

ARIZONA STATE TRAUMA REGISTRY

Standard Public Report - 2007 Trauma Data - Version 1.1

Important information about the 2007 Arizona State Trauma Registry (ASTR) data:

Eleven hospitals contributed 2007 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. Reporting hospitals were instructed to submit cases based on ASTR Trauma Patient Inclusion Criteria. As of 9/4/08, there were 24022 records submitted to ASTR with ED Arrival Dates from 1/1/07 to 12/31/07.

This report reflects trauma data as it existed in the ASTR database on 9/4/08. Only limited quality checks were run on the 2007 trauma data. Duplicate cases have not been identified, and a transferred patient may show up more than once in the ASTR database. ASTR collects data from a limited number of hospitals in Arizona, thus the records in this report are not representative of all Arizona trauma cases statewide.

Changes from version 1.0 to 1.1 reflect edits to the report formatting. No changes were made to data numbers or percentages.

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 *ND means that the registrar entered a Not Documented response for that specific data element. The ASTR Data Dictionary defines Not Documented as no documentation in record, unknown.

*NOT APPLICABLE or *NA in this report means that the registrar entered a Not Applicable response for that specific data element. In the ASTR Data Dictionary, 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 2007 data, please contact Anita Ray Ng with the Arizona Department of Health Services at 602-542-1245, email: raya@azdhs.gov.

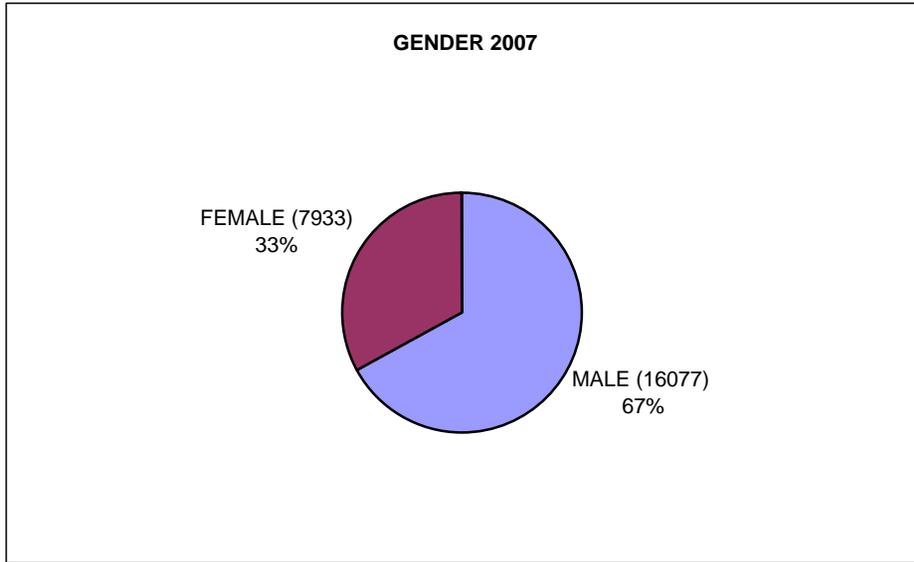
FACILITIES THAT SUBMITTED 2007 DATA TO ASTR

(2007 DATA = ED Arrival Dates 1/1/07-12/31/07)

	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	Sierra Vista Regional Medical Center *	Non-Designated
9	Tuba City Regional Healthcare Corporation	Non-Designated
10	Yavapai Regional Medical Center	Non-Designated
11	Yuma Regional Medical Center	Non-Designated

* Partial 2007 data.

GENDER 2007

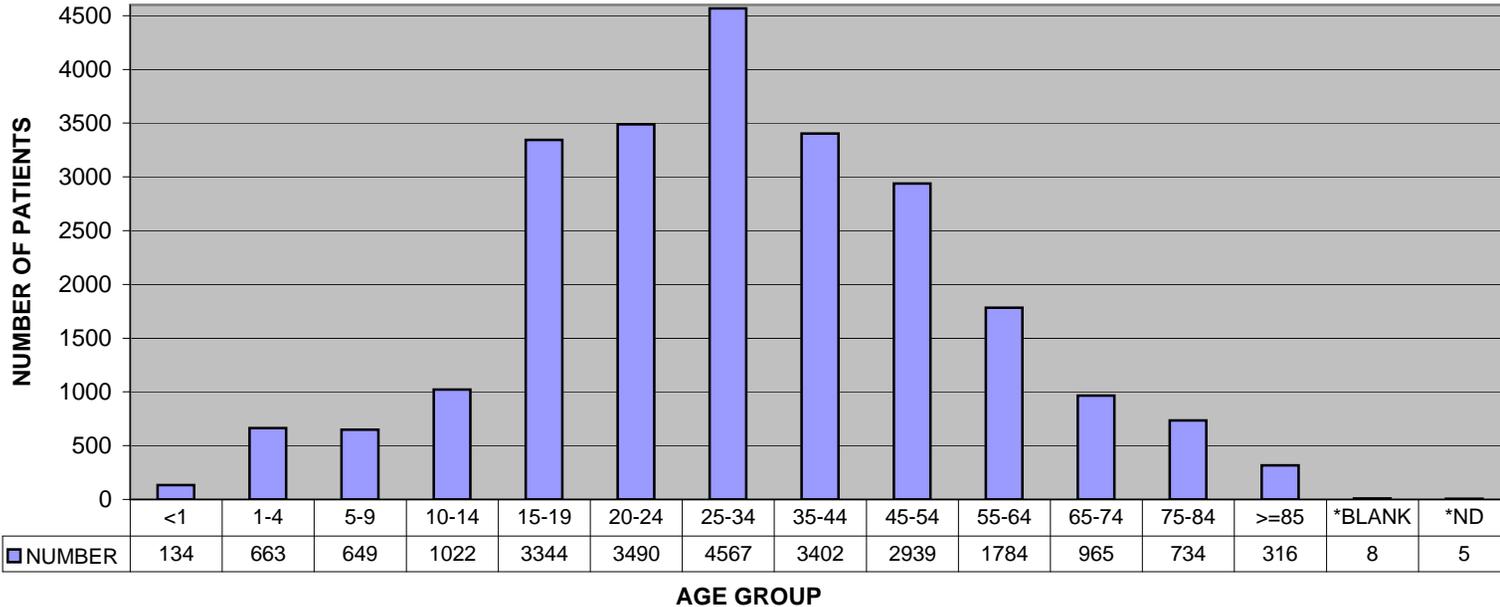


GENDER	NUMBER	PERCENT
MALE	16077	66.93
FEMALE	7933	33.02
UNKNOWN	12	0.05
TOTAL	24022	100.00

AGE IN YEARS 2007

AGE IN YEARS 2007

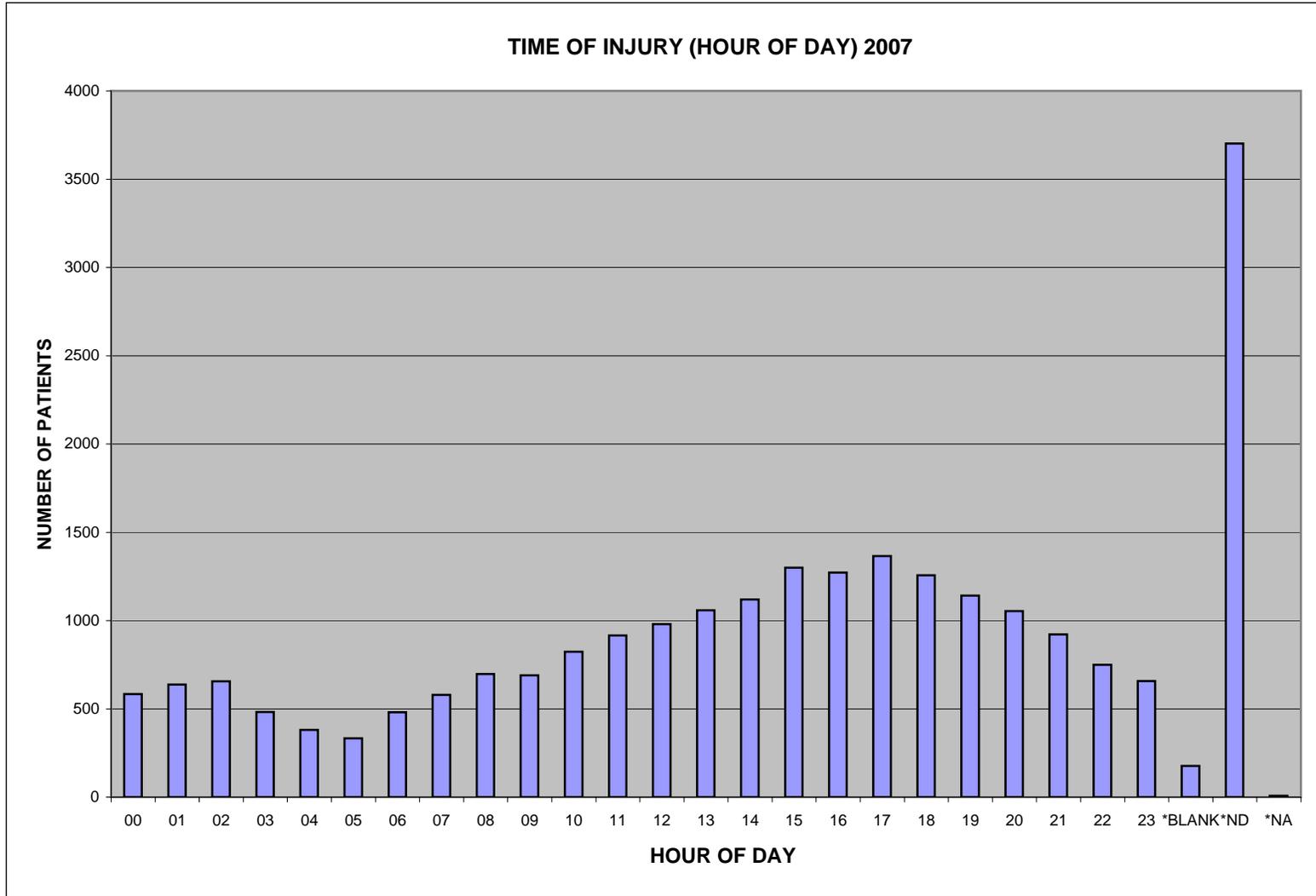
Mean = 34
Median = 30



AGE**	NUMBER	PERCENT
<1	134	0.56
1-4	663	2.76
5-9	649	2.70
10-14	1022	4.25
15-19	3344	13.92
20-24	3490	14.53
25-34	4567	19.01
35-44	3402	14.16
45-54	2939	12.23
55-64	1784	7.43
65-74	965	4.02
75-84	734	3.06
>=85	316	1.32
*BLANK	8	0.03
*ND	5	0.02
TOTAL	24022	100.00

