

ARIZONA STATE TRAUMA REGISTRY

Standard Public Report - 2006 Trauma Data - Version 3.0

Important information about 2006 Arizona State Trauma Registry (ASTR) data:

Eleven hospitals contributed 2006 trauma data to the Arizona State Trauma Registry (ASTR). Seven of the reporting facilities were designated as Level I Trauma Centers at the time of data submission. The remaining four facilities were non-designated. Two of the non-designated facilities submitted partial 2006 data. Reporting hospitals were instructed to submit cases based on Trauma Patient Inclusion Criteria. **ASTR collects data from a limited number of hospitals in Arizona. The records in this report are not representative of all Arizona trauma cases statewide.**

The 2006 ASTR data was tested for 23 quality control checks. In May 2007, quality check results were sent to reporting hospitals. Data entry and system errors were corrected by reporting facilities and the data was resubmitted to ASTR. Other data entry and system errors may be present in the 2006 data. Blank responses for State required fields do exist in the database and have not been corrected.

This report reflects trauma data as it exists in the ASTR database on 9/5/07. Duplicate cases have not been removed or identified, and a transferred patient may show up more than once in the ASTR database. As of 9/5/07, there were 23727 records submitted to ASTR with ED Arrival Dates from 1/1/06 to 12/31/06.

Report Definitions:

*BLANK or *BL in this report means that a value was not submitted by the facility for that specific data element.

*NOT DOCUMENTED or *N/D means that the registrar entered a Not Documented response for that specific data element. The ASTR Data Dictionary (revised June 2006) defines Not Documented as "no documentation in record, unknown."

*NOT APPLICABLE or *N/A in this report means that the registrar entered a Not Applicable response for that specific data element. In the ASTR Data Dictionary (revised June 2006), Not Applicable is allowed in instances where the data element does not apply to the specific circumstances of the trauma case. For example, the date of the EMS run sheet does not apply if the patient was transported to the hospital by a relative.

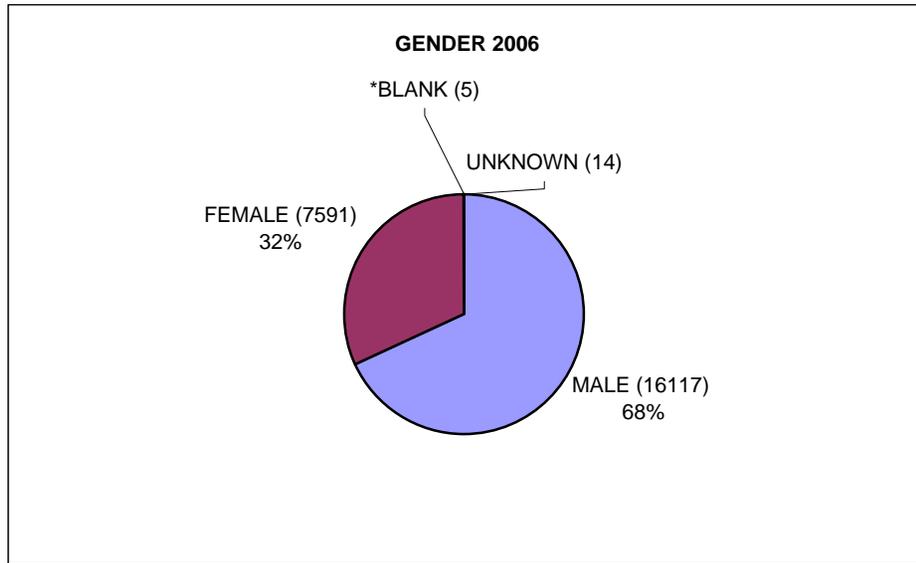
For questions regarding this report or for a list of the quality checks run on the 2006 data, please contact Anita Ray with the Arizona Department of Health Services at 602-542-1245, email: raya@azdhs.gov.

FACILITIES THAT SUBMITTED FULL OR PARTIAL 2006 DATA TO ASTR

(2006 DATA = ED Arrival Dates 1/1/06-12/31/06)

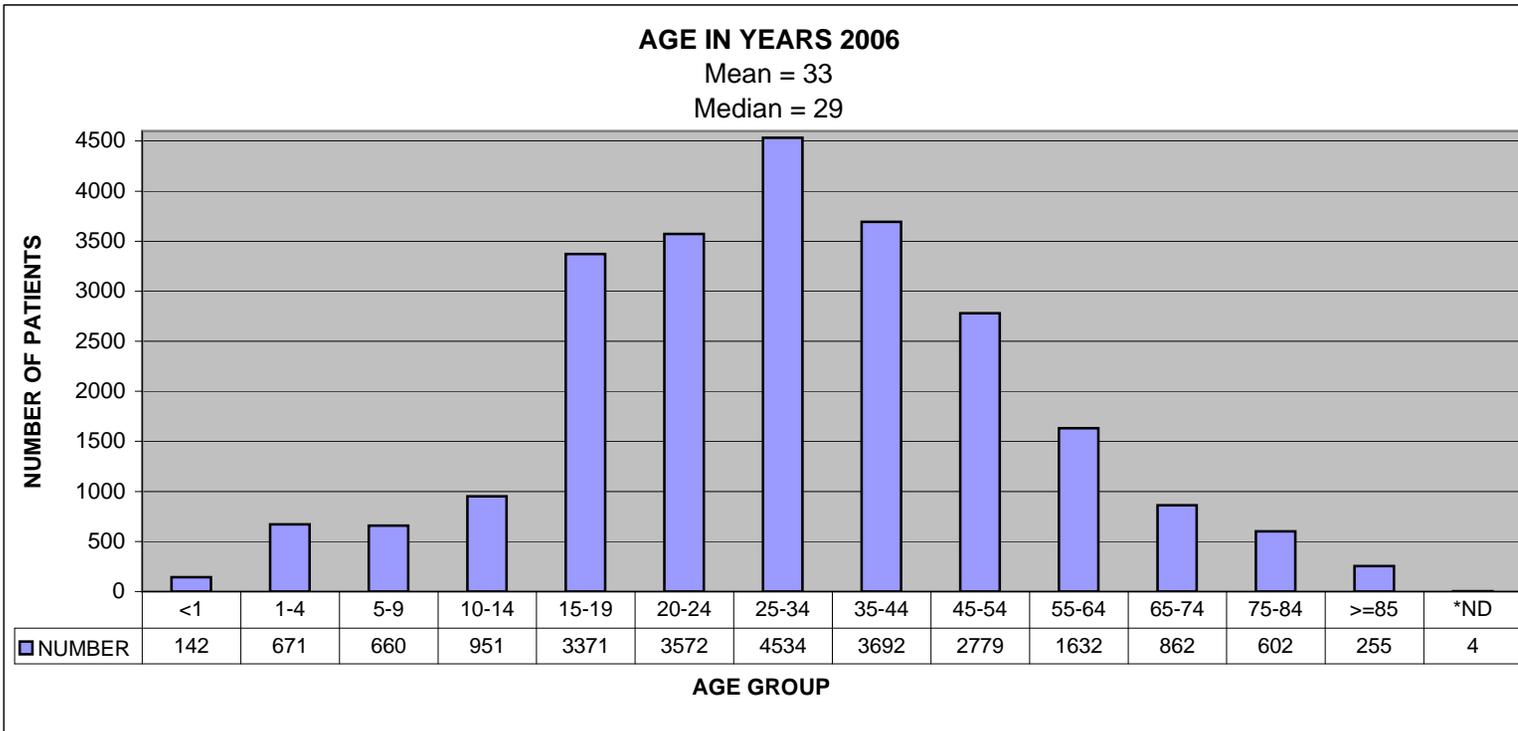
	Reporting Facility Name	Trauma Center designation level at time of ASTR data submission
1	Banner Good Samaritan Medical Center	Level I
2	Flagstaff Regional Medical Center	Level I
3	John C. Lincoln North Mountain Hospital	Level I
4	Maricopa Medical Center	Level I
5	Scottsdale Healthcare Osborn	Level I
6	St. Joseph's Hospital and Medical Center	Level I
7	University Medical Center (Tucson)	Level I
8	Tuba City Regional Healthcare Corporation	Non-Designated
9	Whiteriver PHS Indian Hospital	Non-Designated
10	Yavapai Regional Medical Center	Non-Designated
11	Yuma Regional Medical Center	Non-Designated

GENDER 2006



GENDER	NUMBER	PERCENT
MALE	16117	67.93
FEMALE	7591	31.99
UNKNOWN	14	0.06
*BLANK	5	0.02
TOTAL	23727	100.00

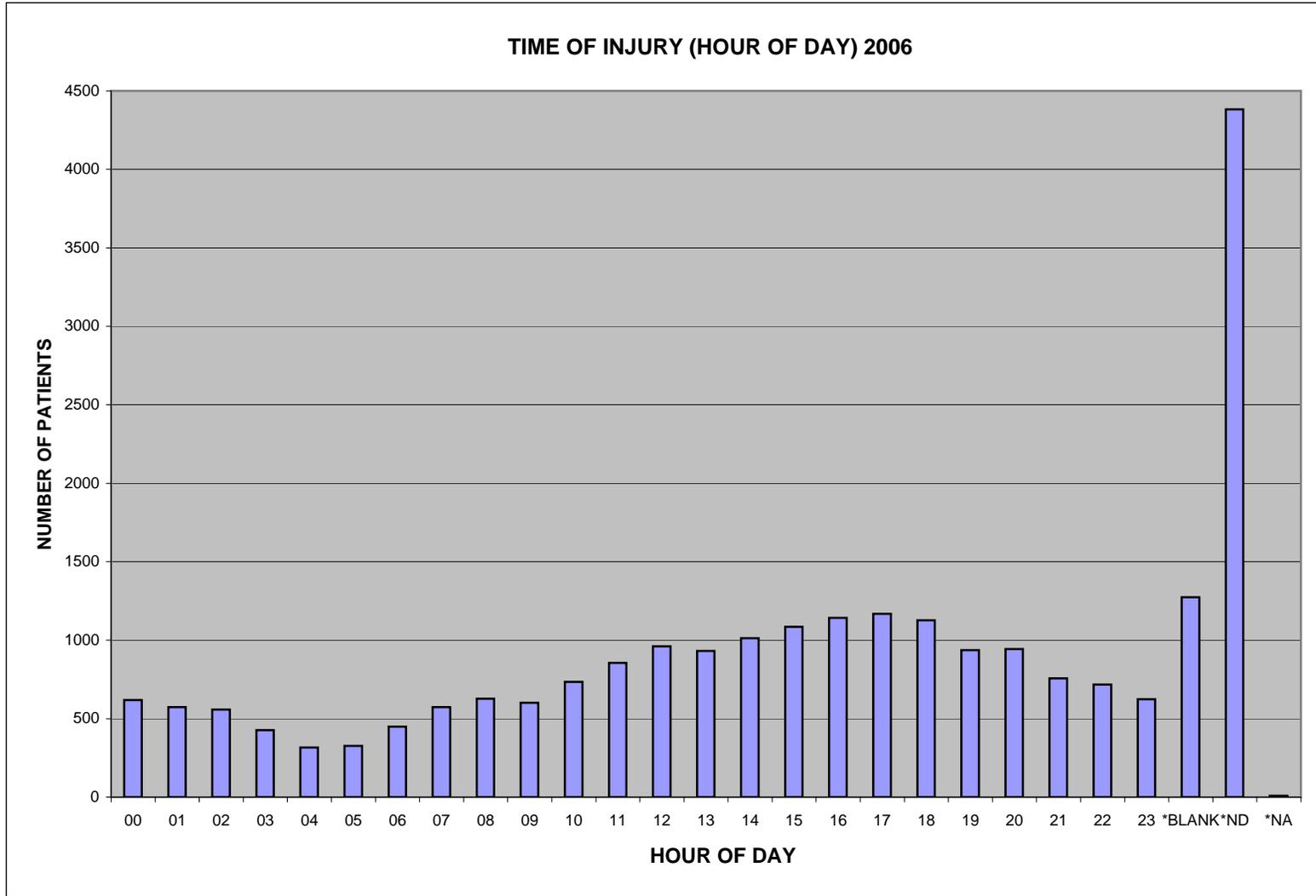
AGE IN YEARS 2006



AGE**	NUMBER	PERCENT
<1	142	0.60
1-4	671	2.83
5-9	660	2.78
10-14	951	4.01
15-19	3371	14.21
20-24	3572	15.05
25-34	4534	19.11
35-44	3692	15.56
45-54	2779	11.71
55-64	1632	6.88
65-74	862	3.63
75-84	602	2.54
>=85	255	1.07
*ND	4	0.02
TOTAL	23727	100.00

