

KENTUCKY TRAUMA DATA BANK 2023 ANNUAL REPORT

DECEMBER 2024



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FOREWORD

The Kentucky Trauma Data Bank (KTDB) was established by state law (KRS 211.490 et seq.; 902 KAR 28:040) to be the state-wide repository for trauma data. It is housed administratively in the Kentucky Department for Public Health and managed by the Kentucky Injury Prevention and Research Center (KIPRC), a unit of the University of Kentucky's College of Public Health and a bona fide agent of the Kentucky Department for Public Health. All trauma centers designated by the Commissioner of Public Health in the Kentucky Trauma Care System maintain trauma registries that are compatible with the National Trauma Data Bank standards established in the National Trauma Data Standard Data Dictionary. The same standards apply to trauma centers in the process of applying for designation. The trauma centers upload their trauma data electronically to the KTDB at least quarterly. ESO is the vendor that manages the downloading and compilation of data from participat-

ing trauma centers, including unverified facilities that report to the data bank, and supplies the data to the Kentucky Injury Prevention and Research Center.

With support from the National Highway Traffic Safety Administration through the Kentucky Transportation Cabinet, KIPRC analyzes the statewide trauma data bank data and provides a detailed profile of the traumatic injuries treated in the state's trauma facilities.

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INTRODUCTION

Kentucky law (Kentucky Revised Statutes [KRS] 311A.010) defines trauma as a single- or multi-system injury requiring immediate medical or surgical intervention or treatment to prevent death or permanent disability. This report summarizes data reported to the Kentucky Trauma Data Bank (KTDB) as of October 2022 on trauma patients cared for at Kentucky trauma centers, both verified and in applicant status, during calendar year 2022. A list of these facilities appears on page 4.

It is important to note several characteristics of the data reported here:

- Governing state law (KRS 211.490 [6]) protects patient privacy by forbidding the identification of individual trauma patients in Kentucky Trauma Data Bank data. Patients transferred between hospitals have separate records for treatment at each reporting facility that cannot be merged because they lack personal identifiers. Thus, the number of records in the KTDB reflects total episodes of care in reporting facilities and is greater than the number of patients treated. The rest of this report refers to each episode of trauma care as a “case”.
- These data represent the most serious injuries—those that meet national inclusion criteria—rather than all traumatic injuries in the state.
- Trauma that results in death at the scene of the injury event is not part of the reported data. Hospital trauma registrars report KTDB data only for patients who reach a hospital.
- If a traumatic injury occurs in Kentucky but the patient is treated in an out-of-state facility, the case is not included in KTDB data. Border areas are thus under-represented in this report.

Definitions (per 902 Kentucky Administrative Regulation [KAR] 28:010):

- (18) “Level I trauma center” means a regional trauma center that
- (a) provides total care of every aspect of injury from prevention through rehabilitation and
 - (b) meets the requirements established in [902 KAR 28:020](#).
- (19) “Level II trauma center” means a regional trauma center that
- (a) provides screening and initial trauma care of the injured patient regardless of the severity of injury and
 - (b) meets the requirements established in [902 KAR 28:020](#).
- (20) “Level III trauma center” means a regional trauma center that
- (a) provides prompt assessment, resuscitation, emergency operations, and stabilization;
 - (b) arranges for transfer to a facility that can provide trauma care at a higher level;
 - (c) serves communities that do not have immediate access to a Level I or Level II trauma center; and
 - (d) meets the requirements established in [902 KAR 28:020](#).

- (21) “Level IV trauma center” means a regional trauma center that
- (a) provides advanced trauma life support before a patient is transferred to a higher level of care;
 - (b) is located in a hospital emergency department; and
 - (c) meets the requirements established in [902 KAR 28:030](#).

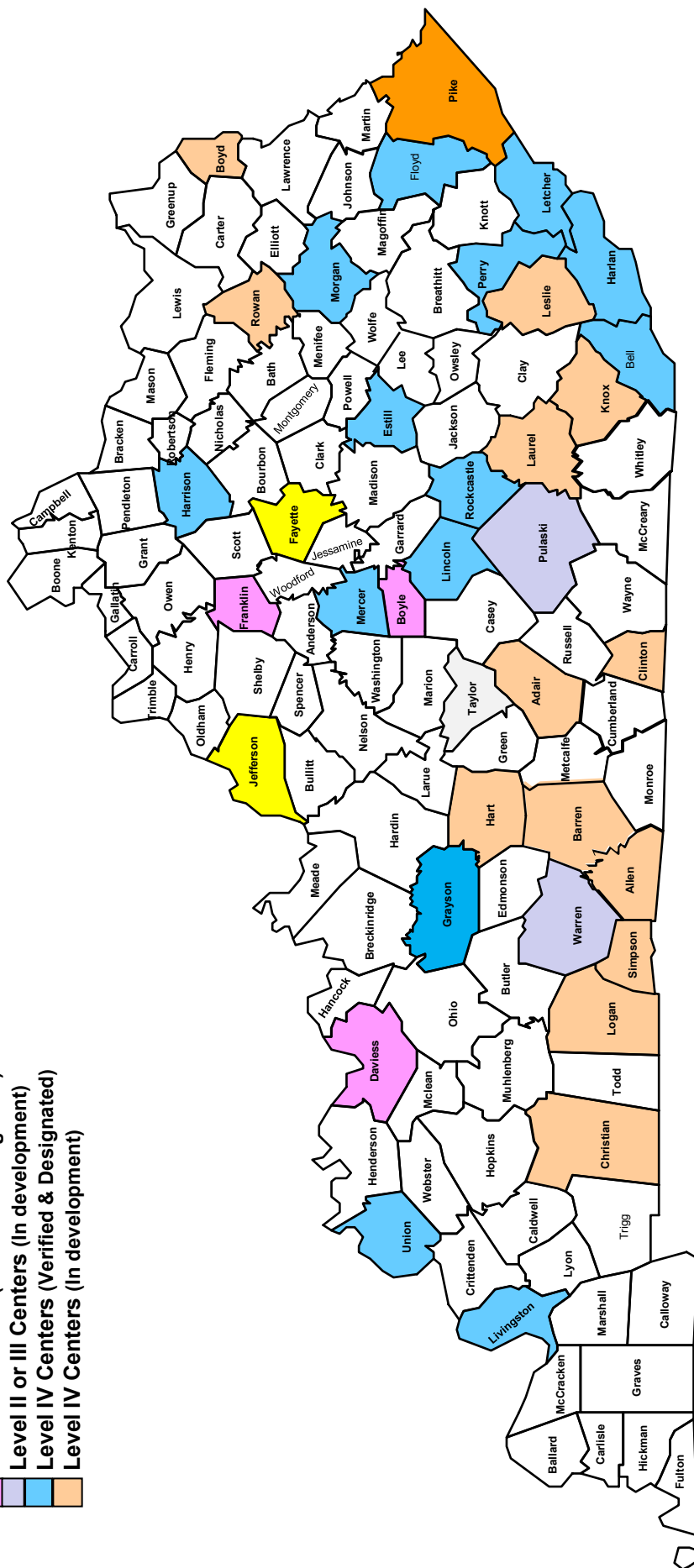
Kentucky's reporting trauma centers, 2023