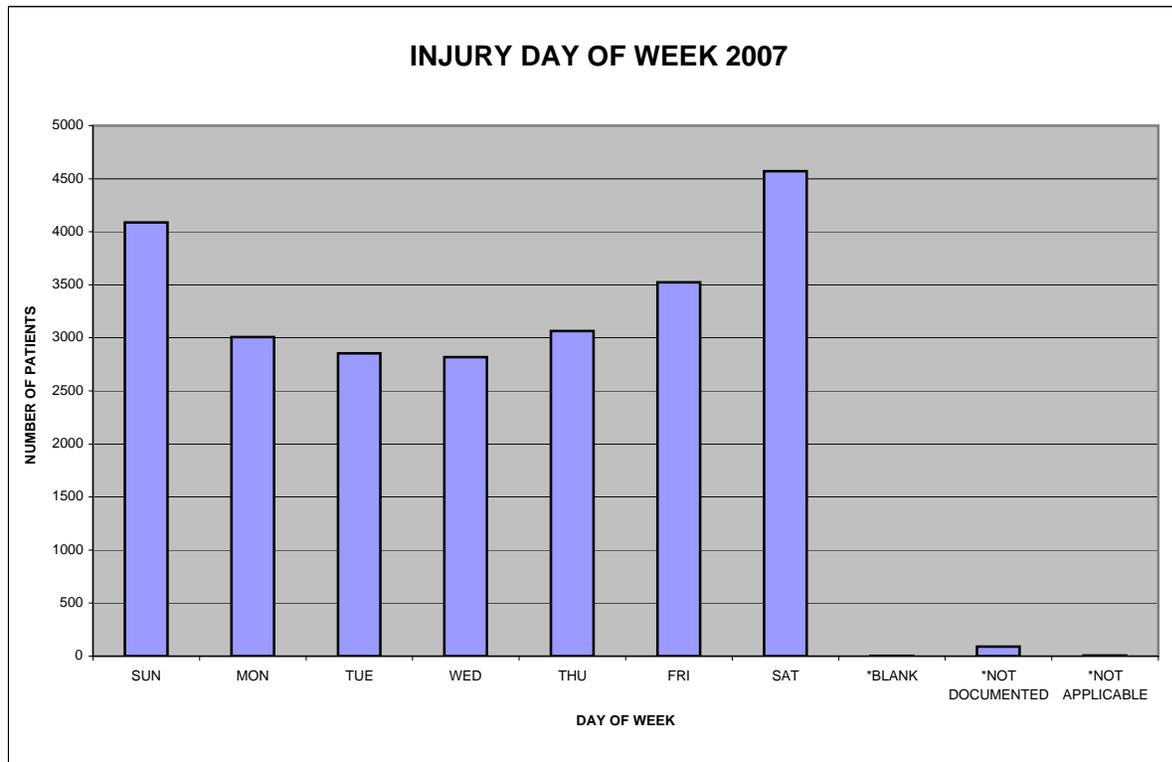
****Note: Calculated based on the ASTR Trauma One "Age (Years)" field.**

INJURY TIME OF DAY 2007



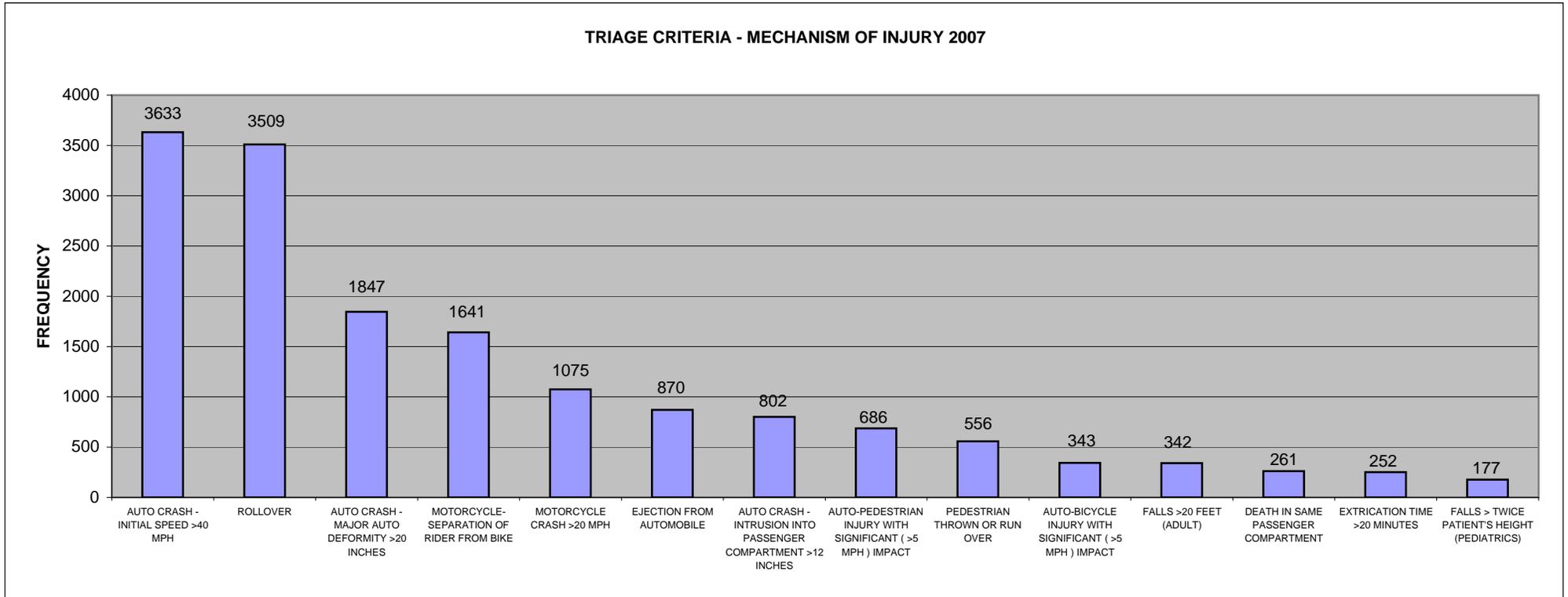
TIME OF INJURY - HOUR OF DAY	NUMBER	PERCENT
00	583	2.43
01	637	2.65
02	656	2.73
03	482	2.01
04	381	1.59
05	334	1.39
06	481	2.00
07	579	2.41
08	697	2.90
09	690	2.87
10	823	3.43
11	915	3.81
12	980	4.08
13	1059	4.41
14	1120	4.66
15	1300	5.41
16	1272	5.30
17	1366	5.69
18	1256	5.23
19	1142	4.75
20	1054	4.39
21	922	3.84
22	750	3.12
23	657	2.73
*BLANK	177	0.74
*ND	3702	15.41
*NA	7	0.03
TOTAL	24022	100.00

INJURY DAY OF WEEK 2007



INJURY DATE - DAY OF WEEK	NUMBER	PERCENT
SUN	4089	17.02
MON	3008	12.52
TUE	2853	11.88
WED	2818	11.73
THU	3064	12.75
FRI	3522	14.66
SAT	4570	19.02
*BLANK	3	0.01
*NOT DOCUMENTED	90	0.37
*NOT APPLICABLE	5	0.02
TOTAL	24022	100.00

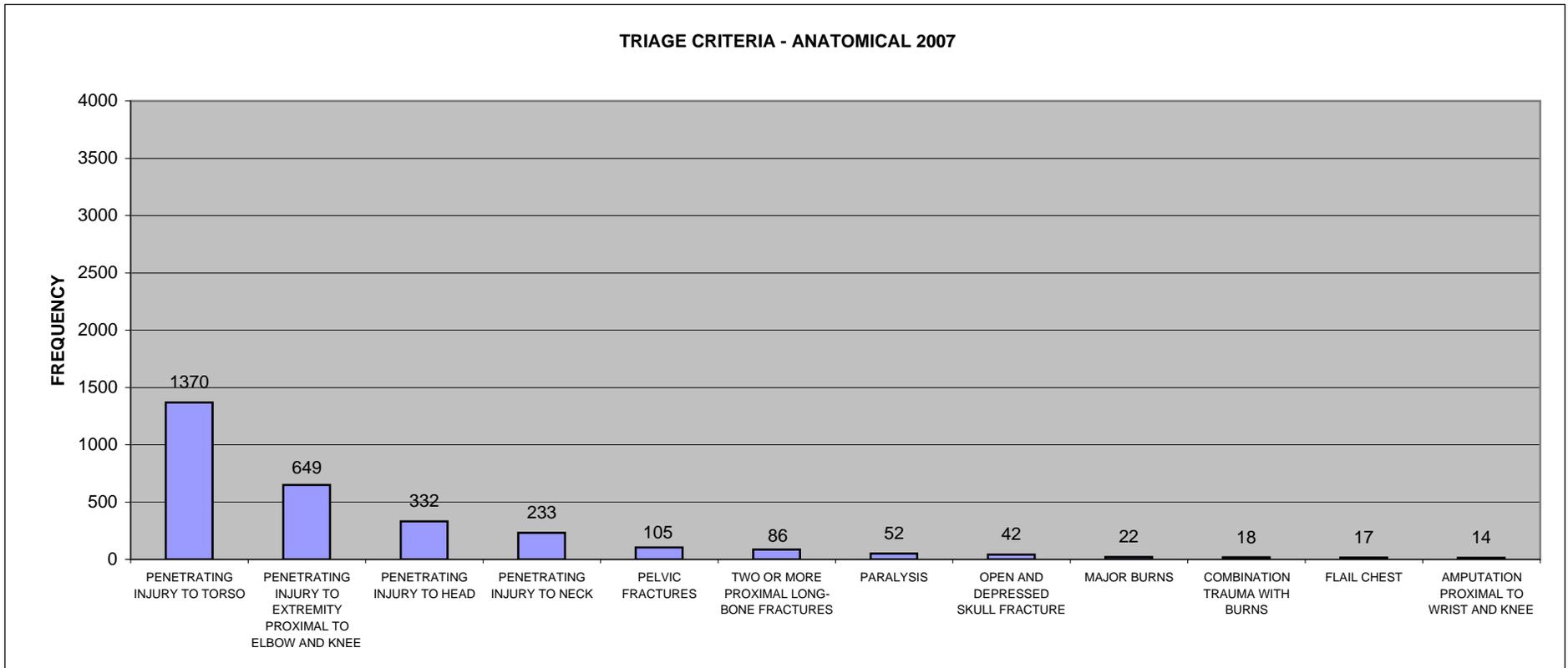
TRIAGE CRITERIA - MECHANISM OF INJURY 2007



