

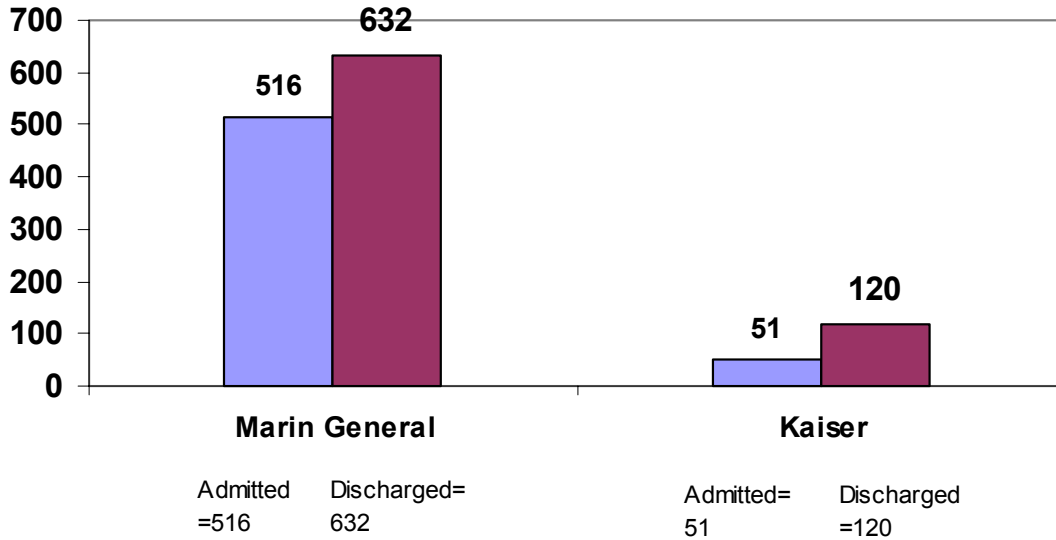
MARIN COUNTY ANNUAL TRAUMA REPORT: 2002

*Trauma Center Statistics are generated by the Collector Registry Software.
Volume Indicators*

Total trauma patient volume increased 12% in 2002 with the rate of admission and discharge staying relatively constant:

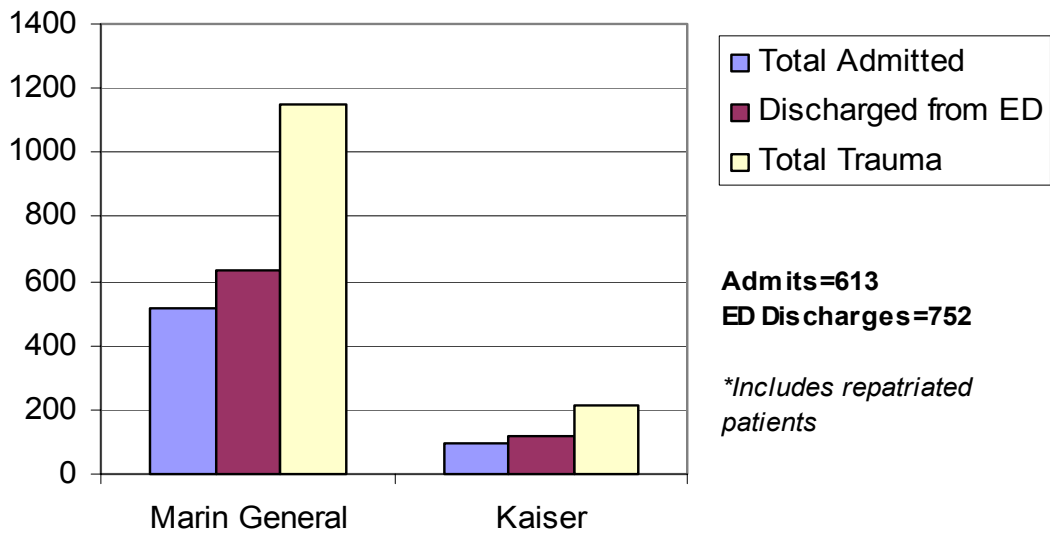
	Marin General Hospital		Kaiser Hospital		Total Marin County	
	2002	2001	2002	2001	2002	2001
Total Trauma Patients	1148	971	217	229	1365	1200
Admitted from ED Only	510	424	51	48	561	472
Interfacility Transfers in for Higher Level of Care	6	8	0	0	6	8
Total Admitted (ED +repatriated/ transferred)	516	432	97	84	613	516
% Admitted	45%	44%	45%	21%	45%	43%
Discharged From ED	632	539	120	145	752	684
Discharge Rate (%)	55%	56%	55%	63%	55%	57%
Deaths	17	15	4	0	21	15