Trauma Center		Designation/Status
1	CHI St. Joseph London	Level III in progress
2	Deaconess Union County Hospital (formerly Methodist Hospital Union County)	Level IV
3	Ephraim McDowell Fort Logan Hospital	Level IV
4	Ephraim McDowell James B. Haggin Memorial Hospital	Level IV
5	Ephraim McDowell Regional Medical Center	Level III
6	Frankfort Regional Medical Center	Level III
7	Harlan ARH Hospital	Level IV
8	Harrison Memorial Hospital	Level IV
9	Hazard ARH Hospital	Level IV
10	Highlands ARH Regional Medical Center	Level IV
11	Livingston Hospital	Level IV
12	McDowell ARH	Level IV in progress
13	Mercy Health Marcum and Wallace Memorial Hospital	Level IV
14	Middlesboro ARH Hospital	Level IV
15	Morgan County ARH Hospital	Level IV
16	Norton Children's Hospital	Level 1 Pediatric
17	Owensboro Medical Center	Level III
18	Pikeville Medical Center	Level II
19	Rockcastle Regional Hospital	Level IV
20	The Medical Center at Bowling Green	Level III in progress
21	Tug Valley ARH (formerly Williamson ARH)	Level IV
22	University of Kentucky Medical Center	Level I
23	University of Kentucky-Children's	Level I Pediatric
24	University of Louisville Hospital	Level I
25	Whitesburg ARH Hospital	Level IV

Hospitals in the Kentucky Trauma System

(November 25, 2024)

- Level I Centers (Verified & Designated)
- Level II & IV Centers (Verified & Designated)
- Level III Centers (Verified & Designated)
- Level II or III Centers (In development)
- Level IV Centers (Verified & Designated)
- Level IV Centers (In development)



Verified Trauma Centers

- Level I - Pediatric – Norton Children’s Hospital, Louisville
- Level I - Pediatric – Kentucky Children’s Hospital, Lexington
- Level I - UK Chandler Hospital Lexington
- Level II - University of Louisville Hospital, Louisville
- Level II - Pikeville Medical Center
- Level III - Ephraim McDowell Reg. Med. Center, Danville
- Level III - Frankfort Regional Medical Center
- Level III - Owensboro Health Regional Hospital
- Level IV - Deaconess Union Co. Hospital, Morganfield
- Level IV - Ephraim McDowell Fort Logan Hospital, Stanford
- Level IV - Ephraim McDowell Haggin, Harrodsburg
- Level IV - Harlan ARH Hospital
- Level IV - Harrison Memorial, Cynthiana
- Level IV - Hazard ARH Hospital, Hazard, KY
- Level IV - Highlands ARH Reg Med Cntr, Prestonsburg
- Level IV - Livingston Hospital, Salem
- Level IV - Mercy Marcum & Wallace Hospital, Irvine
- Level IV - Middlesboro ARH
- Level IV - Morgan Co. ARH, West Liberty
- Level IV - Owensboro Health Twin Lakes Reg Med Cntr, Leitchfield
- Level IV - Rockcastle Reg. Hospital, Mt. Vernon
- Level IV - Tug Valley ARH Reg Med Cntr, S. Williamson
- Level IV - Whitesburg ARH Hospital

KENTUCKY TRAUMA DATA BANK RECORDS 2008-2023

The Kentucky Trauma Data Bank (KTDB) has grown from five reporting facilities in 2008 to 26 in 2023, although some smaller hospitals have left the trauma system in recent years. A total of 15,197 records were reported in 2023 (Table 1), more than double the 2008 total and a slight increase from 2022.

Table 1. Records by reporting trauma center, 2023

Facility	Count	%
CHI St. Joseph London	354	2.33
Deaconess Union County Hospital	154	1.01
Ephraim McDowell Fort Logan Hospital	28	0.18
Ephraim McDowell J.B. Haggin Memorial Hospital	37	0.24
Ephraim McDowell Regional Medical Center	478	3.15
Frankfort Regional Medical Center	570	3.75
Harlan ARH	204	1.34
Harrison Memorial Hospital	11	0.07
Hazard ARH	425	2.80
Highlands Regional Medical Center	107	0.70
Livingston Hospital	57	0.38
Mercy Health Marcum & Wallace Memorial Hospital	36	0.24
Middlesboro ARH Hospital	140	0.92
Morgan County ARH Hospital	53	0.35
Norton Children's Hospital	656	4.32
Owensboro Medical Center	1,070	7.04
Pikeville Medical Center	1,118	7.36
Rockcastle Regional Hospital	49	0.32
The Medical Center at Bowling Green	52	0.34
Tug Valley ARH	152	1.00
Twin Lakes Regional Medical Center	97	0.64
University of Kentucky Children's Hospital	559	3.68
University of Kentucky Medical Center	4,469	29.41
University of Louisville Hospital	4,151	27.31
Whitesburg ARH	170	1.12
Total	15,197	100.00

* Reporting delayed because of technical difficulties.