TRIAGE CRITERIA	FREQUENCY
AUTO CRASH - INITIAL SPEED >40 MPH	3633
ROLLOVER	3509
AUTO CRASH - MAJOR AUTO DEFORMITY >20 INCHES	1847
MOTORCYCLE-SEPARATION OF RIDER FROM BIKE	1641
MOTORCYCLE CRASH >20 MPH	1075
EJECTION FROM AUTOMOBILE	870
AUTO CRASH - INTRUSION INTO PASSENGER COMPARTMENT >12 INCHES	802
AUTO-PEDESTRIAN INJURY WITH SIGNIFICANT (>5 MPH) IMPACT	686
PEDESTRIAN THROWN OR RUN OVER	556
AUTO-BICYCLE INJURY WITH SIGNIFICANT (>5 MPH) IMPACT	343
FALLS >20 FEET (ADULT)	342
DEATH IN SAME PASSENGER COMPARTMENT	261
EXTRICATION TIME >20 MINUTES	252
FALLS > TWICE PATIENT'S HEIGHT (PEDIATRICS)	177
TOTAL	15994

Note: Total number of Triage Criteria = 33310
The Triage Criteria field allows for multiple entries of triage criteria for each patient.

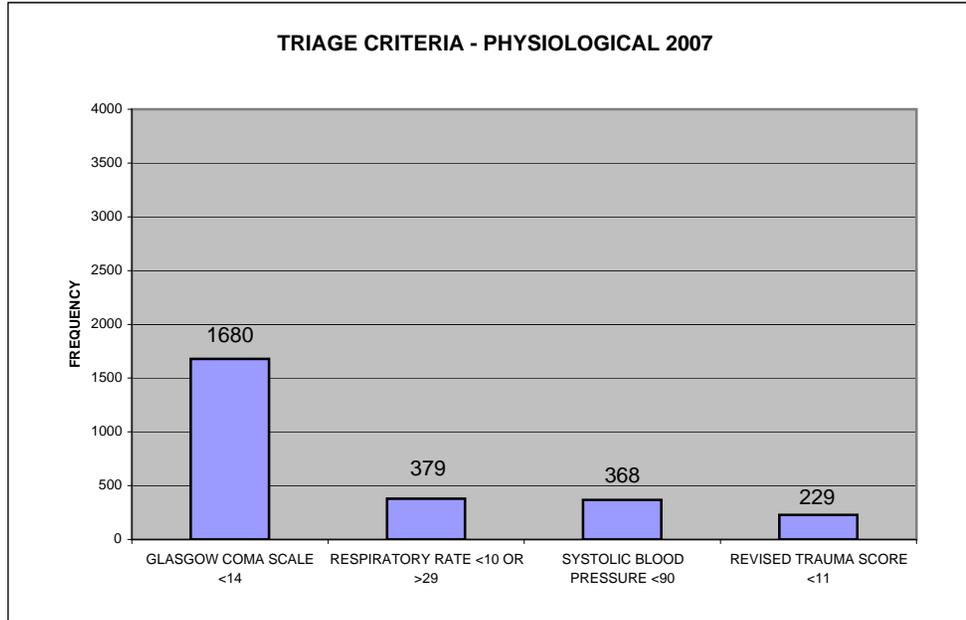
TRIAGE CRITERIA - ANATOMICAL 2007



TRIAGE CRITERIA	FREQUENCY
PENETRATING INJURY TO TORSO	1370
PENETRATING INJURY TO EXTREMITY PROXIMAL TO ELBOW AND KNEE	649
PENETRATING INJURY TO HEAD	332
PENETRATING INJURY TO NECK	233
PELVIC FRACTURES	105
TWO OR MORE PROXIMAL LONG-BONE FRACTURES	86
PARALYSIS	52
OPEN AND DEPRESSED SKULL FRACTURE	42
MAJOR BURNS	22
COMBINATION TRAUMA WITH BURNS	18
FLAIL CHEST	17
AMPUTATION PROXIMAL TO WRIST AND KNEE	14
TOTAL	2940

Note: Total number of Triage Criteria = 33310
The Triage Criteria field allows for multiple entries of triage criteria for each patient.

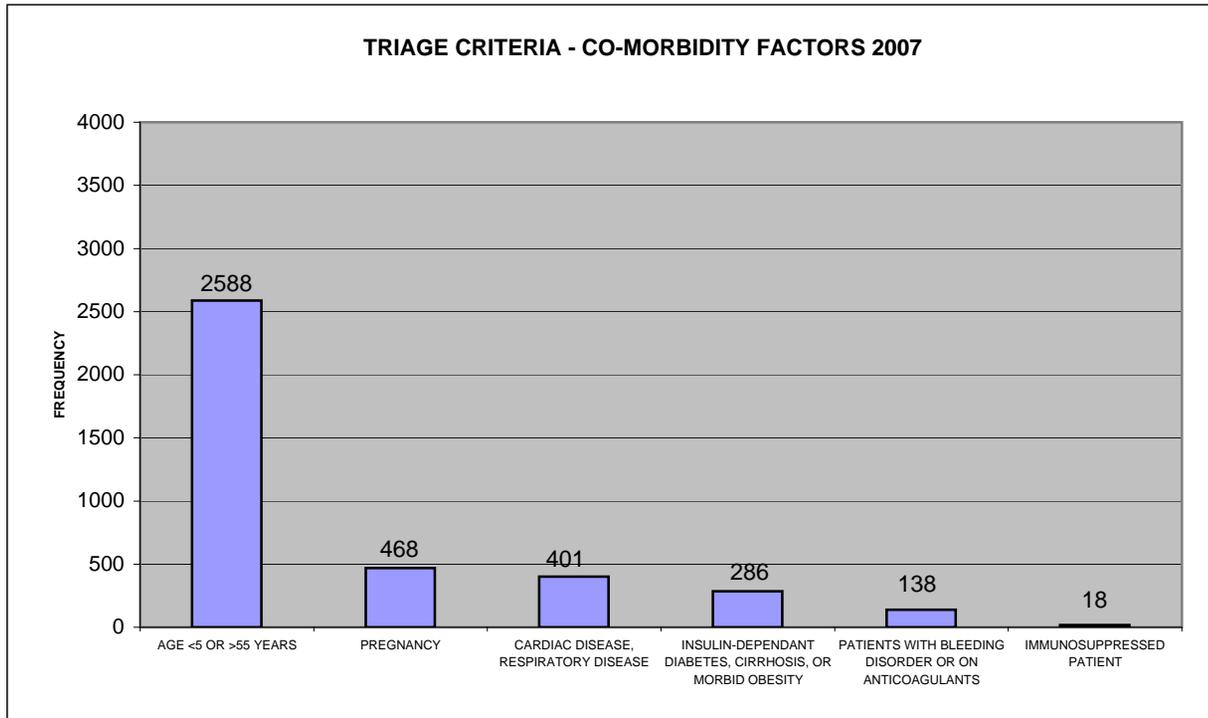
TRIAGE CRITERIA - PHYSIOLOGICAL 2007



TRIAGE CRITERIA	FREQUENCY
GLASGOW COMA SCALE <14	1680
RESPIRATORY RATE <10 OR >29	379
SYSTOLIC BLOOD PRESSURE <90	368
REVISED TRAUMA SCORE <11	229
TOTAL	2656

Note: Total number of Triage Criteria = 33310
The Triage Criteria field allows for multiple entries of triage criteria for each patient.

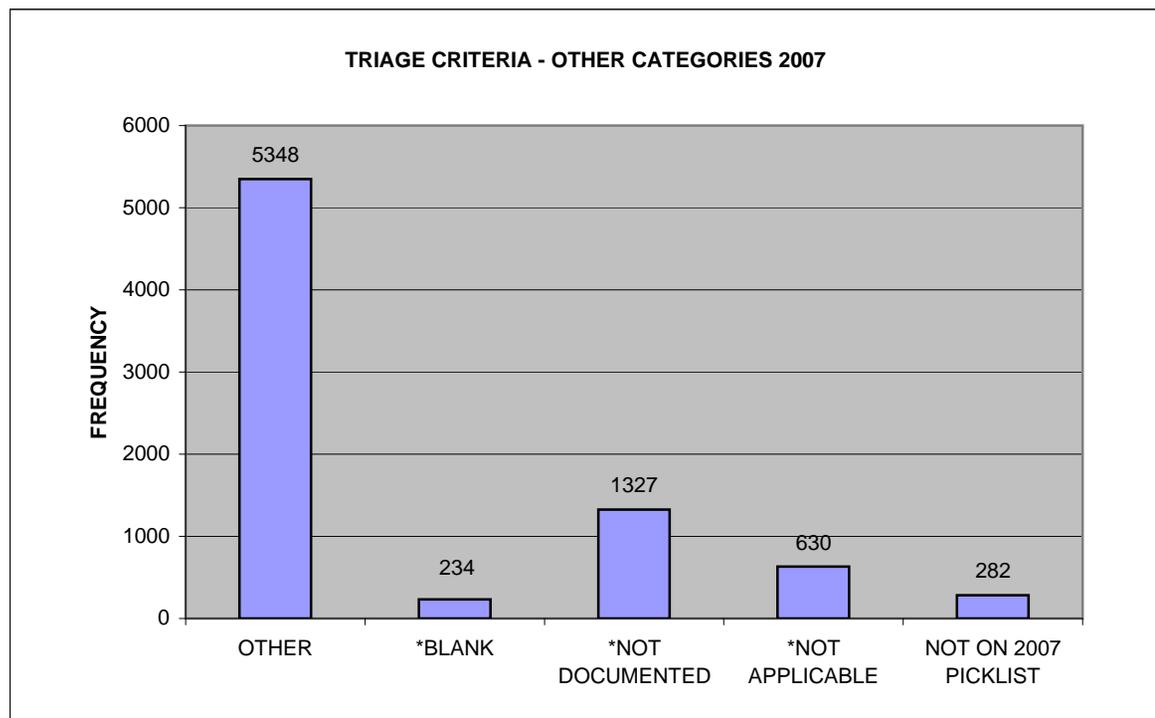
TRIAGE CRITERIA - CO-MORBIDITY FACTORS 2007



TRIAGE CRITERIA	FREQUENCY
AGE <5 OR >55 YEARS	2588
PREGNANCY	468
CARDIAC DISEASE, RESPIRATORY DISEASE	401
INSULIN-DEPENDANT DIABETES, CIRRHOSIS, OR MORBID OBESITY	286
PATIENTS WITH BLEEDING DISORDER OR ON ANTICOAGULANTS	138
IMMUNOSUPPRESSED PATIENT	18
TOTAL	3899

Note: Total number of Triage Criteria = 33310
The Triage Criteria field allows for multiple entries of triage criteria for each patient.

