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# National Trauma Data Bank 2013

## Pediatric Report

# NTDB PEDIATRIC REPORT 2013

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## EDITOR'S NOTE

The Pediatric Report of the National Trauma Data Bank is an updated analysis of the largest aggregation of U.S./Canadian trauma registry data ever assembled. In total, the NTDB now contains more than 5 million records. The 2013 Pediatric Report is based on 152,884 2012 admission year records from 803 facilities.

In the interest of capturing a better picture of deaths in the NTDB, any patients that have been recorded as “Discharged to Hospice” have now been counted as deaths.

The mission of the American College of Surgeons Committee on Trauma (ACS COT) is to develop and implement meaningful programs for trauma care. In keeping with this mission, the NTDB is committed to being the principal national repository for trauma center registry data. The purpose of this report is to inform the medical community, the public, and decision makers about a wide variety of issues that characterize the current state of care for injured persons. It has implications in many areas, including epidemiology, injury control, research, education, acute care, and resource allocation.

The NTDB Committee would like to thank all of the trauma centers that contributed data and hope that this report will attract new participants. The National Trauma Data Bank Pediatric Report is available on the ACS website as a PowerPoint PDF at [www.ntdb.org](http://www.ntdb.org). In addition, information is available on our website about how to obtain NTDB data for more detailed study.

Many dedicated individuals on the ACS COT, as well as at trauma centers, have contributed to the early development of the NTDB and its rapid growth in recent years. Building on these achievements, our goals in the coming years include improving data quality, updating analytic methods, and enabling more useful inter-hospital comparisons. These efforts will be reflected in future NTDB reports to participating hospitals as well as in the Pediatric Reports.



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## EDITOR'S NOTE, CONT'D

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To cite figures used from the NTDB Annual Report, please specify the title of the report and year, and the name of the figure used in the format of the following:

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# FACILITY INFORMATION



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Table  
1

## Pediatric-Only Facilities by Trauma Level

LEVEL	NUMBER	PERCENT
I	28	84.85
II	5	15.15
Total	33	100.00



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Figure 1

## Pediatric-Only Facilities by Trauma Level

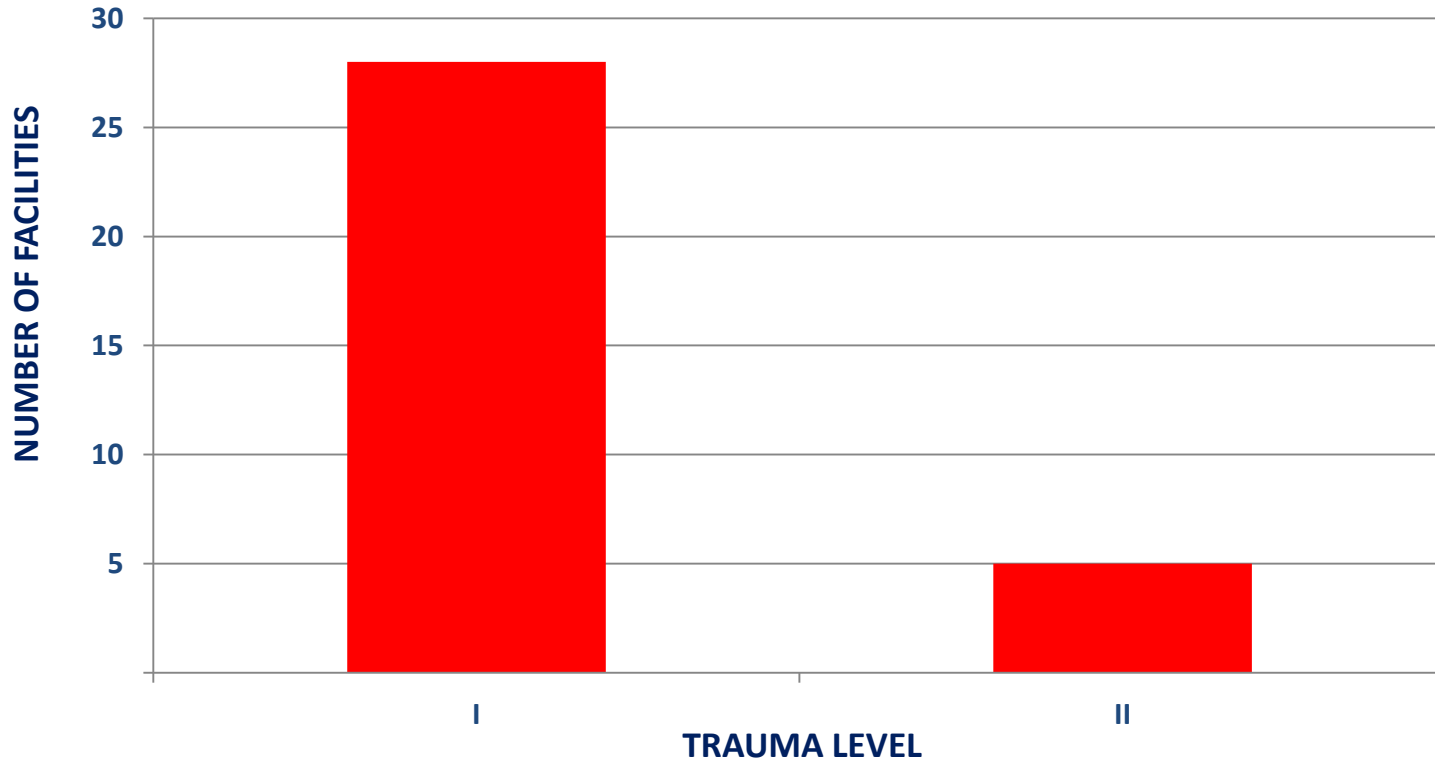


Table  
2

## Facilities by Pediatric Hospital Association

PEDIATRIC ASSOCIATION	NUMBER	PERCENT
NO ASSOCIATION	476	59.28
ASSOCIATED WITH PEDS HOSPITAL	327	40.72
Total	803	100.00

This excludes two facilities with no pediatric patients (patients aged <20).



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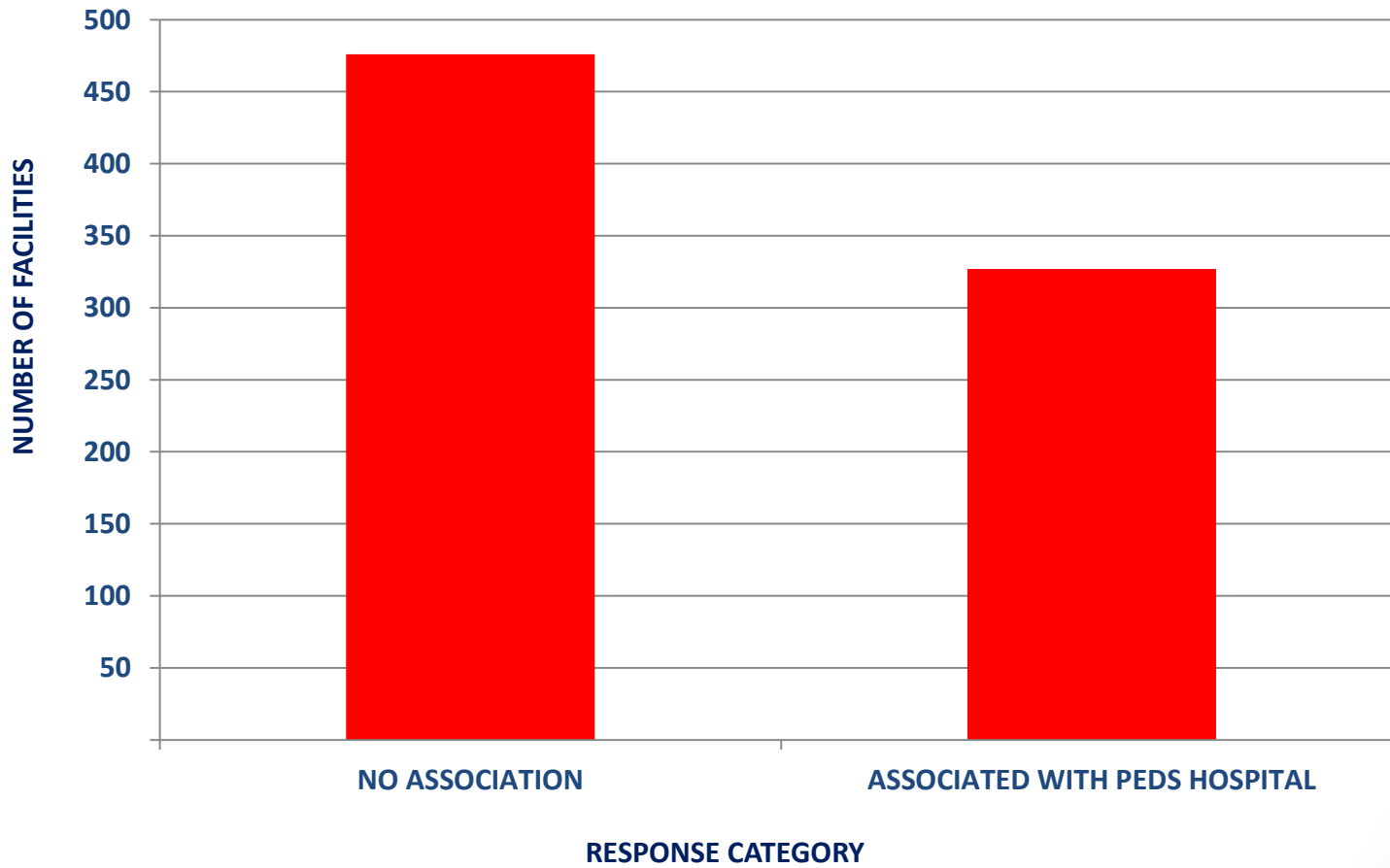
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Figure 2

## Facilities by Pediatric Hospital Association



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Table  
3

## Facilities by Presence of Pediatric Ward

PEDIATRIC WARD	NUMBER	PERCENT
No	297	36.99
Yes	506	63.01
Total	803	100.00

This excludes two facilities with no pediatric patients (patients aged <20).



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Figure 3

### Facilities by Presence of Pediatric Ward

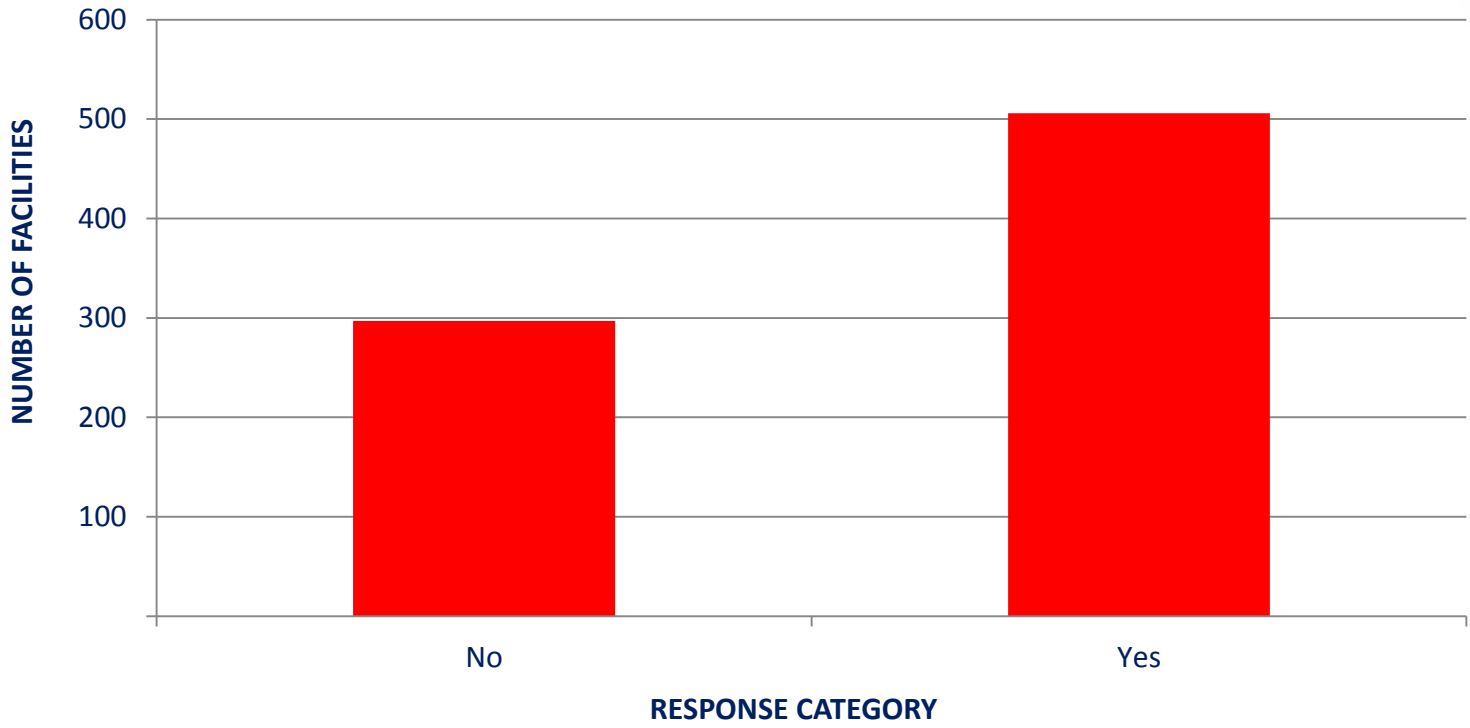


Table  
4

## Facilities by Presence of Pediatric ICU

PEDIATRIC ICU	NUMBER	PERCENT
NO ICU	556	69.24
ICU	247	30.76
Total	803	100.00

This excludes two facilities with no pediatric patients (patients aged <20).



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Figure 4

## Facilities by Presence of Pediatric ICU

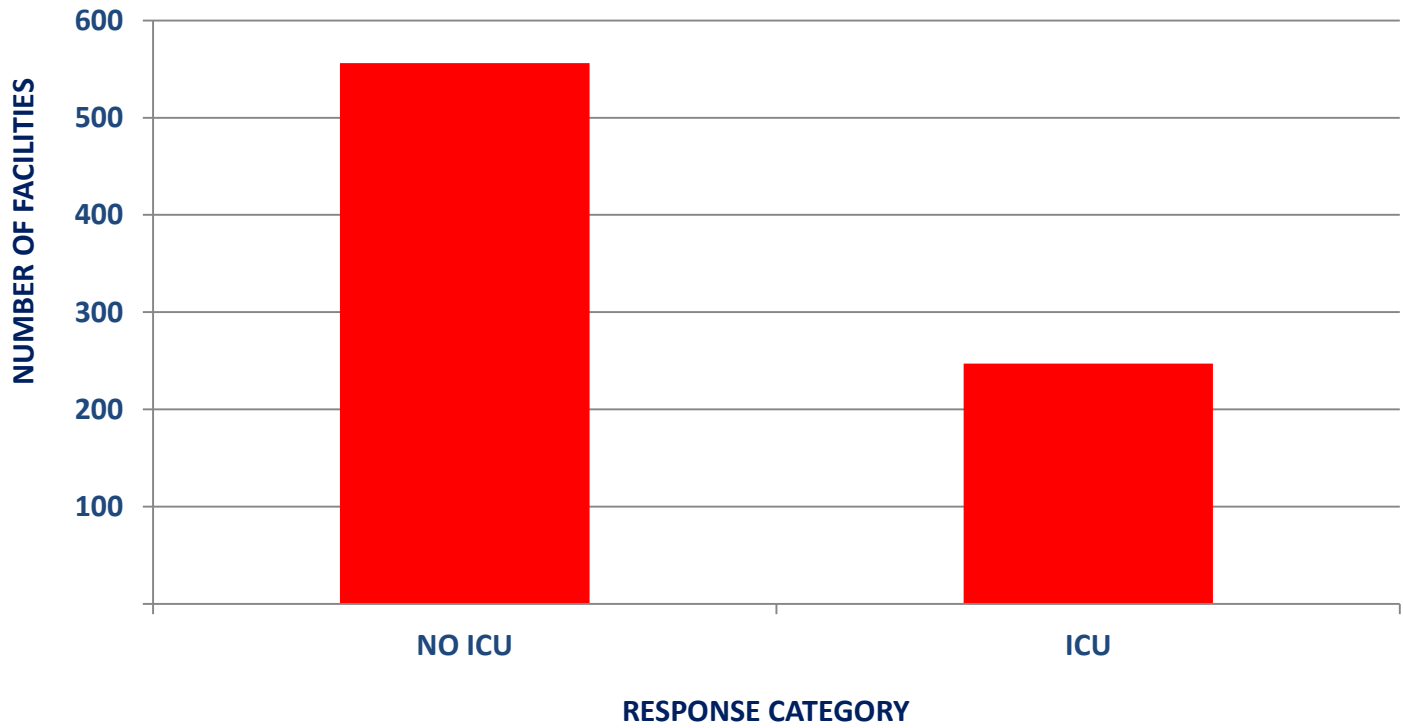


Table  
5

## Facilities by Pediatric Transfer Status

PEDIATRIC TRANSFER	NUMBER	PERCENT
SEVERE INJURIES NOT TRANSFERRED	204	25.40
SEVERE INJURIES TRANSFERRED	599	74.60
Total	803	100.00

This excludes two facilities with no pediatric patients (patients aged <20).