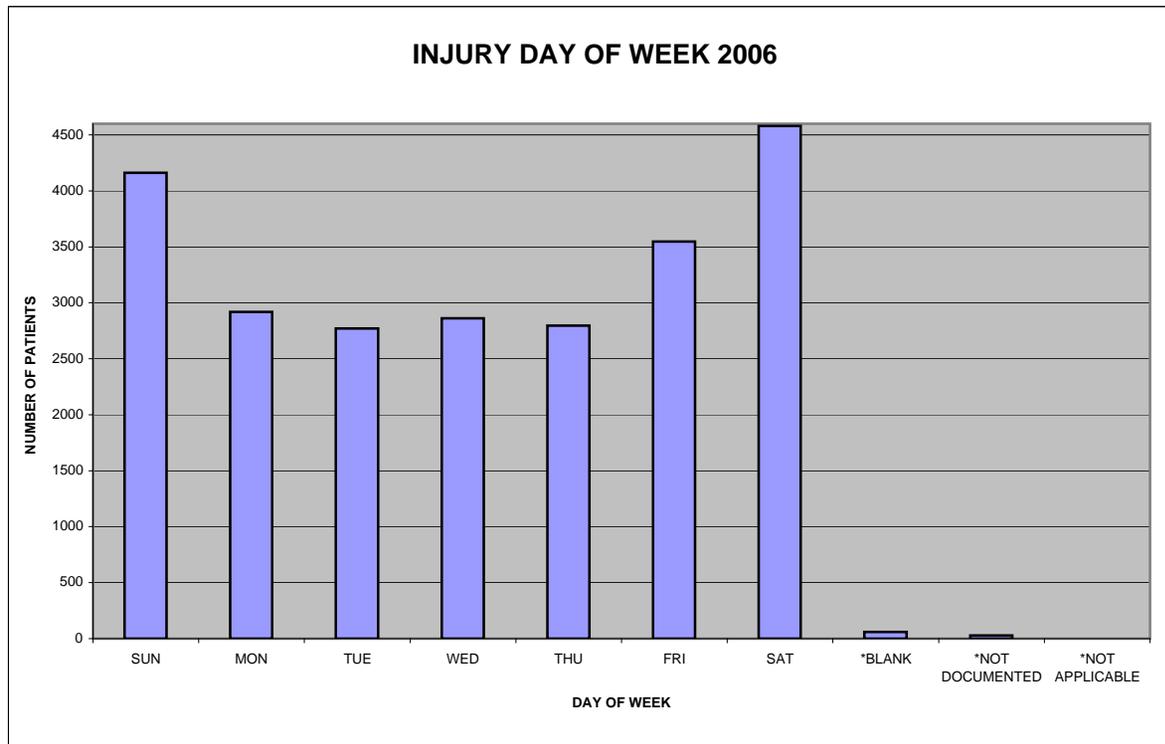
****Note: Calculated based on the ASTR Trauma One "Age (Years)" field.**

INJURY TIME OF DAY 2006



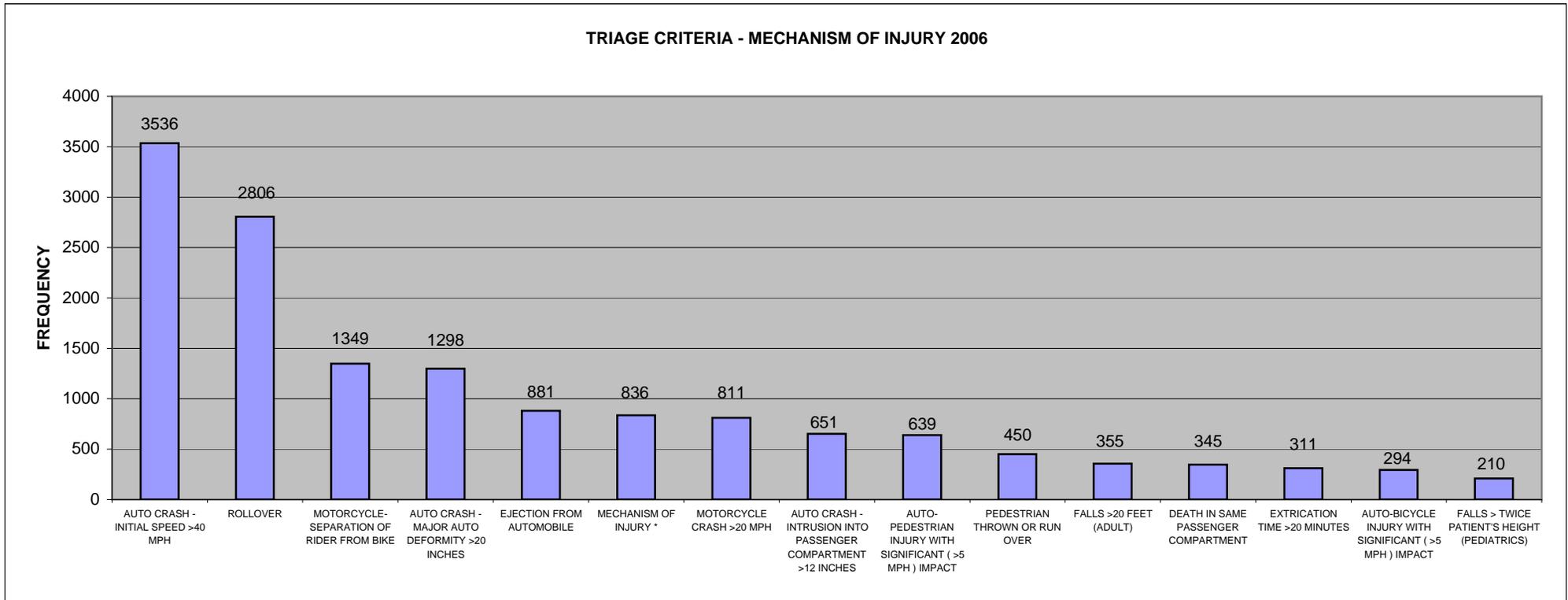
TIME OF INJURY - HOUR OF DAY	NUMBER	PERCENT
00	618	2.60
01	573	2.41
02	558	2.35
03	426	1.80
04	316	1.33
05	326	1.37
06	450	1.90
07	573	2.41
08	627	2.64
09	601	2.53
10	735	3.10
11	856	3.61
12	960	4.05
13	931	3.92
14	1012	4.27
15	1086	4.58
16	1142	4.81
17	1169	4.93
18	1127	4.75
19	936	3.94
20	943	3.97
21	757	3.19
22	717	3.02
23	623	2.63
*BLANK	1274	5.37
*ND	4382	18.47
*NA	9	0.04
TOTAL	23727	100.00

INJURY DAY OF WEEK 2006



INJURY DATE - DAY OF WEEK	NUMBER	PERCENT
SUN	4161	17.54
MON	2919	12.30
TUE	2772	11.68
WED	2863	12.07
THU	2797	11.79
FRI	3547	14.95
SAT	4579	19.30
*BLANK	60	0.25
*NOT DOCUMENTED	28	0.12
*NOT APPLICABLE	1	0.00
TOTAL	23727	100.00