** Reporting incomplete because of cybersecurity breach.

SEX

Injuries to males comprised nearly 60% of KTDB records (Table 2). Some Kentucky reporting facilities exclude isolated hip fractures, the most common traumatic injury in older adults and a category in which women are overrepresented because of their greater longevity. Thus, KTDB demographics vary significantly from those of the related report on Kentucky injuries as a whole, in which males and females are roughly equally represented (see Kentucky Inpatient and Emergency Department Traumatic Injury Data Reports, <https://kiprc.uky.edu/injury-focus-areas/trauma>). Designation of sex was missing from a single record.

Table 2. Records by sex, 2023

Sex	Number	%
Female	6,263	41.21
Male	8,931	58.77
Nonbinary	2	0.01
Missing	1	0.01
Total	15,197	100.00

RACE/ETHNICITY

Most (88.17%) of the records reported treatment for white patients, reflecting Kentucky's largely white population, while about one in 12 (7.83%) were for black patients (Table 3). Information on patient race was missing in less than 1% of cases, while a similar proportion was missing information on ethnicity.

Table 3. Records by race and ethnicity, 2023

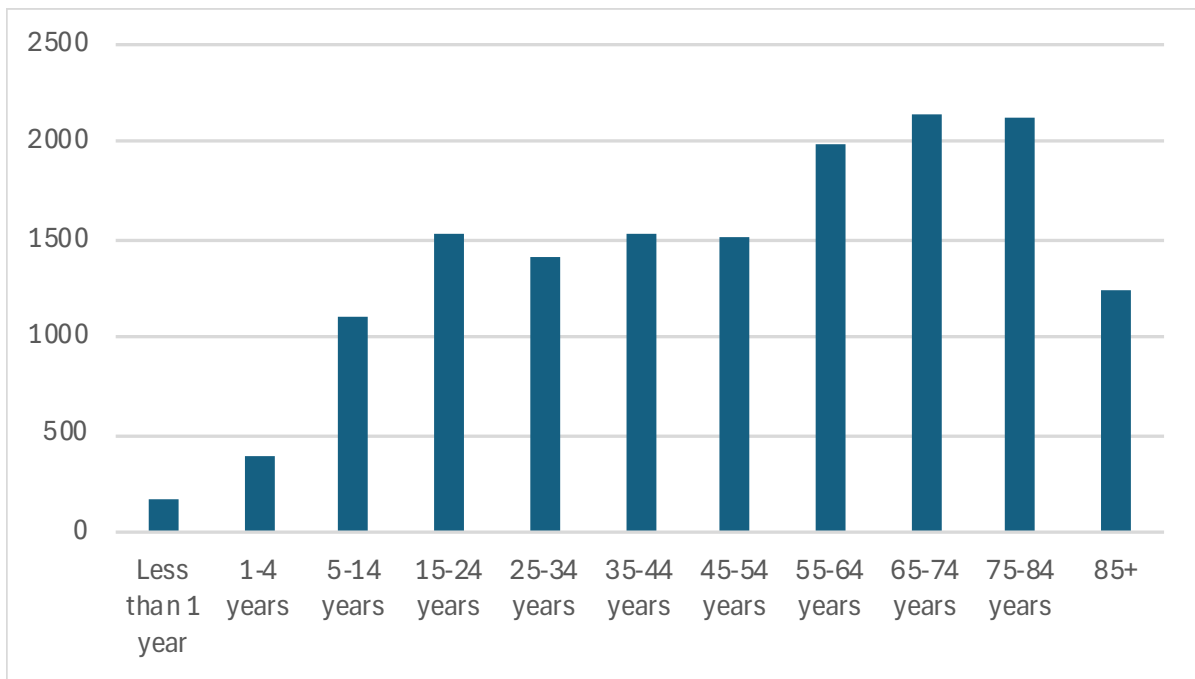
Race	Ethnicity			Total	Percentage
	Missing	Hispanic/Latino	Not Hispanic/Latino		
White	93	143	13,163	13,399	88.17
Black	5	5	1,180	1,190	7.83
Other	5	168	86	259	1.70
More than 1 race	0	*	28	32	0.21
Asian	0	*	44	45	0.30
American Indian	0	*	12	13	0.09
Native Hawaiian/Pacific Islander	*	*	9	13	0.09
Missing	65	122	59	246	1.62
Total	170	446	14,581	15,197	100.00

*Counts greater than zero but less than five were suppressed in accordance with state data management policy.

AGE

Inclusion criteria influence the distribution of trauma records by age group. The statewide hospitalization data for all types of injury are skewed toward older age groups due to the inclusion of hip fractures, whereas about two-thirds of KTDB records are for adults under 65 years of age (Figure 1).