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Figure 5

## Facilities by Pediatric Transfer Status

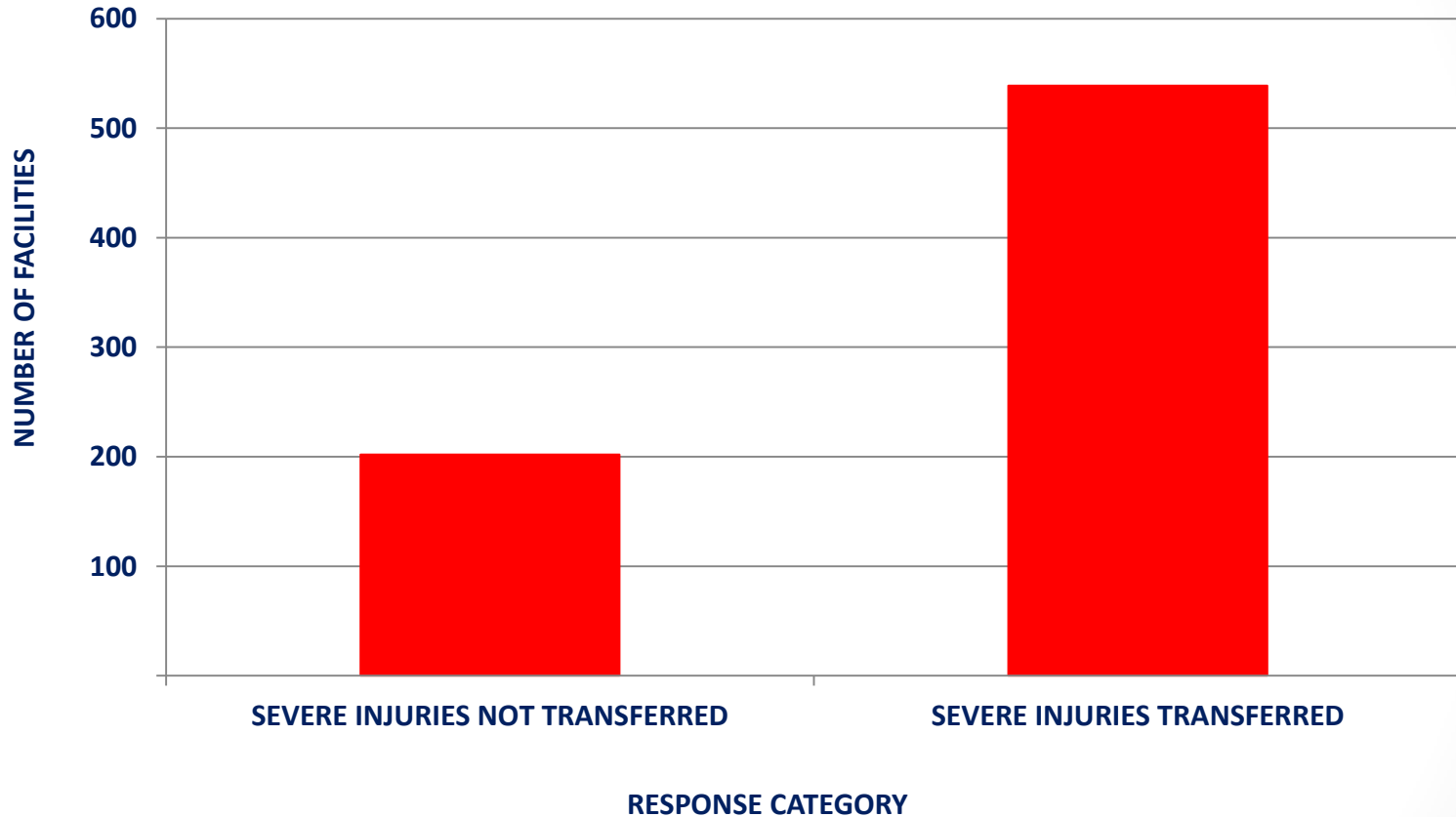


Table  
6

## Facilities by Pediatric Age Cutoff

AGE	NUMBER	PERCENT
12	18	2.24
13	15	1.87
14	144	17.93
15	156	19.43
16	103	12.83
17	150	18.68
18	125	15.57
19	3	0.37
20	2	0.25
21	34	4.23
None	53	6.60
Total	803	100.00

This excludes two facilities with no pediatric patients (patients aged <20).



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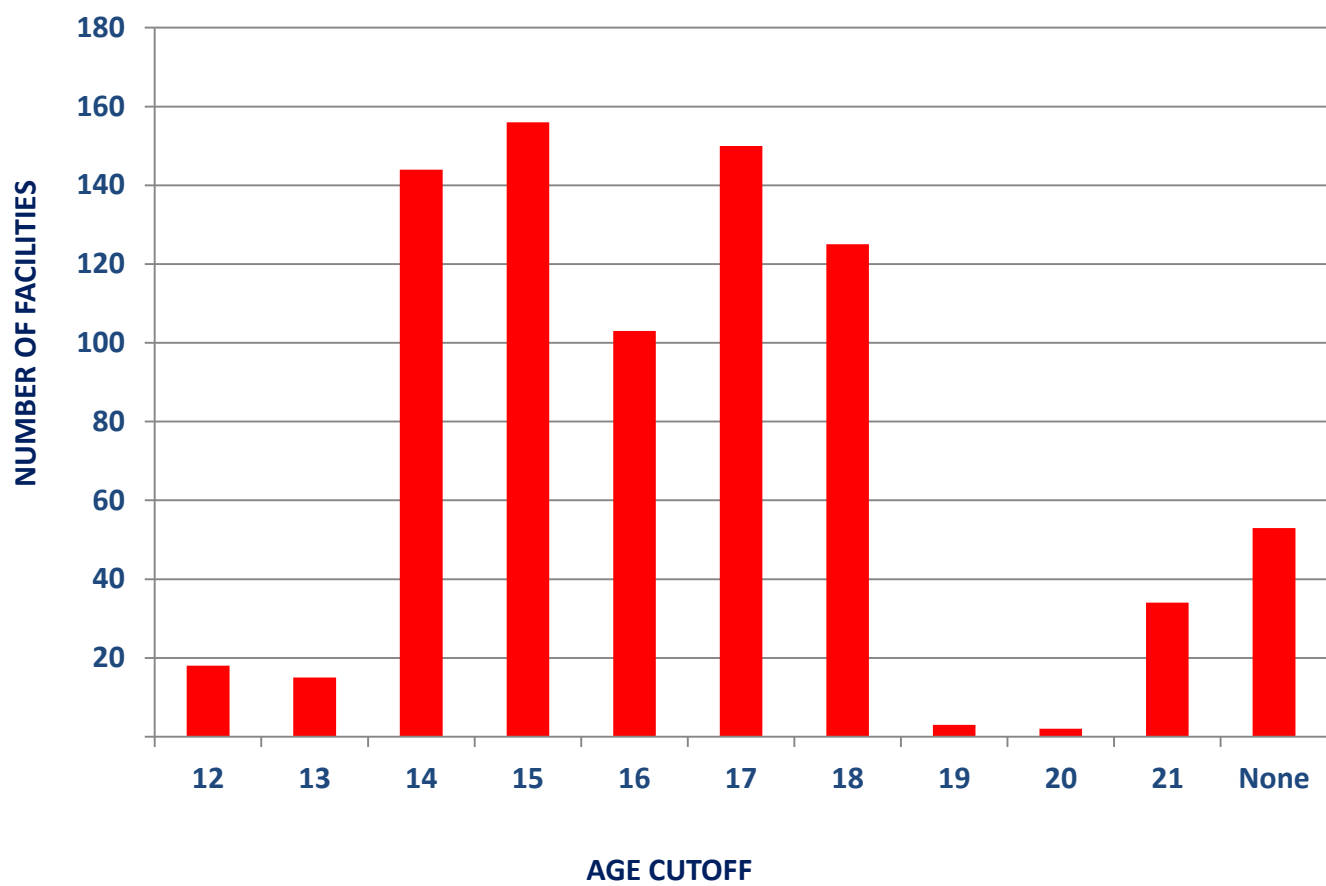
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Figure 6

## Facilities by Pediatric Age Cutoff



This excludes two facilities with no pediatric patients (patients aged <20).



# DEMOGRAPHIC INFORMATION



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Table  
7

## Incidents and Case Fatality Rate by Age

AGE	NUMBER	PERCENT	DEATHS	CASE FATALITY RATE
<1 year	9,569	6.26	215	2.25
1	7,310	4.78	159	2.18
2	7,156	4.68	129	1.80
3	6,555	4.29	66	1.01
4	6,514	4.26	75	1.15
5	6,759	4.42	54	0.80
6	6,339	4.15	53	0.84
7	5,496	3.59	61	1.11
8	5,127	3.35	37	0.72
9	4,675	3.06	41	0.88
10	4,735	3.10	35	0.74
11	5,087	3.33	45	0.88
12	5,860	3.83	53	0.90
13	6,456	4.22	67	1.04
14	7,679	5.02	99	1.29
15	8,294	5.43	135	1.63
16	10,066	6.58	225	2.24
17	11,589	7.58	307	2.65
18	13,543	8.86	443	3.27
19	14,075	9.21	535	3.80
Total	152,884	100.00	2,834	1.85



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Figure 7a

## Incidents by Age

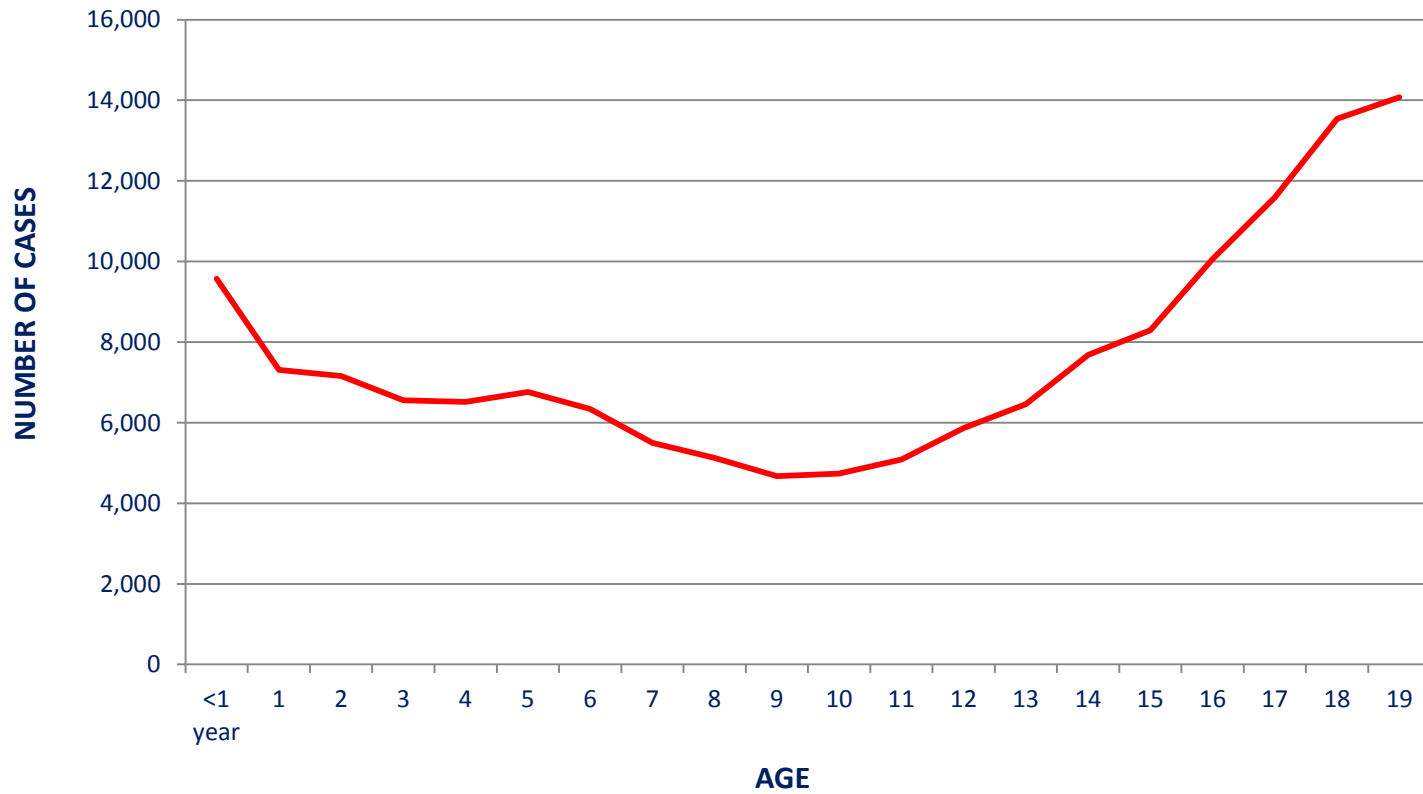
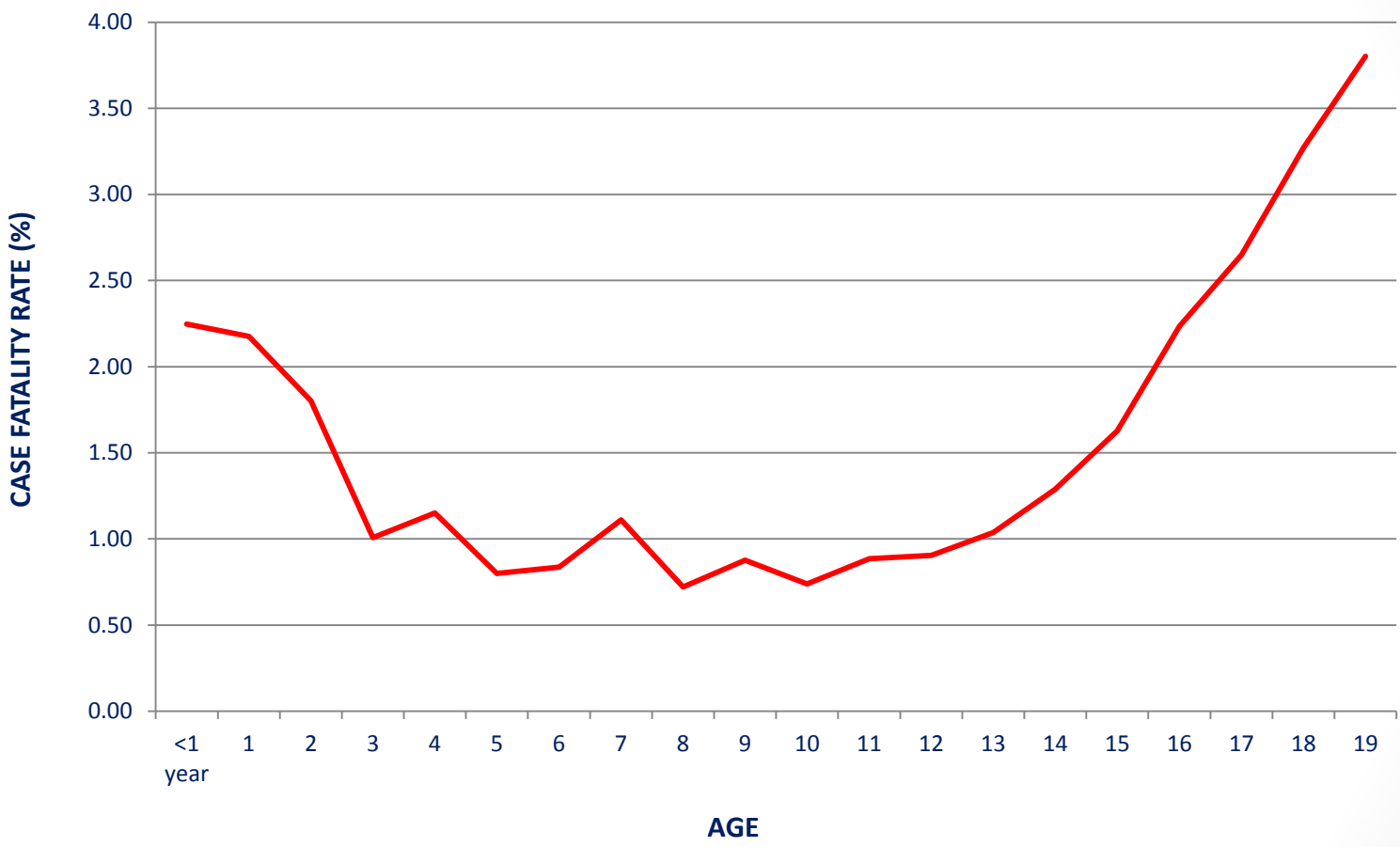