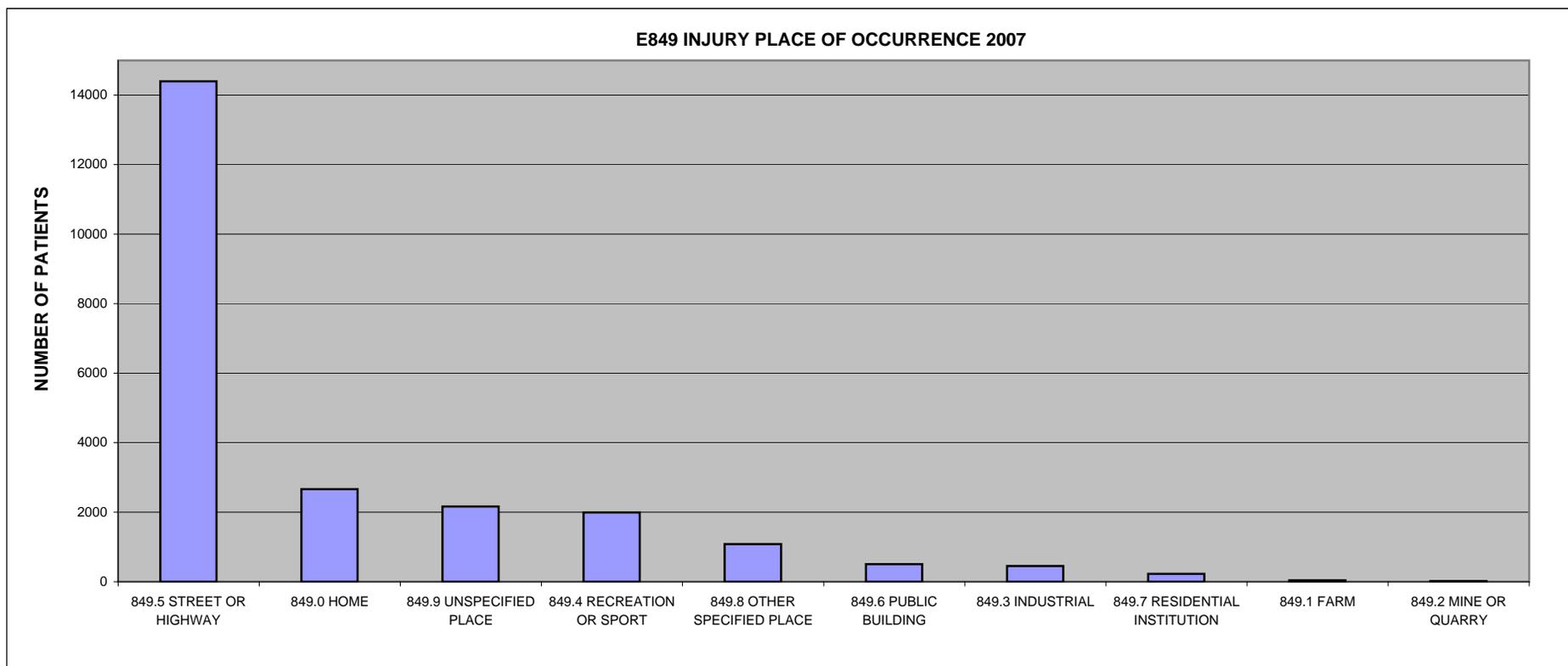
TRIAGE CRITERIA - OTHER CATEGORIES 2007



TRIAGE CRITERIA	FREQUENCY
OTHER	5348
*BLANK	234
*NOT DOCUMENTED	1327
*NOT APPLICABLE	630
NOT ON 2007 PICKLIST	282
TOTAL	7821

Note: Total number of Triage Criteria = 33310
The Triage Criteria field allows for multiple entries
of triage criteria for each patient.

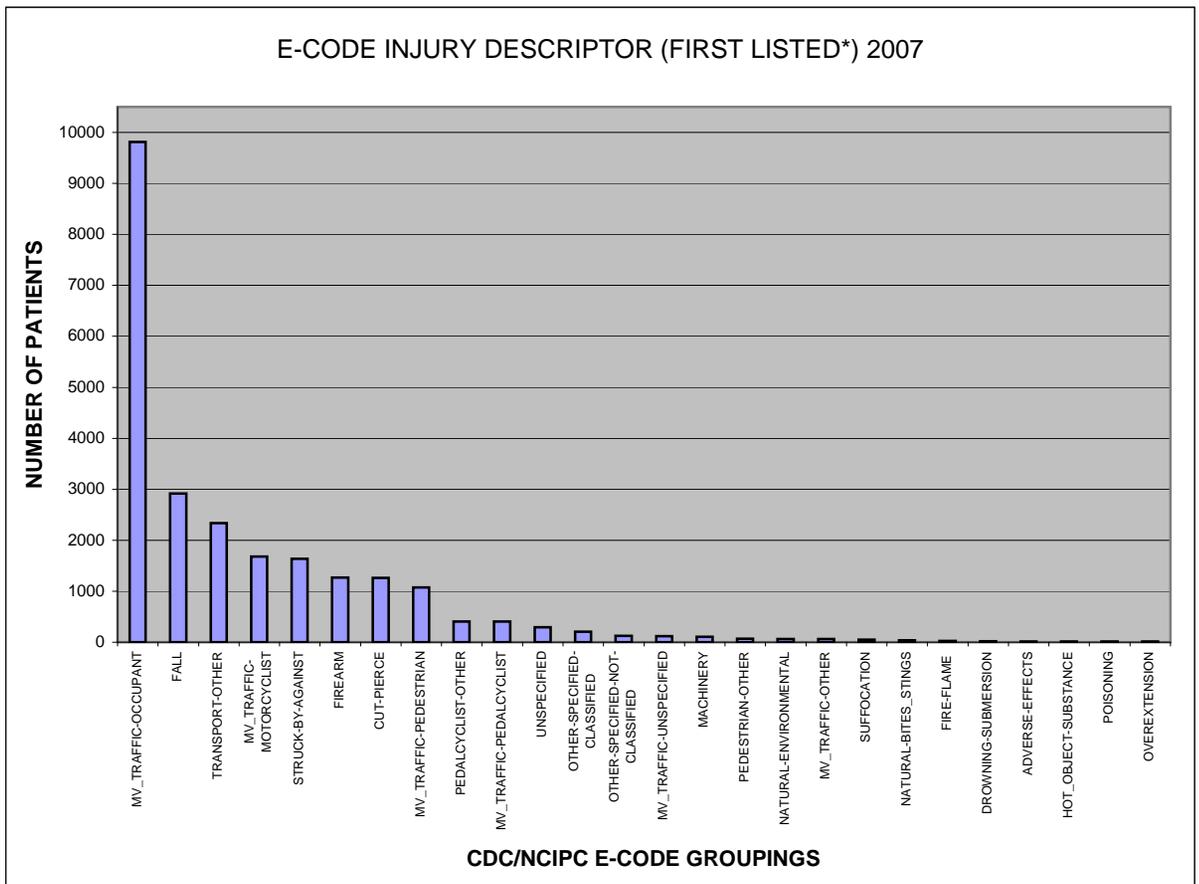
INJURY PLACE OF OCCURRENCE 2007



E849 INJURY PLACE OF OCCURRENCE	NUMBER	PERCENT
849.5 STREET OR HIGHWAY	14401	59.95
849.0 HOME	2661	11.08
849.9 UNSPECIFIED PLACE	2166	9.02
849.4 RECREATION OR SPORT	1994	8.30
849.8 OTHER SPECIFIED PLACE	1083	4.51
849.6 PUBLIC BUILDING	506	2.11
849.3 INDUSTRIAL	452	1.88
849.7 RESIDENTIAL INSTITUTION	228	0.95
849.1 FARM	39	0.16
849.2 MINE OR QUARRY	13	0.05
*BLANK	9	0.04
*NOT DOCUMENTED	461	1.92
*NOT APPLICABLE	6	0.02
*NOT ON 2007 PICKLIST	3	0.01
TOTAL	24022	100.00

ICD-9-CM PRIMARY E-CODE INJURY DESCRIPTOR 2007

CDC/NCIPC E-CODE MECHANISM GROUPINGS	NUMBER
MV_TRAFFIC-OCCUPANT	9814
FALL	2920
TRANSPORT-OTHER	2336
MV_TRAFFIC-MOTORCYCLIST	1678
STRUCK-BY-AGAINST	1634
FIREARM	1265
CUT-PIERCE	1259
MV_TRAFFIC-PEDESTRIAN	1075
PEDALCYCLIST-OTHER	409
MV_TRAFFIC-PEDALCYCLIST	407
UNSPECIFIED	291
OTHER-SPECIFIED-CLASSIFIED	206
OTHER-SPECIFIED-NOT-CLASSIFIED	127
MV_TRAFFIC-UNSPECIFIED	117
MACHINERY	109
PEDESTRIAN-OTHER	70
NATURAL-ENVIRONMENTAL	63
MV_TRAFFIC-OTHER	61
SUFFOCATION	49
NATURAL-BITES_STINGS	35
FIRE-FLAME	25
DROWNING-SUBMERSION	20
ADVERSE-EFFECTS	13
HOT_OBJECT-SUBSTANCE	12
POISONING	10
OVEREXTENSION	10
*NOT ON CDC LIST	7
TOTAL	24022



Categories were adapted from 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>. Categories labeled as MV_TRAFFIC refer to traffic-related motor vehicle events occurring on a street or highway. Non-traffic motor vehicle events were included in the TRANSPORT-OTHER category. The category MV_TRAFFIC-OTHER is not on the CDC matrix (due to small numbers) but was created for ASTR reporting so that E-codes would sum to the total record count. MV_TRAFFIC-OTHER in this report includes occupant of streetcar, rider of animal and other specified person.