Figure 1. Records by age group, 2023



PATIENT COUNTY OF RESIDENCE

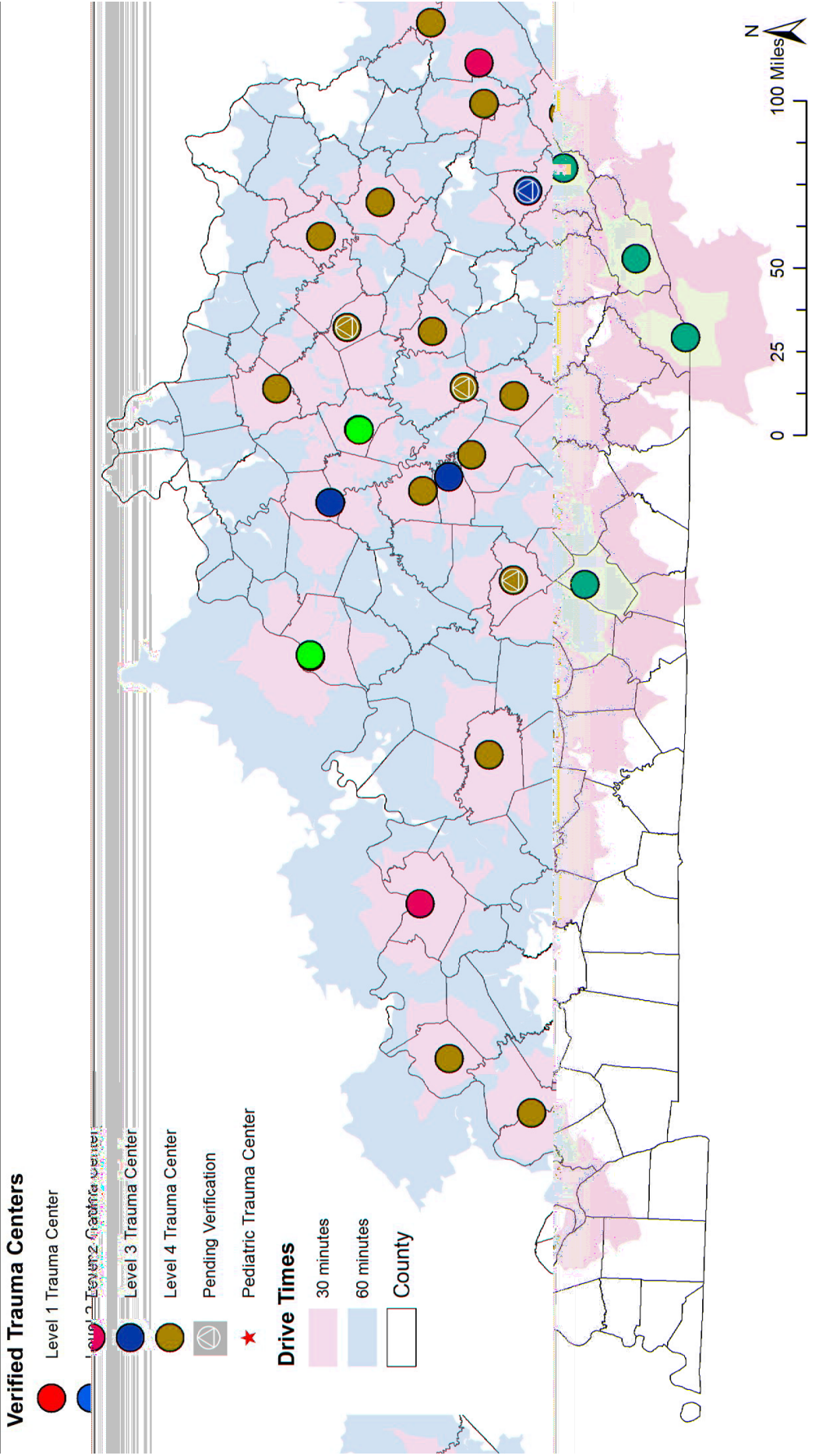
Table 4 includes the number and proportion of KTDB records for the counties with the highest number of reports. Over one-fifth (21.23%) of the records were for patients residing in Jefferson or Fayette counties, which is expected as these are the most populous counties in the state. One in eight (12.17%) of the total KTDB records were for out-of-state patients.

Table 4. Records by county of residence, 2023

Top 10 counties	Number	%
Jefferson	2,234	14.70
Fayette	992	6.53
Daviess	707	4.65
Pike	571	3.76
Franklin	432	2.84
Perry	364	2.40
Laurel	339	2.23
Madison	289	1.90
Boyle	282	1.86
Letcher	266	1.75
All other Ky counties combined	6,871	45.21
Out of state	1,850	12.17

A map of travel times to the state's trauma facilities follows.

2023 Trauma Data Bank Facilities for Kentucky with 30- and 60-Minute Drive Time Coverage



WORK-RELATED CASES

Work-related trauma is defined as injury that occurs during paid employment. A total of 450 work-related trauma cases were recorded in the KTDB data set in 2023, an insignificant (0.1%) increase from cases reported in 2022. Falls were the most common cause of injury (Figure 2).

Figure 2. Work-related trauma records by cause of injury, 2023

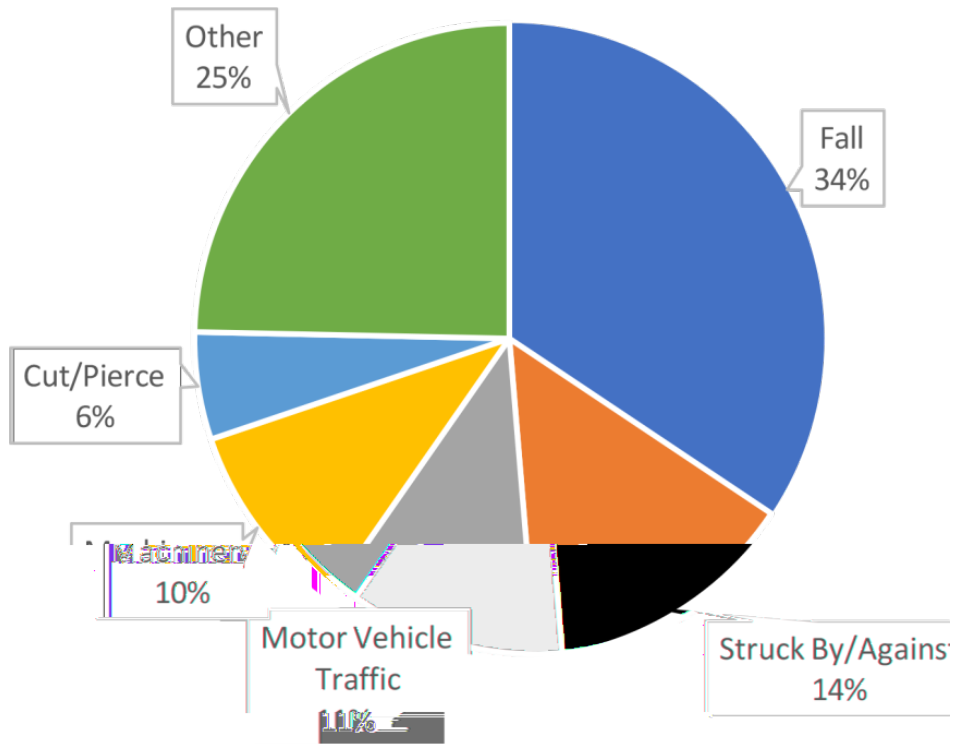


Table 5 shows the industry associated with the patient’s work environment for work-related trauma records. Production industry workers made up the largest single group at over one-fifth of all work-related trauma, while construction workers represented another fifth of work-related trauma in the KTDB.