Figure 7b

### Case Fatality Rate by Age



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Table  
8

## Incidents and Case Fatality Rate by Age and Gender

AGE	NUMBER (FEMALE)	NUMBER (MALE)	DEATHS (FEMALE)	DEATHS (MALE)	CASE FATALITY RATE (FEMALE)	CASE FATALITY RATE (MALE)
<1 year	4,088	5,476	81	134	1.98	2.45
1	2,999	4,310	69	90	2.30	2.09
2	2,861	4,293	60	69	2.10	1.61
3	2,604	3,950	27	39	1.04	0.99
4	2,624	3,887	25	50	0.95	1.29
5	2,743	4,015	17	37	0.62	0.92
6	2,520	3,816	17	36	0.67	0.94
7	2,229	3,265	23	38	1.03	1.16
8	1,971	3,155	17	20	0.86	0.63
9	1,698	2,976	20	21	1.18	0.71
10	1,737	2,996	16	19	0.92	0.63
11	1,631	3,455	12	33	0.74	0.96
12	1,750	4,109	22	31	1.26	0.75
13	1,661	4,793	23	44	1.38	0.92
14	1,983	5,695	18	81	0.91	1.42
15	2,239	6,053	35	100	1.56	1.65
16	2,934	7,130	67	158	2.28	2.22
17	3,332	8,256	59	248	1.77	3.00
18	3,812	9,728	88	355	2.31	3.65
19	3,685	10,388	98	437	2.66	4.21
Total	51,101	101,746	794	2,040	1.55	2.00



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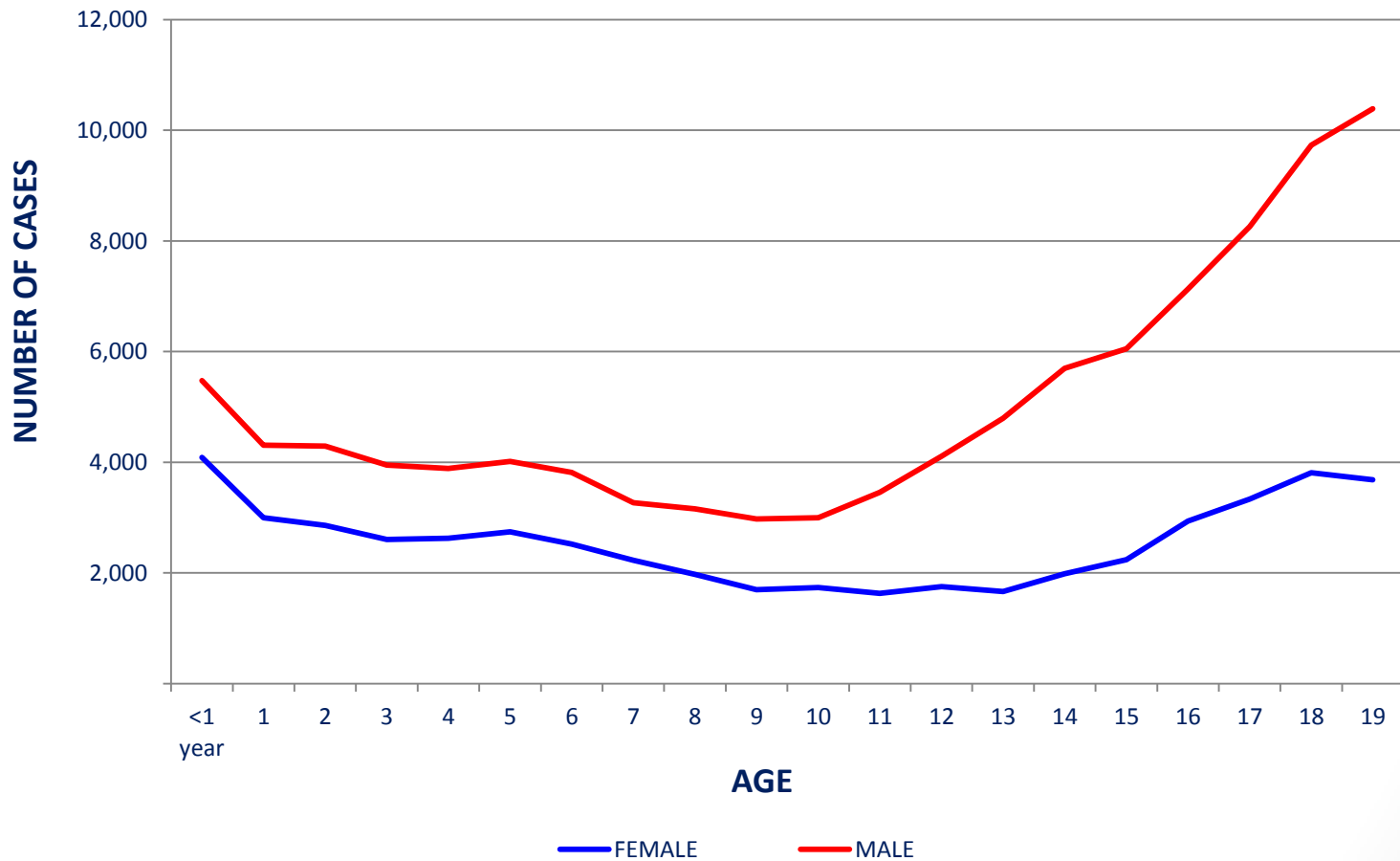
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Figure 8a

## Incidents by Age and Gender



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Figure 8b

## Case Fatality Rate by Age and Gender

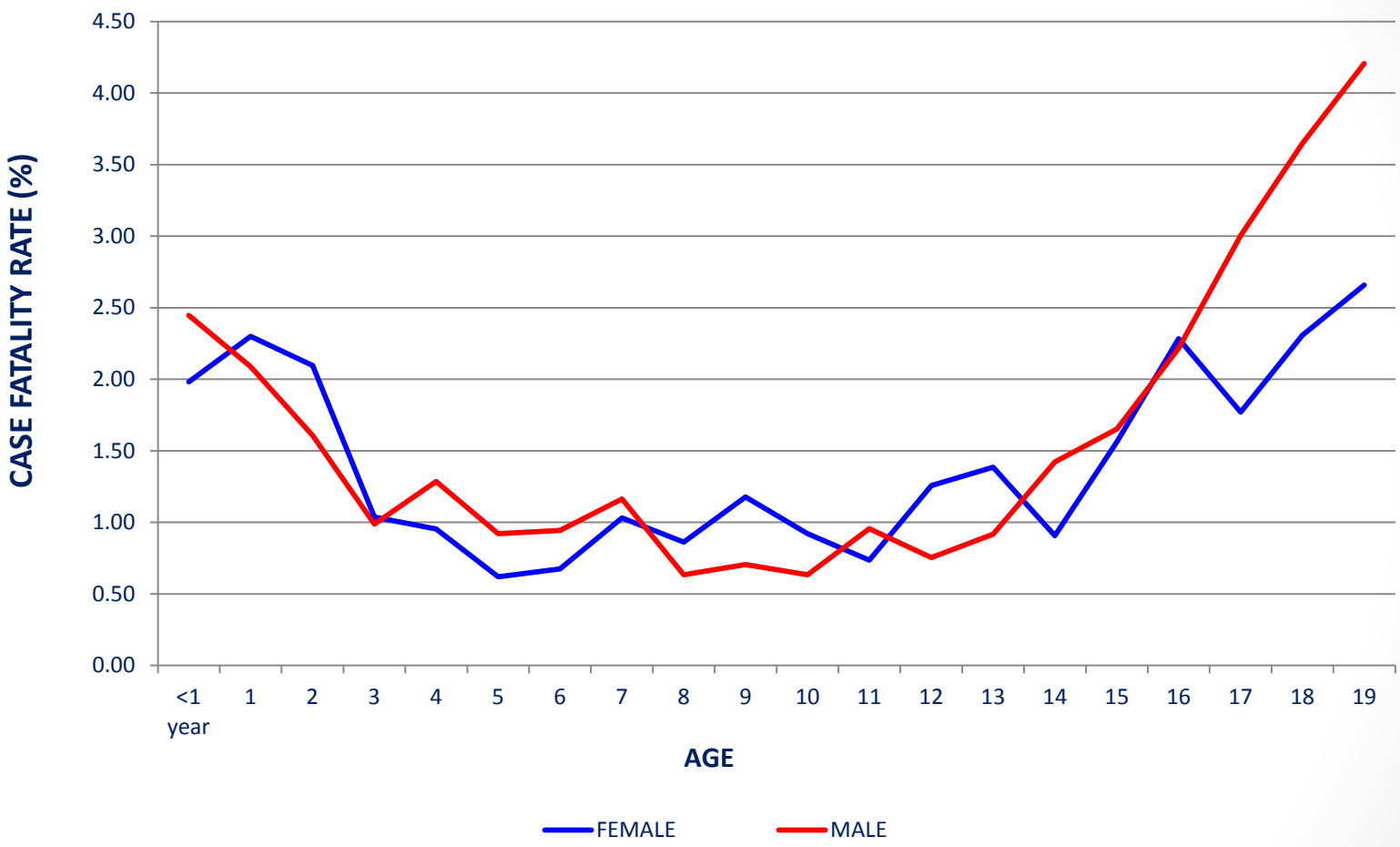




Table  
9

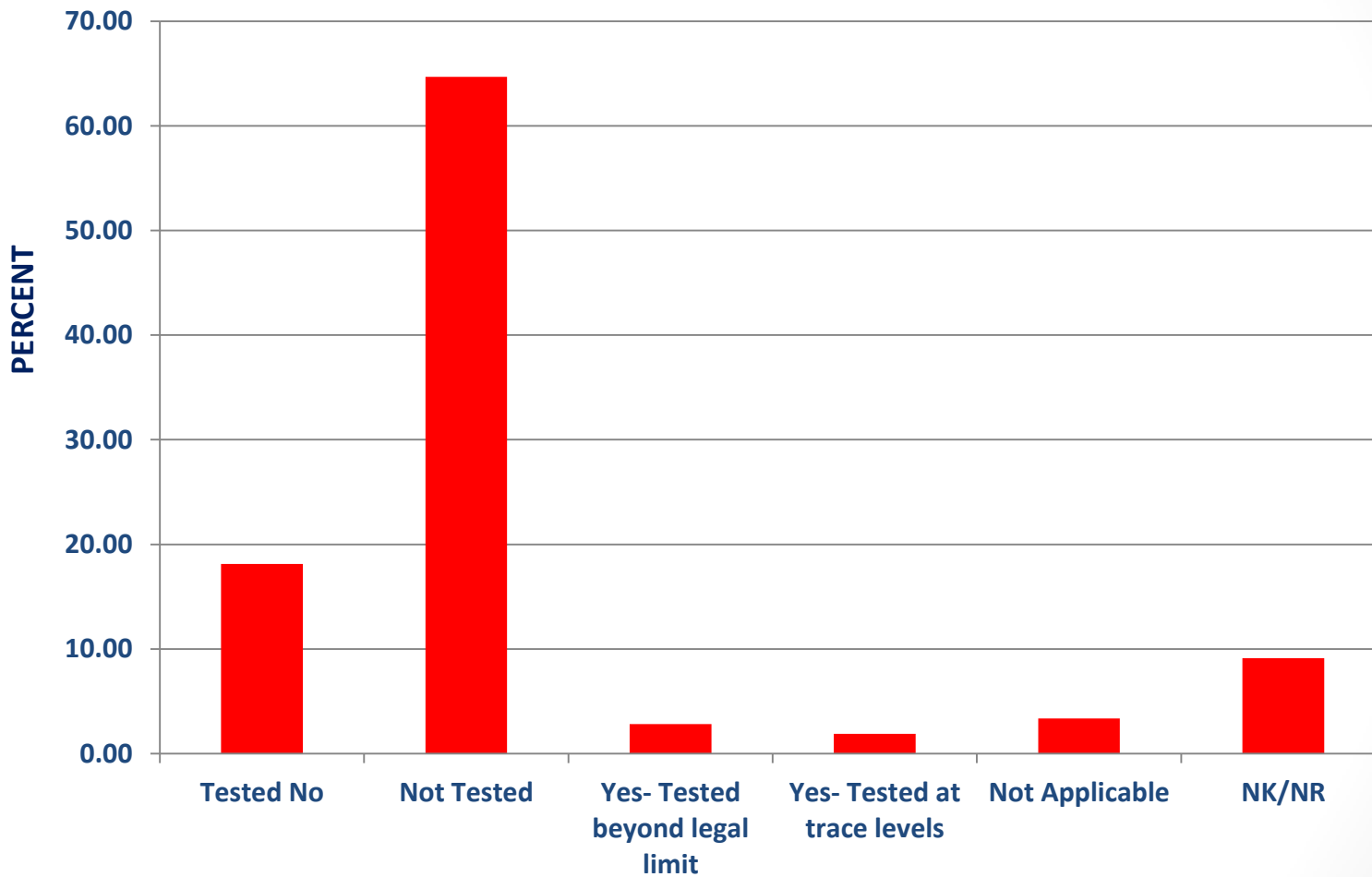
## Alcohol Use

ALCOHOL USE	NUMBER	PERCENT
No (confirmed by test)	27,721	18.13
No (not tested)	98,898	64.69
Yes (confirmed by test - beyond legal limit)	4,332	2.83
Yes (confirmed by test - trace levels)	2,870	1.88
Not applicable	5,119	3.35
NK/NR	13,944	9.12
Total	152,884	100.00



Figure 9

## Alcohol Use



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Table  
10

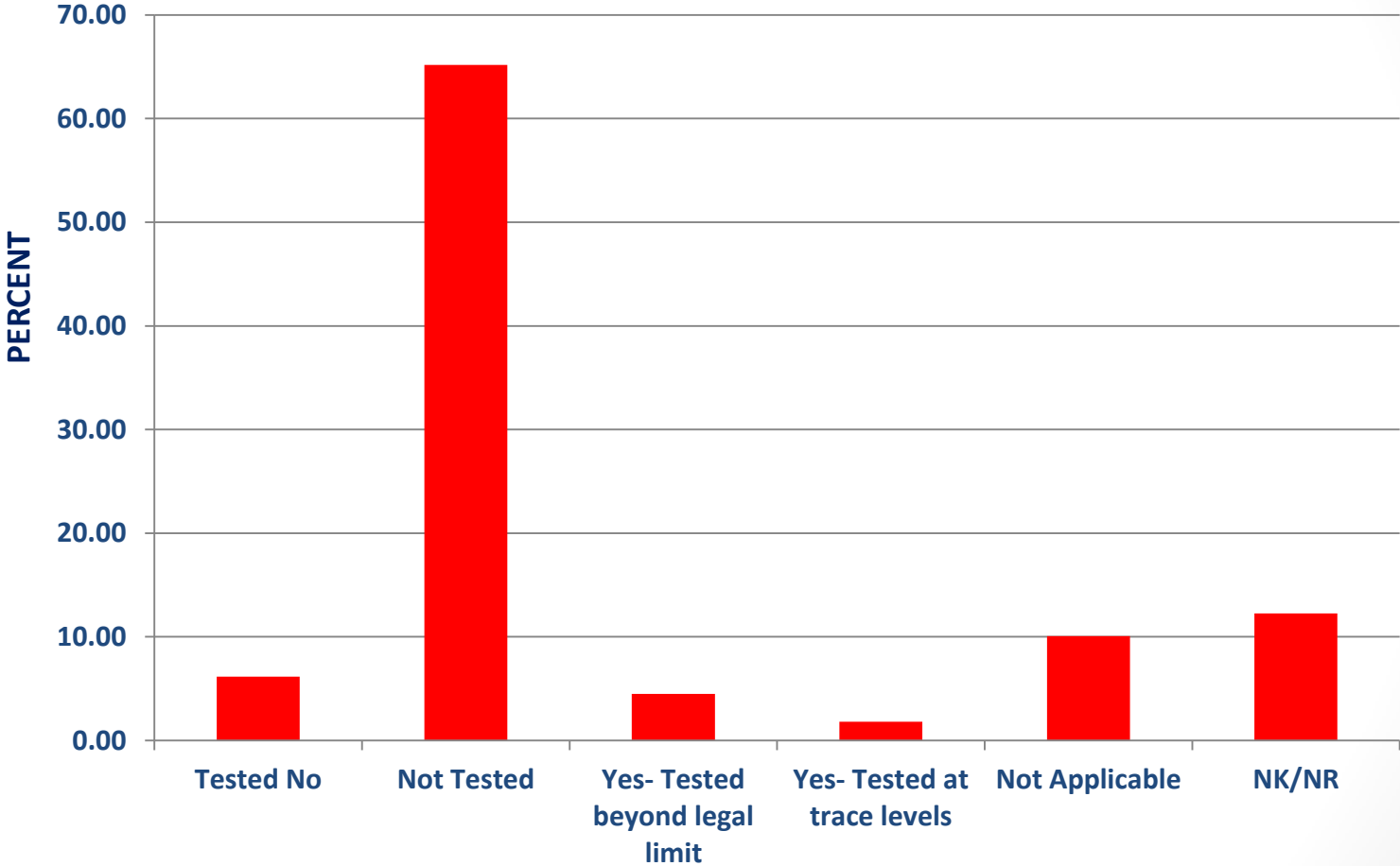
## Drug Use

DRUG USE	NUMBER	PERCENT
No (confirmed by test)	9,438	6.17
No (not tested)	99,647	65.18
Yes (confirmed by test - illegal use drug)	6,864	4.49
Yes (confirmed by test -prescription drug)	2,755	1.80
Not applicable	15,418	10.08
NK/NR	18,762	12.27
Total	152,884	100.00