TRIAGE CRITERIA - MECHANISM OF INJURY 2006

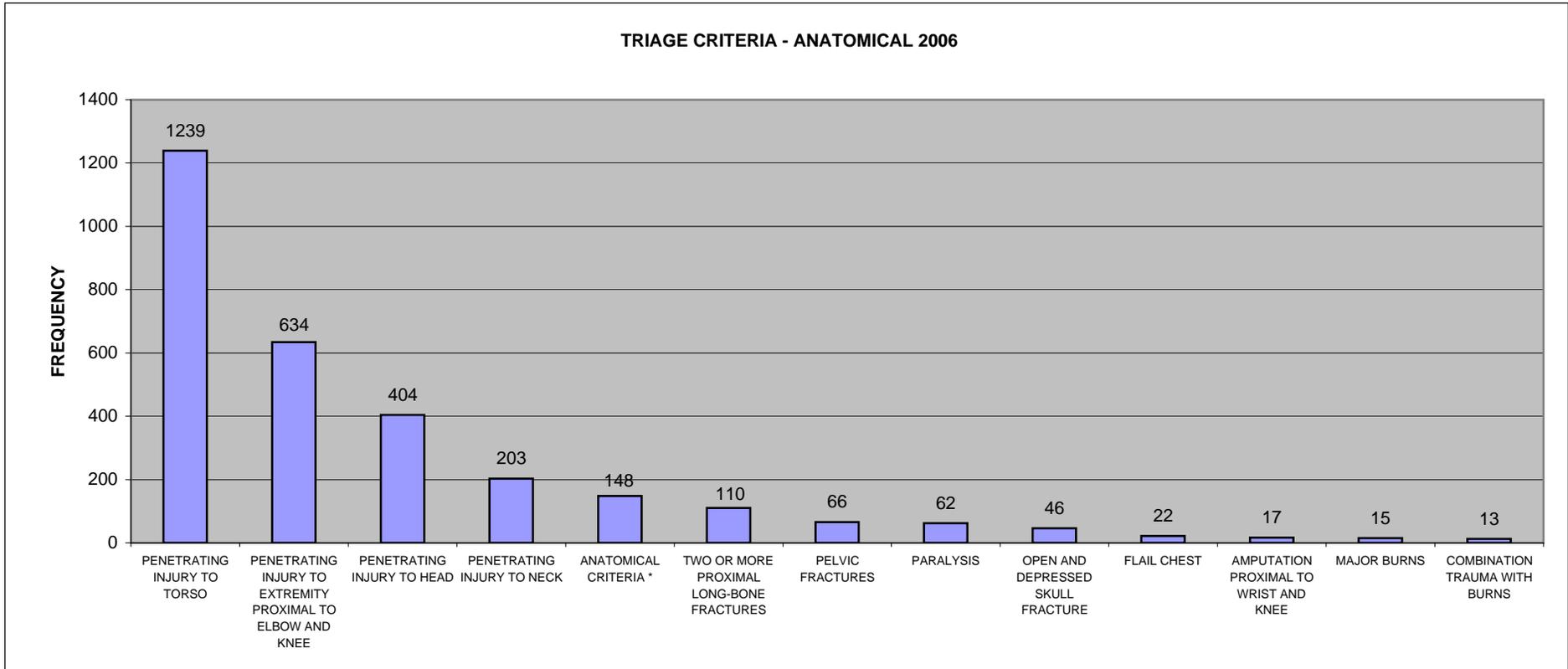


TRIAGE CRITERIA	FREQUENCY
AUTO CRASH - INITIAL SPEED >40 MPH	3536
ROLLOVER	2806
MOTORCYCLE-SEPARATION OF RIDER FROM BIKE	1349
AUTO CRASH - MAJOR AUTO DEFORMITY >20 INCHES	1298
EJECTION FROM AUTOMOBILE	881
MECHANISM OF INJURY *	836
MOTORCYCLE CRASH >20 MPH	811
AUTO CRASH - INTRUSION INTO PASSENGER COMPARTMENT >12 INCHES	651
AUTO-PEDESTRIAN INJURY WITH SIGNIFICANT (>5 MPH) IMPACT	639
PEDESTRIAN THROWN OR RUN OVER	450
FALLS >20 FEET (ADULT)	355
DEATH IN SAME PASSENGER COMPARTMENT	345
EXTRICATION TIME >20 MINUTES	311
AUTO-BICYCLE INJURY WITH SIGNIFICANT (>5 MPH) IMPACT	294
FALLS > TWICE PATIENT'S HEIGHT (PEDIATRICS)	210
TOTAL	14772

Note: Total number of Triage Criteria = 31436
The Triage Criteria field allows for multiple entries of triage criteria for each patient.

***Prior to data conversion some hospitals only had the ability to select the five major categories (i.e. mechanism of injury, anatomical, physiological, co-morbidity, and other). In this figure and table, the Mechanism of Injury is not a total of the more specific criteria.**

TRIAGE CRITERIA - ANATOMICAL 2006

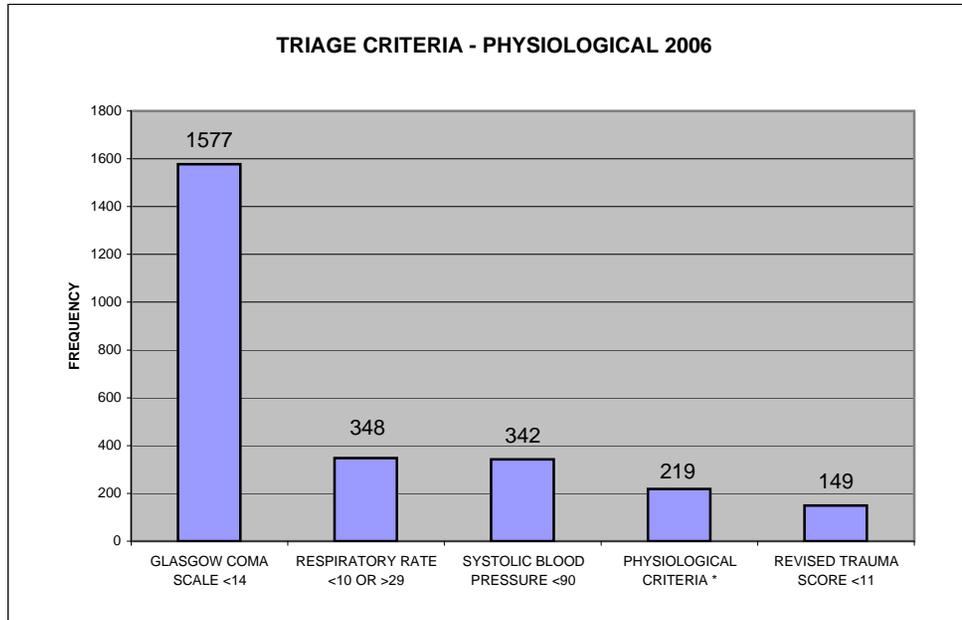


TRIAGE CRITERIA	FREQUENCY
PENETRATING INJURY TO TORSO	1239
PENETRATING INJURY TO EXTREMITY PROXIMAL TO ELBOW AND KNEE	634
PENETRATING INJURY TO HEAD	404
PENETRATING INJURY TO NECK	203
ANATOMICAL CRITERIA *	148
TWO OR MORE PROXIMAL LONG-BONE FRACTURES	110
PELVIC FRACTURES	66
PARALYSIS	62
OPEN AND DEPRESSED SKULL FRACTURE	46
FLAIL CHEST	22
AMPUTATION PROXIMAL TO WRIST AND KNEE	17
MAJOR BURNS	15
COMBINATION TRAUMA WITH BURNS	13
TOTAL	2979

Note: Total number of Triage Criteria = 31436
 The Triage Criteria field allows for multiple entries of triage criteria for each patient.

*Prior to data conversion some hospitals only had the ability to select the five major categories (i.e. mechanism of injury, anatomical, physiological, co-morbidity, and other). In this figure and table, the Anatomical Criteria is not a total of the more specific criteria.

TRIAGE CRITERIA - PHYSIOLOGICAL 2006

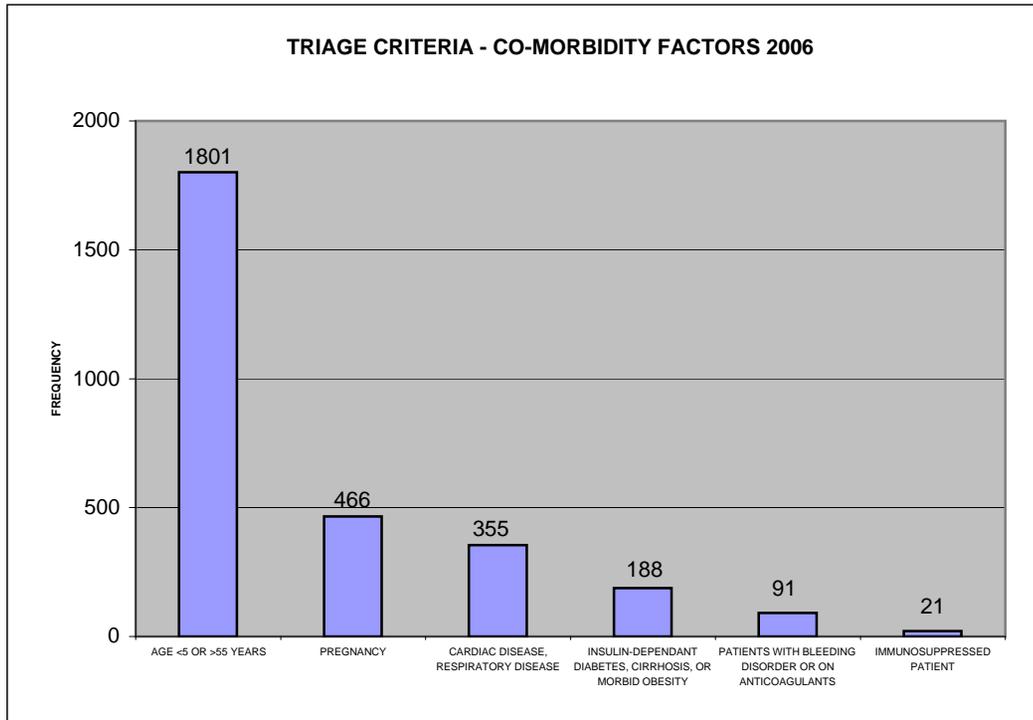


TRIAGE CRITERIA	FREQUENCY
GLASGOW COMA SCALE <14	1577
RESPIRATORY RATE <10 OR >29	348
SYSTOLIC BLOOD PRESSURE <90	342
PHYSIOLOGICAL CRITERIA *	219
REVISED TRAUMA SCORE <11	149
TOTAL	2635

Note: Total number of Triage Criteria = 31436
 The Triage Criteria field allows for multiple entries of triage criteria for each patient.

*Prior to data conversion some hospitals only had the ability to select the five major categories (i.e. mechanism of injury, anatomical, physiological, co-morbidity, and other). In this figure and table, the Physiological Criteria is not a total of the more specific criteria.

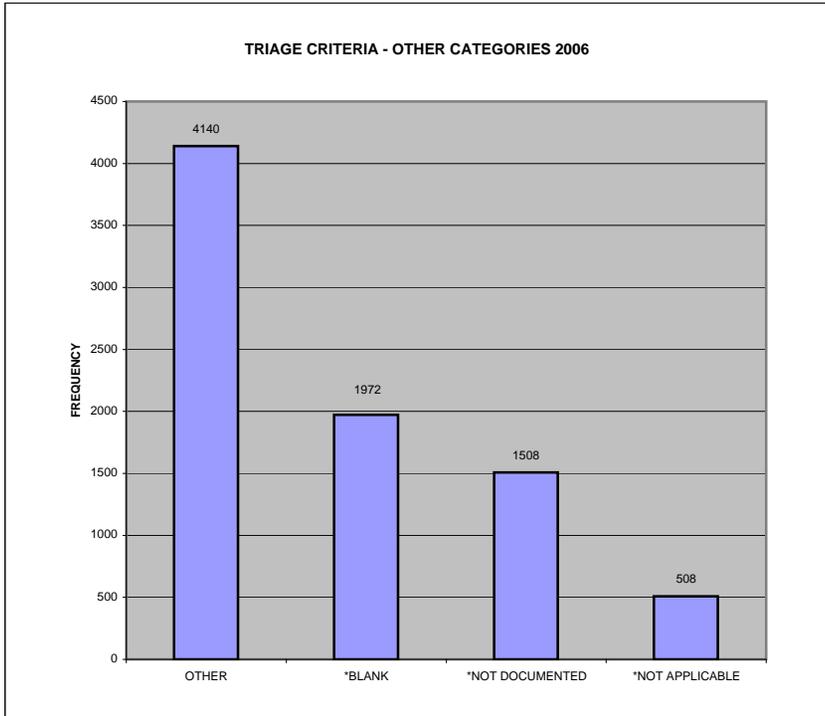
TRIAGE CRITERIA - CO-MORBIDITY FACTORS 2006



TRIAGE CRITERIA	FREQUENCY
AGE <5 OR >55 YEARS	1801
PREGNANCY	466
CARDIAC DISEASE, RESPIRATORY DISEASE	355
INSULIN-DEPENDANT DIABETES, CIRRHOSIS, OR MORBID OBESITY	188
PATIENTS WITH BLEEDING DISORDER OR ON ANTICOAGULANTS	91
IMMUNOSUPPRESSED PATIENT	21
TOTAL	2922

Note: Total number of Triage Criteria = 31436
The Triage Criteria field allows for multiple entries of triage criteria for each patient.

