children's Hospital	869	12.82
University of Kentucky Medical Center	2,917	43.04
Taylor Regional Medical Center	180	2.66
University of Louisville Hospital	2,690	39.69
Ephraim McDowell Regional Medical Center	122	1.80
Total	6,778	100.00

Table 2: KY Trauma Registry patient distribution by gender

Gender	Frequency	Percent
Female	2,227	32.86
Male	4,551	67.14
Total	6,778	100.00

Table 3: KY Trauma Registry patients by race and ethnicity

Race	Ethnicity			Total
	Hispanic or Latino	Not Hispanic or Latino	Missing	
Asian	0	*	11	15
Other Race	39	*	8	49
American Indian	0	0	37	37
Black or African American	0	84	521	605
White	85	2,741	3,235	6,061
Missing	5	0	6	11
Total	129	2,831	3,818	6,778

*Totals less than 5 were suppressed by state data management policy

Table 4: KY Trauma Registry patient distribution by age group

	Trauma Facility									
	Kosair Children's Hospital		University of Kentucky Medical Center		Taylor Regional Medical Center		University of Louisville Hospital		Ephraim McDowell Regional Medical Center	
	N	%	N	%	N	%	N	%	N	%
Age										
<1yr	113	13.00	32	1.10	.	.	.	.	.	.
1-4yr	224	25.78	119	4.08	5	2.78	.	.	.	.
5-14yr	408	46.95	236	8.09	16	8.89	*	*	5	4.10
15-24	124	14.27	507	17.38	31	17.22	482	17.92	23	18.85
25-34	.	.	456	15.63	14	7.78	487	18.10	19	15.57
35-44	.	.	415	14.23	17	9.44	427	15.87	13	10.66
45-54	.	.	433	14.84	24	13.33	479	17.81	23	18.85
55-64	.	.	283	9.70	14	7.78	370	13.75	11	9.02
65-74	.	.	211	7.23	18	10.00	195	7.25	13	10.66
75-84	.	.	158	5.42	18	10.00	172	6.39	8	6.56
85+	.	.	67	2.30	23	12.78	77	2.86	7	5.74
All	869	100.00	2,917	100.00	180	100.00	2,690	100.00	122	100.00

*Totals less than 5 were suppressed by state data management policy

Table 5: KY Trauma Registry patient distribution by month of arrival

Facility	Month												Total
	01	02	03	04	05	06	07	08	09	10	11	12	
Kosair Children's Hospital	47	49	60	104	95	73	92	93	80	72	59	45	869
University of Kentucky Medical Center	176	188	235	273	278	242	277	290	258	253	231	216	2,917
Taylor Regional Medical Center	20	12	14	16	22	29	24	12	13	*	9	6	*
University of Louisville Hospital	176	175	196	236	210	240	268	263	239	235	245	207	2,690
Ephraim McDowell Regional Medical Center	*	7	16	14	8	10	16	10	8	18	*	7	*
Total	423	431	521	643	613	594	677	668	598	581	548	481	6,778

*Totals less than 5 were suppressed by state data management policy

Table 6: Top 10 KY counties by number of residents in KY Trauma Registry

#	Patient County of Residence	Cases	% of KY Residents Treated in KY Trauma Registry Facilities	Rate per 1,000 Population
1	Jefferson	1,537	26.1%	2.1
2	Fayette	439	7.4%	1.5
3	Madison	168	2.8%	2.0
4	Hardin	168	2.8%	1.7
5	Bullitt	114	1.9%	1.5
6	Nelson	113	1.9%	2.6
7	Laurel	111	1.9%	1.9
8	Pulaski	111	1.9%	1.8
9	Boyle	84	1.4%	2.9
10	Montgomery	83	1.4%	3.2