Table 5. Work-related trauma records by industry, 2023

Occupation	Count	%
Production	96	21.3
Construction and Extraction	92	20.4
Transportation and Material Moving	42	9.3
Installation, Maintenance, and Repair	39	8.7
Farming, Fishing, and Forestry	15	3.3
Sales and Related	13	2.9
Food Preparation	12	2.7
Arts, Design, Entertainment, Sports, and Media	6	1.3
Healthcare Support	6	1.3
Community and Social Services	6	1.3
Architecture and Engineering	5	1.1
Other	23	5.1
Missing	95	21.1
Total	450	100.0

CAUSE AND INTENT OF INJURY

Codes indicating mechanism and intent were provided for all but 17 of the records. Unintentional falls (n=6,870) and unintentional motor vehicle traffic collisions (n=4,031) were the leading causes of injuries reported to KTR (Table 6).

Table 6. Records by cause and intent of injury, 2023

Cause	Intent							
	Unintentional		Intentional		Other/ Undetermined		Total	
	N	%	N	%	N	%	N	%
Fall	6,870	49.69	12	0.96	17	15.89	6,899	45.45
MVT	4,031	29.16	11	0.88	2	1.87	4,044	26.64
Struck by/Against	462	3.34	321	25.72	5	4.67	788	5.19
MV Nontraffic	734	5.31	-	0.00	-	0.00	734	4.84
Firearm	181	1.31	455	36.46	54	50.47	690	4.55
Cut/Pierce	263	1.90	215	17.23	8	7.48	486	3.20
Fire/Flame	191	1.38	6	0.48	2	1.87	199	1.31
Other Specified, Classifiable	167	1.21	13	1.04	2	1.87	182	1.20
Other Land Transport	173	1.25	1	0.08	-	0.00	174	1.15
Child/Adult Abuse	-	0.00	135	10.82	-	0.00	135	0.89
Pedal Cyclist, Other	134	0.97	-	0.00	-	0.00	134	0.88
Machinery	129	0.93	-	0.00	-	0.00	129	0.85
Bite/Sting	126	0.91	-	0.00	-	0.00	126	0.83
Hot Object/Substance	81	0.59	4	0.32	-	0.00	85	0.56
Natural/Environmental	83	0.60	-	0.00	-	0.00	83	0.55
Pedestrian, Other	77	0.56	-	0.00	-	0.00	77	0.51
Overexertion	68	0.49	-	0.00	-	0.00	68	0.45
Other Specified, Not Elsewhere Classifiable	-	0.00	44	3.53	17	15.89	61	0.40
Unspecified	36	0.26	22	1.76	-	0.00	58	0.38
Other Transport	12	0.09	-	0.00	-	0.00	12	0.08
Suffocation	1	0.01	8	0.64	-	0.00	9	0.06
Foreign Body	4	0.03	-	0.00	-	0.00	4	0.03
Poisoning	2	0.01	-	0.00	-	0.00	2	0.01
Drowning/Submersion	-	0.00	1	0.08	-	0.00	1	0.01
Total	13,825	100.00	1,248	100.00	107	100.00	15,180	100.00

*Counts greater than zero but less than five were suppressed in accordance with state data management policy.

17 cases had missing information on causes of injury.

CAUSE AND INTENT OF INJURY BY AGE GROUP

Patients aged 15–24 accounted for nearly one-sixth (17.84%) of motor vehicle crash-related trauma, followed by those aged 35–44 (14.39%) and 25–34 (14.15%). This finding is similar to those of previous years. Falls among those 55 and older accounted for over two-thirds (61.44%) of all unintentional falls treated in trauma centers. Nearly one in three (30.95%) of the injuries that are attributed to being unintentionally struck by or against an object were experienced by patients 5–24 years of age. An earlier review of the struck by/against injuries in this age group found that more than half were sports-related. Over 60% of assault injuries were to adolescents and young adults aged 15–44 (Table 7). Self-harm is far less common than assault as a cause of trauma hospitalization because it more frequently leads to death than to survivable injury in Kentucky.

Table 7. Records by age and major causes of injury, 2023

Age Group	Intention													
	Unintentional										Intentional			
	All other unintentional		Falls		MVT		Other transport injuries		Struck by/Against		Self-harm		Assault	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
<1 year	10	0.71	52	0.76	*	0.04	*	0.76	7	1.52	0	0.00	90	8.42
1-4 years	66	4.70	180	2.62	65	1.39	17	4.29	29	6.28	0	0.00	38	3.55
5-14 years	144	10.26	400	5.82	376	8.02	84	21.21	71	15.37	5	2.79	24	2.25
15-24 years	187	13.33	142	2.07	837	17.84	41	10.35	72	15.58	30	16.76	210	19.64
25-34 years	194	13.83	207	3.01	664	14.15	35	8.84	48	10.39	42	23.46	206	19.27
35-44 years	186	13.26	292	4.25	675	14.39	50	12.63	52	11.26	36	20.11	226	21.14
45-54 years	205	14.61	438	6.38	596	12.71	50	12.63	45	9.74	25	13.97	138	12.91
55-64 years	183	13.04	938	13.65	641	13.66	52	13.13	51	11.04	24	13.41	95	8.89
65-74 years	139	9.91	1,417	20.63	458	9.76	46	11.62	40	8.66	10	5.59	27	2.53
75-84 years	67	4.78	1,708	24.86	288	6.14	13	3.28	27	5.84	5	2.79	7	0.65
85+	25	1.78	1,096	15.95	89	1.90	5	1.26	20	4.33	*	1.12	8	0.75
Total	1,406		6,870		4,691		396		462		179		1,069	

*Counts greater than zero but less than five were suppressed in accordance with state data management policy. Motor vehicle injuries include both traffic and non-traffic injuries.

TRAFFIC COLLISION INVOLVEMENT

Among the motor vehicle traffic collision (MVTC) records, three-quarters (75.32%) were coded as vehicle occupants and 15.41% as motorcyclists (Table 8). The rate of traumatic injury among motorcycle riders in Kentucky is unknown because of the large number of unregistered vehicles. Pedestrians and pedal cyclists accounted for 9.08% of traffic-related trauma.