Figure 10

# Drug Use



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Table  
11

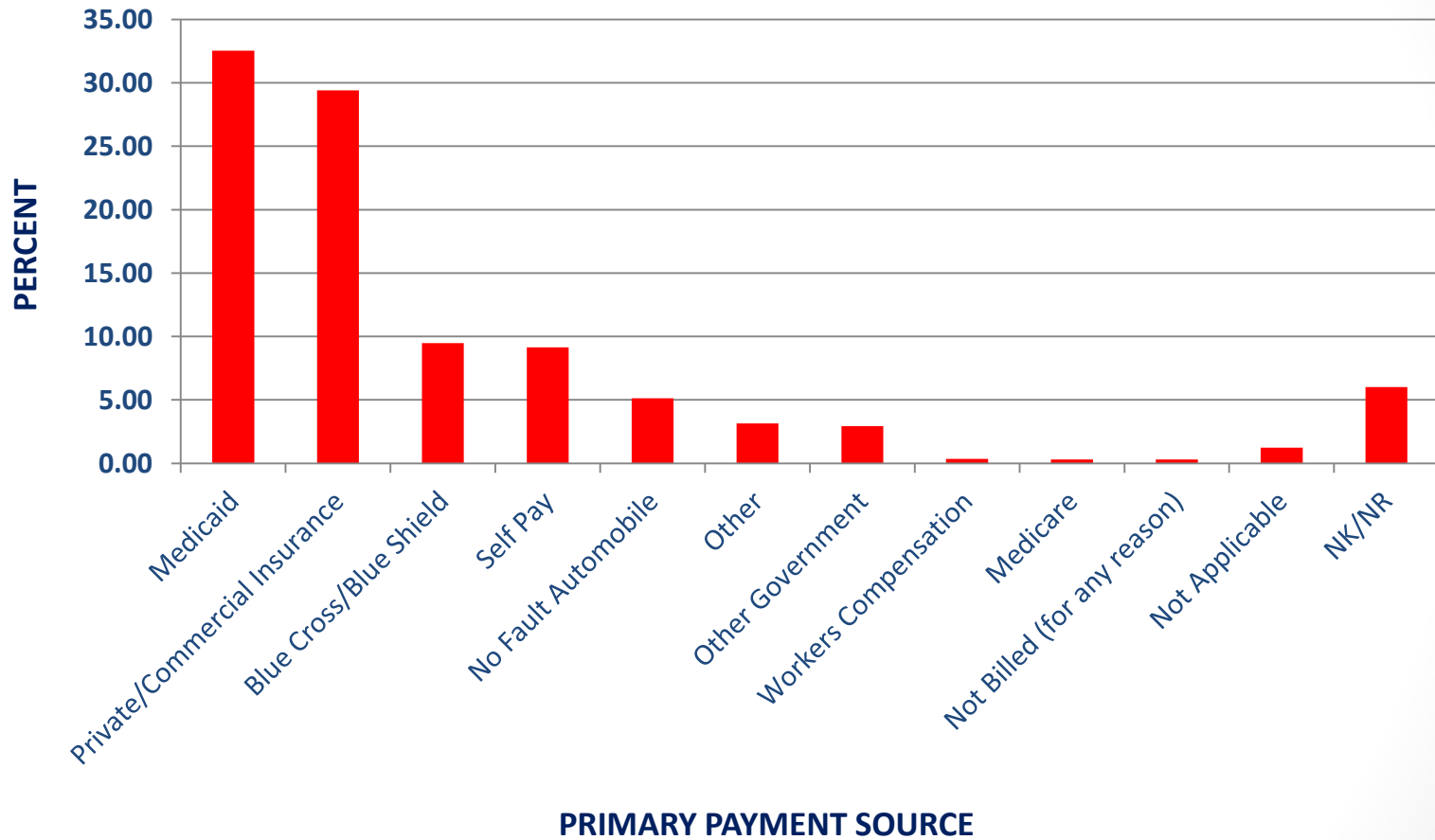
## Primary Payment Source

PRIMARY PAYMENT SOURCE	NUMBER	PERCENT
Medicaid	49,763	32.55
Private/Commercial Insurance	44,965	29.41
Blue Cross/Blue Shield	14,507	9.49
Self Pay	13,994	9.15
No Fault Automobile	7,839	5.13
Other	4,812	3.15
Other Government	4,482	2.93
Workers Compensation	541	0.35
Medicare	457	0.30
Not Billed (for any reason)	450	0.29
Not Applicable	1,891	1.24
NK/NR	9,183	6.01
Total	152,884	100.00



Figure 11

## Primary Payment Source



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# INJURY CHARACTERISTICS



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Table  
12

## Incidents and Case Fatality Rate by Mechanism of Injury

MECHANISM	NUMBER	PERCENT	DEATHS	CASE FATALITY RATE
Fall	50,740	33.19	103	0.20
Motor Vehicle Traffic	38,109	24.93	1,157	3.04
Struck by, against	16,257	10.63	68	0.42
Transport, other	11,083	7.25	124	1.12
Firearm	6,757	4.42	837	12.39
Pedal cyclist, other	5,425	3.55	5	0.09
Cut/pierce	5,260	3.44	56	1.06
Other specified and classifiable	4,821	3.15	228	4.73
Hot object/substance	4,500	2.94	3	0.07
Natural/environmental, Bites and stings	2,484	1.62	9	0.36
Unspecified	1,660	1.09	35	2.11
Fire/flame	1,583	1.04	41	2.59
Other specified, not elsewhere classifiable	848	0.55	11	1.30
Overexertion	778	0.51	0	0.00
Pedestrian, other	674	0.44	29	4.30
Natural/environmental, Other	617	0.40	7	1.13
Machinery	574	0.38	11	1.92
Suffocation	170	0.11	52	30.59
Drowning/submersion	145	0.09	26	17.93
Poisoning	129	0.08	2	1.55
Adverse effects, medical care	25	0.02	1	4.00
Adverse effects, drugs	13	0.01	0	0.00
NK/NR	232	0.15	1	0.43
Total	152,884	100.00	2,806	1.84

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Figure 12a

## Incidents and Case Fatality Rate by Mechanism of Injury

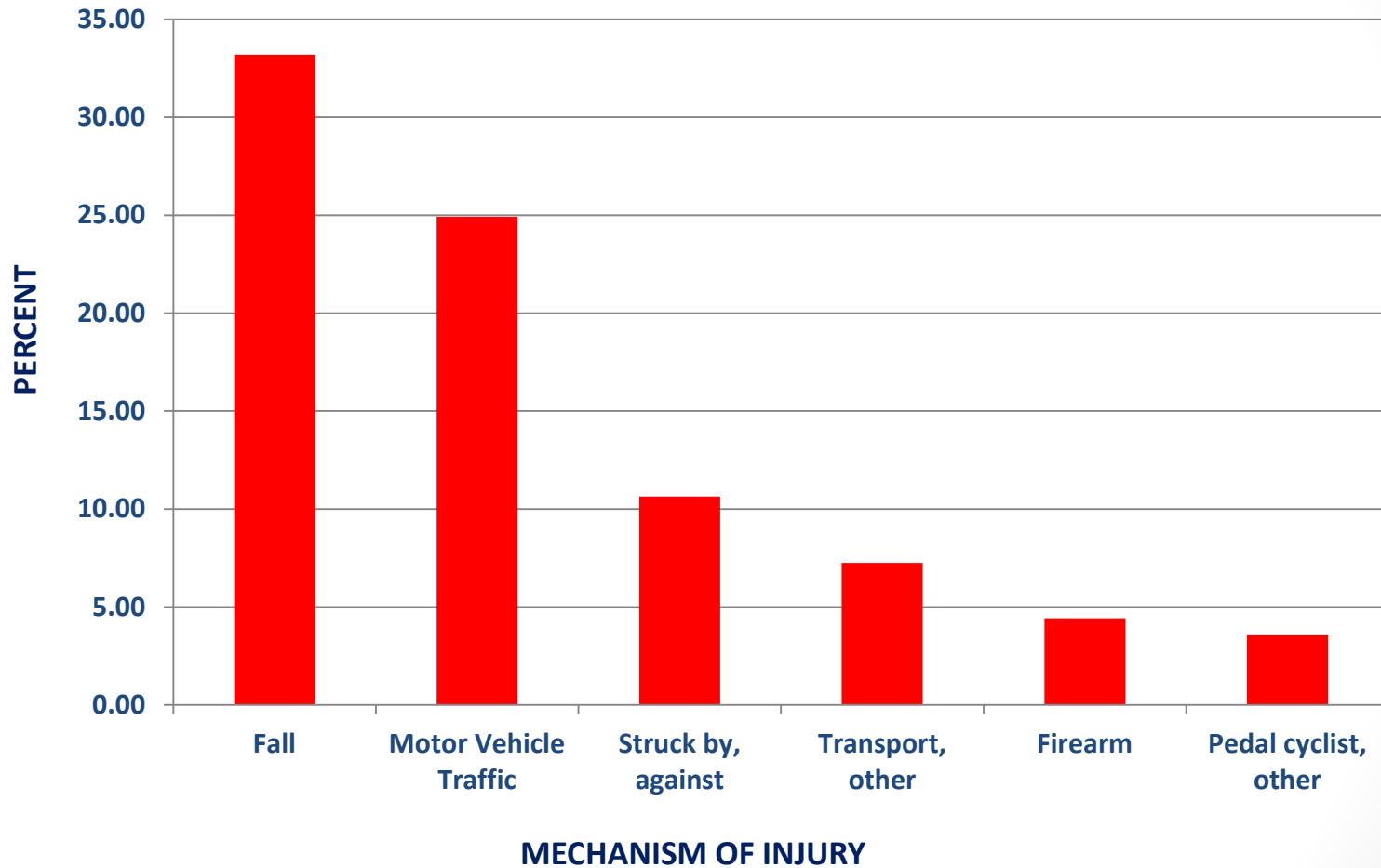


Figure 12b

### Incidents and Case Fatality Rate by Mechanism of Injury

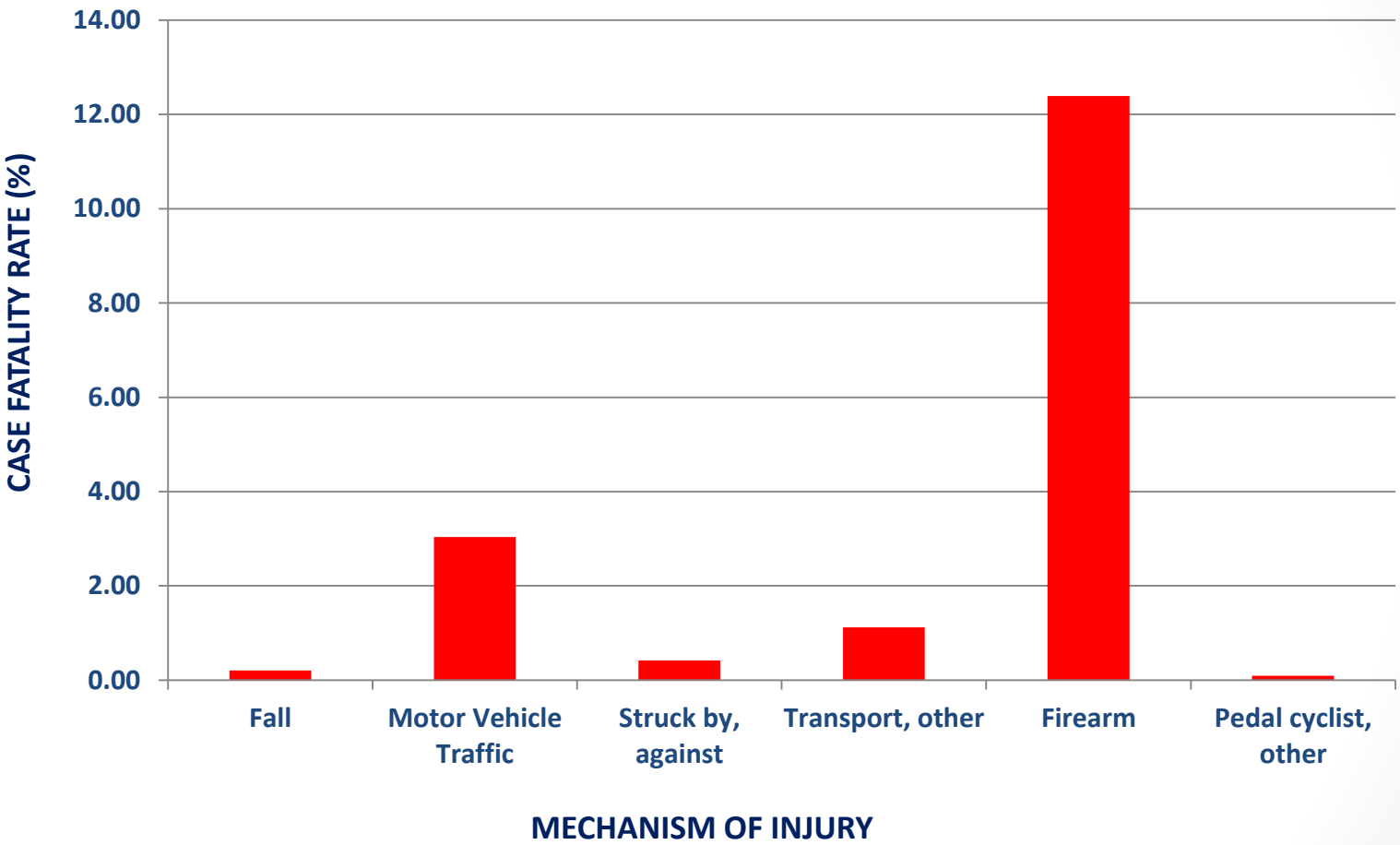


Table 13

## Selected Mechanism of Injury by Age

AGE	FALL	MVT	STRUCK BY, AGAINST	TRANSPORT, OTHER	FIREARM	CUT/PIERCE
<1 year	5,249	460	423	38	43	45
1	3,310	660	452	49	20	102
2	3,697	834	649	134	45	114
3	3,379	921	578	200	56	126
4	3,417	1,020	515	245	52	145
5	3,862	961	461	277	25	115
6	3,500	982	442	307	25	100
7	2,784	964	412	319	40	101
8	2,378	919	452	314	49	84
9	1,898	958	436	387	41	107
10	1,887	900	498	437	37	80
11	1,783	1,042	645	546	62	113
12	1,892	1,139	898	733	99	116
13	1,857	1,228	1,075	923	148	174
14	1,984	1,698	1,381	1,042	288	236
15	1,786	2,196	1,433	1,093	481	324
16	1,567	3,740	1,449	1,073	791	526
17	1,467	4,879	1,540	981	1,074	694
18	1,500	6,247	1,296	970	1,650	852
19	1,543	6,361	1,222	1,015	1,731	1,106
Total	50,740	38,109	16,257	11,083	6,757	5,260