Table 7: Top 10 KY counties by rate of resident patients in KY Trauma Registry

	Patient County of Residence	Cases	% of KY cases	Rate per 1,000 population
1	Estill	60	1.0%	4.0
2	Jackson	53	0.9%	4.0
3	Nicholas	26	0.4%	3.8
4	Mercer	78	1.3%	3.6
5	Lee	25	0.4%	3.4
6	Wolfe	24	0.4%	3.4
7	Trimble	30	0.5%	3.3
8	Montgomery	83	1.4%	3.2
9	Menifee	21	0.4%	3.2
10	Powell	43	0.7%	3.2

Table 8: KY Trauma Registry patient distribution by cause and intent of injury

Cause	Intent			Total
	Unintentional	Intentional	Other/ Undetermined	
Motor vehicle traffic collisions	2,522	6	0	2,528
Firearm	65	255	18	338
Poisoning	*	*	*	*
Falls	1,703	*	*	1,709
Suffocation	0	*	*	*
Drowning		*	*	*
Fire/burn	260	*	*	268
Cut/pierce	111	181	*	*
Struck by/against	260	179	9	448
Machinery	93	0	0	93
Other pedal cycle	99	0	0	99
Other pedestrian	22	0	0	22
Other transportation	622	0	0	622
Natural/environmental	74	0	0	74
Overexertion	20	0	0	20
Other specified	81	61	0	142
NEC	12	21	5	38
Not specified	26	35	8	69
Missing Ecode				5
Total	5,973	749	51	6,778

*Totals less than 5 were suppressed by state data management policy

Table 9: KY Trauma Registry patients injured in motor vehicle traffic collisions

Role in motor vehicle collision	Number
Occupant	1,911
Motorcyclist	383
Pedal cyclist	35
Pedestrian	158
Unknown	25
Other	10
Total	2,522

Table 10: Pediatric KY Trauma Registry patients in MVTC by age

Age in years	Number of patients in motor vehicle traffic collision	Percent of all pediatric motor vehicle traffic collision cases	Percent of all trauma registry cases for this age
0	8	1.83	5.80
1	8	1.83	9.30
2	14	3.2	13.59
3	17	3.89	20.48
4	9	2.06	10.84
5	15	3.43	18.29
6	13	2.97	22.03
7	16	3.66	26.23
8	15	3.43	26.32
9	13	2.97	23.21
10	8	1.83	19.51
11	13	2.97	24.53
12	13	2.97	14.94
13	18	4.12	22.50
14	35	8.01	38.89
15	26	5.95	29.21
16	42	9.61	47.73
17	87	19.91	59.59
18	67	15.33	54.03
Total	437	100.00	27.21

Table 11: Pediatric KY Trauma Registry patients in motor vehicle traffic collisions, by age and protective device

Protective Device	Age					
	<1yr	1-4yr	5-8	9-14	15-18	Total
None	*	7	16	28	48	100
Lap Belt	*	*	10	8	41	63
Lap & Shoulder Belt	0	0	*	5	40	*
Child Restraint (booster seat, child car seat)	5	19	6	0	0	30
Helmet (e.g., bicycle, skiing, motorcycle)	0	0	*	6	8	*
Airbag Present	0	0	*	*	8	11
Not Applicable	0	0	0	*	*	*
Not documented	*	19	24	50	75	169
Total	8	48	59	100	222	437

Table 12: KY Trauma Registry patients by age and cause of injury

Age	Unintentional Injuries										Intentional Assault	
	Motor vehicle traffic collisions		Other transport. injuries		Falls		Struck by/against		All other			
	N	%	N	%	N	%	N	%	N	%	N	%
<1yr	8	0.32	*	0.48	62	3.65	7	2.70	25	2.40	25	4.00
1-4yr	48	1.90	11	1.77	156	9.18	32	12.36	92	8.82	16	2.56
5-14yr	159	6.30	81	13.02	195	11.48	76	29.34	148	14.19	7	1.12
15-24	571	22.64	147	23.63	95	5.59	41	15.83	146	14.00	167	26.72
25-34	432	17.13	104	16.72	108	6.36	21	8.11	159	15.24	152	24.32
35-44	359	14.23	87	13.99	133	7.83	24	9.27	141	13.52	128	20.48
45-54	364	14.43	105	16.88	231	13.60	34	13.13	134	12.85	91	14.56
55-64	268	10.63	42	6.75	242	14.24	10	3.86	87	8.34	29	4.64
65-74	160	6.34	24	3.86	177	10.42	11	4.25	59	5.66	6	0.96
75-84	109	4.32	14	2.25	191	11.24	*	0.39	37	3.55	*	0.64
s.85+	44	1.74	*	0.64	109	6.42	*	0.77	15	1.44	.	.