Emergency Department Admissions/Discharges: 2002

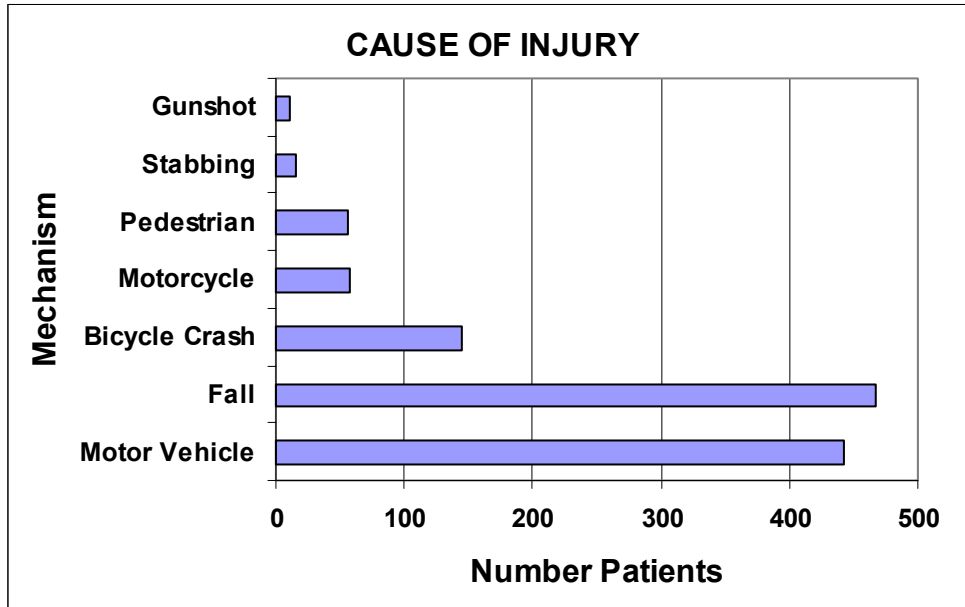


Percent patients admitted= 45%
Percent patients discharged= 55%

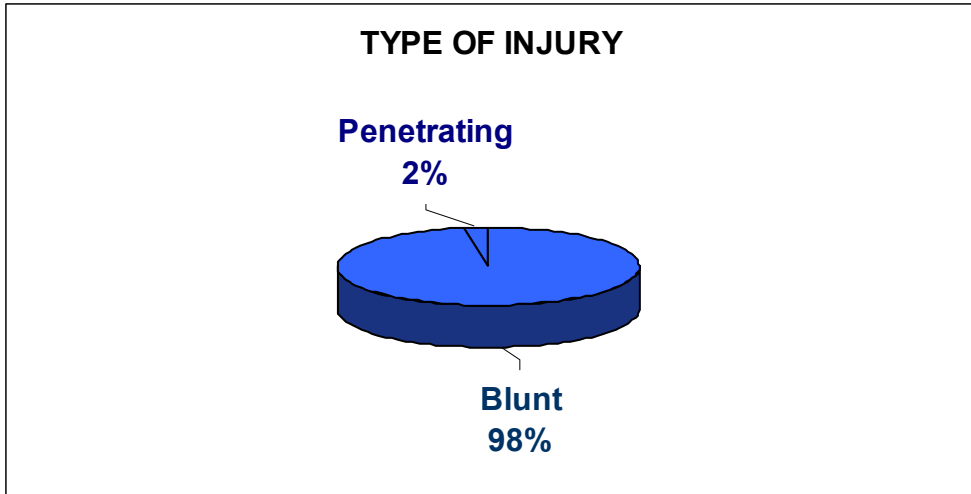
Trauma Patients 2002 N=1365



Causes of Injury



	Marin General	Kaiser	Marin County Total
Motor Vehicle	334	108	442
Motorcycle	39	19	58
Pedestrian	46	10	56
Gunshot	7	4	11
Stabbing	14	2	16
Fall	421	46	467
Other (*includes bicycle crashes)	288	34	322