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Figure 13

### Selected Mechanism of Injury by Age

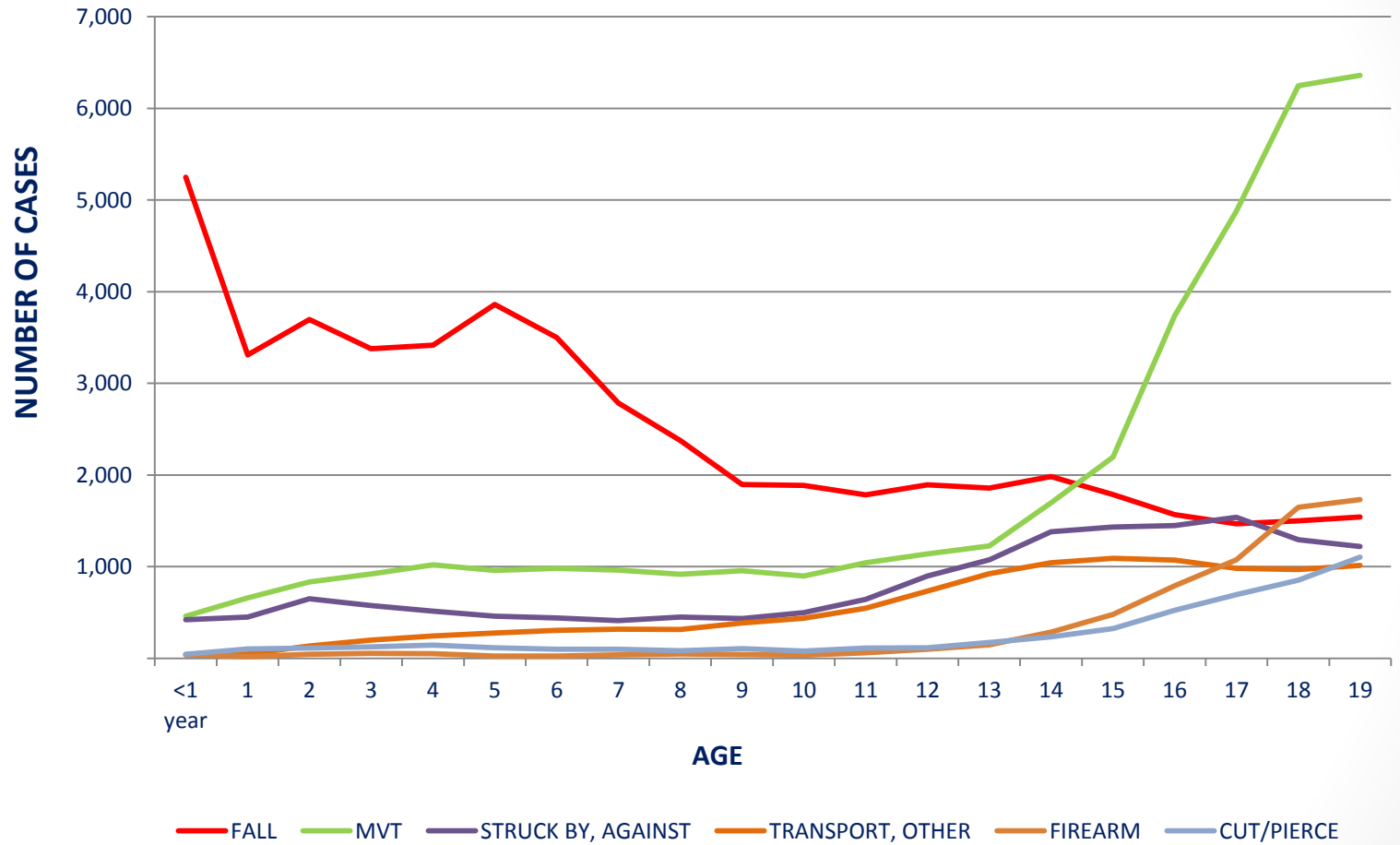


Table  
14

## Case Fatality Rate by Mechanism of Injury and Age

AGE	FALL CASE FATALITY RATE	MVT CASE FATALITY RATE	STRUCK BY, AGAINST CASE FATALITY RATE	TRANSPORT, OTHER CASE FATALITY RATE	FIREARM CASE FATALITY RATE	CUT/PIERCE CASE FATALITY RATE
<1 year	0.29	7.39	1.42	2.63	13.95	6.67
1	0.42	6.21	2.88	4.08	30.00	0.00
2	0.27	6.24	1.23	2.99	15.56	0.88
3	0.06	3.80	0.52	1.50	12.50	0.00
4	0.06	3.04	1.17	0.82	5.77	2.76
5	0.10	3.23	0.87	1.44	8.00	0.00
6	0.00	2.95	0.90	0.98	32.00	1.00
7	0.04	3.73	0.73	1.57	17.50	0.00
8	0.04	2.50	0.00	0.96	2.04	1.19
9	0.21	2.92	0.00	1.03	2.44	0.00
10	0.05	1.33	0.20	2.06	10.81	0.00
11	0.17	2.40	0.00	0.92	9.68	0.88
12	0.05	2.11	0.33	0.55	10.10	0.86
13	0.00	1.95	0.19	0.43	16.22	0.57
14	0.10	2.36	0.07	0.48	12.50	0.42
15	0.56	2.19	0.07	0.73	12.06	0.31
16	0.19	2.73	0.07	1.21	11.00	1.14
17	0.20	2.68	0.06	1.73	12.38	1.44
18	0.67	3.06	0.15	1.44	11.88	1.06
19	1.10	3.46	0.74	1.38	13.58	1.45



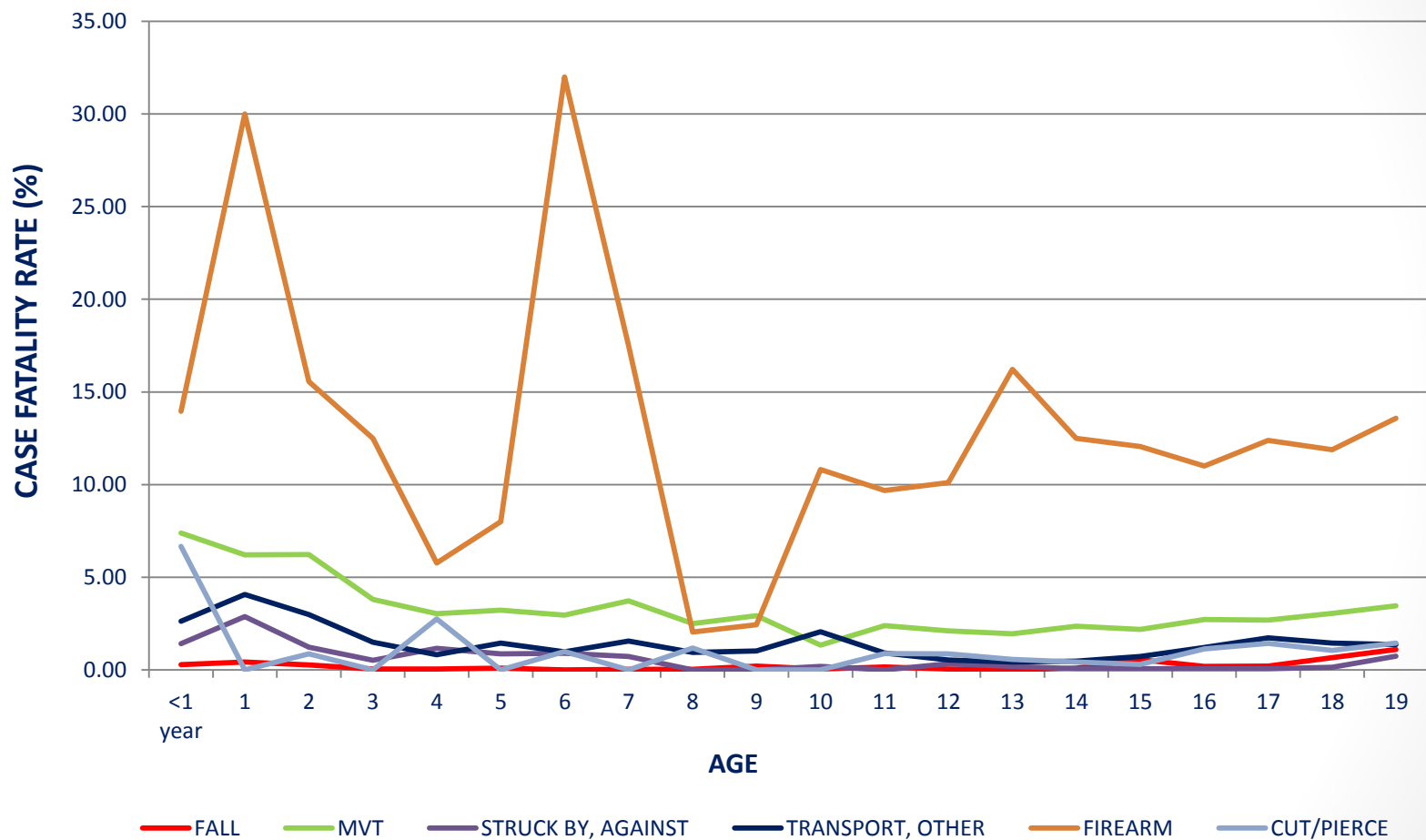
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Figure 14

## Case Fatality Rate by Mechanism of Injury and Age



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Table  
15

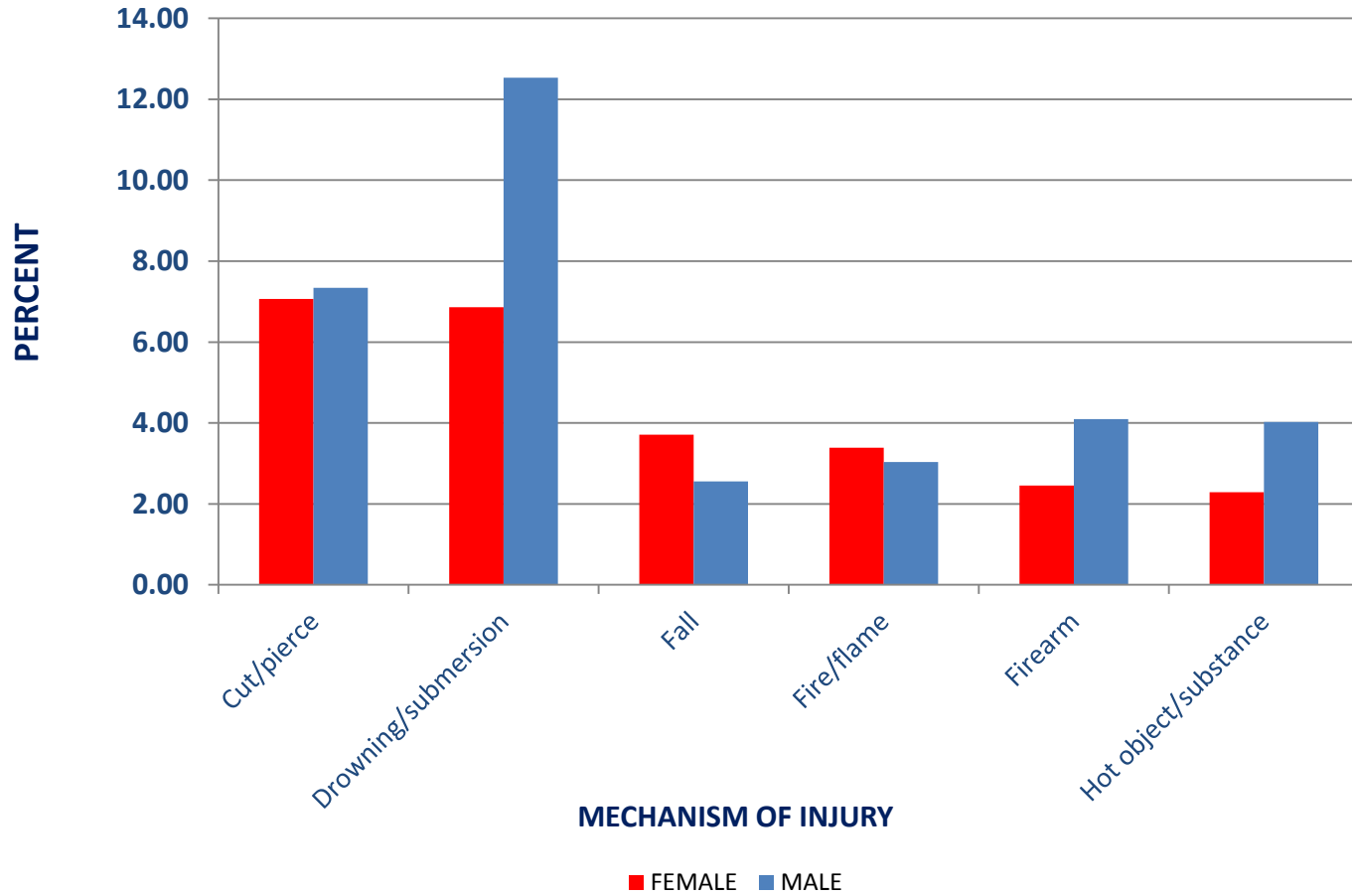
## Incidents and Case Fatality Rate by Mechanism of Injury and Gender

MECHANISM	PERCENT (FEMALE)	PERCENT (MALE)	CASE FATALITY RATE (FEMALE)	CASE FATALITY RATE (MALE)
Adverse effects, drugs	36.22	31.67	0.00	.
Adverse effects, medical care	29.79	22.49	0.00	7.69
Cut/pierce	7.07	7.34	0.77	1.15
Drowning/submersion	6.86	12.53	17.24	18.39
Fall	3.71	2.56	0.16	0.23
Fire/flare	3.39	3.04	4.83	1.85
Firearm	2.45	4.10	10.98	12.59
Hot object/substance	2.29	4.02	0.05	0.08
Motor Vehicle Traffic	2.07	1.40	2.83	3.17
Machinery	1.64	5.82	2.20	1.86
Natural/environmental, Bites and stings	1.11	1.07	0.38	0.35
Natural/environmental, Other	0.77	1.17	1.12	1.15
Other specified and classifiable	0.52	0.34	4.44	4.89
Other specified, not elsewhere classifiable	0.49	0.59	1.59	1.17
Overexertion	0.47	0.53	0.00	.
Pedal cyclist, other	0.44	0.44	0.00	0.12
Pedestrian, other	0.18	0.47	4.02	4.44
Poisoning	0.15	0.15	2.86	.
Struck by, against	0.14	0.06	0.63	0.36
Suffocation	0.11	0.09	27.27	32.17
Transport, other	0.11	0.11	1.11	1.12
Unspecified	0.02	0.01	2.47	1.92
NK/NR	0.01	0.01	0.00	0.65
Total	.	.	.	.



Figure 15a

## Incidents and Case Fatality Rate by Mechanism of Injury and Gender



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Figure 15b

## Incidents and Case Fatality Rate by Mechanism of Injury and Gender

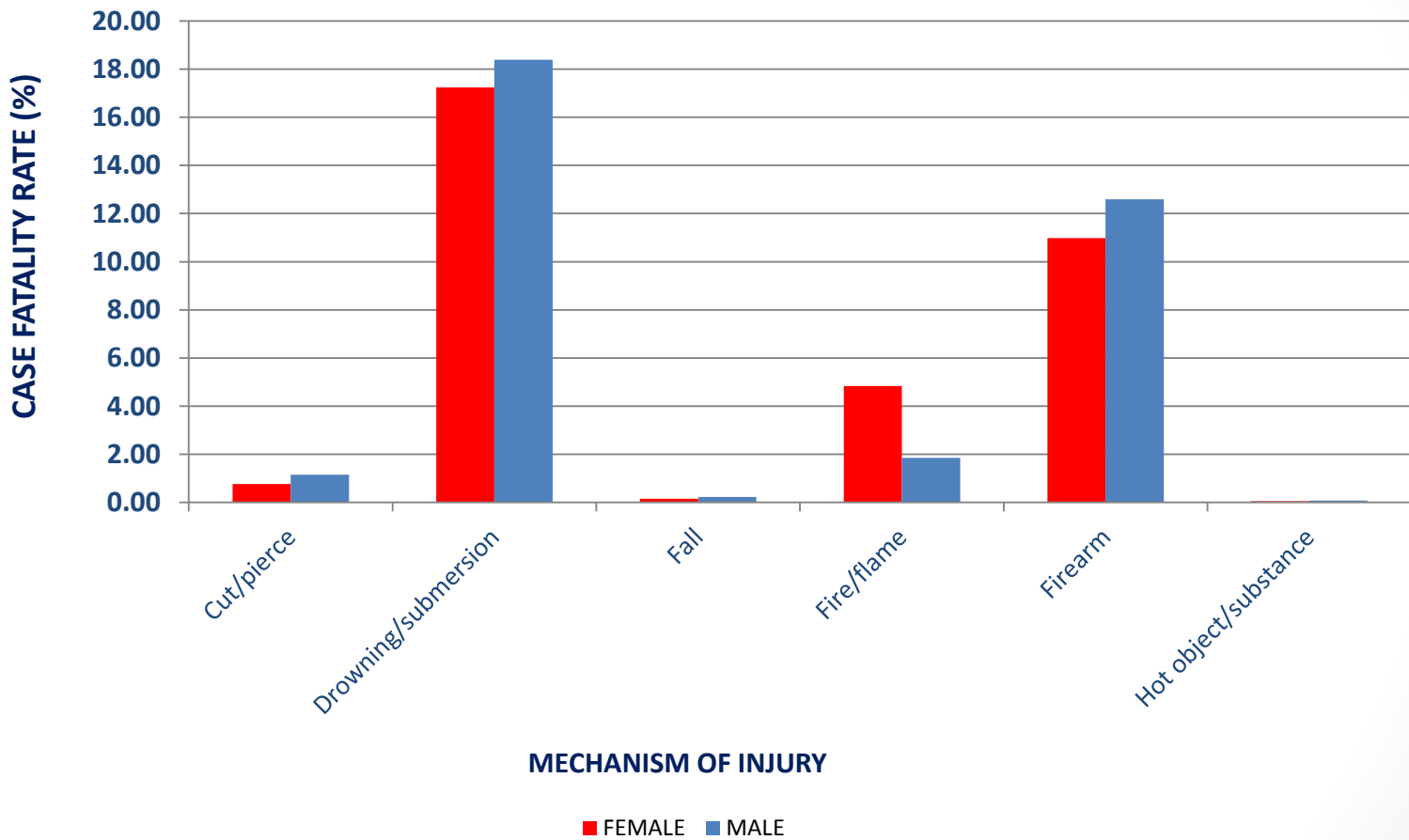


Table  
16

## Incidents by Comparative Injury Severity Scores

ISS	LOCAL ISS		AIS SUBMITTED		AIS 98 CROSSWALKED		AIS ICDMAP-90	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
1-8	91,890	60.10	90,453	59.16	88,706	58.02	96,580	63.17
9-15	36,400	23.81	35,990	23.54	36,050	23.58	23,498	15.37
16-24	11,727	7.67	11,444	7.49	15,980	10.45	16,860	11.03
>24	7,720	5.05	7,387	4.83	9,137	5.98	6,239	4.08
NK/NR	5,147	3.37	7,610	4.98	3,011	1.97	9,707	6.35
Total	152,884	100.00	152,884	100.00	152,884	100.00	152,884	100.00

Injury Severity Score definitions can be found in Appendix B.