*Totals less than 5 were suppressed by state data management policy

Table 13: KY Trauma Registry patients by cause of injury and alcohol use

	Cause of Injury				
	Unintentional MVTC	Other transport.	Falls	Other unintentional	Assault
	N	N	N	N	N
Alcohol Use Indicators					
No (not tested)	1,180	311	753	547	235
No (confirmed by test)	567	49	212	166	122
Yes (confirmed by test [trace levels])	216	112	86	66	99
Yes (confirmed by test [beyond legal limit])	224	24	62	50	89
Not Applicable	131	47	189	94	25
Not Documented/missing	204	79	401	381	57

Table 14: KY Trauma Registry patients by cause of injury and drug use indicator

	Cause of Injury				
	Unintentional MVTC	Other transport.	Falls	Other unintentional	Assault
	N	N	N	N	N
Drug Use Indicators					
No (not tested)	298	101	371	249	50
No (confirmed by test)	453	40	145	101	117
Yes (confirmed by test [prescription drug])	785	260	204	162	135
Yes (confirmed by test [illegal use drug])	115	10	30	38	41
Yes (confirmed by test [prescription drug],[illegal use drug])	23	*	8	9	9
Not Applicable	183	68	208	107	27
Not documented	665	140	737	638	248

*Totals less than 5 were suppressed by state data management policy

Table 15: KY Trauma Registry, alcohol use by work related trauma injuries

Alcohol Use Indicators	Work Related Trauma Injury			
	No	Yes	Missing	Total
No (not tested)	2,863	158	5	3,026
No (confirmed by test)	1,024	86	6	1,116
Yes (confirmed by test [trace levels])	567	7	5	579
Yes (confirmed by test [beyond legal limit])	446	*	*	449
Not Applicable	465	21	0	486
Missing information	1,105	11	6	72
Total	6,470	285	23	6,778

*Totals less than 5 were suppressed by state data management policy

Table 16: KY Trauma Registry, drug use by work related trauma injuries

Drug Use Indicator	Work Related Trauma Injury			
	No	Yes	Missing	Total
No (not tested)	1,016	39	14	1,069
No (confirmed by test)	803	52	*	*
Yes (confirmed by test [prescription drug])	1,496	50	0	1,546
Yes (confirmed by test [illegal use drug])	221	13	0	234
Yes (confirmed by test [prescription drug][illegal use drug])	51	*	0	*
Not Applicable	565	28	0	593
Not documented	2,318	102	8	2,428
Total	6,470	285	23	6,778

*Totals less than 5 were suppressed by state data management policy

Table 17: KY Trauma Registry, work related trauma injuries

Patient Occupational Industry	Frequency	Percent
Natural Resources and Mining	*	*
Other Services	158	55.44
Retail Trade	*	*
Transportation and Public Utilities	*	*
Agriculture, Forestry, Fishing	10	3.51
Education and Health Services	*	0.35
Construction	23	8.07
Government	*	*
Missing	80	28.07
Total	285	100.00

*Totals less than 5 were suppressed by state data management policy

Table 18: KY Trauma Registry patients by mode of transport delivering the patient to the hospital and inter facility transfer status