Retrospective Trauma Triage Criteria Met

	Anatomic/Physiologic	High Energy Transfer	Other Mechanism of Injury
Marin General	93 (8%)	845 (74%)	166 (14%)
Kaiser Hospital	5	18	108
TOTAL	98	863	274

Demographics

Age	MGH	KSR	Total	% Total Reported
< 15 years	91	12	103	9%
15—55 years	562	140	702	59%
55 years	315	71	386	32%
Gender				
Male	691	129	820	60%
Female	458	94	552	40%

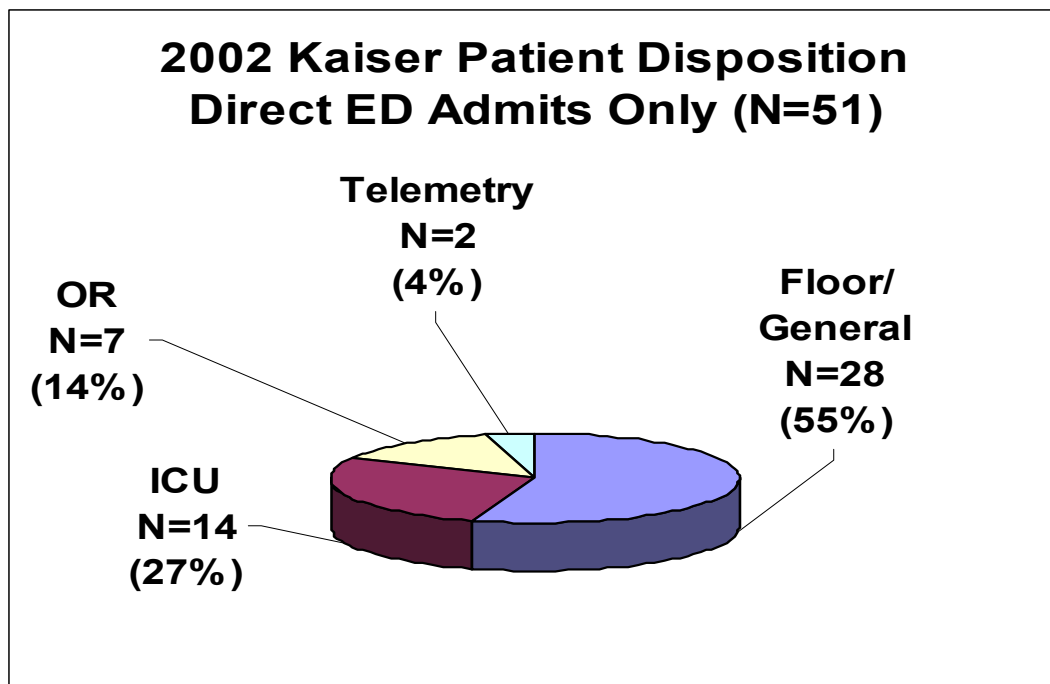
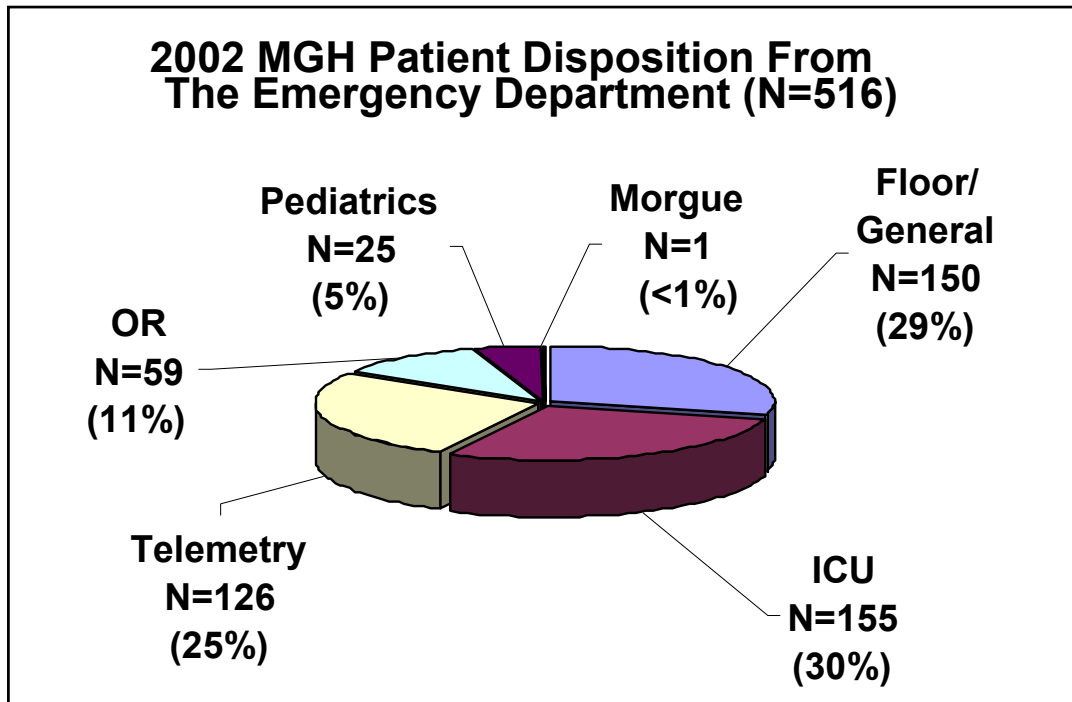
Injury Severity Score (All Admitted and Discharged)N=1365