*NOTE: This report is based on the first E-code entered. ASTR 2007 data required only the primary E-code, but some facilities collected multiple E-codes. Registrars were instructed to enter the primary external cause of injury first.

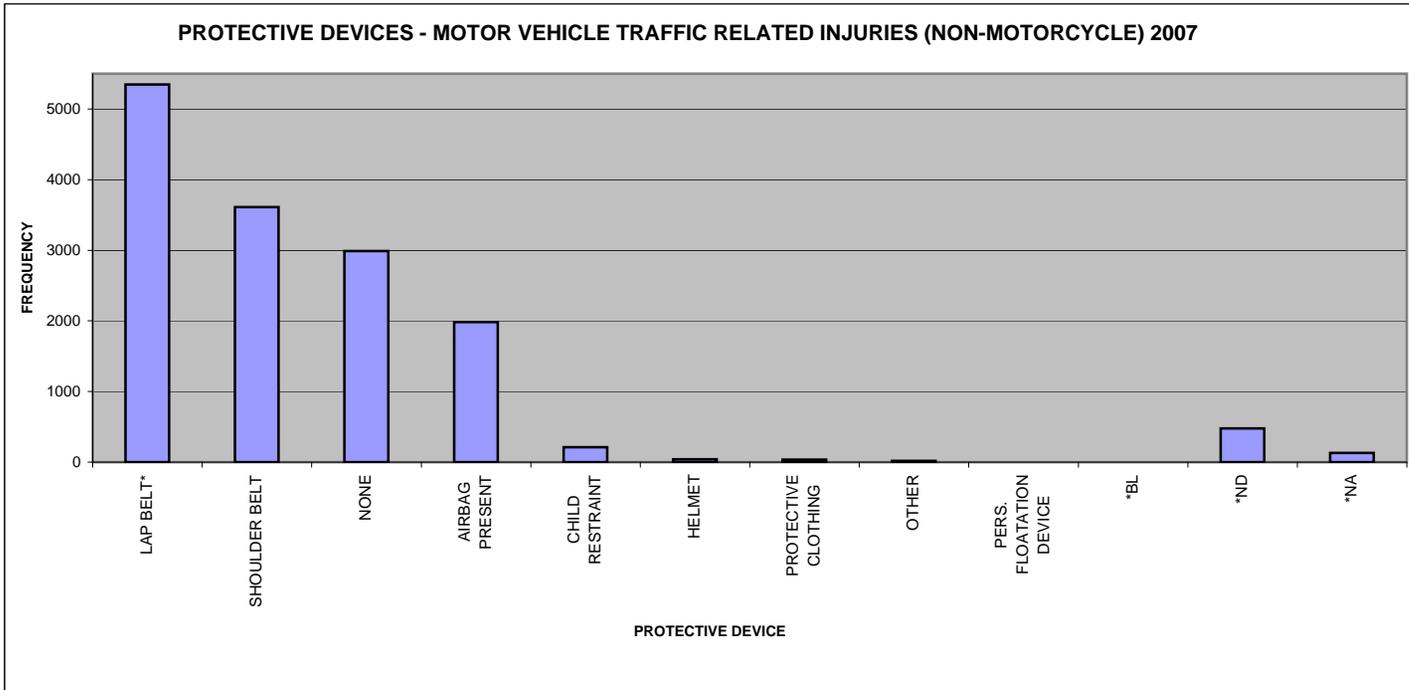
**NOT ON CDC LIST refers to E-codes that are BLANK, *ND, *NA or invalid entry.

ICD9-CM INJURY DIAGNOSIS 2007 TOTAL COUNT

Injury Diagnosis - ICD9 Code	Frequency
910-919 SUPERFICIAL INJURY	11314
870-879 OPEN WOUND OF HEAD, NECK, AND TRUNK	9770
805-809 FRACTURE OF NECK AND TRUNK	9521
920-924 CONTUSION WITH INTACT SKIN SURFACE	8855
850-854 INTRACRANIAL INJURY, EXCLUDING THOSE WITH SKULL FRACTURES	8001
860-869 INTERNAL INJURY OF CHEST, ABDOMEN, AND PELVIS	6716
800-804 FRACTURE OF SKULL	6485
810-819 FRACTURE OF UPPER LIMB	4945
820-829 FRACTURE OF LOWER LIMB	4635
840-848 SPRAINS AND STRAINS OF JOINTS AND ADJACENT MUSCLES	3296
958-959 CERTAIN TRAUMATIC COMPLICATIONS AND UNSPECIFIED INJURIES	2996
880-887 OPEN WOUND OF UPPER LIMB	2735
890-897 OPEN WOUND OF LOWER LIMB	1662
830-839 DISLOCATION	968
900-904 INJURY TO BLOOD VESSELS	768
950-957 INJURY TO NERVES AND SPINAL CORD	468
940-949 BURNS	241
996-999 COMPLICATIONS OF SURGICAL AND MEDICAL CARE, NOT ELSEWHERE CLASSIFIED	159
925-929 CRUSHING INJURY	133
990-995 OTHER AND UNSPECIFIED EFFECTS OF EXTERNAL CAUSES	124
930-939 EFFECTS OF FOREIGN BODY ENTERING THROUGH ORIFICE	36
905-909 LATE EFFECTS OF INJURIES, POISONINGS, TOXIC EFFECTS, AND OTHER EXTERNAL CAUSES	23
960-979 POISONING BY DRUGS, MEDICINAL, AND BIOLOGICAL SUBSTANCES	12
980-989 TOXIC EFFECTS OF SUBSTANCES CHIEFLY NON-MEDICINAL AS TO SOURCE	9
*BLANK	210
*NOT DOCUMENTED	219
*NOT APPLICABLE	1136
Total	85437

****Note:** The ICD-9-CM diagnosis field allows for entry of multiple diagnoses per patient. The total in this report is based on the occurrence of all ICD-9-CM final diagnoses entered and is not a total patient count. State picklist includes only ICD-9-CM N-codes from 800-999.

PROTECTIVE DEVICES USED IN UNINTENTIONAL MOTOR VEHICLE TRAFFIC RELATED INJURIES -MOTOR VEHICLE OTHER THAN MOTORCYCLE- 2007

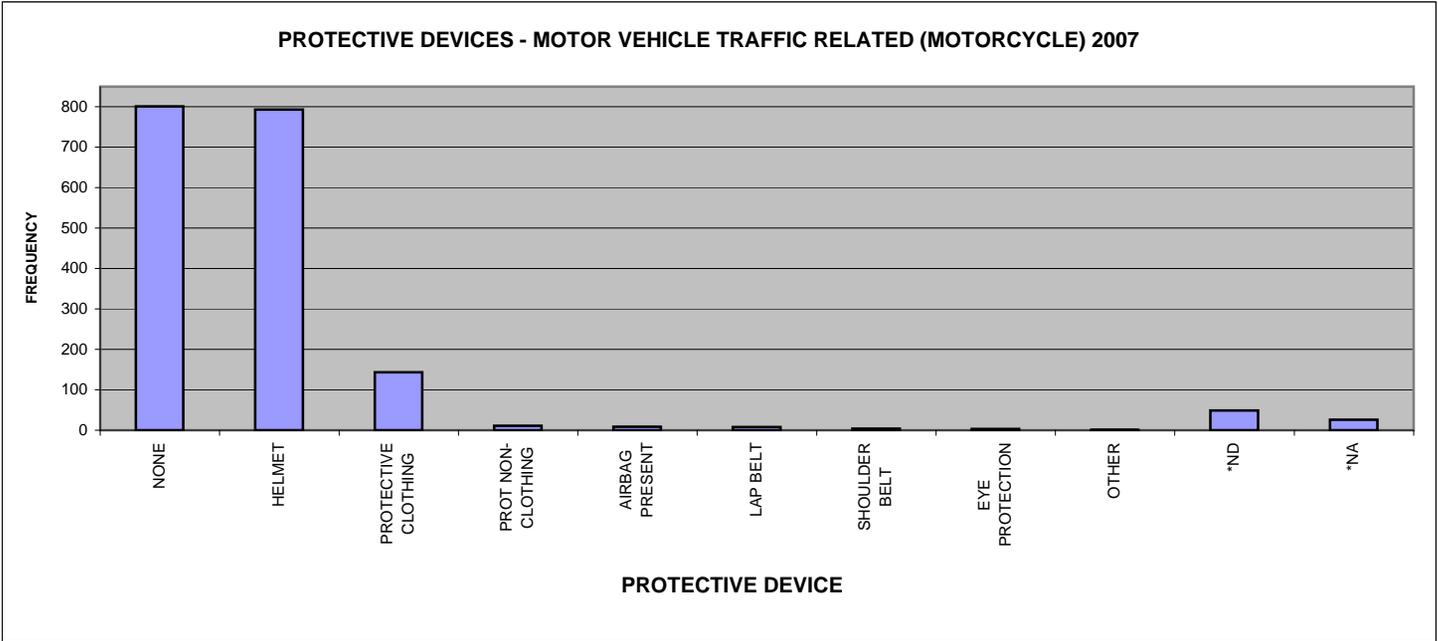


PROTECTIVE DEVICE	FREQUENCY
LAP BELT*	5346
SHOULDER BELT	3613
NONE	2991
AIRBAG PRESENT	1984
CHILD RESTRAINT	211
HELMET	41
PROTECTIVE CLOTHING	38
OTHER	19
PERS. FLOATATION DEVICE	2
*BL	1
*ND	476
*NA	132
TOTAL DEVICES	14854

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.

*Registrars were instructed to code as LAP BELT if the EMS run sheet indicated "Restrained" and did not specify the type of belt used.