Mode of Transportation	Inter Facility Transfer		
	Yes	No	Total
Ground Ambulance	2,008	2,346	4,354
Helicopter Ambulance	671	1,018	1,689
Private/Public Vehicle/Walk-in	127	578	705
Other	5	7	12
Not documented	9	9	18
Total	2,820	3,958	6,778

Table 19: KY Trauma Registry patients by time from injury to hospital arrival

Time to Hospital	Total	%
Up to 1 hour	2,656	39.19
1 to less than 2 hours	214	3.16
2 to less than 5 hours	235	3.47
5 to less than 12 hours	204	3.01
12 to less than 24 hours	393	5.80
More than 24 hours	223	3.29
Missing	2,824	41.66
Invalid	29	0.43

Table 20: KY Trauma Registry patients by time from injury to hospital arrival

Time to Hospital	Facility									
	Kosair Children's Hospital		University of Kentucky Medical Center		Taylor Regional Medical Center		University of Louisville Hospital		Ephraim McDowell Regional Medical Center	
	N	%	N	%	N	%	N	%	N	%
Up to 1 hour	47	5.41	2,385	81.76	19	10.56	137	5.09	68	55.74
1 to less than 2 hours	37	4.26			11	6.11	143	5.32	23	18.85
2 to less than 5 hours	84	9.67			9	5	135	5.02	7	5.74
5 to less than 12 hours	77	8.86			*	*	123	4.57	*	*
12 to less than 24 hours	15	1.73	326	11.18	*	*	49	1.82		
More than 24 hours	7	0.81	173	5.93			43	1.60		
Missing	602	69.28	*	*	135	75.00	2,060	76.58	23	18.85
Invalid			29	0.99						

*Totals less than 5 were suppressed by state data management policy

Table 21: KY Trauma Registry patient distribution by shift of arrival

	Facility									
	Kosair Children's Hospital		University of Kentucky Medical Center		Taylor Regional Medical Center		University of Louisville Hospital		Ephraim McDowell Regional Medical Center	
	N	%	N	%	N	%	N	%	N	5
Shift										
11pm-7am	174	20.02	2880	98.73	20	11.11	768	28.55	23	18.85
7am-3pm	140	16.11	9	0.31	72	40.00	712	26.47	45	36.89
3pm-11pm	555	63.87	27	0.93	88	48.89	1193	44.35	54	44.26
Missing	.	.	*	*	.	.	17	0.63	.	.

*Totals less than 5 were suppressed by state data management policy

Table 22: KY Trauma Registry - First recorded Glasgow Coma Score in the ED/hospital
Pediatric patients, age ≤ 2 years

Pediatric patients, age ≤ 2 years	Frequency	Percent
Glasgow Coma Score (Eye)		
1 (No eye movement when assessed)	24	7.34
2 (Opens eyes in response to painful stimulation)	*	*
3 (Opens eyes in response to verbal stimulation)	*	*
4 (Opens eyes spontaneously)	257	78.59
Missing	41	12.54
Glasgow Coma Score (Verbal)		
1 (No vocal response)	31	9.48
2 (Inconsolable, agitated)	14	4.28
3 (Inconsistently consolable, moaning)	*	*
4 (Cries but is consolable, inappropriate interactions)	8	2.45
5 (Smiles, oriented to sounds, follows objects, Interacts)	229	70.03
Missing	41	12.54
Glasgow Coma Score (Motor)		
1 (No motor response)	15	4.59
2 (Extension to pain)	*	*
3 (Flexion to pain)	7	2.14
4 (Withdrawal from pain)	*	*
5 (Localizing pain)	29	8.87
6 (Appropriate response to stimulation)	229	70.03
Missing	41	12.54

*Totals less than 5 were suppressed by state data management policy

Table 23: KY Trauma Registry - First recorded Glasgow Coma Score in the ED/hospital Patients, age>2 years