	MGH	KSR	TOTAL	% Total Reported
01—08	927	171	1093	80%
09—15	142	28	170	12%
16—24	42	22	64	5%
25—40	29	2	31	2%
41—49	3	0	3	< 1%
50—74	0	0	0	N/A
75	0	0	0	N/A
Unknown	4	0	4	< 1%

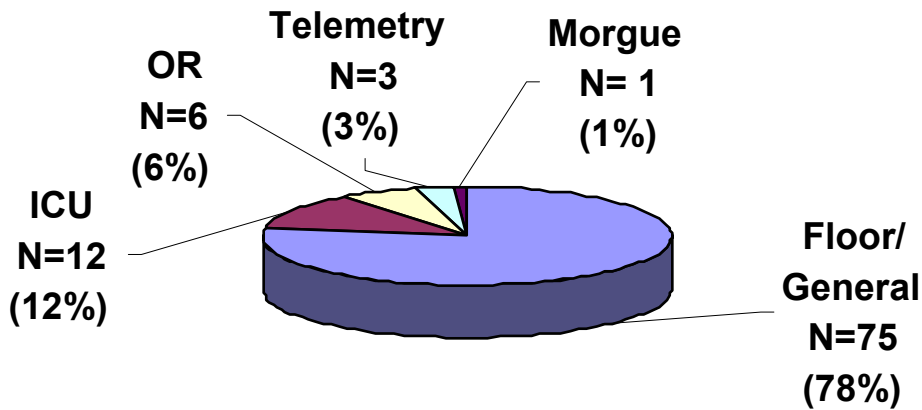
Injury Severity Score: Direct Admit From ED Only N=567

	MGH	KSR N=51	TOTAL	% of Total Reported (N=567 patients admitted)
01—08	324 (63%)	33 (65%)	355	(63%)
09—15	125 (24%)	17 (33%)	142	(25%)
16—24	39(8%)	1 (2%)	40	(7%)
25—40	27(5%)	0	27	(5%)
41—49	3 (<1%)	0	3	(<1%)
50—74	0	0	0	
75	0	0	0	