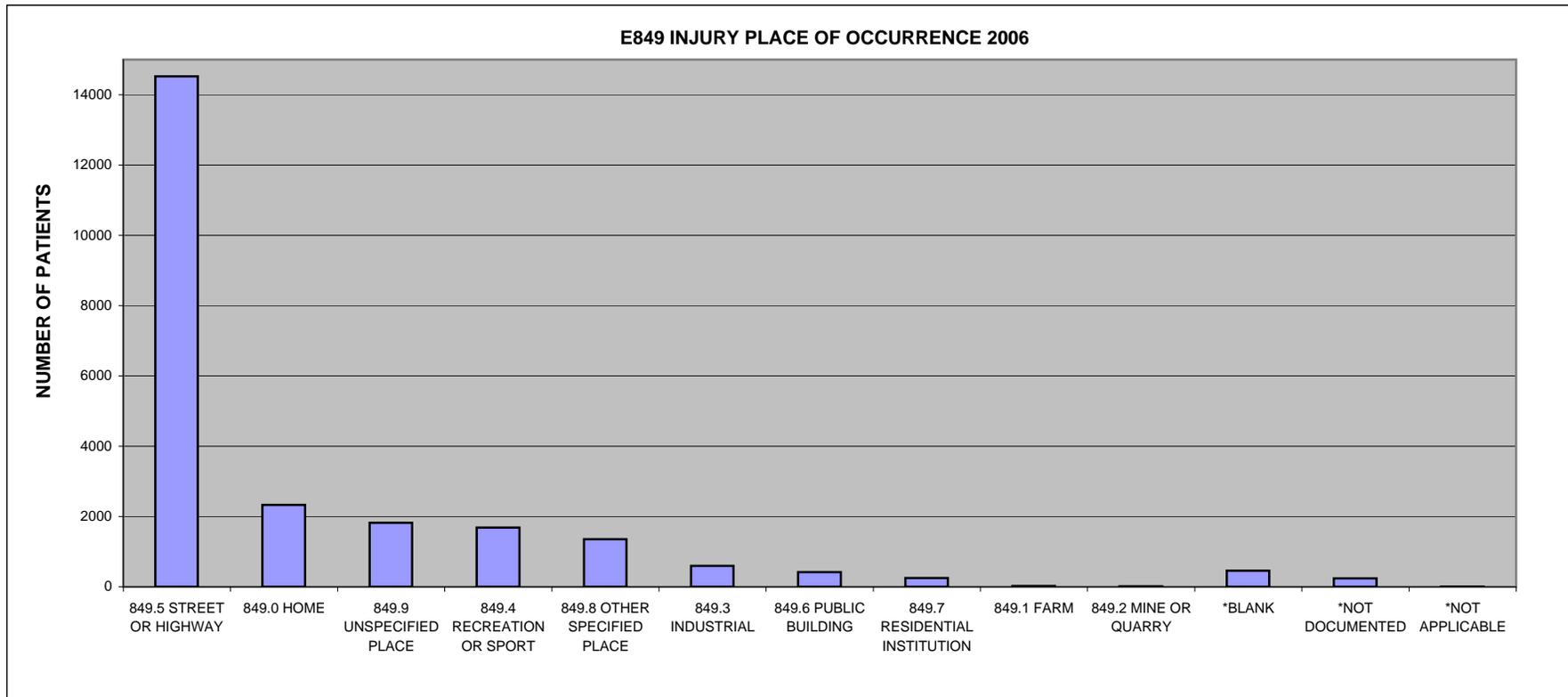
TRIAGE CRITERIA - OTHER CATEGORIES 2006



TRIAGE CRITERIA	FREQUENCY
OTHER	4140
*BLANK	1972
*NOT DOCUMENTED	1508
*NOT APPLICABLE	508
TOTAL	8128

Note: Total number of Triage Criteria = 31436
 The Triage Criteria field allows for multiple entries of triage criteria for each patient.

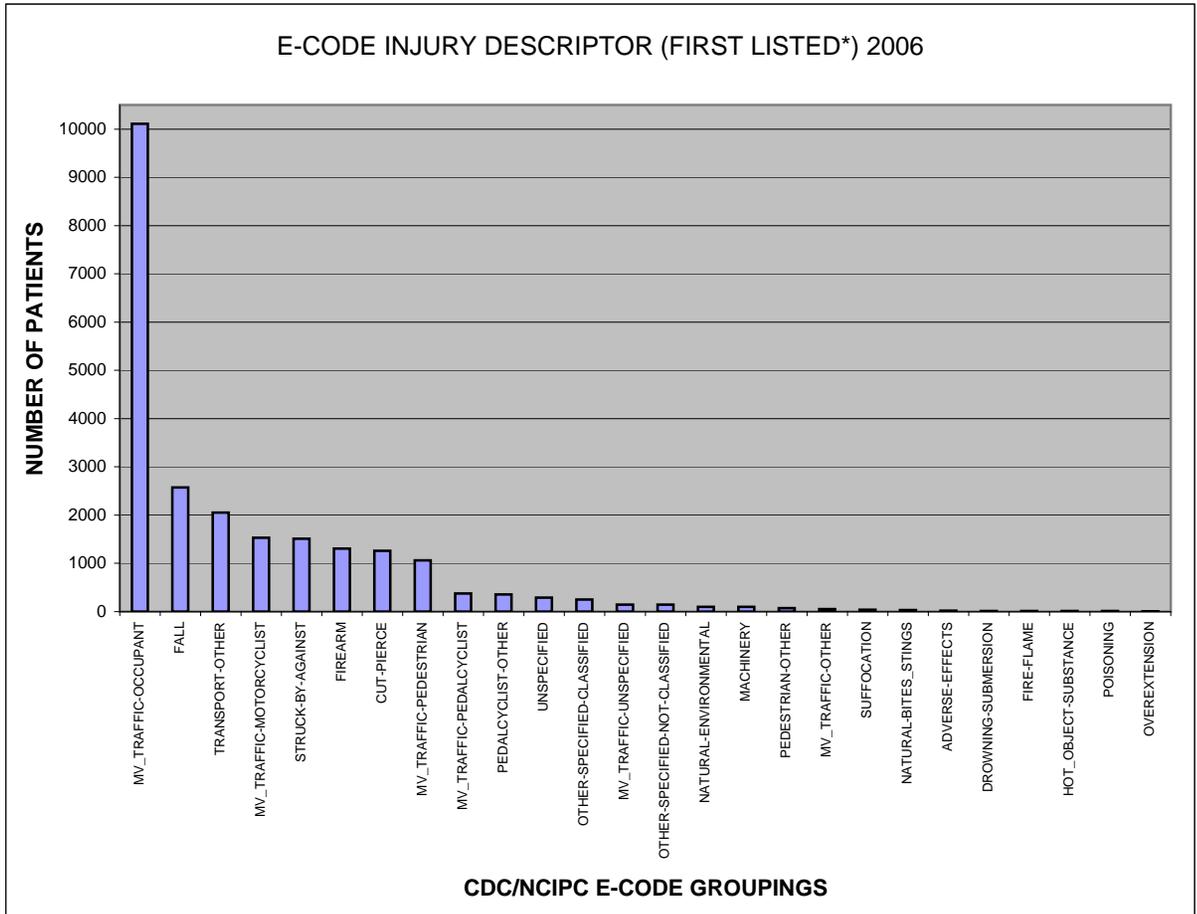
INJURY PLACE OF OCCURRENCE 2006



E849 INJURY PLACE OF OCCURRENCE	NUMBER	PERCENT
849.5 STREET OR HIGHWAY	14527	61.23
849.0 HOME	2334	9.84
849.9 UNSPECIFIED PLACE	1820	7.67
849.4 RECREATION OR SPORT	1683	7.09
849.8 OTHER SPECIFIED PLACE	1353	5.70
849.3 INDUSTRIAL	597	2.52
849.6 PUBLIC BUILDING	418	1.76
849.7 RESIDENTIAL INSTITUTION	251	1.06
849.1 FARM	27	0.11
849.2 MINE OR QUARRY	14	0.06
*BLANK	460	1.94
*NOT DOCUMENTED	238	1.00
*NOT APPLICABLE	5	0.02
TOTAL	23727	100.00

ICD-9-CM PRIMARY E-CODE INJURY DESCRIPTOR 2006

CDC/NCIPC E-CODE MECHANISM GROUPINGS	NUMBER
MV_TRAFFIC-OCCUPANT	10113
FALL	2571
TRANSPORT-OTHER	2050
MV_TRAFFIC-MOTORCYCLIST	1533
STRUCK-BY-AGAINST	1509
FIREARM	1306
CUT-PIERCE	1262
MV_TRAFFIC-PEDESTRIAN	1065
MV_TRAFFIC-PEDALCYCLIST	375
PEDALCYCLIST-OTHER	355
UNSPECIFIED	293
OTHER-SPECIFIED-CLASSIFIED	252
MV_TRAFFIC-UNSPECIFIED	147
OTHER-SPECIFIED-NOT-CLASSIFIED	147
NATURAL-ENVIRONMENTAL	102
MACHINERY	101
PEDESTRIAN-OTHER	75
MV_TRAFFIC-OTHER	55
SUFFOCATION	42
NATURAL-BITES_STINGS	35
ADVERSE-EFFECTS	21
DROWNING-SUBMERSION	16
FIRE-FLAME	14
HOT_OBJECT-SUBSTANCE	13
POISONING	11
OVEREXTENSION	6
*NOT ON CDC LIST	258
TOTAL	23727



Groupings based on the CDC/National Center for Injury Prevention and Control's *Recommended framework of E-code groupings for presenting injury mortality and morbidity data* (February 16, 2005), <http://www.cdc.gov/ncipc/whatsnew/matrix2.htm>.