Patients, age>2 years	Frequency	Percent
Glasgow Coma Score (Eye)		
1 (No eye movement when assessed)	536	8.31
2 (Opens eyes in response to painful stimulation)	52	0.81
3 (Opens eyes in response to verbal stimulation)	215	3.33
4 (Opens eyes spontaneously)	5,014	77.72
Missing	634	9.83
Glasgow Coma Score (Verbal)		
1 (No verbal response)	605	9.38
2 (Incomprehensible sounds)	53	0.82
3 (Inappropriate words)	35	0.54
4 (Confused)	467	7.24
5 (Oriented)	4,657	72.19
Missing	634	9.83
Glasgow Coma Score (Motor)		
1 (No motor response)	405	6.28
2 (Extension to pain)	19	0.29
3 (Flexion to pain)	24	0.37
4 (Withdrawal from pain)	69	1.07
5 (Localizing pain)	184	2.85
6 (Obeys commands)	5,116	79.31
Missing	634	9.83

Table 24: KY Trauma Registry - First recorded Glasgow Coma Score (Total) in the ED/hospital

	Trauma Facility									
	Kosair Children's Hospital		University of Kentucky Medical Center		Taylor Regional Medical Center		University of Louisville Hospital		Ephraim McDowell Regional Medical Center	
	N	%	N	%	N	%	N	%	N	%
GCS										
3	22	2.53	232	7.95	*	*	166	6.17		
4	*	*	8	0.27	*	*	8	0.30		
5	*	*	8	0.27			12	0.45		
6	*	*	14	0.48	*	*	27	1.00		
7	*	*	33	1.13	*	*	28	1.04	*	*
8	*	*	10	0.34	*	*	11	0.41		
9	*	*	12	0.41	*	*	14	0.52	*	*
10	9	1.04	14	0.48			14	0.52		
11	14	1.61	22	0.75			32	1.19		
12	*	*	25	0.86	*	*	18	0.67		
13	11	1.27	83	2.85			45	1.67	*	*
14	33	3.80	239	8.19	6	3.33	133	4.94	5	4.10
15	755	86.88	1864	63.90	159	88.33	1918	71.30	109	89.34
No inf.	9	1.04	353	12.10	6	3.33	264	9.81	*	*

*Totals less than 5 were suppressed by state data management policy

Table 25: KY Trauma Registry patient distribution by length of stay

Length of Hospital Stay	Facility									
	Kosair Children's Hospital		University of Kentucky Medical Center		Taylor Regional Medical Center		University of Louisville Hospital		Ephraim McDowell Regional Medical Center	
	N	%	N	%	N	%	N	%	N	%
1-7 days	796	91.60	2196	79.80	81	91.01	2059	77.96	20	80.00
8-30 days	*	*	47	1.71	.	.	36	1.36	*	*
>30	69	7.94	509	18.50	8	8.99	546	20.67	*	*

*Totals less than 5 were suppressed by state data management policy

Table 26: Percent of KY Trauma Registry patients by primary method of payment

Primary Method of Payment	Facility									
	Kosair Children's Hospital		University of Kentucky Medical Center		Taylor Regional Medical Center		University of Louisville Hospital		Ephraim McDowell Regional Medical Center	
	N	%	N	%	N	%	N	%	N	%
Medicaid	447	51.44	17	0.58	14	7.78	100	3.72	*	*
Blue Cross/Blue Shield			7	0.24			237	8.81	*	*
Not Billed (for any reason)	*	*					*	*		
Self Pay	16	1.84	19	0.65	27	15	398	14.80	*	*
Private/Commercial Insurance	369	42.46	11	0.38	42	23.33	391	14.54	12	9.84
No Fault Automobile	16	1.84	89	3.05			541	20.11	14	11.48
Medicare			18	0.62	58	32.22	404	15.02	7	5.74
Other Government			*	*	*	*	35	1.30		
Workers Compensation			5	0.17	7	3.89	138	5.13	*	*
Other	*	*					443	16.47		
Unknown	19	2.19	2750	94.27	31	17.22	*	*	79	64.75