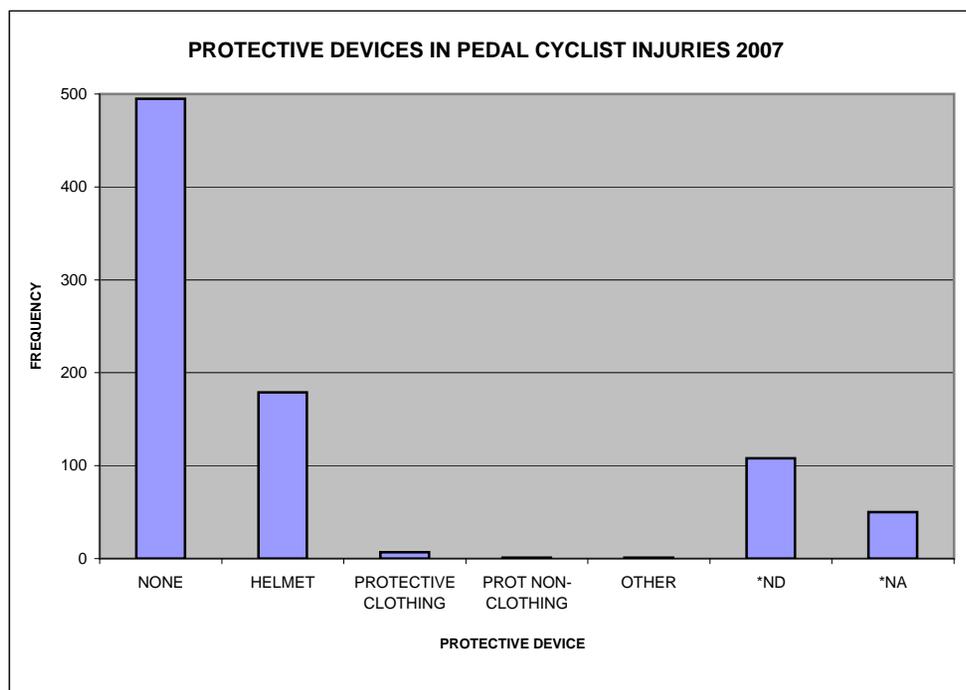
PROTECTIVE DEVICES USED IN UNINTENTIONAL MOTOR VEHICLE TRAFFIC RELATED INJURIES - MOTORCYCLE DRIVER OR PASSENGER- 2007



PROTECTIVE DEVICE	FREQUENCY
NONE	801
HELMET	793
PROTECTIVE CLOTHING	143
PROT NON-CLOTHING	11
AIRBAG PRESENT	9
LAP BELT	8
SHOULDER BELT	4
EYE PROTECTION	3
OTHER	1
*ND	49
*NA	26
TOTAL DEVICES	1848

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.

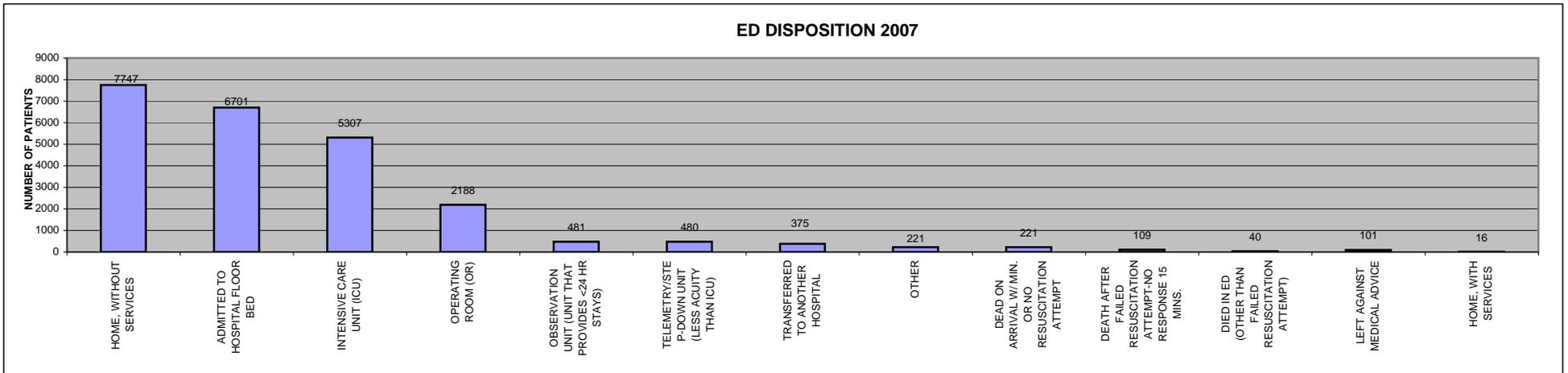
PROTECTIVE DEVICES USED IN PEDAL CYCLIST INJURIES 2007



PROTECTIVE DEVICE	FREQUENCY
NONE	495
HELMET	179
PROTECTIVE CLOTHING	7
PROT NON-CLOTHING	1
OTHER	1
*ND	108
*NA	50
TOTAL DEVICES	841

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). This report include traffic-related and non-traffic related pedal cycle / bicycle accidents. 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 2007

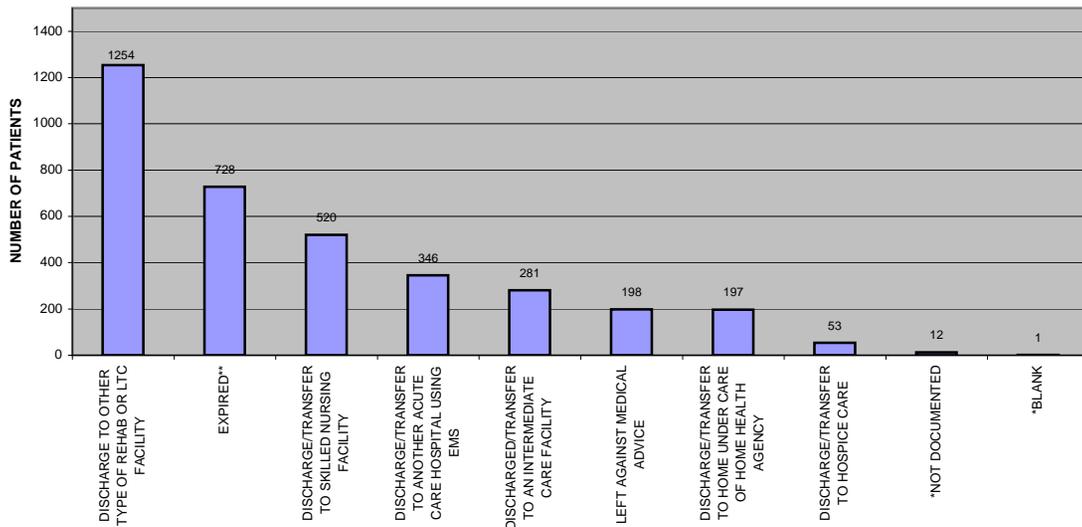


ED DISPOSITION	NUMBER	PERCENT
HOME, WITHOUT SERVICES	7747	32.25
ADMITTED TO HOSPITAL FLOOR BED	6701	27.90
INTENSIVE CARE UNIT (ICU)	5307	22.09
OPERATING ROOM (OR)	2188	9.11
OBSERVATION UNIT (UNIT THAT PROVIDES <24 HR STAYS)	481	2.00
TELEMETRY/STEP-DOWN UNIT (LESS ACUITY THAN ICU)	480	2.00
TRANSFERRED TO ANOTHER HOSPITAL	375	1.56
OTHER	221	0.92
DEAD ON ARRIVAL W/ MIN. OR NO RESUSCITATION ATTEMPT	221	0.92
DEATH AFTER FAILED RESUSCITATION ATTEMPT-NO RESPONSE 15 MINS.	109	0.45
DIED IN ED (OTHER THAN FAILED RESUSCITATION ATTEMPT)	40	0.17
LEFT AGAINST MEDICAL ADVICE	101	0.42
HOME, WITH SERVICES	16	0.07
*BLANK	11	0.05
*NOT DOCUMENTED	1	0.00
*NOT APPLICABLE	23	0.10
TOTAL	24022	100.00

HOSPITAL DISCHARGE DISPOSITION 2007

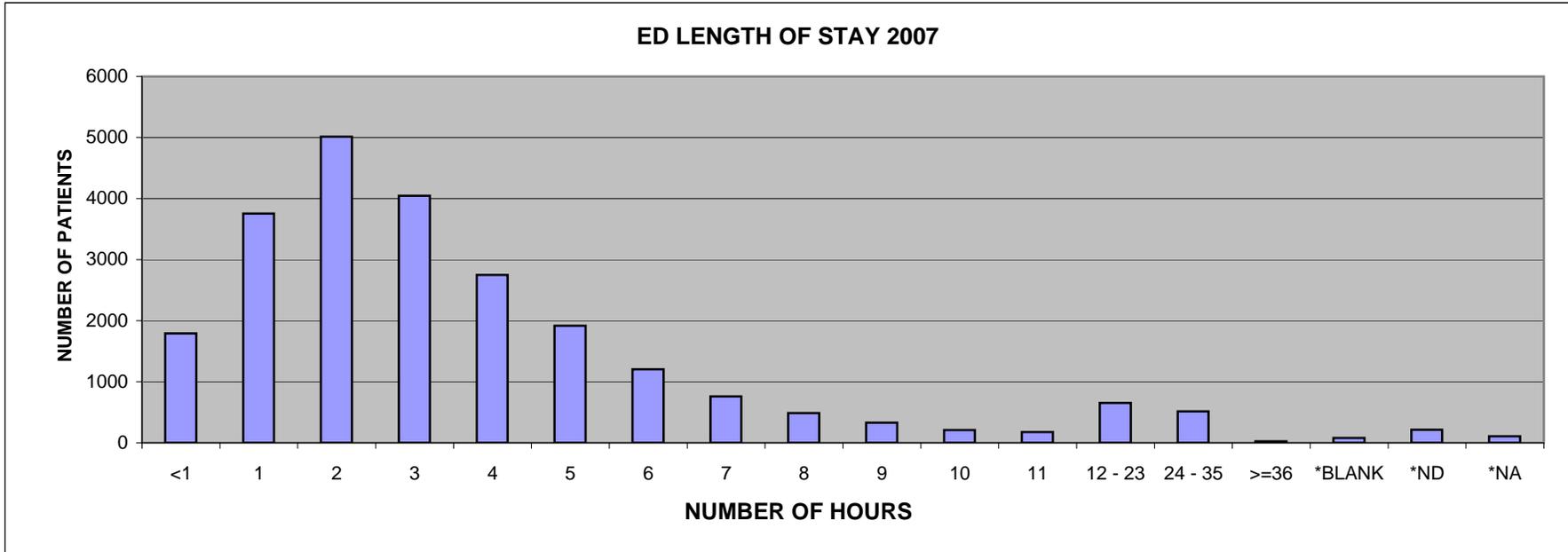
HOSPITAL DISCHARGE DISPOSITION 2007 - OTHER THAN HOME NO SERVICES OR *NA

Dispositions not represented on chart below:
HOME, NO SERVICES = 16,519 records
*NOT APPLICABLE = 3,913 records