Admitted Patient Dispositions



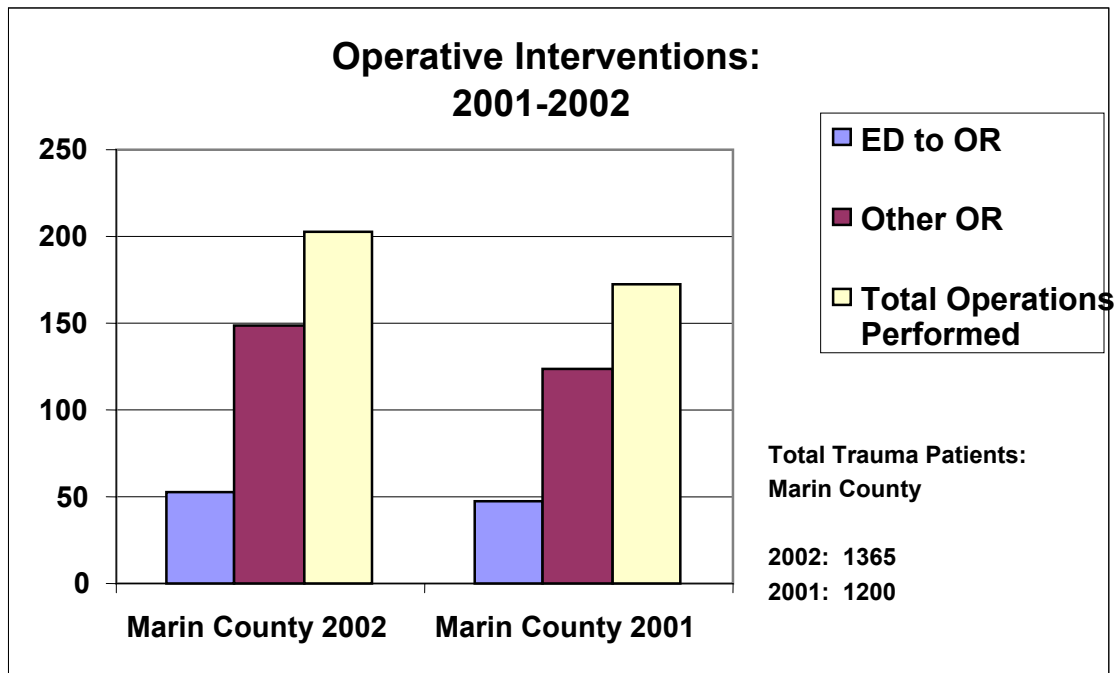
2002 Kaiser Patient Disposition (*Includes Repatriated Patients)



Operative Interventions

In 2002, a slight increase in operative intervention was observed: Marin General Hospital demonstrated an increase in both direct admits to the OR from the ED and in the total number of operative interventions performed during the course of hospitalization. Kaiser hospital increased the total number of operative interventions, but showed a slight decrease in those number of patients who went directly from the ED to the OR. Statistically, a one (1) percent increase of operations per trauma patient volume (172 of 1200 in 2001, or 14 %; 202 of 1365 in 2002, or 15%) was observed in 2002.

	MGH: 2002	MGH: 2001	Kaiser: 2002	Kaiser: 2001	Marin County: 2002	Marin County: 2001
Patients Direct from ED to OR	47	40	6	8	53	48
Total Number of Patients to OR	105	90	18	12	123	102
Total Operative Interventions Performed	124	109	25	15	149	124



Neurosurgical Involvement

- Data represents patients transported to Marin General Hospital ONLY.
- A significant change in the neurosurgical service occurred in August, 2002. Problems with neurosurgical coverage existed for the better part of nine months during this year and were rectified by the initiation of a new Neurosurgeon Group Contract, effective September 1, 2002. The number of interfacility transfers for Neurosurgical care *tripled* from 2002 to date in 2003 (6 versus currently 18 interfacility transfers for Neurosurgical care).
- *Neurosurgical Consult (NSC)* is defined as a patient consultation/evaluation conducted by a Neurosurgeon.
- *Neurosurgical Intervention (NSI)* is defined as a surgical/operative intervention.

	2001	2002	*2003 (1/1--10/31/03)
# NSC	121	132	119
#NSI	46	23	17
Interfacility Transfers In For Neurosurgical Care	8	6	18

***Injury Severity Scores (ISS) of Patients Receiving
Neurosurgical Consultation/Evaluation/Surgery:
N=132:***

01—08	51	<i>(81 of 132, or 62% had ISS > 09)</i>
09—15	30	
16—24	28	
25—40	22	
41—49	1	

Trauma in the Elderly

The elderly in Marin (persons aged > 55 years) continue to demonstrate a higher admission rate for trauma services than those other age groups (67% versus 45%). Seventy six percent (76%) of all trauma deaths occurred in this age bracket (16 of 21 patients), constituting the highest mortality. Injury Severity Scores were higher in persons age > 55 years than any other age groups. Mortality etiologies include the following:

- Ground level falls: 7
- MVA: 3
- Pedestrian hit by car: 2
- Gunshot wound: 2 (suicide)
- Fall > 14 ft: 1
- Fall (embankment): 1

	Marin General	Kaiser
Total Patients Age > 55yrs.	362	43
Admitted	234	27
% Admitted	65%	63%
Discharged	128	21
Discharge Rate	35%	49%
% Total Trauma Patients Age > 55 yrs.	31%	20%