*Totals less than 5 were suppressed by state data management policy

Table 27: Percent of KY Trauma Registry patients by discharge status

Hospital Discharge Disposition	Facility									
	Kosair Children's Hospital		University of Kentucky Medical Center		Taylor Regional Medical Center		University of Louisville Hospital		Ephraim McDowell Regional Medical Center	
	N	%	N	%	N	%	N	%	N	%
Discharged/Transferred to a short-term general hospital for inpatient care	*	*	20	0.73			15	0.57		
Discharged/Transferred to an Intermediate Care Facility (ICF)	25	2.88			*	*	365	13.85		
Discharge/Transferred to home under care of organized home health service	*	*					100	3.79	8	32.00
Left against medical advice or discontinued care			7	0.25			17	0.64		
Expired	12	1.38	97	3.52	*	*	146	5.54		
Discharged home with no home services	829	95.40	2184	79.36	66	74.16	1868	70.86	12	48.00
Discharged/Transferred to Skilled Nursing Facility			38	1.38	17	19.10	119	4.51	*	*
Discharged/ Transferred to hospice care			*	*						
Discharged/Transferred to another type of rehabilitation or long-term care facility			403	14.64	*	*	6	0.23	*	*

*Totals less than 5 were suppressed by state data management policy

Table 28: Percent of KY Trauma Registry patients by injury severity scores (ISS)

ISS	Facility									
	Kosair Children's Hospital		University of Kentucky Medical Center		Taylor Regional Medical Center		University of Louisville Hospital		Ephraim McDowell Regional Medical Center	
	N	%	N	%	N	%	N	%	N	%
1-9	738	84.93	1663	57.07	155	86.59	980	36.46	98	82.35
10-15	58	6.67	528	18.12	10	5.59	557	20.72	15	12.61
16-24	56	6.44	439	15.07	10	5.59	589	21.91	6	5.04
25-34	14	1.61	213	7.31	*	*	419	15.59		
35-44	*	*	47	1.61			101	3.76		
45-75			24	0.82	*	*	42	1.56		