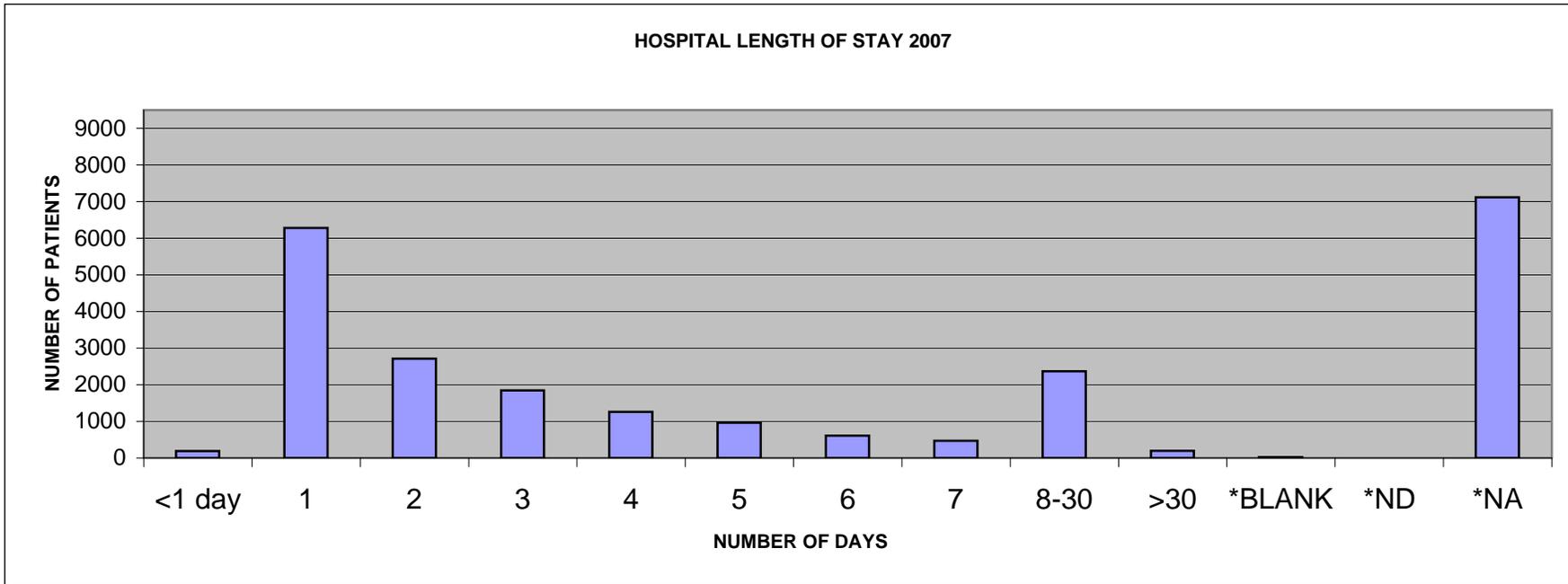
DISCHARGE DISPOSITION	NUMBER	PERCENT
DISCHARGED HOME WITH NO HOME SERVICES	16519	68.77
*NOT APPLICABLE	3913	16.29
DISCHARGE TO OTHER TYPE OF REHAB OR LTC FACILITY	1254	5.22
EXPIRED**	728	3.03
DISCHARGE/TRANSFER TO SKILLED NURSING FACILITY	520	2.16
DISCHARGE/TRANSFER TO ANOTHER ACUTE CARE HOSPITAL USING EMS	346	1.44
DISCHARGE/TRANSFER TO AN INTERMEDIATE CARE FACILITY	281	1.17
LEFT AGAINST MEDICAL ADVICE	198	0.82
DISCHARGE/TRANSFER TO HOME UNDER CARE OF HOME HEALTH AGENCY	197	0.82
DISCHARGE/TRANSFER TO HOSPICE CARE	53	0.22
*NOT DOCUMENTED	12	0.05
*BLANK	1	0.00
TOTAL	24022	100.00

LENGTH OF STAY (HOURS) IN EMERGENCY DEPARTMENT 2007



LENGTH OF STAY (HOURS) IN ED	NUMBER	PERCENT
<1	1792	7.46
1	3756	15.64
2	5012	20.86
3	4044	16.83
4	2748	11.44
5	1917	7.98
6	1205	5.02
7	761	3.17
8	486	2.02
9	328	1.37
10	209	0.87
11	174	0.72
12 - 23	652	2.71
24 - 35	515	2.14
>=36	25	0.10
*BLANK	81	0.34
*ND	211	0.88
*NA	106	0.44
TOTAL	24022	100.00

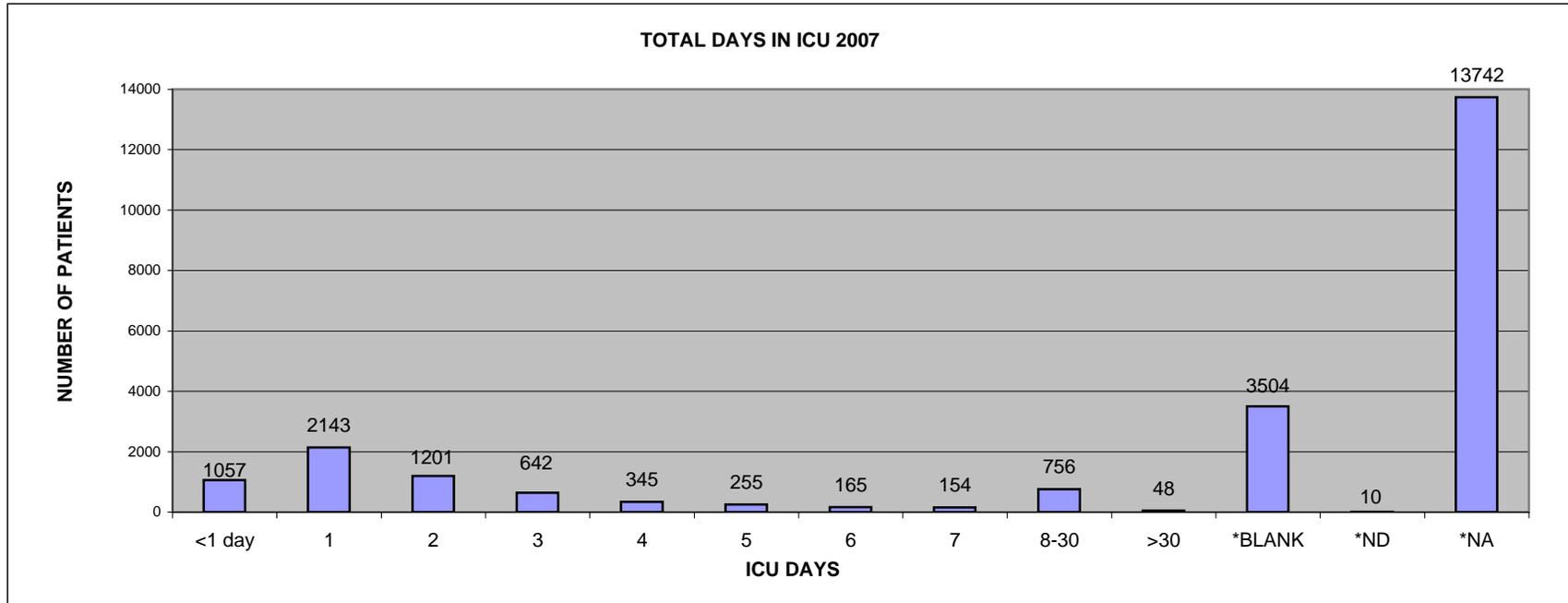
HOSPITAL LENGTH OF STAY (DAYS) 2007*



HOSPITAL LENGTH OF STAY (DAYS) *	NUMBER	PERCENT
<1 day	184	0.77
1	6280	26.14
2	2712	11.29
3	1842	7.67
4	1259	5.24
5	961	4.00
6	611	2.54
7	468	1.95
8-30	2370	9.87
>30	194	0.81
*BLANK	25	0.10
*ND	2	0.01
*NA	7114	29.61
TOTAL	24022	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.

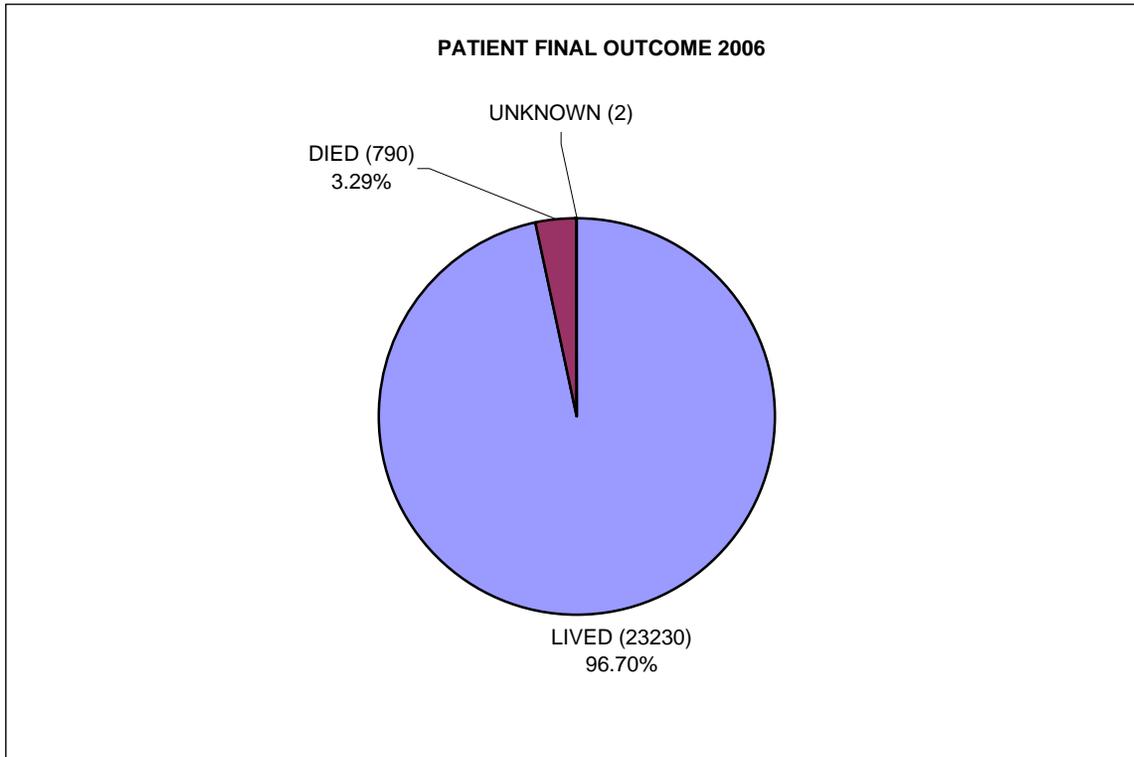
TOTAL DAYS IN ICU 2007



TOTAL DAYS IN ICU	NUMBER	PERCENT
<1 day	1057	4.40
1	2143	8.92
2	1201	5.00
3	642	2.67
4	345	1.44
5	255	1.06
6	165	0.69
7	154	0.64
8-30	756	3.15
>30	48	0.20
*BLANK	3504	14.59
*ND	10	0.04
*NA	13742	57.21
TOTAL*	24022	100.00