Table 8. Traffic collision involvement, 2023

Role in motor vehicle traffic collision	Number	%
Motor vehicle occupant	3,046	75.32
Motorcyclist	623	15.41
Pedal cyclist	293	7.25
Pedestrian	74	1.83
Unknown	6	0.15
Other	2	0.05
Total	4,044	100.00

*Counts greater than zero but less than five were suppressed in accordance with state data management policy.

PROTECTIVE DEVICES

There were 4,044 records for vehicle occupants injured in motor vehicle traffic collisions. The numbers in the table below reflect some entries where multiple protective devices were noted. Protective devices were not used in one-fifth (20.03%) of reported cases. Kentucky continues to fall well below national norms for use of motor vehicle occupant protective devices, and helmets are not mandated for motorcycle users.

Table 9. Use of occupant protective devices in motor vehicle traffic collisions (MVTCS), 2023

Protective device	Use of protective devices by occupants in MVTC	
	Number	%
Shoulder and lap belt	1,592	52.27
Shoulder belt only	17	0.56
Lap belt only	132	4.33
Child restraint	52	1.71
Airbag	1,776	58.31
No protective device used	610	20.03

Data were missing for 108 cases.

Note: In some records, two or more protective devices were listed; therefore, counts do not add up to the total number of MVTC cases.

TRANSPORTATION MODE

The mode of transportation to trauma facilities and incidence of interfacility transfers are presented in Table 10. The interfacility transfer variable indicates whether the patient was transferred to the reporting facility from another acute care facility. Helicopter ambulances were used in 948 (20.16%) of interfacility transfers and 1,050 (10.06%) of the non-transfer cases.

Table 10. Transportation mode, 2023

Transport Mode	Interfacility Transfer					
	Yes		No		Total	
	N	%	No	%	N	%
Ground Ambulance	3,347	71.18	6,974	66.81	10,321	68.20
Private/Public Vehicle/Walk-in	399	8.49	2,371	22.72	2,770	18.30
Helicopter Ambulance	948	20.16	1,050	10.06	1,998	13.20
Police	4	0.09	40	0.38	44	0.29
Other	3	0.06	6	0.06	9	0.06
Fixed-Wing Ambulance	1	0.02	-	0.00	1	0.01
Total	4,702		10,441		15,143	

Data were missing for 54 cases.

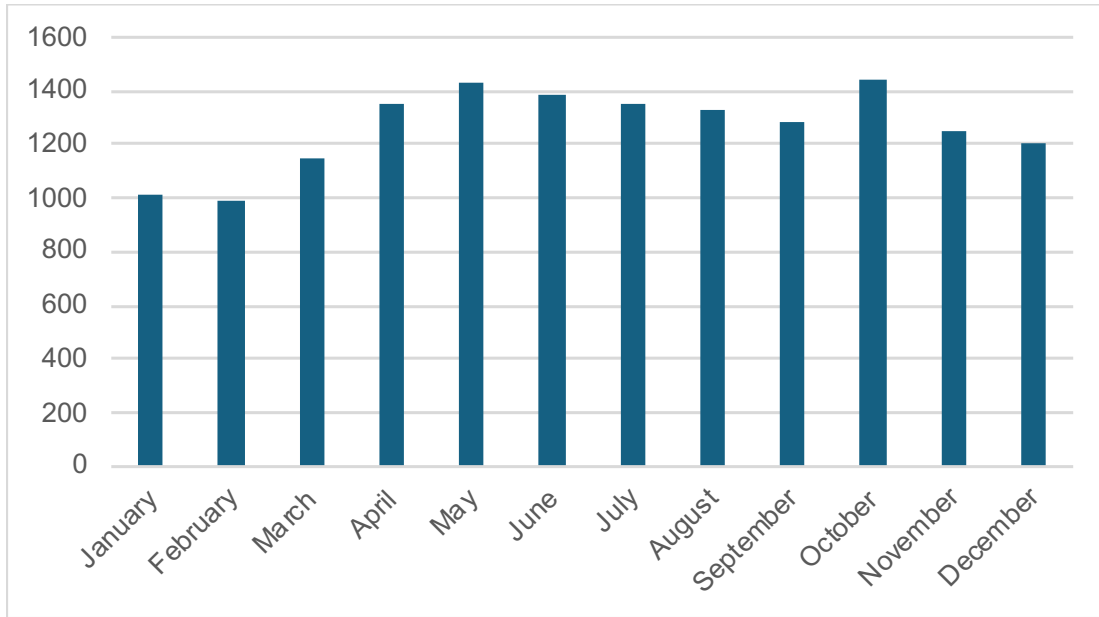
EMS Information

EMS notification, departure, and arrival times are not applicable data elements for patients who arrived at the trauma facility by private vehicle, and they may not be known for patients transferred from another acute care facility. It is reasonable to expect that EMS information will be available for patients who were not interfacility transferees and were transported to the trauma facility by ground ambulance (n=6,101) or air ambulance (n=953) (Table 10). Work is ongoing to integrate these data elements with future KTDB reports.

MONTH OF ARRIVAL AT EMERGENCY DEPARTMENT (ED)/HOSPITAL

Trauma volume typically varies by season, with a higher volume during summer months, and this pattern continued, according to 2023 data (Figure 3).

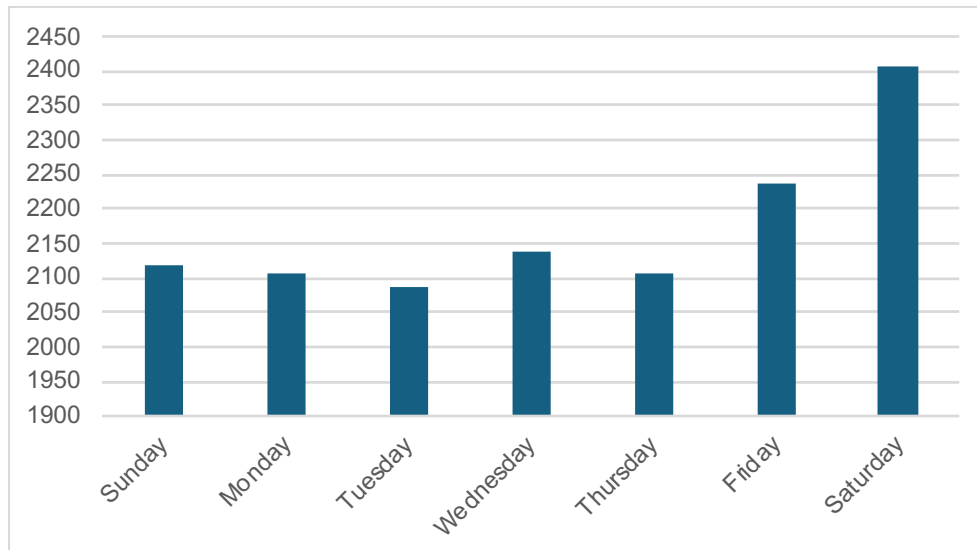
Figure 3. Month of emergency department/hospital arrival, 2023