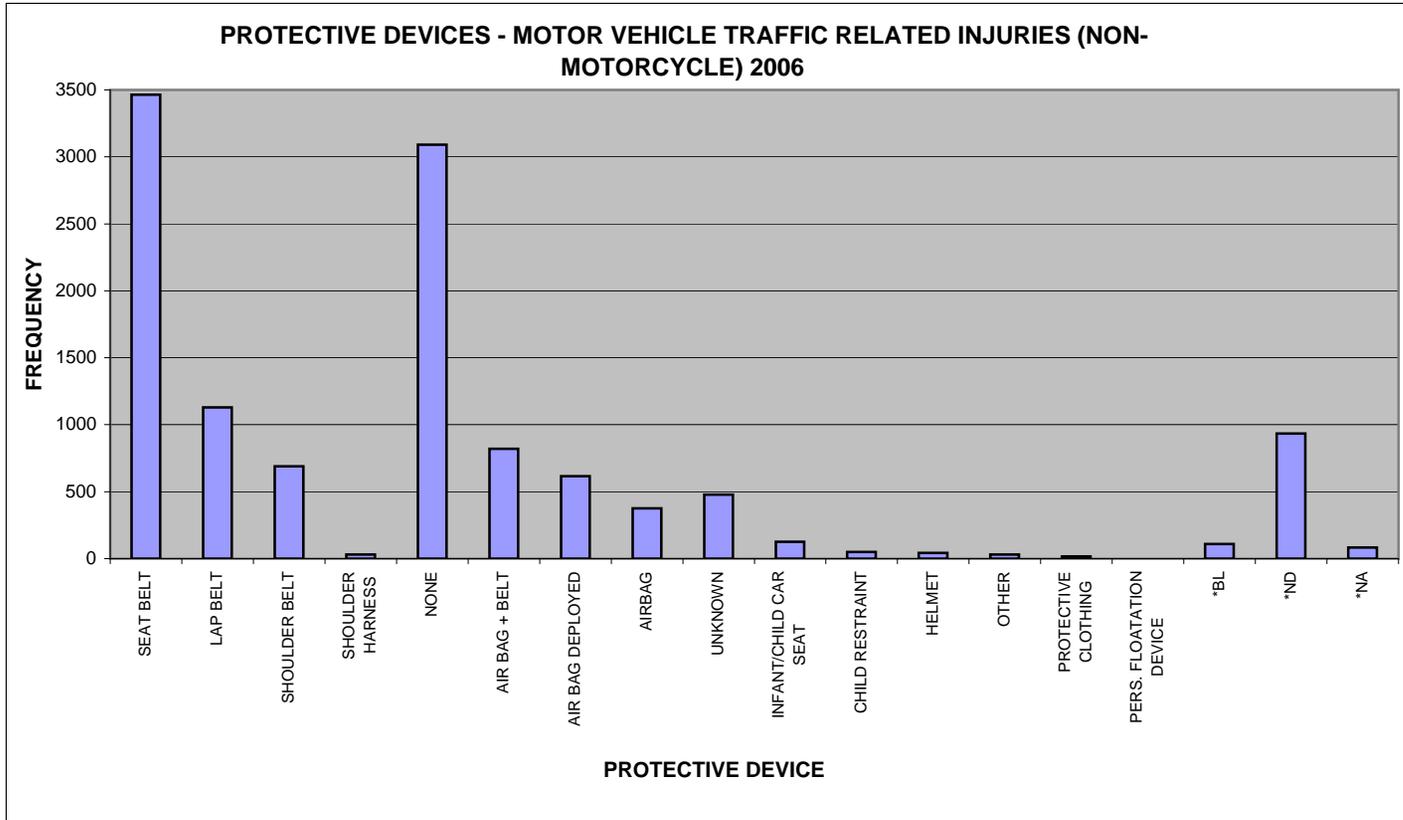
*NOTE: This report is based on the first E-code entered. ASTR requires only the primary E-code, but some facilities collect multiple E-codes. Registrars are instructed to enter the primary external cause of injury first.

**NOT ON CDC LIST refers to E-codes that are BLANK, *ND, *NA or invalid.

ICD9-CM INJURY DIAGNOSIS 2006 **

**UNABLE TO RUN ICD-9-CM INJURY DIAGNOSIS REPORT DUE TO ASTR DATABASE PROBLEMS.
TRAUMA REGISTRY MANAGER IS WORKING WITH SOFTWARE VENDOR TO RESOLVE SYSTEM PROBLEM.

PROTECTIVE DEVICES USED IN UNINTENTIONAL MOTOR VEHICLE TRAFFIC RELATED INJURIES -MOTOR VEHICLE OTHER THAN MOTORCYCLE- 2006



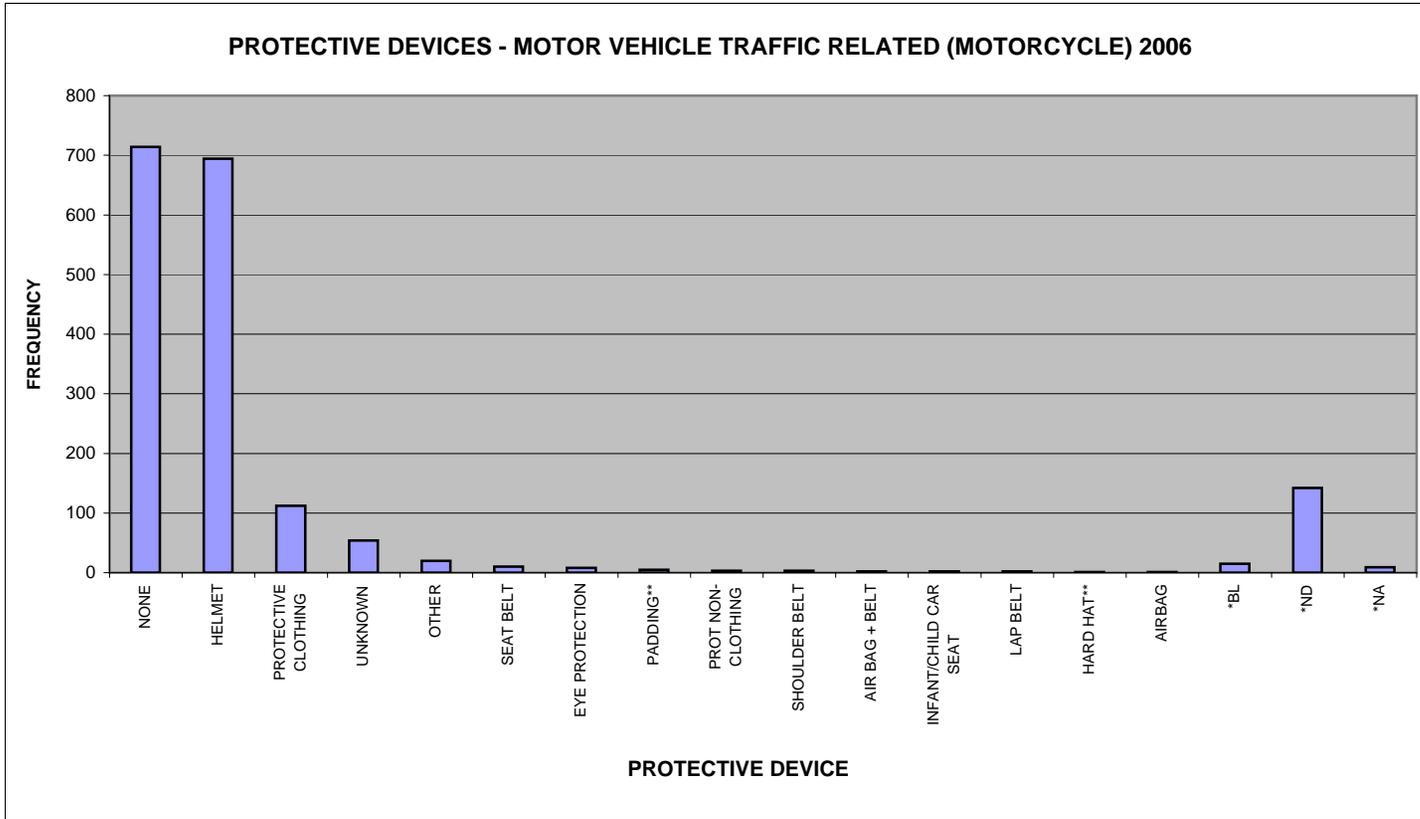
PROTECTIVE DEVICE**	FREQUENCY
SEAT BELT	3464
LAP BELT	1129
SHOULDER BELT	690
SHOULDER HARNESS	32
NONE	3091
AIR BAG + BELT	820
AIR BAG DEPLOYED	615
AIRBAG	376
UNKNOWN	478
INFANT/CHILD CAR SEAT	127
CHILD RESTRAINT	51
HELMET	42
OTHER	31
PROTECTIVE CLOTHING	16
PERS. FLOATATION DEVICE	1
*BL	110
*ND	935
*NA	84
TOTAL	12092

****Picklist updated in January 2007 and in effect for part of 2006 data entry. Above variations in coding of similar protective devices are a result of updates made to align choices with national trauma registry standards.**

Quality checks have not been completed for the protective device data.

Note: Unintentional motor vehicle traffic related injuries -motor vehicle occupant other than motorcycle- are classified by E-codes E810-E819 (.0 & .1). Field allows for multiple entry of protective devices. The numbers in this report reflect motor vehicle crash information found in the ASTR database and do not account for all motor vehicle crashes statewide.

PROTECTIVE DEVICES USED IN UNINTENTIONAL MOTOR VEHICLE TRAFFIC RELATED INJURIES - MOTORCYCLE DRIVER OR PASSENGER- 2006



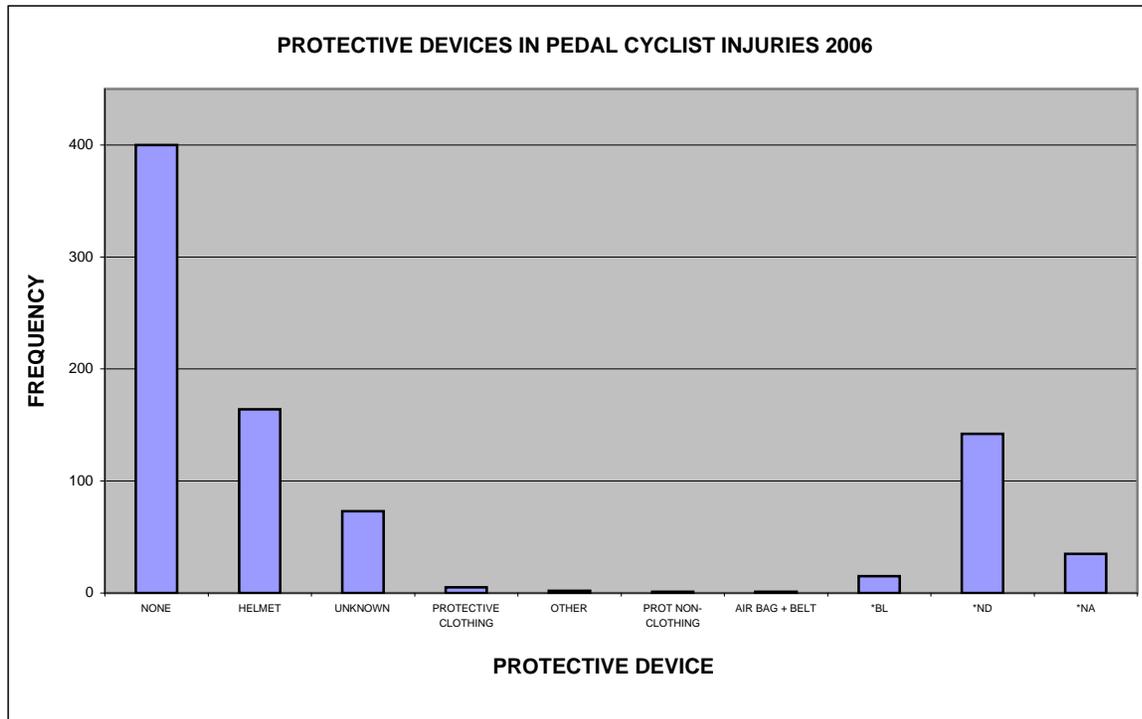
PROTECTIVE DEVICE**	FREQUENCY
NONE	714
HELMET	694
PROTECTIVE CLOTHING	112
UNKNOWN	54
OTHER	20
SEAT BELT	10
EYE PROTECTION	8
PADDING**	5
PROT NON-CLOTHING	3
SHOULDER BELT	3
AIR BAG + BELT	2
INFANT/CHILD CAR SEAT	2
LAP BELT	2
HARD HAT**	1
AIRBAG	1
*BL	15
*ND	142
*NA	9
TOTAL	1797

****Picklist updated in January 2007 and in effect for part of 2006 data entry. Above variations in coding of similar protective devices are a result of updates made to align choices with national trauma registry standards.**

Quality checks have not been completed for the protective device data.