*Numbers based on ASTR Total ICU Days field as reported by hospitals. The ASTR database does not tracking a patient's ICU exit and re-entry so this is reported as an approximate total days spent in ICU.

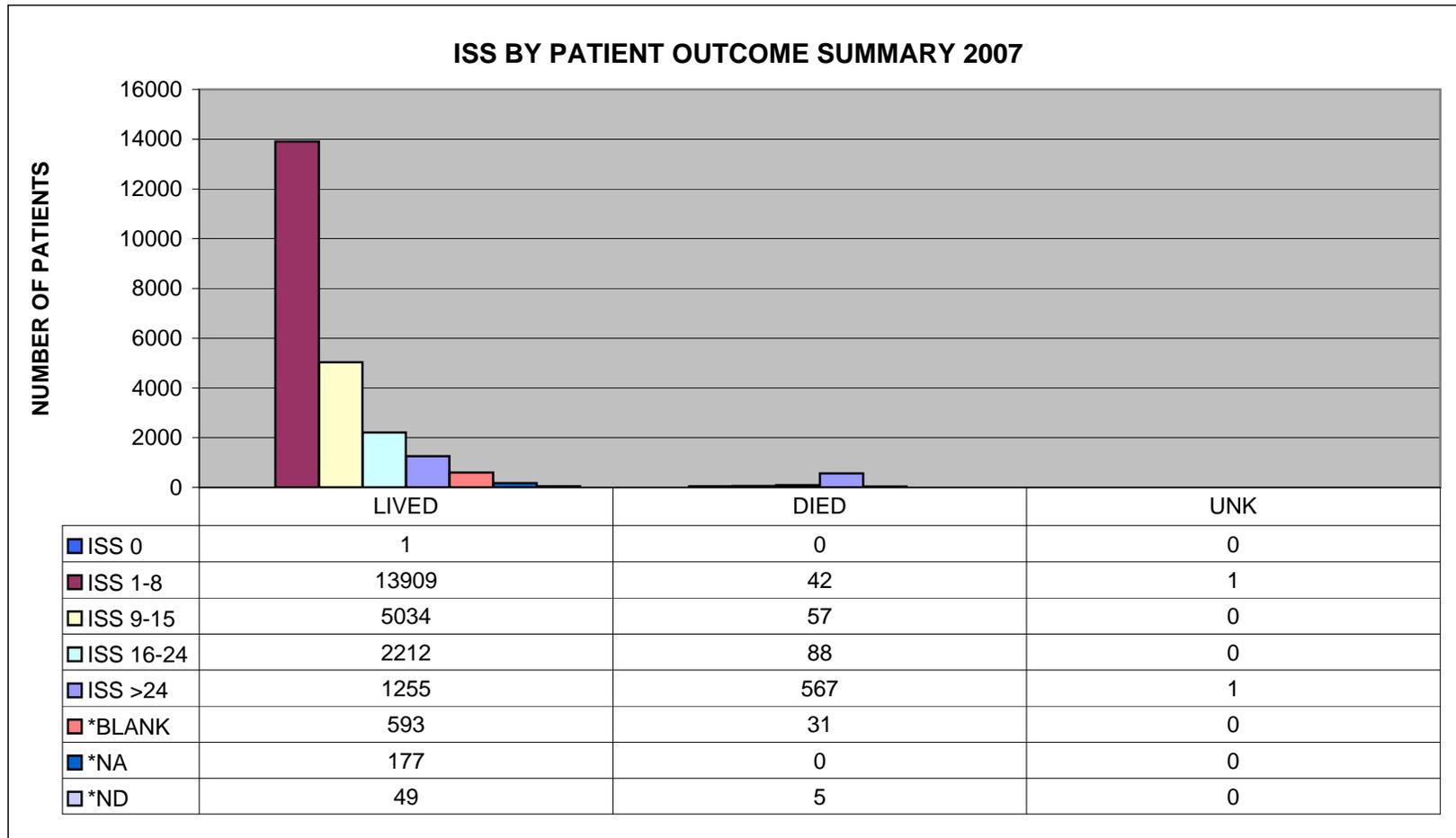
PATIENT FINAL OUTCOME 2007



OUTCOME	NUMBER	PERCENT
LIVED	23230	96.70
DIED *	790	3.29
UNKNOWN	2	0.01
TOTAL	24022	100.00

* Inclusion Criteria note: Total trauma deaths in ASTR do not include deaths at the pre-hospital scene, deaths of patients treated only at non-reporting facilities, and deaths after discharge from the final reporting hospital.

INJURY SEVERITY SCORE (ISS) BY PATIENT OUTCOME SUMMARY 2007



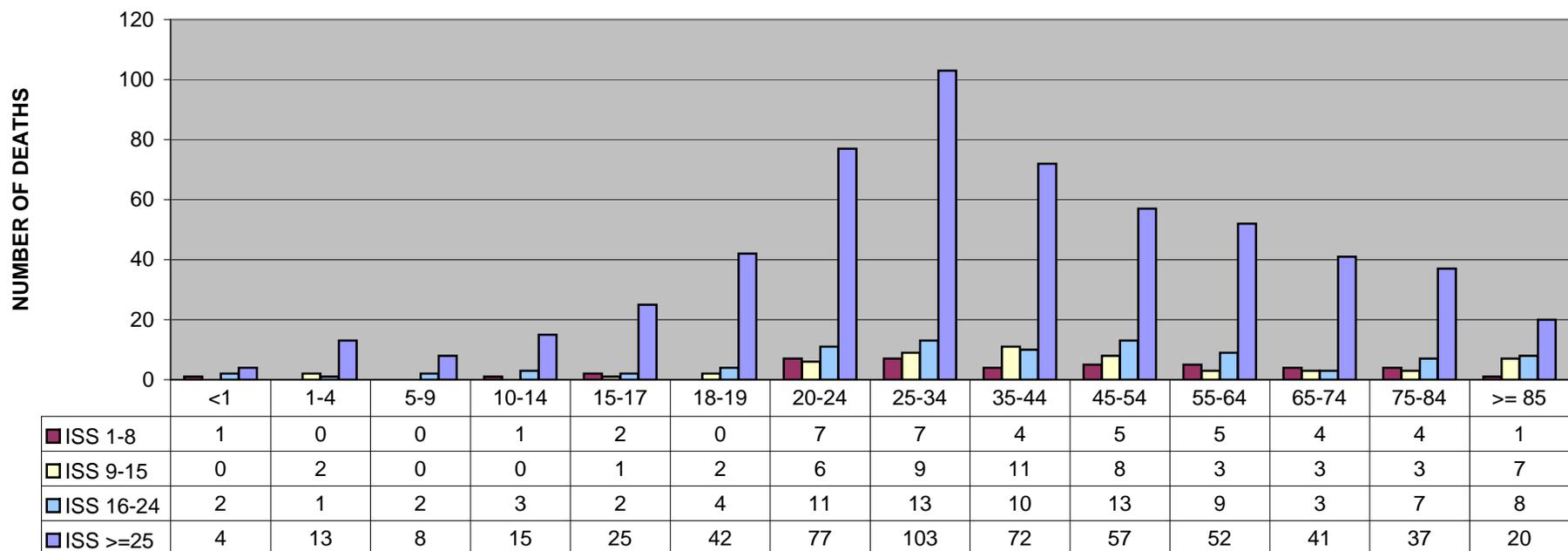
ISS	LIVED	DIED	UNK	TOTAL
ISS 0	1	0	0	1
ISS 1-8	13909	42	1	13952
ISS 9-15	5034	57	0	5091
ISS 16-24	2212	88	0	2300
ISS >24	1255	567	1	1823
*BLANK	593	31	0	624
*ND	49	5	0	54
*NA	177	0	0	177
TOTAL	23230	790	2	24022

This report contains data from both Level I Trauma Centers and non-designated facilities. Non-Level I hospitals are not required to collect the Abbreviated Injury Scale (AIS) codes typically used to calculate the ISS.

For this report, ISS scores from Level I facilities were calculated from AIS-98 codes and ISS scores from non-Level I facilities were calculated based on ICD-9-CM codes.

DEATHS BY INJURY SEVERITY SCORE AND AGE 2007

DEATHS BY ISS SCORE AND AGE 2007



AGE	ISS 1-8	ISS 9-15	ISS 16-24	ISS >=25	TOTAL
<1	1	0	2	4	7
1-4	0	2	1	13	16
5-9	0	0	2	8	10
10-14	1	0	3	15	19
15-17	2	1	2	25	30
18-19	0	2	4	42	48
20-24	7	6	11	77	101
25-34	7	9	13	103	132
35-44	4	11	10	72	97
45-54	5	8	13	57	83
55-64	5	3	9	52	69
65-74	4	3	3	41	51
75-84	4	3	7	37	51
>= 85	1	7	8	20	36
TOTAL	41	55	88	566	750*

*Patient count = 790 (deaths).

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

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

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For this report, ISS scores from Level I facilities were calculated from AIS-98 codes and ISS scores from non-Level I facilities were calculated based on ICD-9-CM codes.