WEEKDAY OF ARRIVAL TO ED/HOSPITAL

Fridays and Saturdays saw larger volumes of ED trauma cases (Figure 4).

Figure 4: Day of emergency department/hospital arrival, 2023



TIME TO ED/HOSPITAL ARRIVAL

Because patients with traumatic injuries need timely access to definitive care, the length of time between the injury incident and hospital arrival is an important indicator of trauma system quality. The distribution of KTR records by time from injury to hospital arrival and interfacility transfer status is presented in Table 11. Interfacility transfers are patients who are transferred to the reporting facility from another acute care facility. Due to the lack of personal identifiers in trauma registry data collection, we cannot track specific patients from one facility to another. Further complicating this analysis, the incident time is unknown in over half (55.79%) of cases. This data gap reflects the lack of integration between emergency medical services data and hospital-based data and is the subject of ongoing data linkage initiatives. The absence of time-of-injury indicators hinders efforts to assess the critical metric of timely transportation to definitive care for trauma patients as well as outcome data that may reflect delays in access to definitive care.

Table 11. Time to emergency department/hospital arrival, 2023

Time to Hospital	Interfacility Transfer	
	Yes	No
<1 hour	5	1,695
1-2 hours	36	1,411
2-5 hours	583	546
5-12 hours	992	231
12-24 hours	157	151
24+ hours	407	440
Same day (exact incident time unknown)	1,864	5,557
Next day or later (exact incident time unknown)	665	382
Total	4,709	10,413

Information on interfacility transfer is missing for 75 records.

ALCOHOL USE INDICATORS (2020 DATA)

Alcohol use data has been missing since EMS records became fully electronic in 2020. In that year, alcohol use was confirmed by test for 4,927 (35.71%) of all records (Table 12) and only 88 (0.64%) of cases were not tested for alcohol use. Efforts to recapture alcohol use data are ongoing.

Table 12. Alcohol use indicators, 2020

Alcohol Use Indicators	Number	%
No (confirmed by test)	8,774	63.58
Yes	4,927	35.71
Not documented	88	0.64
Missing	10	0.07
Total	13,799	100.00

DRUG USE INDICATORS

Illegal use of illicit or prescription drugs was confirmed in 2,771 (18.23%) of the records (Table 13). However, it is important to note that two-thirds (67.51%) of cases either were not tested for drug use or did not document whether testing was performed, so the extent of this relationship is unknown.

Table 13. Drug use indicators, 2023

Drug Use Indicators	Number	%
No (confirmed by test)	2,168	14.27
Yes (confirmed by test)	2,771	18.23
Not tested	9,236	60.78
Not documented	861	5.67
Missing	161	1.06
Total	15,197	

INJURY SEVERITY SCORES

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, nearly two-thirds (63.83%) of trauma registry injuries were mild, 17.19% were moderate, 11.46% were severe, and 6.86% were very severe. ISS was missing for less than one percent of the records (Table 14).

Table 14. Records by Injury Severity Score, 2023

Injury Severity Score Range	Category	Number	%
1-9	Mild	9,701	63.83
10-15	Moderate	2,613	17.19
16-24	Severe	1,741	11.46
25-75	Very Severe	1,042	6.86
Missing	Missing	100	0.66
Total		15,197	100

Outcome Information

Table 15. Discharge type by facility, 2023

Facility	Discharged				Total
	ED Discharge		Inpatient Discharge		
	N	%	N	%	
CHI St. Joseph London	141	6.20	213	1.65	354
Deaconess Union County Hospital	121	5.32	33	0.26	154
Ephraim McDowell Fort Logan Hospital	28	1.23	-	-	28
Ephraim McDowell J.B. Haggin Memorial Hospital	36	1.58	*	0.01	37
Ephraim McDowell Regional Medical Center	247	10.85	231	1.79	478
Frankfort Regional Medical Center	220	9.67	350	2.71	570
Harlan ARH	103	4.53	101	0.78	204
Harrison Memorial Hospital	8	0.35	*	0.02	11
Hazard ARH	87	3.82	338	2.62	425
Highlands Regional Medical Center	90	3.95	17	0.13	107
Livingston Hospital	18	0.79	39	0.30	57
Mercy Health Marcum & Wallace Memorial Hospital	35	1.54	*	0.01	36
Middlesboro ARH Hospital	111	4.88	29	0.22	140
Morgan County ARH Hospital	53	2.33	-	-	53
Norton Children's Hospital	54	2.37	602	4.66	656
Owensboro Medical Center	100	4.39	970	7.51	1,070
Pikeville Medical Center	127	5.58	991	7.67	1,118
Rockcastle Regional Hospital	49	2.15	-	-	49
The Medical Center at Bowling Green	*	0.09	50	0.39	52
Tug Valley ARH	151	6.63	*	0.01	152
Twin Lakes Regional Medical Center	88	3.87	9	0.07	97
University of Kentucky Children's Hospital	21	0.92	538	4.16	559
University of Kentucky Medical Center	120	5.27	4,349	33.66	4,469
University of Louisville Hospital	119	5.23	4,032	31.21	4,151
Whitesburg ARH	146	6.41	24	0.19	170
Total	2,276	100.00	12,921	100.00	15,197

*Counts greater than zero but less than five were suppressed in accordance with state data management policy.

28 cases were missing discharge information. McDowell ARH reported no trauma cases for 2023.

Norton Children's Hospital data are missing two months of discharges due to a cybersecurity breach.