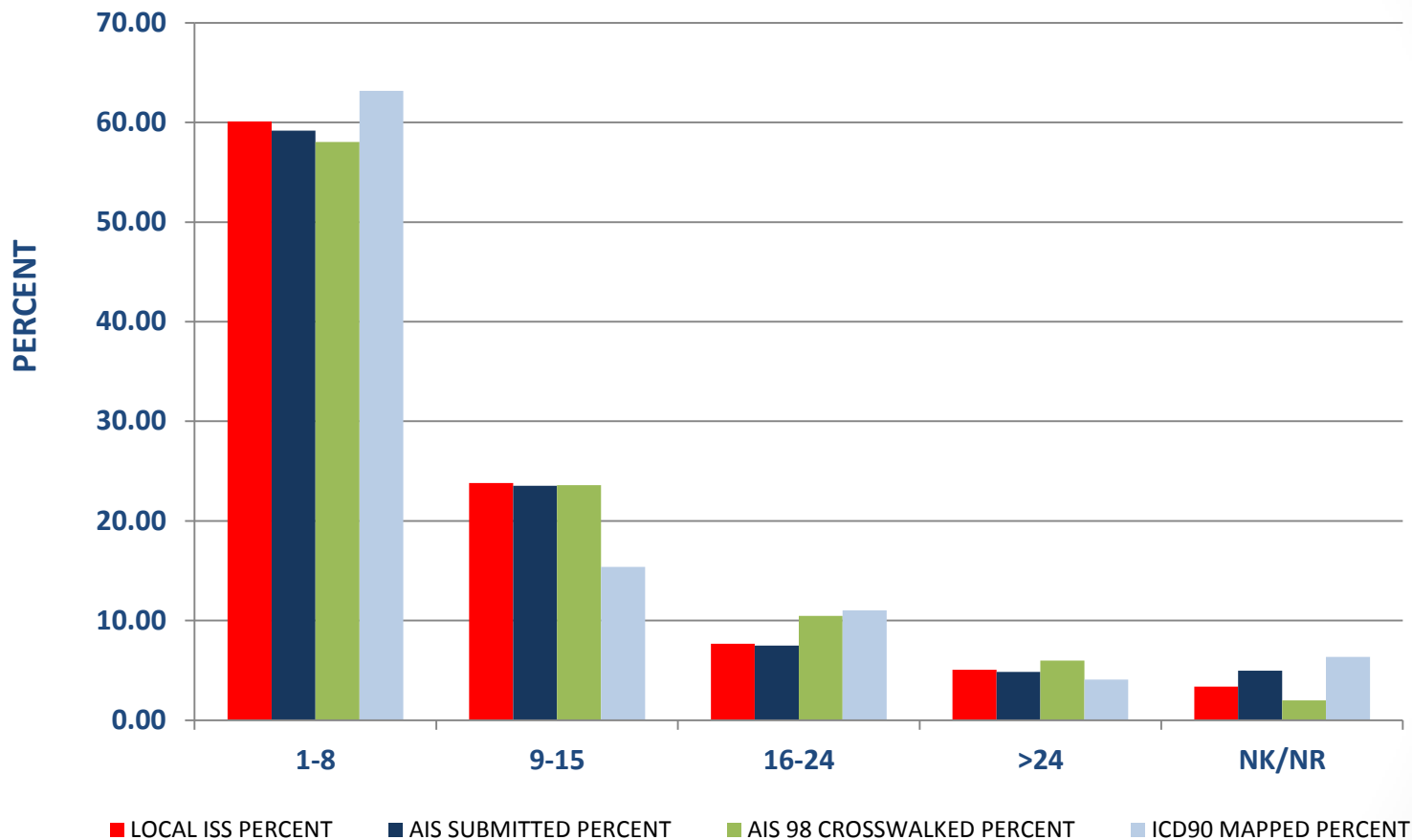
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Figure 16

## Incidents by Comparative Injury Severity Scores



Injury Severity Score definitions can be found in Appendix B.



Table  
17

## Incidents and Case Fatality Rate by Injury Severity Score

ISS	NUMBER	PERCENT	DEATHS	CASE FATALITY RATE
1-8	88,706	58.02	205	0.23
9-15	36,050	23.58	229	0.64
16-24	15,980	10.45	340	2.13
>24	9,137	5.98	1,963	21.48
NK/NR	3,011	1.97	69	2.29
Total	152,884	100.00	2,806	1.84

Injury Severity Score definitions can be found in Appendix B.



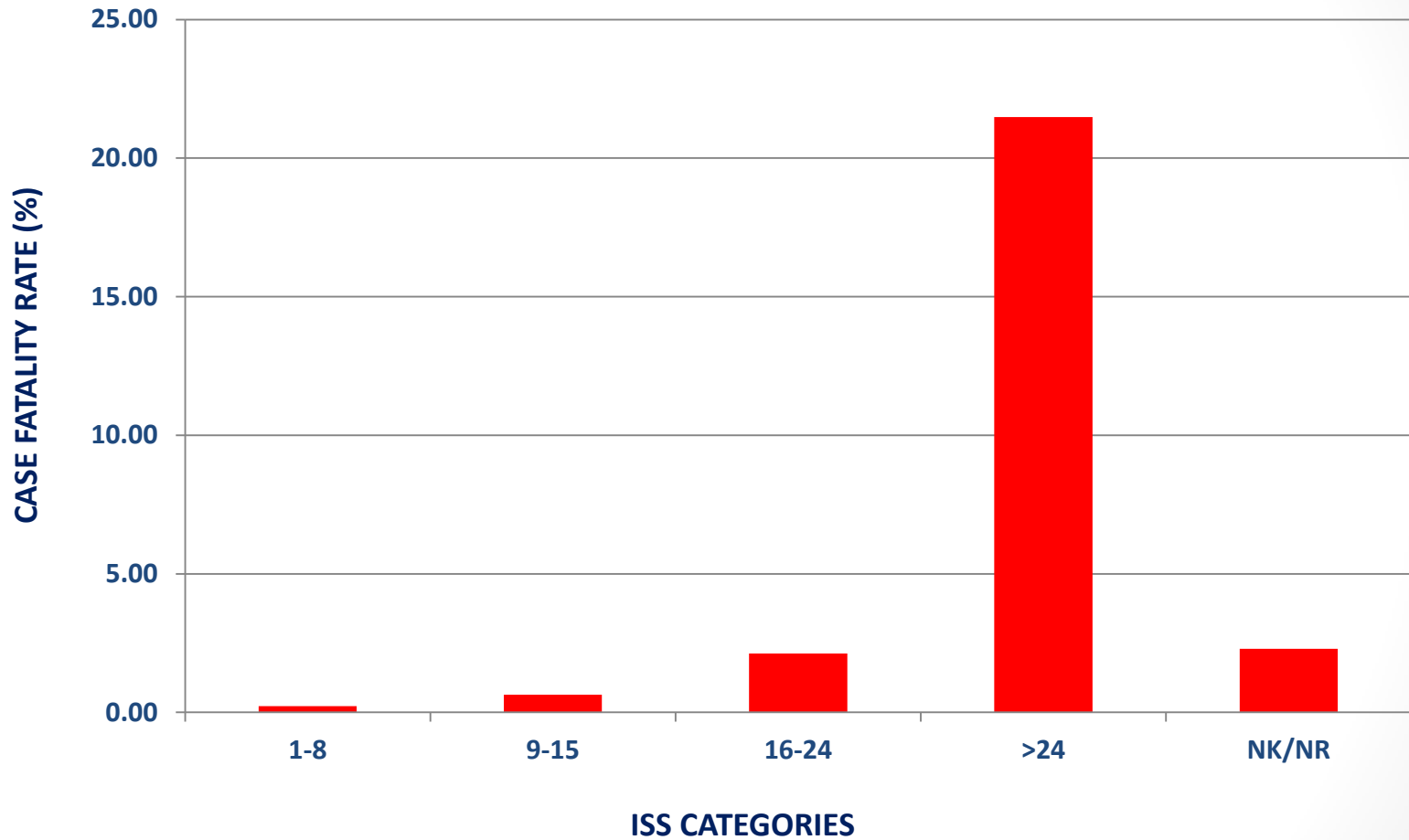
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Figure 17

## Incidents and Case Fatality Rate by Injury Severity Score



Injury Severity Score definitions can be found in Appendix B.



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Table  
18

## Incidents by Injury Severity Score and Age

	ISS 1–8	ISS 9–15	ISS 16–24	ISS >24	ISS NK/NR	Total
<1 year	4,110	2,309	2,046	727	377	9,569
1	4,670	1,396	656	295	293	7,310
2	4,135	1,845	603	276	297	7,156
3	4,104	1,508	509	210	224	6,555
4	4,323	1,285	510	243	153	6,514
5	4,669	1,383	442	162	103	6,759
6	4,318	1,338	406	177	100	6,339
7	3,715	1,173	336	182	90	5,496
8	3,399	1,128	334	163	103	5,127
9	3,007	1,036	348	169	115	4,675
10	3,000	1,132	341	153	109	4,735
11	3,136	1,224	425	176	126	5,087
12	3,517	1,471	551	229	92	5,860
13	3,869	1,660	532	290	105	6,456
14	4,534	1,860	777	399	109	7,679
15	4,740	2,023	911	501	119	8,294
16	5,504	2,455	1,174	832	101	10,066
17	6,040	2,851	1,484	1,088	126	11,589
18	6,850	3,401	1,766	1,389	137	13,543
19	7,066	3,572	1,829	1,476	132	14,075
Total	88,706	36,050	15,980	9,137	3,011	152,884

Injury Severity Score definitions can be found in Appendix B.



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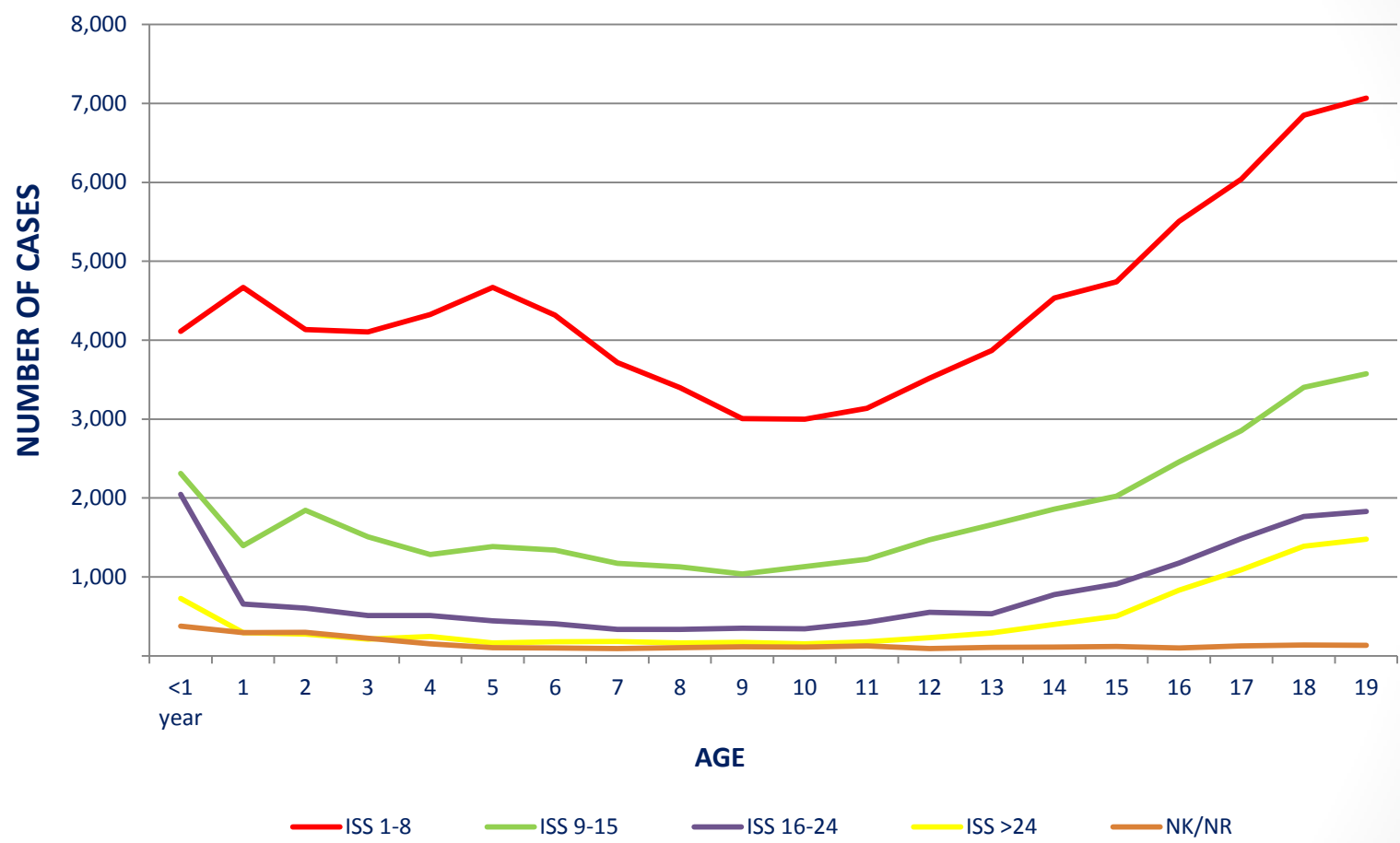
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Figure 18

## Incidents by Injury Severity Score and Age



Injury Severity Score definitions can be found in Appendix B.

Table  
19

## Case Fatality Rate by Injury Severity Score and Age

AGE	ISS 1-8 DEATHS	ISS 1-8 CASE FATALITY RATE	ISS 9-15 DEATHS	ISS 9-15 CASE FATALITY RATE	ISS 16-24 DEATHS	ISS 16-24 CASE FATALITY RATE	ISS >24 DEATHS	ISS >24 CASE FATALITY RATE	ISS NK/NR DEATHS	ISS NK/NR CASE FATALITY RATE
<1 year	10	0.24	21	0.91	38	1.86	134	18.43	134	1.06
1	8	0.17	7	0.50	21	3.20	118	40.00	118	1.37
2	8	0.19	9	0.49	22	3.65	88	31.88	88	0.67
3	6	0.15	8	0.53	4	0.79	44	20.95	44	1.79
4	10	0.23	2	0.16	7	1.37	52	21.40	52	1.96
5	4	0.09	9	0.65	7	1.58	33	20.37	33	0.97
6	9	0.21	5	0.37	4	0.99	33	18.64	33	1.00
7	4	0.11	6	0.51	8	2.38	42	23.08	42	0.00
8	5	0.15	4	0.35	3	0.90	22	13.50	22	1.94
9	3	0.10	0	0.00	5	1.44	33	19.53	33	0.00
10	1	0.03	2	0.18	7	2.05	23	15.03	23	1.83
11	5	0.16	2	0.16	3	0.71	35	19.89	35	0.00
12	5	0.14	6	0.41	4	0.73	34	14.85	34	3.26
13	4	0.10	9	0.54	7	1.32	45	15.52	45	1.90
14	7	0.15	6	0.32	9	1.16	72	18.05	72	3.67
15	8	0.17	5	0.25	15	1.65	103	20.56	103	2.52
16	18	0.33	14	0.57	23	1.96	165	19.83	165	4.95
17	19	0.31	24	0.84	39	2.63	216	19.85	216	4.76
18	30	0.44	42	1.23	52	2.94	303	21.81	303	8.76
19	41	0.58	48	1.34	62	3.39	368	24.93	368	8.33
Total	205	0.23	229	0.64	340	2.13	1,963	21.48	1,963	2.29

Injury Severity Score definitions can be found in Appendix B.