Note: Unintentional motor vehicle traffic related injuries -motorcycle driver or motorcycle passenger- are classified by E-codes E810-E819 (.2 & .3). Field allows for multiple entry of protective devices. The numbers in this report reflect motorcycle crash information found in the ASTR database and do not account for all motorcycle crashes statewide.

PROTECTIVE DEVICES USED IN PEDAL CYCLIST INJURIES 2006



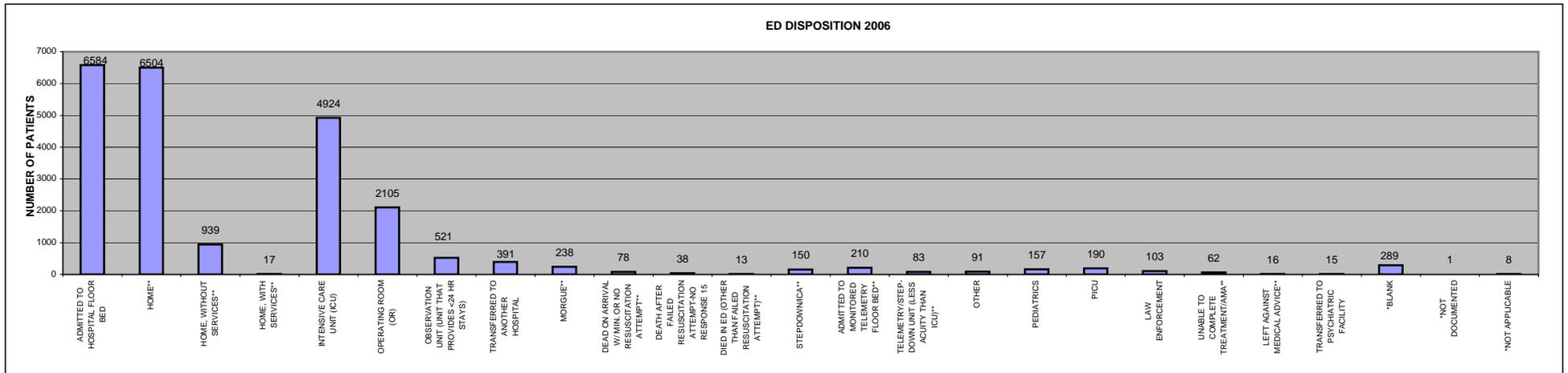
PROTECTIVE DEVICE**	FREQUENCY
NONE	400
HELMET	164
UNKNOWN	73
PROTECTIVE CLOTHING	5
OTHER	2
PROT NON-CLOTHING	1
AIR BAG + BELT	1
*BL	15
*ND	142
*NA	35
TOTAL	838

****Picklist updated in January 2007 and in effect for part of 2006 data entry. Above variations in coding of similar protective devices are a result of updates made to align choices with national trauma registry standards.**

Quality checks have not been completed for the protective device data.

Note: Pedal cyclist injuries are classified by CDC E-code groupings including: E810-E819(.6), E800-807(.3), E820-E825(.6), E826(.1, .9), E827-E829(.1). Field allows for multiple entry of protective devices. The numbers in this report reflect pedal cycle/bicycle information found in the ASTR database and do not account for all pedal cyclist injuries statewide.

EMERGENCY DEPARTMENT DISPOSITION 2006



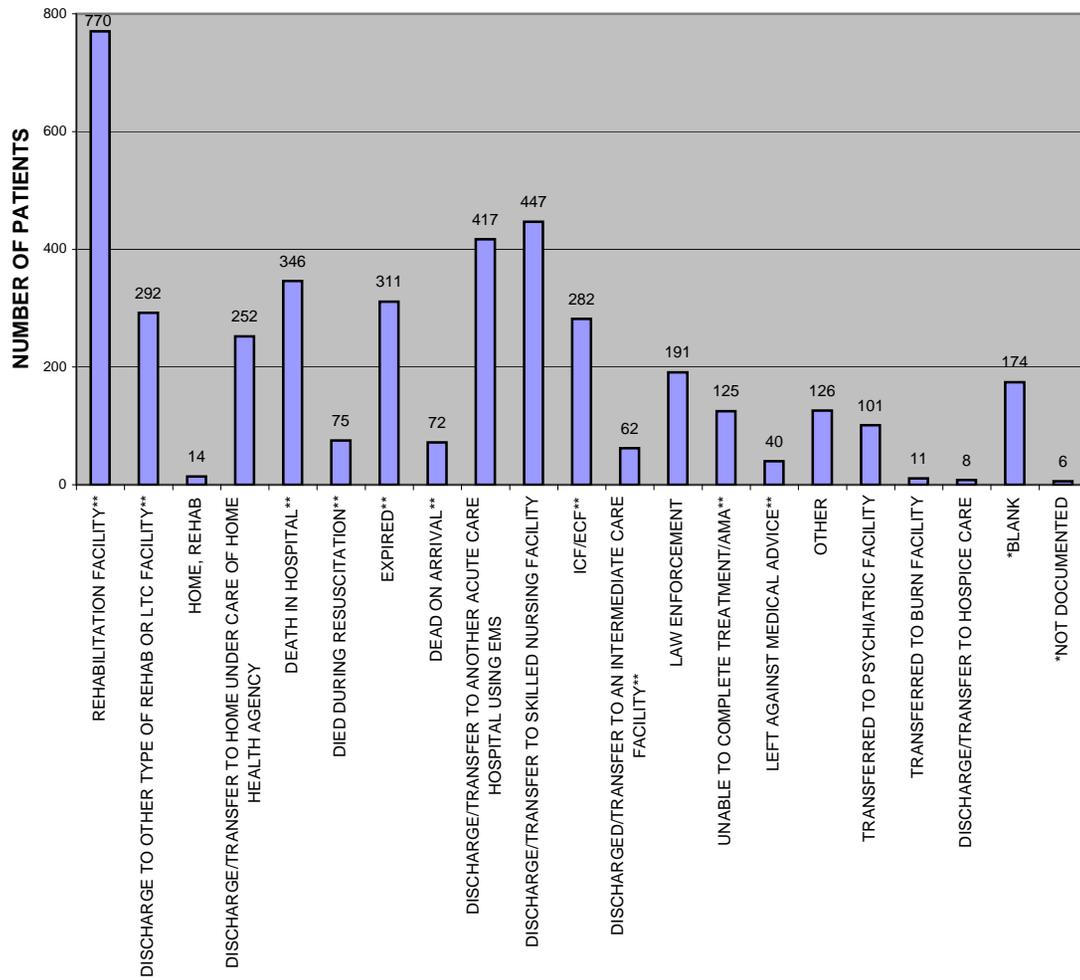
ED DISPOSITION**	NUMBER	PERCENT
ADMITTED TO HOSPITAL FLOOR BED	6584	27.75
HOME**	6504	27.41
HOME, WITHOUT SERVICES**	939	3.96
HOME, WITH SERVICES**	17	0.07
INTENSIVE CARE UNIT (ICU)	4924	20.75
OPERATING ROOM (OR)	2105	8.87
OBSERVATION UNIT (UNIT THAT PROVIDES <24 HR STAYS)	521	2.20
TRANSFERRED TO ANOTHER HOSPITAL	391	1.65
MORGUE**	238	1.00
DEAD ON ARRIVAL W/ MIN. OR NO RESUSCITATION ATTEMPT**	78	0.33
DEATH AFTER FAILED RESUSCITATION ATTEMPT-NO RESPONSE 15 MINS.**	38	0.16
DIED IN ED (OTHER THAN FAILED RESUSCITATION ATTEMPT)**	13	0.05
STEPDOWN/ICA**	150	0.63
ADMITTED TO MONITORED TELEMETRY FLOOR BED**	210	0.89
TELEMETRY/STEP-DOWN UNIT (LESS ACUITY THAN ICU)**	83	0.35
OTHER	91	0.38
PEDIATRICS	157	0.66
PICU	190	0.80
LAW ENFORCEMENT	103	0.43
UNABLE TO COMPLETE TREATMENT/AMA**	62	0.26
LEFT AGAINST MEDICAL ADVICE**	16	0.07
TRANSFERRED TO PSYCHIATRIC FACILITY	15	0.06
*BLANK	289	1.22
*NOT DOCUMENTED	1	0.00
*NOT APPLICABLE	8	0.03
TOTAL	23727	100.00

**Picklist updated in January 2007 and in effect for part of 2006 data entry. Variations in coding of similar ED dispositions are a result of updates made to align choices with national standards.

HOSPITAL DISCHARGE DISPOSITION 2006

HOSPITAL DISCHARGE DISPOSITION 2006

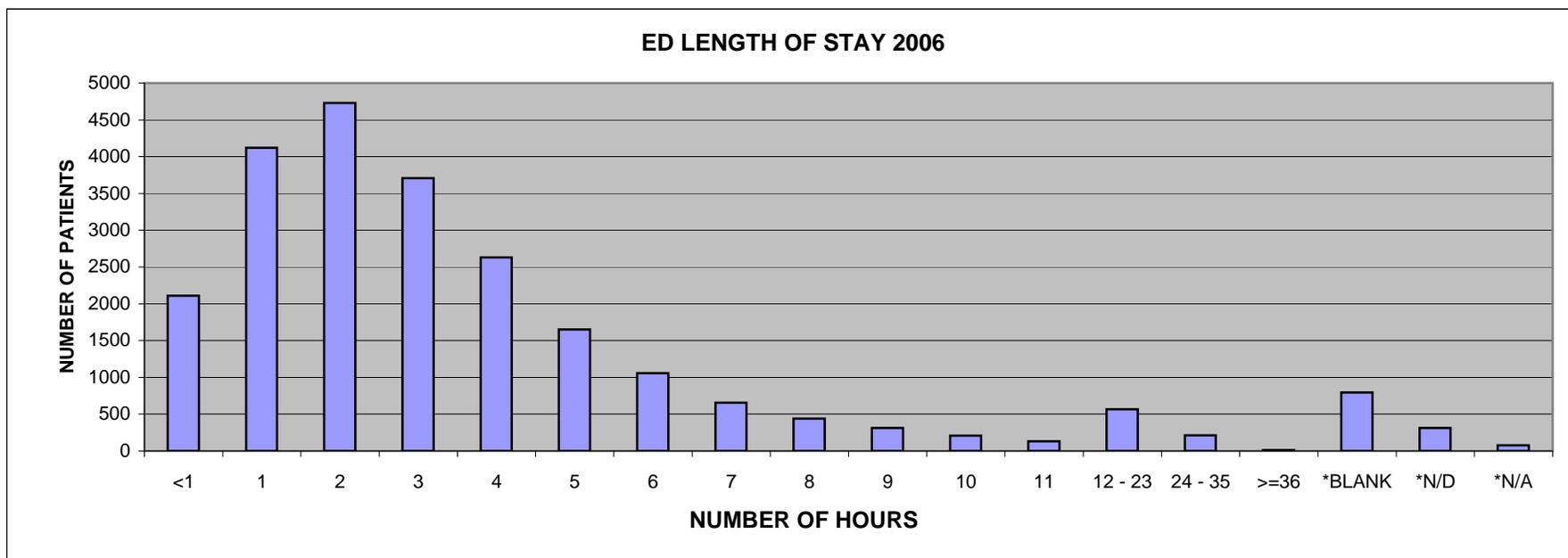
Dispositions not represented on chart below:
HOME, NO SERVICES = 16,499 patients
NOT APPLICABLE = 3106 patients