Comparison of Injury Severity Scores, Age > 55 years
*(*Comparison of Scores in total trauma patients, admitted and discharged)*

ISS	% Persons Age > 55 years	% Total Trauma, All Age Groups
01—08	59%	80%
09—15	23%	12%
16—24	6%	5%
25—40	9%	2%
41--49	1%	<1%
50--74	1%	N/A

Admission versus Discharge Rates

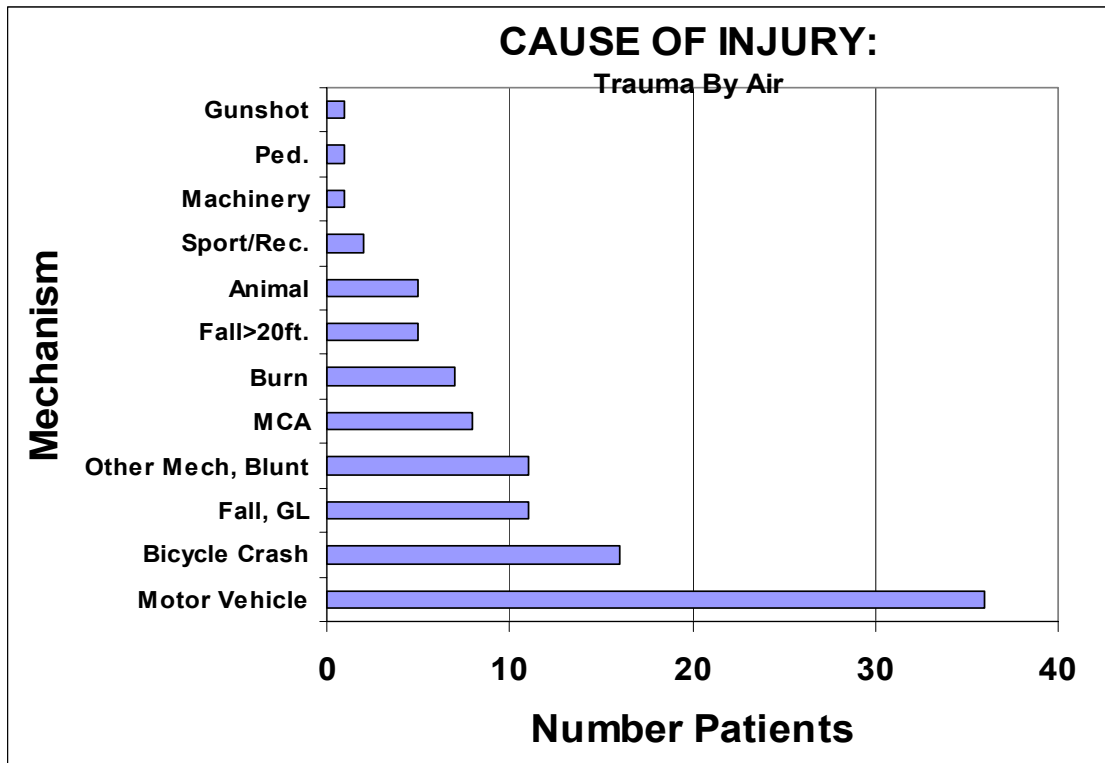
	> 55 years	All Age Groups
Admission Rate	67%	45%
Discharge Rate (From ED)	33%	55%

Trauma Patients by Air to Out-Of-County Facilities

In 2002 there were 104 trauma patients flown to out-of-county burn or trauma centers. Seventy-three percent (76 of 104) of all trauma patients flown to out of county centers originated in West Marin.

DEMOGRAPHICS
Age: <ul style="list-style-type: none"> • < 15 yrs: 17 • 15—55 yrs: 73 (70%) • > 55 yrs: 14
Sex: <ul style="list-style-type: none"> • Male: 67 (65%) • Female: 37
ISS: <ul style="list-style-type: none"> • 01—08: 32 • 09—15: 30 • 16—24: 13 • 25—40: 3 • 41—49: 1 • 50—74: 1 <p><i>*ISS unreported in pediatric patients (17) and in burn victims (7).</i></p>

Mechanism of Injury Reported in Trauma Patients by Air



Patient Disposition from Emergency Department: Trauma by Air