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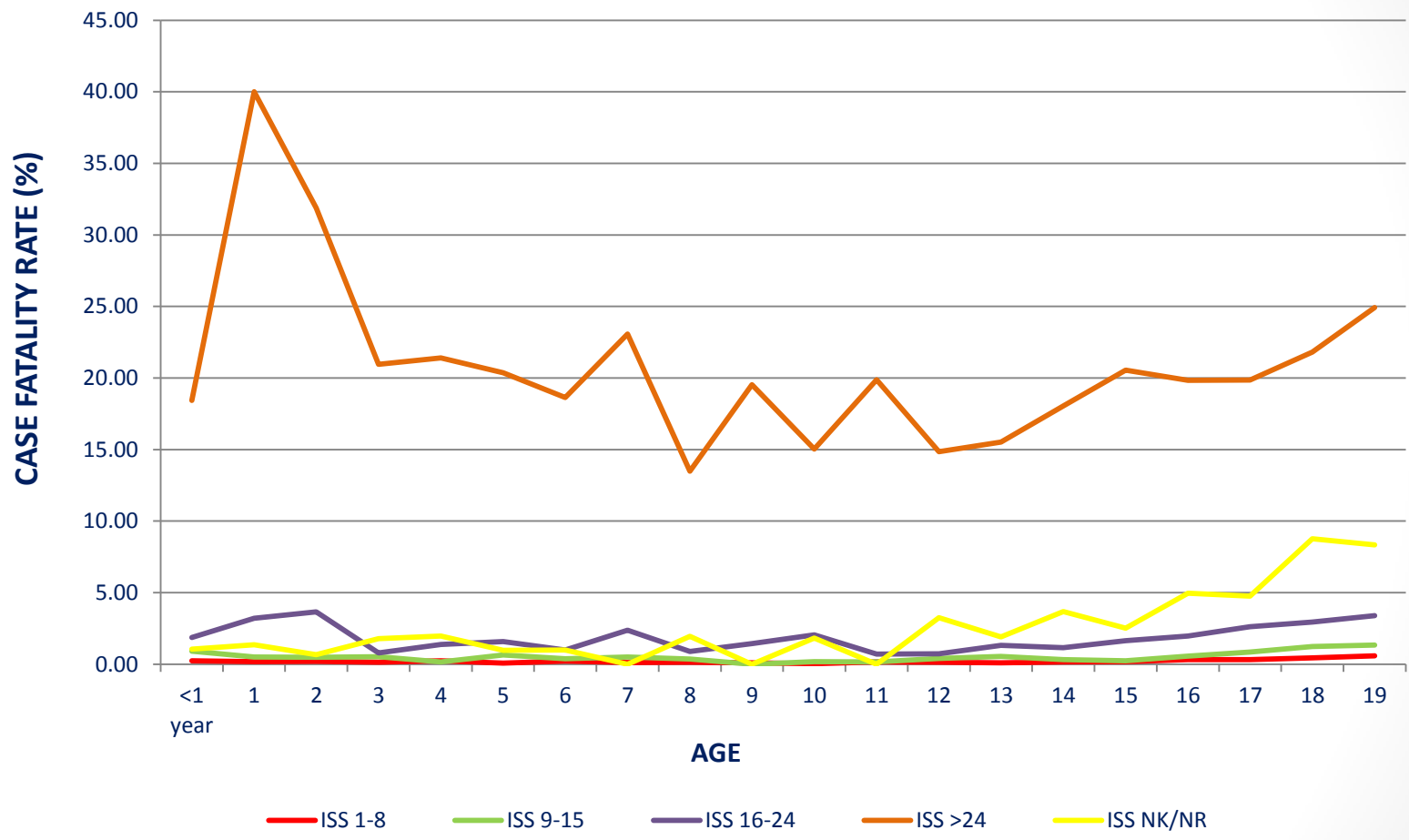
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Figure 19

### Case Fatality Rate by Injury Severity Score and Age



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Injury Severity Score definitions can be found in Appendix B.

Table  
20

## Incidents and Case Fatality Rate by Work-Related Injuries

WORK-RELATED	NUMBER	PERCENT	DEATHS	CASE FATALITY RATE
No	133,928	87.60	2,521	1.88
Yes	875	0.57	11	1.26
Not Applicable	12,702	8.31	154	1.21
NK/NR	5,379	3.52	120	2.23
Total	152,884	100.00	2,806	1.84



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Figure 20a

## Incidents by Work-Related Injuries

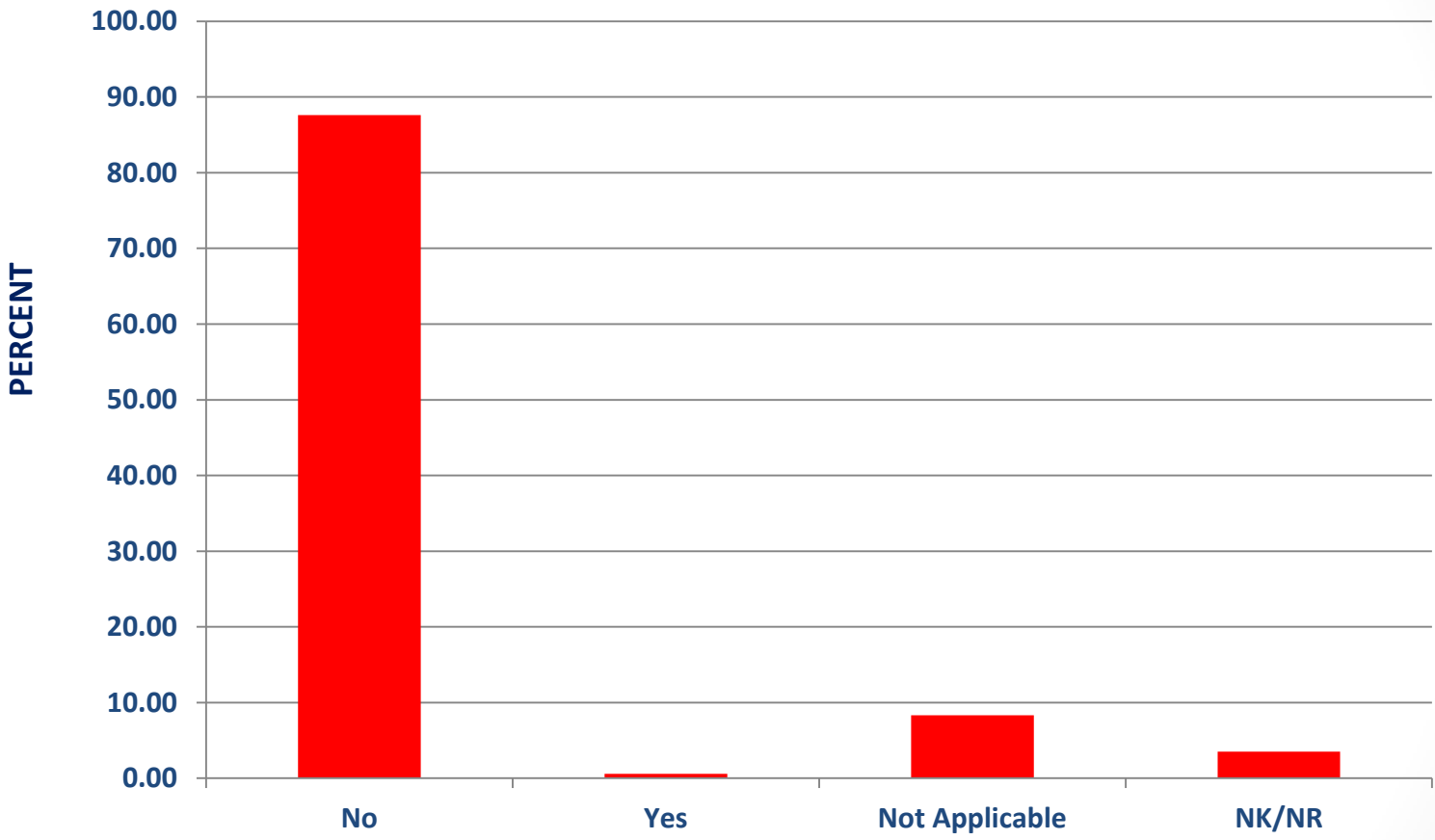
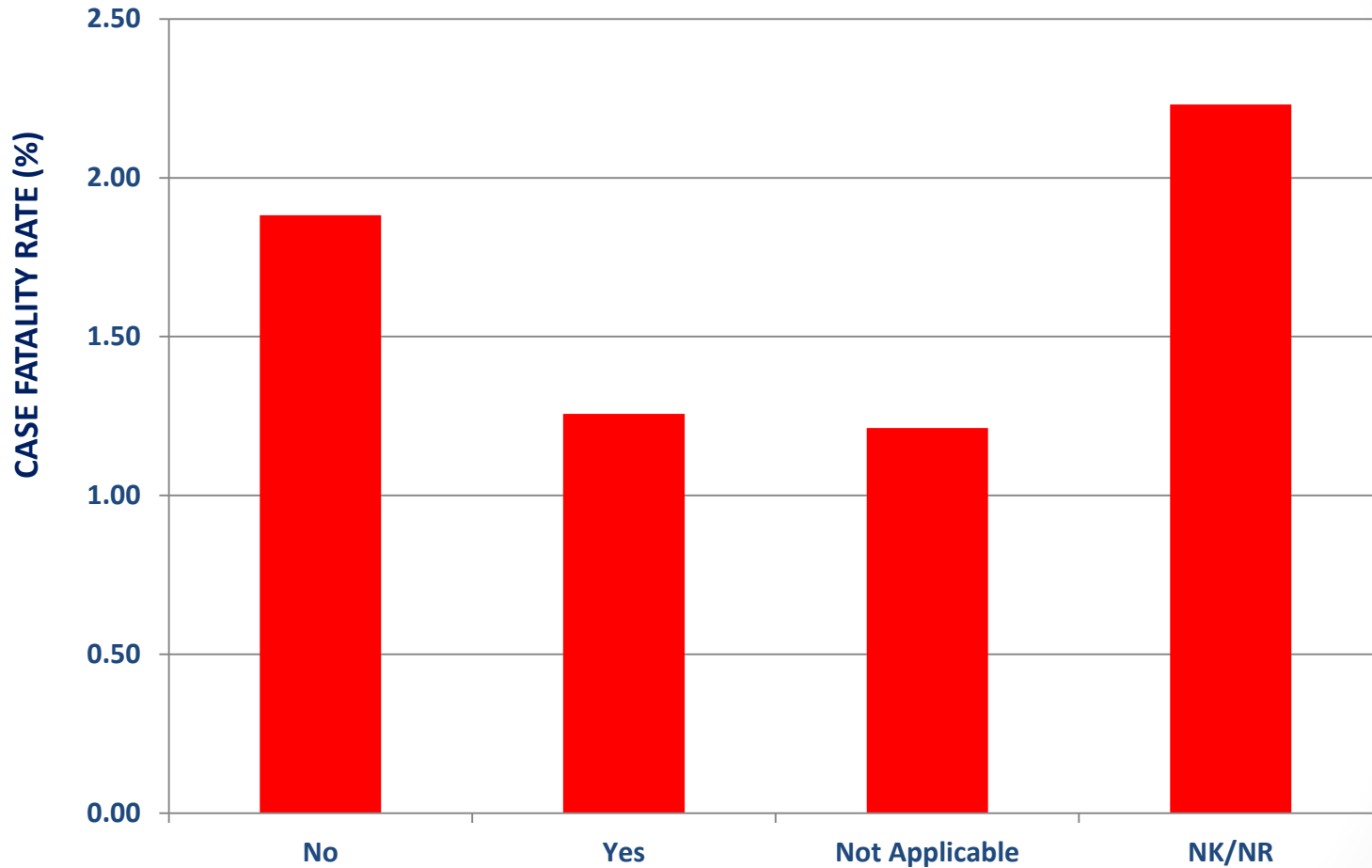


Figure 20b

## Case Fatality Rate by Work-Related Injuries



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Table  
21

## Incidents and Case Fatality Rate by Intent

INTENT	NUMBER	PERCENT	DEATHS	CASE FATALITY RATE
Unintentional	135,828	88.84	1,656	1.22
Assault	14,123	9.24	882	6.25
Self-inflicted	1,468	0.96	197	13.42
Undetermined	1,070	0.70	60	5.61
Other	163	0.11	10	6.13
NK/NR	232	0.15	1	0.43
Total	152,884	100.00	2,806	1.84



Figure 21

### Case Fatality Rate by Intent

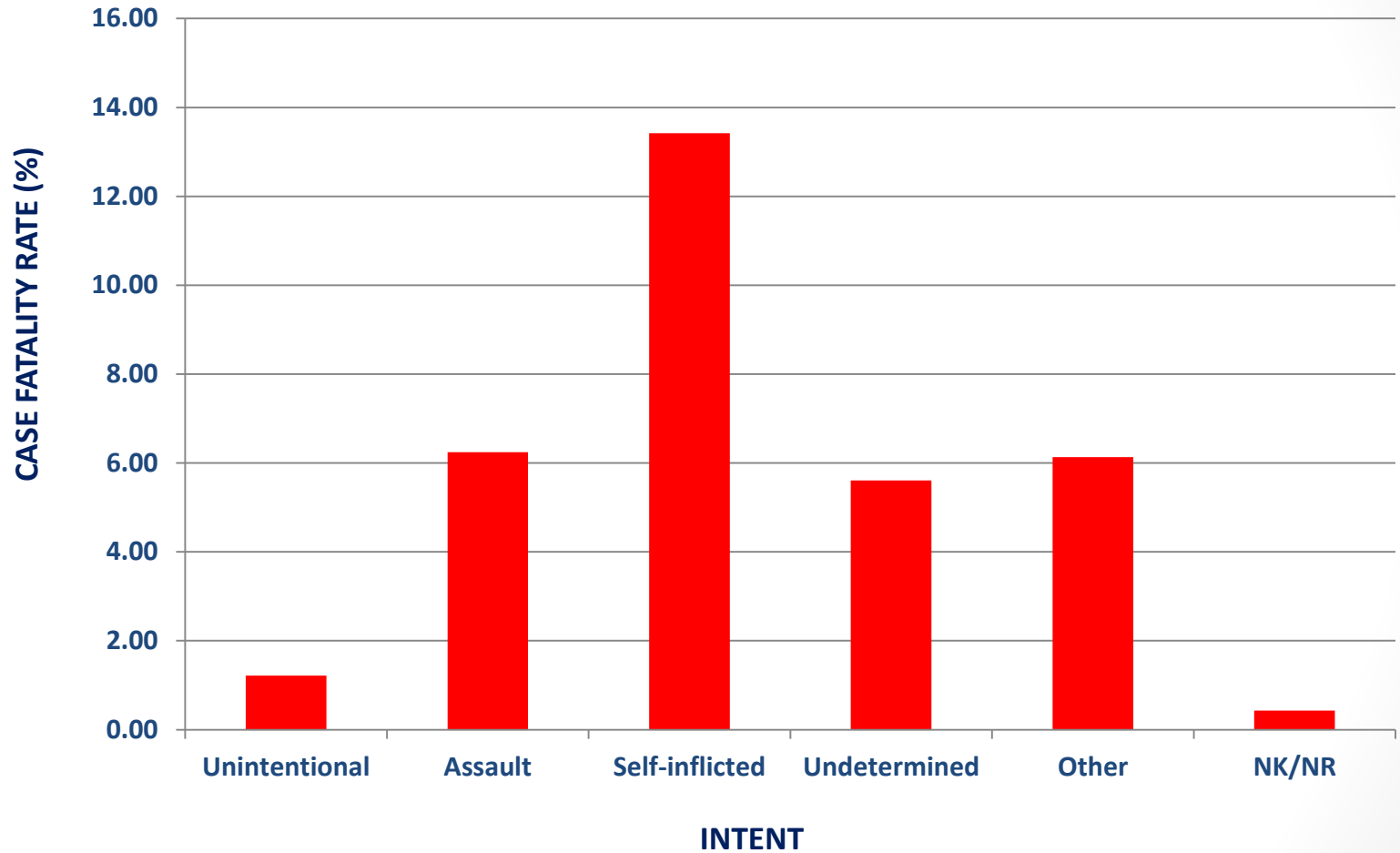


Table  
22

## Incidents and Case Fatality Rate by Location E-Code

LOCATION E-CODE DESCRIPTION	NUMBER	PERCENT	DEATHS	CASE FATALITY RATE
Home	50,158	32.81	814	1.62
Street	46,515	30.43	1,437	3.09
Recreation	23,268	15.22	68	0.29
Unspecified	10,613	6.94	172	1.62
Public Building	9,148	5.98	77	0.84
Other	6,487	4.24	124	1.91
Farm	959	0.63	13	1.36
Industry	548	0.36	8	1.46
Residential Institution	502	0.33	5	1.00
Mine	20	0.01	1	5.00
Not Applicable	96	0.06	2	2.08
NK/NR	4,570	2.99	85	1.86
Total	152,884	100.00	2,806	1.84

Injury Severity Score definitions can be found in Appendix B.