*Totals less than 5 were suppressed by state data management policy

Figure 1: Percent KTR patients by age group, 2009

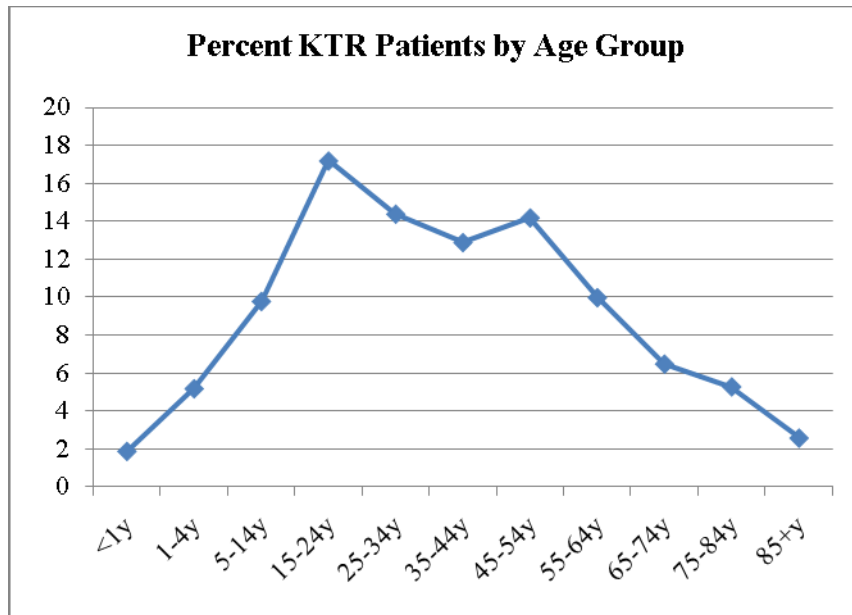


Figure 2: KTR patients by age group and month of incident, 2009

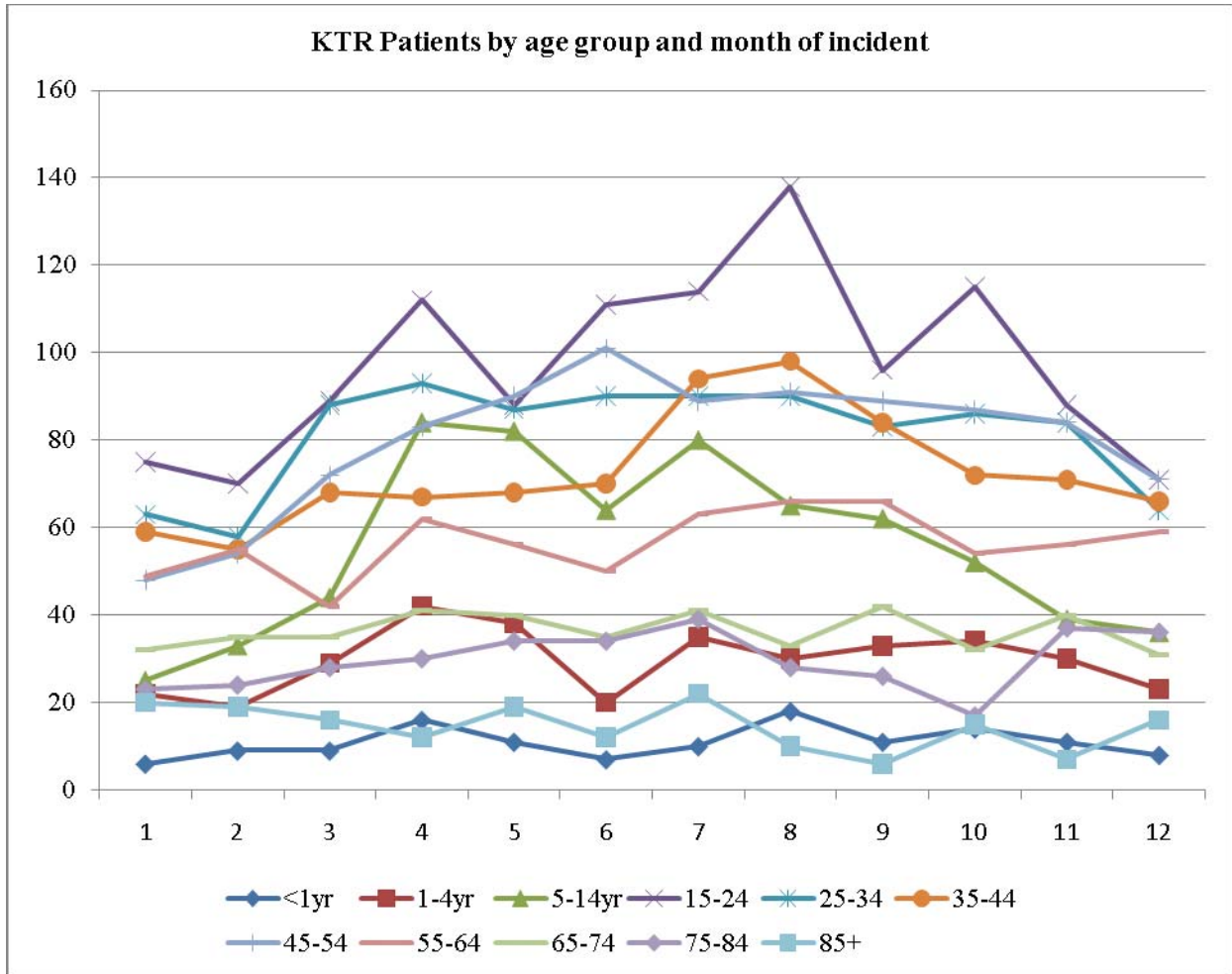


Figure 3: KY Trauma Registry patients - total length of hospital stay in days by cause of injury