DISCHARGE DISPOSITION**	NUMBER	PERCENT
DISCHARGED HOME WITH NO HOME SERVICES	16499	69.54
REHABILITATION FACILITY**	770	3.25
DISCHARGE TO OTHER TYPE OF REHAB OR LTC FACILITY**	292	1.23
HOME, REHAB	14	0.06
DISCHARGE/TRANSFER TO HOME UNDER CARE OF HOME HEALTH AGENCY	252	1.06
DEATH IN HOSPITAL**	346	1.46
DIED DURING RESUSCITATION**	75	0.32
EXPIRED**	311	1.31
DEAD ON ARRIVAL**	72	0.30
DISCHARGE/TRANSFER TO ANOTHER ACUTE CARE HOSPITAL USING EMS	417	1.76
DISCHARGE/TRANSFER TO SKILLED NURSING FACILITY	447	1.88
ICF/ECF**	282	1.19
DISCHARGED/TRANSFER TO AN INTERMEDIATE CARE FACILITY**	62	0.26
LAW ENFORCEMENT	191	0.80
UNABLE TO COMPLETE TREATMENT/AMA**	125	0.53
LEFT AGAINST MEDICAL ADVICE**	40	0.17
OTHER	126	0.53
TRANSFERRED TO PSYCHIATRIC FACILITY	101	0.43
TRANSFERRED TO BURN FACILITY	11	0.05
DISCHARGE/TRANSFER TO HOSPICE CARE	8	0.03
*BLANK	174	0.73
*NOT DOCUMENTED	6	0.03
*NOT APPLICABLE	3106	13.09
TOTAL	23727	100.00

****Picklist updated in January 2007 and in effect for part of 2006 data entry. Above variations in coding of similar dispositions are a result of updates made to align choices with national standards.**

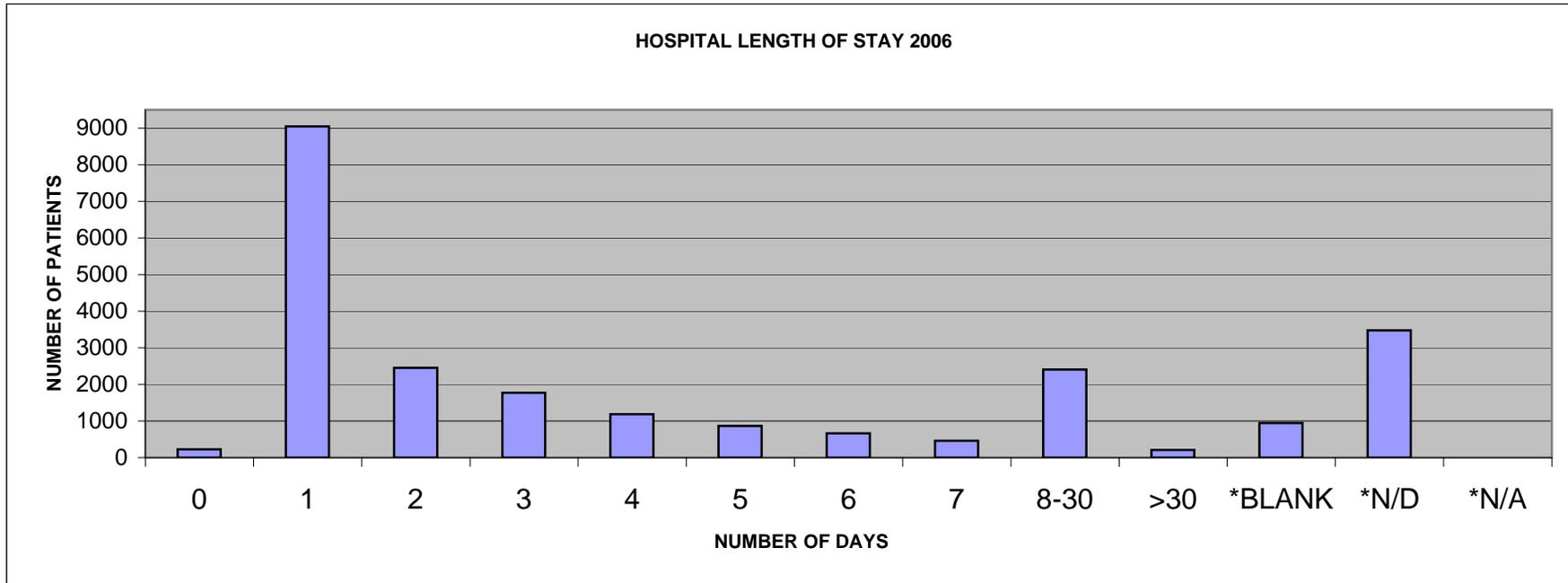
LENGTH OF STAY (HOURS) IN EMERGENCY DEPARTMENT 2006



LENGTH OF STAY (HOURS) IN ED	NUMBER	PERCENT
<1	2110	8.89
1	4119	17.36
2	4729	19.93
3	3706	15.62
4	2630	11.08
5	1652	6.96
6	1058	4.46
7	655	2.76
8	440	1.85
9	313	1.32
10	209	0.88
11	131	0.55
12 - 23	568	2.39
24 - 35	211	0.89
>=36	12	0.05
*BLANK	793	3.34
*N/D	312	1.31
*N/A	79	0.33
TOTAL	23727	100.00

*Note: Length of stay is calculated from ED Arrival Date/Time to ED Exit Date/Time.

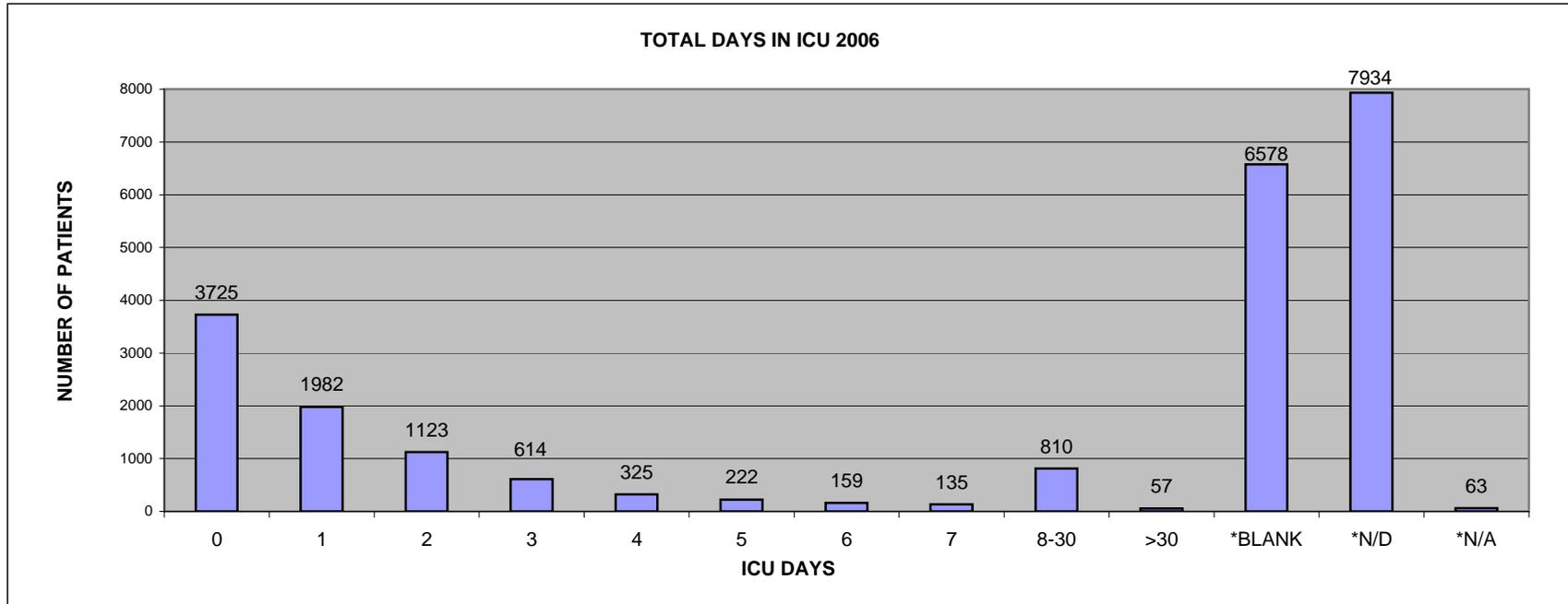
HOSPITAL LENGTH OF STAY (DAYS) 2006*



HOSPITAL LENGTH OF STAY (DAYS) *	NUMBER	PERCENT
0	227	0.96
1	9048	38.13
2	2455	10.35
3	1777	7.49
4	1191	5.02
5	864	3.64
6	662	2.79
7	461	1.94
8-30	2409	10.15
>30	214	0.90
*BLANK	943	3.97
*N/D	3475	14.65
*N/A	1	0.00
TOTAL	23727	100.00

*Note: Hospital length of stay is calculated from Admit Date to Hospital Discharge Date. The time of admission and discharge are not collected, so report is based on approximation of days. Arrival and discharge on the same day equals a length of stay of 1 day.

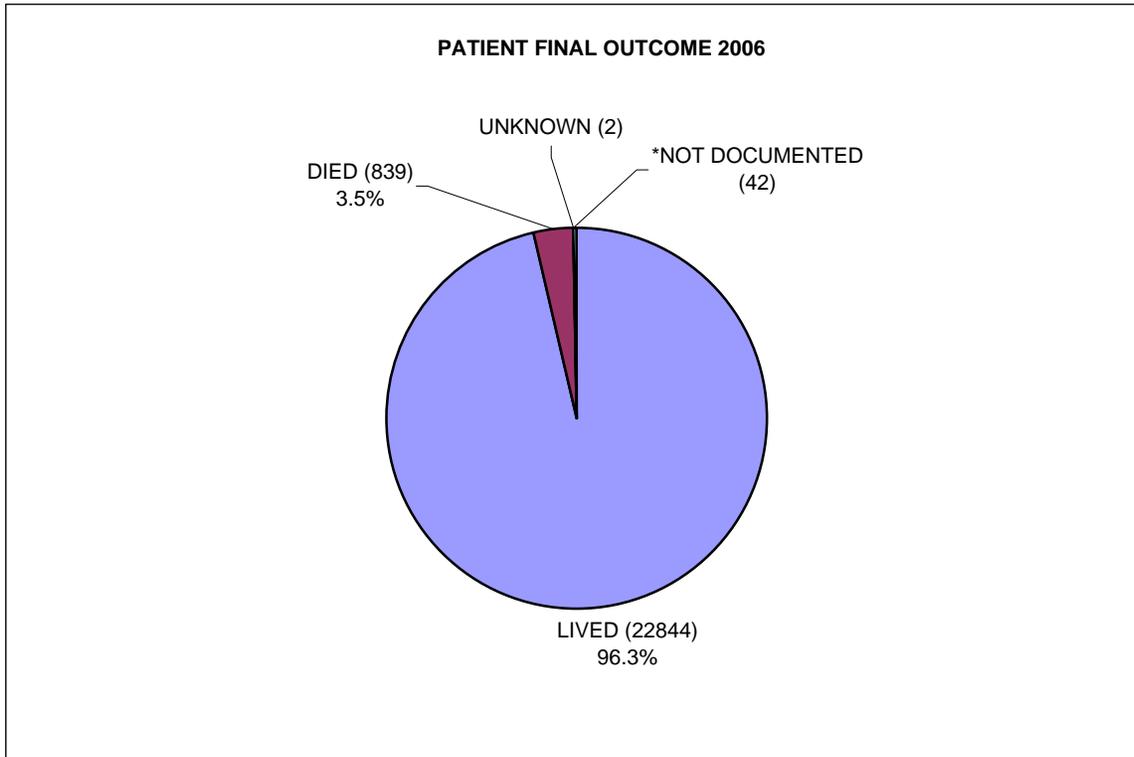
TOTAL DAYS IN ICU 2006



TOTAL DAYS IN ICU	NUMBER	PERCENT
0	3725	15.69
1	1982	8.35
2	1123	4.73
3	614	2.59
4	325	1.37
5	222	0.93
6	159	0.67
7	135	0.57
8-30	810	3.41
>30	57	0.24
*BLANK	6578	27.72
*N/D	7934	33.44
*N/A	63	0.27
TOTAL*	23727	100.00