EMERGENCY DEPARTMENT DISCHARGES

The large majority (84.81%) of ED records indicated discharge from the ED to a bed or operating room in the same hospital, while 11.52% were transferred to another hospital. Deaths are recorded for 201 (1.34%) of ED patients (Table 16).

Table 16. Emergency department discharge disposition, 2023

ED Discharge Disposition	Count	%
Floor bed (general admission, non-specialty unit bed)	6,577	43.76
Left against medical advice	21	0.14
Transferred to another hospital	1,731	11.52
Observation unit (unit that provides <24 hour stays)	94	0.63
Telemetry/step-down unit (less acuity than ICU)	1,135	7.55
Home with services	8	0.05
Died	201	1.34
Other (jail, institutional care, mental health, etc.)	5	0.03
Operating room	2,530	16.83
Intensive care unit (ICU)	2,411	16.04
Home without services	317	2.11
Total	15,030	100.00

167 cases were missing information on emergency department discharge disposition.

INPATIENT HOSPITAL DISCHARGES

Nearly two-thirds (61.40%) of trauma registry records on patients discharged from inpatient care indicated that the patient was well enough to go home without formal home health services, but 30.62% required some kind of post-acute care. In-hospital deaths were recorded for 441 (3.41%) patients (Table 17). In total, about 5% of Kentucky's 2023 deaths from traumatic injury occurred at hospitals, while the balance of deaths occurred at the scene of the traumatic injury.

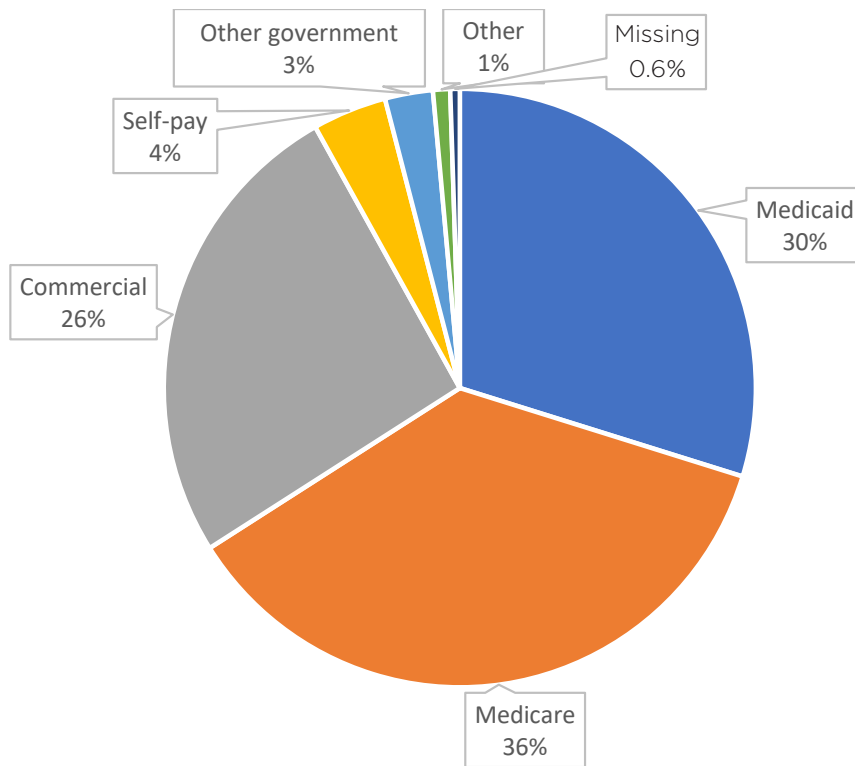
Table 17. Inpatient hospital discharge destination, 2023

Discharge Destination	Count	%
Home with self-care	7,933	61.40
Home health	740	5.73
Inpatient rehab	1,818	14.07
Skilled nursing facility/ICF	1,240	9.60
Died	441	3.41
Another acute care hospital	82	0.63
Psychiatric Hospital	137	1.06
Hospice	158	1.22
Other	182	1.41
Left against medical advice	190	1.47
Total	12,921	100.00

FINANCIAL INFORMATION

Among the encounters listing expected payer, Medicare (36%) was the leader, followed by Medicaid (30%) and commercial insurance (26%) (Figure 6). The proportion of “self-pay” (i.e., uninsured) patients in 2023, 4%, continues to reflect the impact of Medicaid expansion. The “self-pay” category was in the 40% range before 2014, when Medicaid coverage became available to new categories and income levels of Kentuckians. This decline is important because “self-pay” patients are rarely able to pay for their trauma care, and the federal funding that has historically provided some offset to uncompensated care has declined substantially. The expected source of payment was missing for 81 (0.6%) records.

Figure 5. Primary source of payment, 2023



CONCLUSION

As the proportion of Kentucky hospitals reporting to the Kentucky Trauma Data Bank grows, the data bank will become more representative of major trauma in the state as a whole. In a voluntary system like Kentucky's, growth is inevitably slow. The state Trauma Advisory Committee leadership continues to work closely with candidate facilities as they progress toward state or national verification and designation.

Funding from the National Highway Traffic Safety Administration, made available through a grant from the Kentucky Office of Highway Safety, supports software or portal activation costs for a facility's first year in the KTDB as well as the compilation of this report and other initiatives. We look forward to increasing the value of KTDB data for systemwide and facility-specific quality improvement initiatives through collaboration with investigators at the state's research universities and the Transportation Cabinet.

The progress made by Kentucky's trauma system is particularly noteworthy because during the time covered by this report the system had no state funding. The system itself would not have existed without the professionalism and dedication of clinical and support staff. The sustainability of statewide trauma care on this tenuous basis is a constant concern that has been brought before state policymakers repeatedly, including legislative committee testimony in July 2022. The value added by the state's trauma system—saving lives and avoiding catastrophic trauma-related disability—must be recognized and given proportionate support if the state trauma system is to continue its record of growth and effectiveness.

Acknowledgments

In addition to the invaluable support from Trauma Advisory Committee leadership and our grant funders, KTDB facilities' trauma registrars have worked diligently to assure continuous quality improvement for KTDB data as well as trauma care across the state.