*Numbers based on ASTR Total ICU Days field. The actual calculations being used to determine total ICU stay have not been verified as consistent for every reporting facility.

PATIENT FINAL OUTCOME 2006

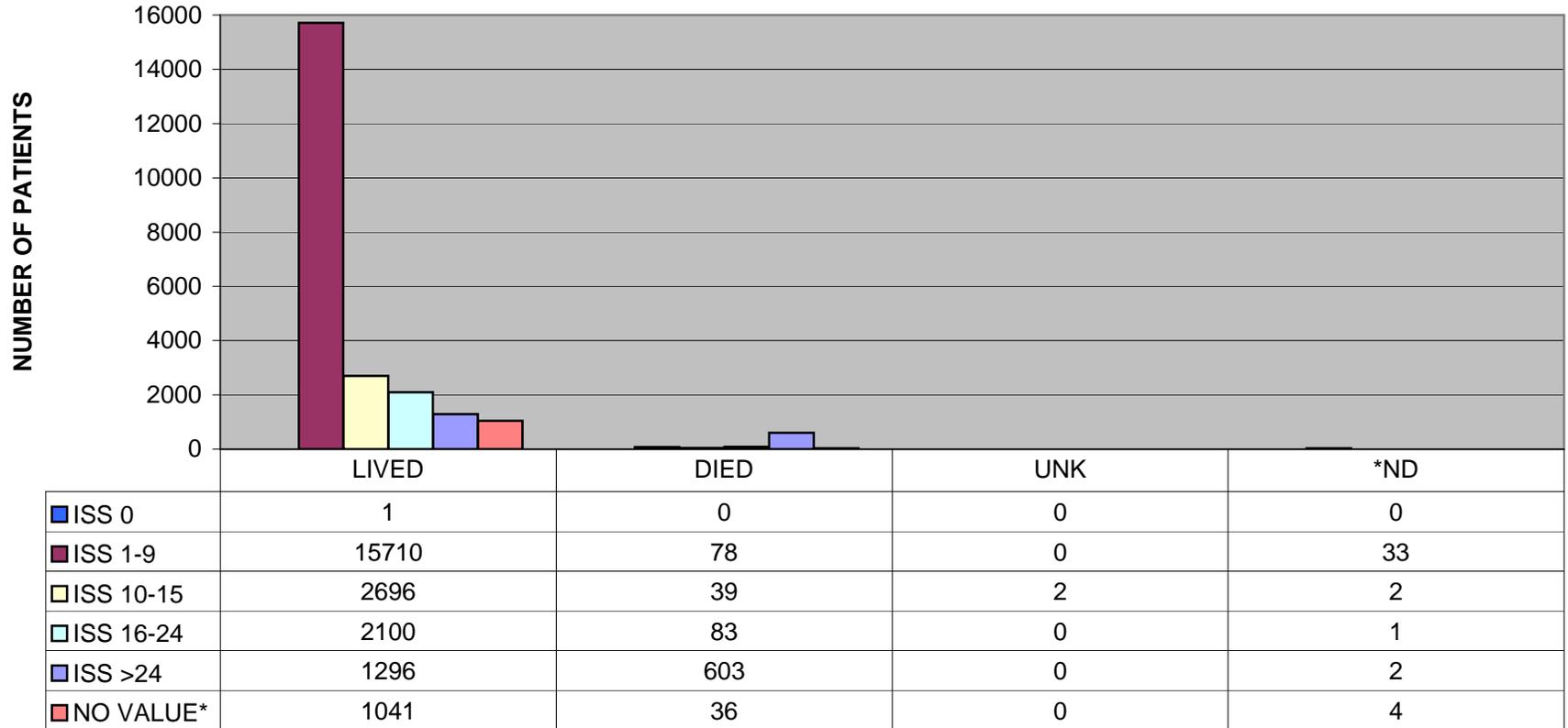


OUTCOME	NUMBER	PERCENT
LIVED	22844	96.28
DIED	839	3.54
UNKNOWN	2	0.01
*ND	42	0.18
TOTAL	23727	100.00

Inclusion Criteria note: Total trauma deaths in ASTR reports do not include deaths occurring at the pre-hospital scene, deaths occurring during transport or deaths occurring shortly after hospital discharge.

INJURY SEVERITY SCORE BY PATIENT OUTCOME SUMMARY 2006

ISS BY PATIENT OUTCOME SUMMARY 2006



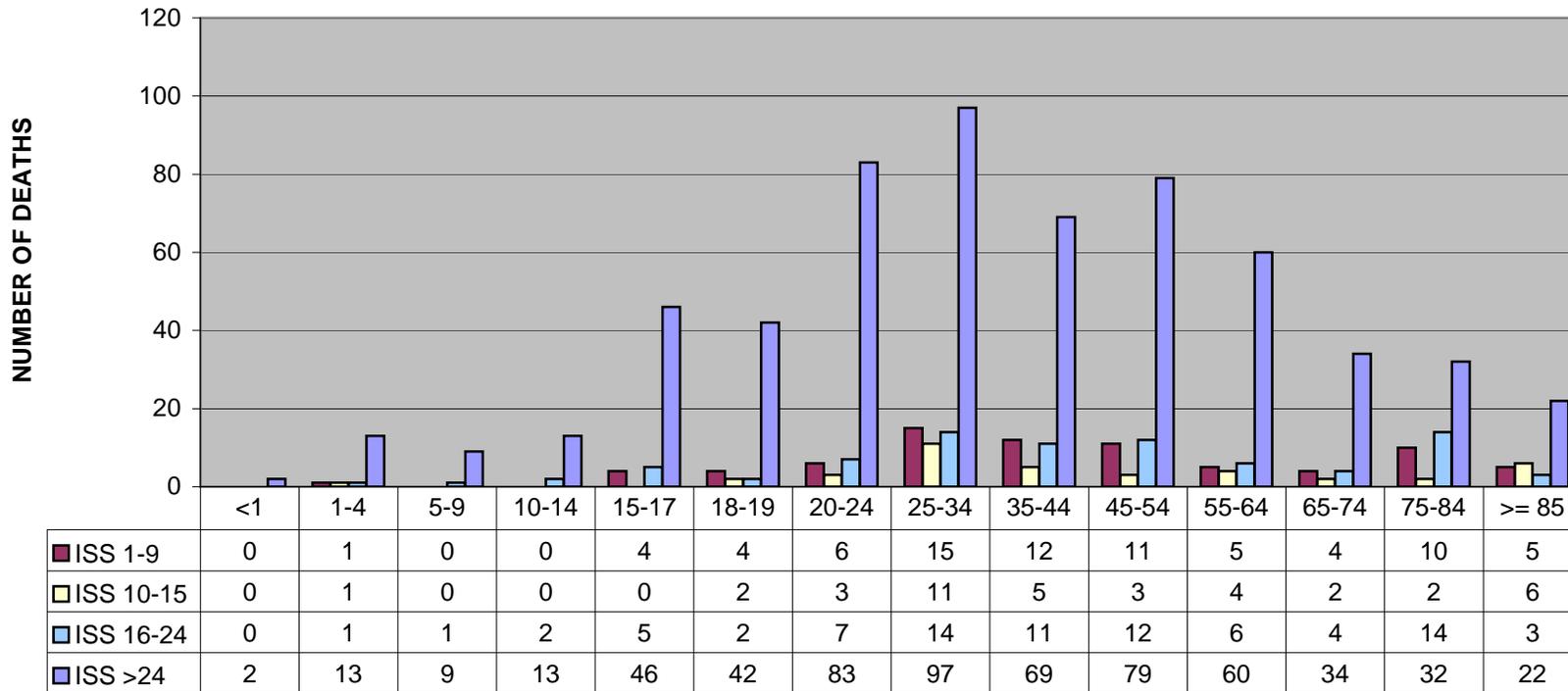
ISS	LIVED	DIED	UNK	*ND	TOTAL
ISS 0	1	0	0	0	1
ISS 1-9	15710	78	0	33	15821
ISS 10-15	2696	39	2	2	2739
ISS 16-24	2100	83	0	1	2184
ISS >24	1296	603	0	2	1901
NO VALUE*	1041	36	0	4	1081
TOTAL	22844	839	2	42	23727

***NO VALUE** in this report includes the sum of Not Documented, Not Applicable and BLANK ISS entries.

This report contains data from Level I Trauma Centers and non-designated centers. Non-Level I facilities do not collect Abbreviated Injury Scale (AIS) codes. The ISS scores from non-Level I facilities are calculated based on ICD-9-CM codes.

DEATHS BY INJURY SEVERITY SCORE AND AGE 2006

DEATHS BY ISS SCORE AND AGE 2006



AGE	ISS 1-9	ISS 10-15	ISS 16-24	ISS >24	TOTAL
<1	0	0	0	2	2
1-4	1	1	1	13	16
5-9	0	0	1	9	10
10-14	0	0	2	13	15
15-17	4	0	5	46	55
18-19	4	2	2	42	50
20-24	6	3	7	83	99
25-34	15	11	14	97	137
35-44	12	5	11	69	97
45-54	11	3	12	79	105
55-64	5	4	6	60	75
65-74	4	2	4	34	44
75-84	10	2	14	32	58
>= 85	5	6	3	22	36
TOTAL	77	39	82	601	799*

*Note: Patient count = 839 (deaths).

40 patients not included due to missing entries for ISS or Age.

**Note: Age calculated based on the ASTR Trauma One field "Age (Years)".

This report contains data from Level I Trauma Centers and non-designated centers. Non-Level I facilities do not collect Abbreviated Injury Scale (AIS) codes. The ISS scores from non-Level I facilities are calculated based on ICD-9-CM codes.