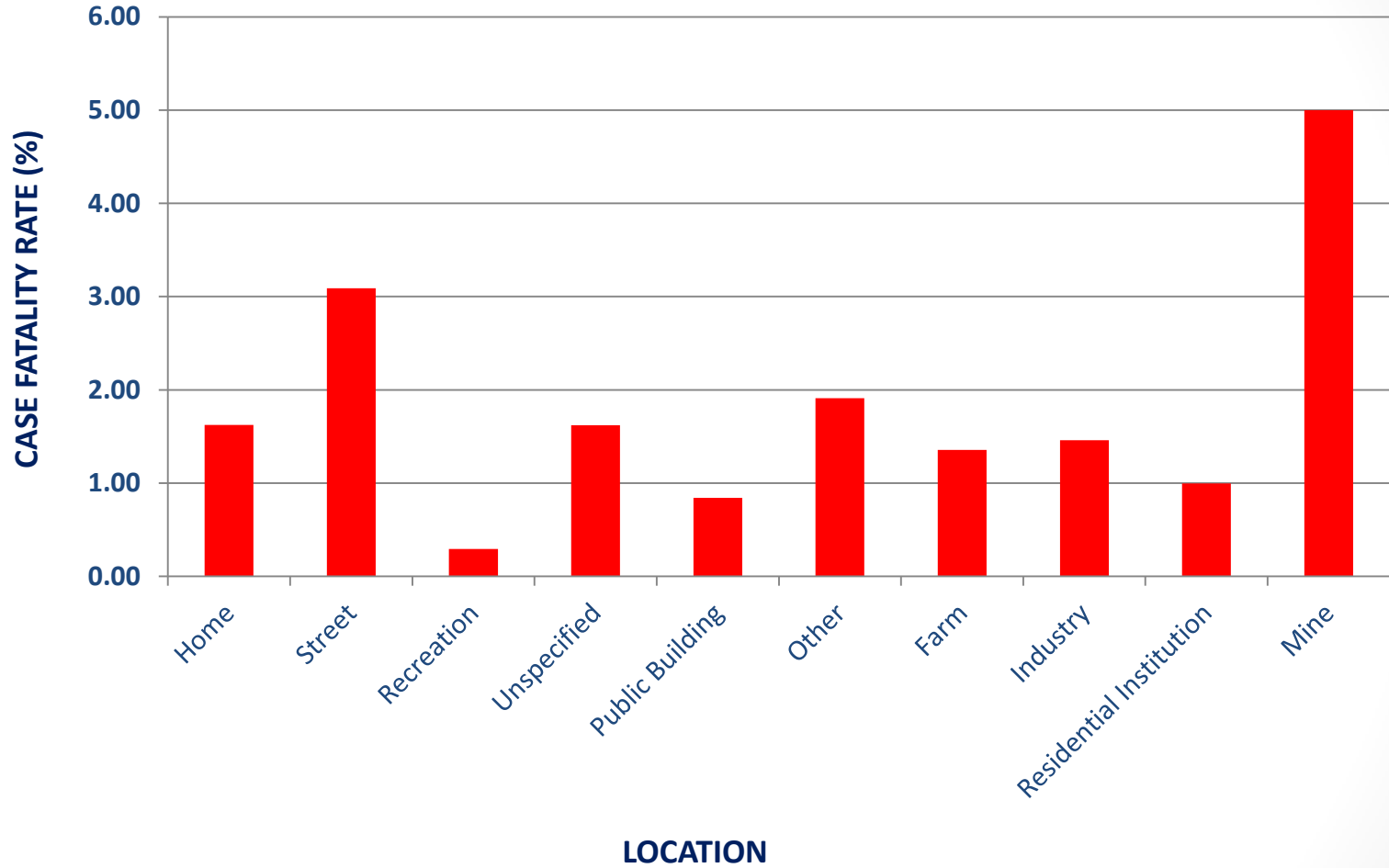
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Figure 22

## Case Fatality Rate by Location E-Code



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Table  
23

## Incidents and Case Fatality Rate by AIS Body Region

AIS BODY REGION	NUMBER	PERCENT	DEATHS	CASE FATALITY RATE
Head	56,786	37.14	1,975	3.48
Upper Extremity	48,597	31.79	720	1.48
Lower Extremity	40,713	26.63	841	2.07
Face	34,993	22.89	948	2.71
Thorax	19,911	13.02	1,470	7.38
Abdomen	19,263	12.60	915	4.75
External/Other	17,558	11.48	410	2.34
Spine	14,530	9.50	456	3.14
Neck	2,615	1.71	168	6.42
NK/NR	2,602	1.70	98	3.77

A patient can have injuries in multiple body regions.



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Figure 23a

## Incidents by AIS Body Region

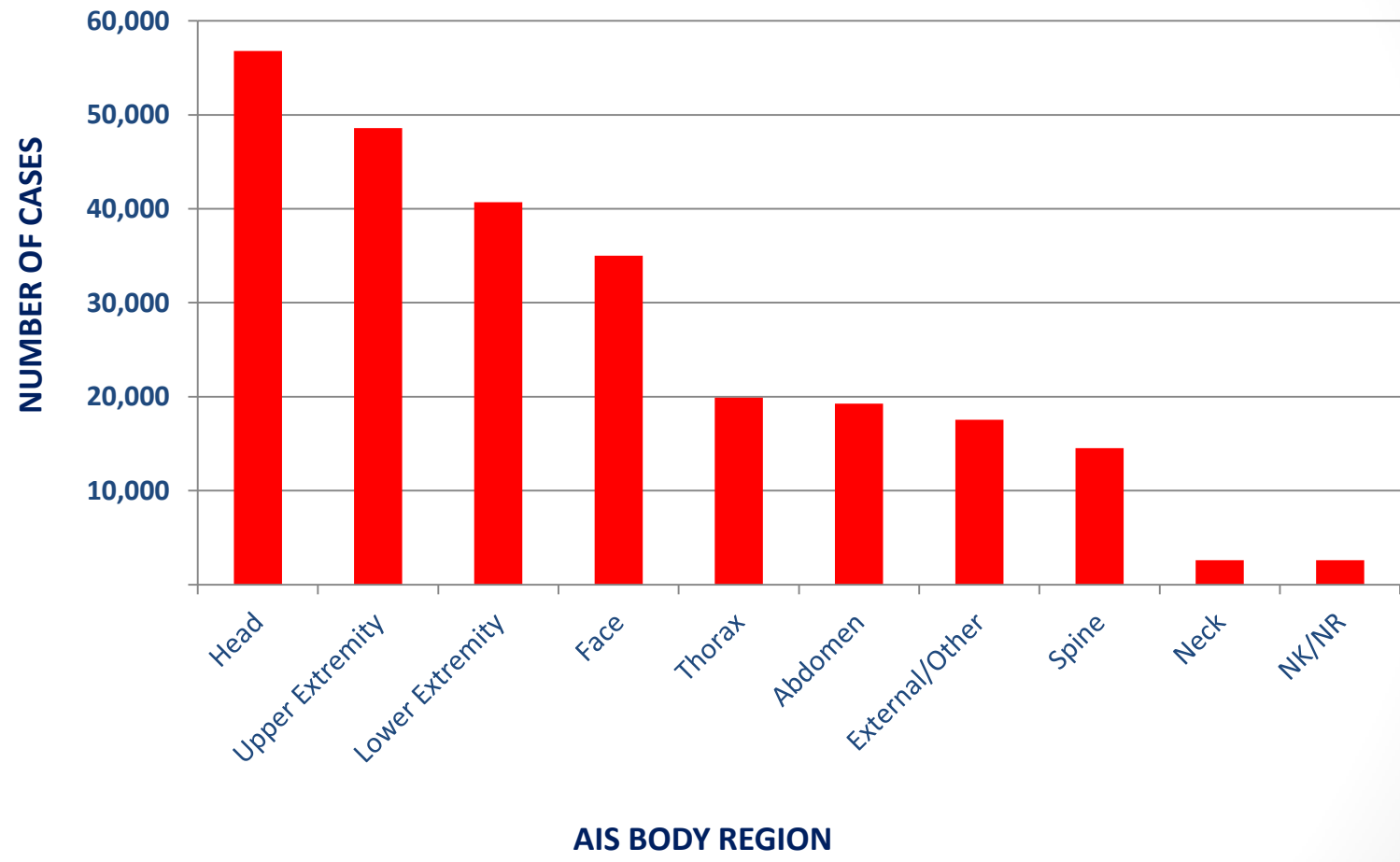
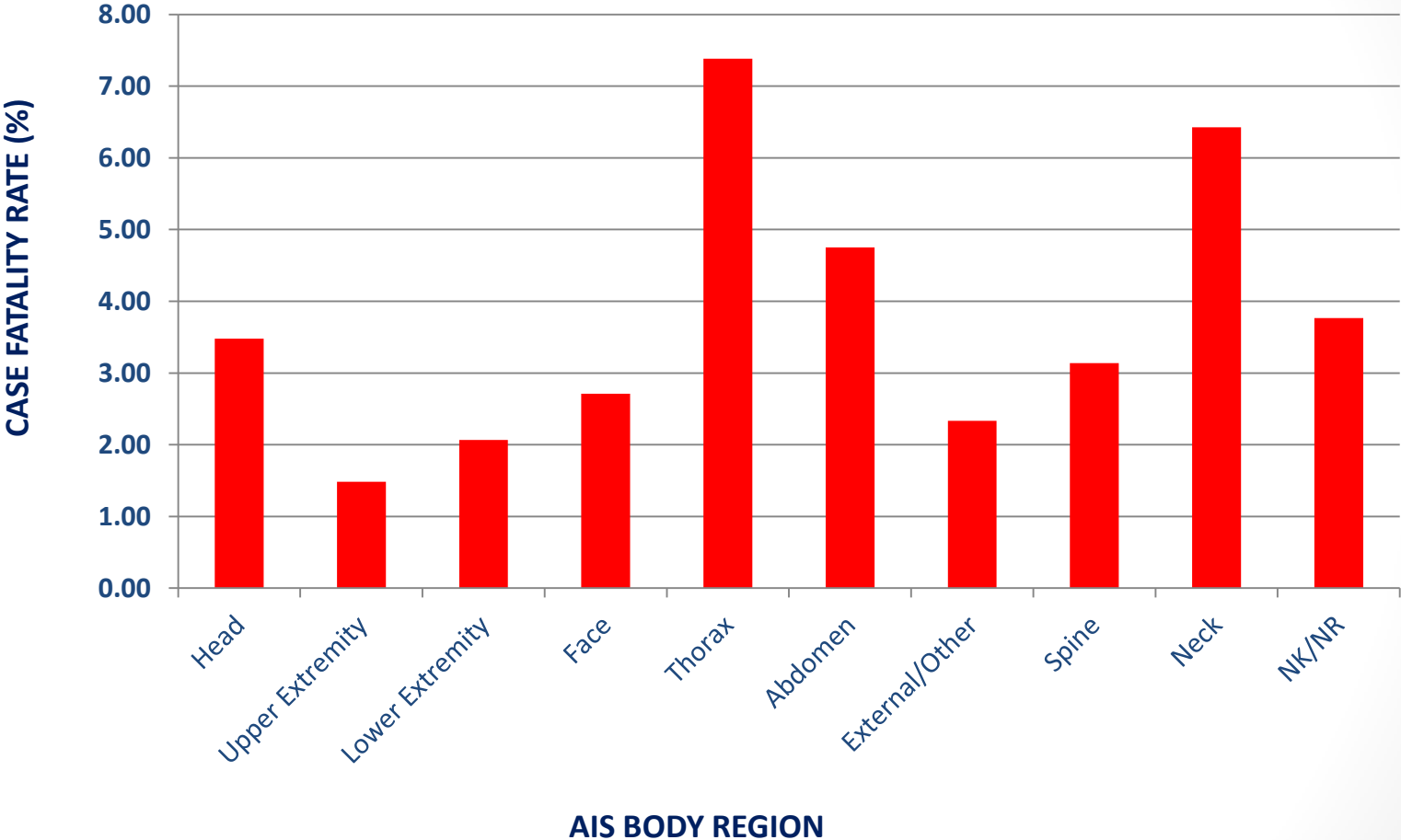


Figure 23b

### Case Fatality Rate by AIS Body Region



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Table 24

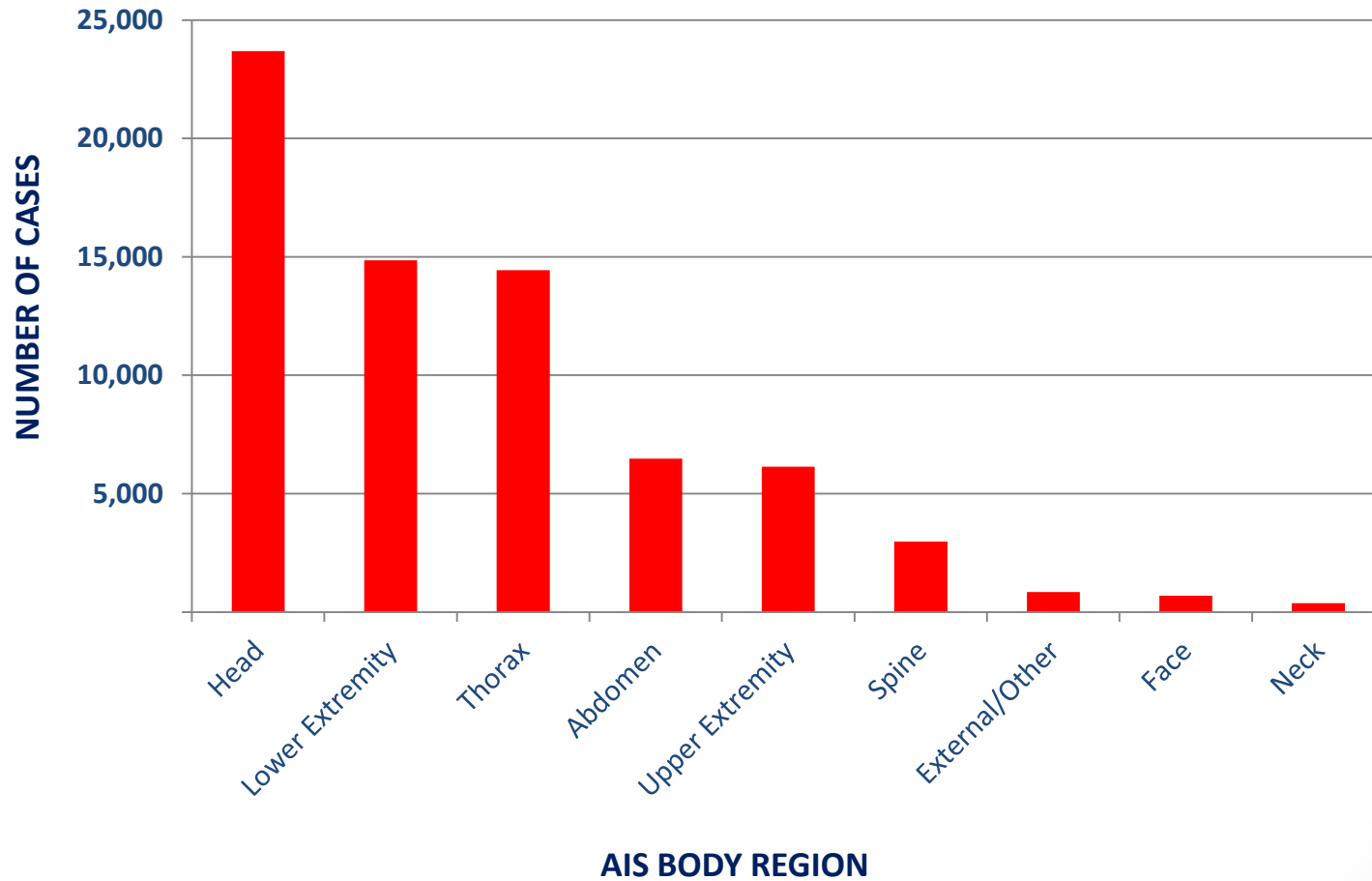
## Incidents and Case Fatality Rate with AIS ≥ 3 by AIS Body Region

AIS BODY REGION	NUMBER	DEATHS	CASE FATALITY RATE
Head	23,690	1,835	7.75
Lower Extremity	14,850	379	2.55
Thorax	14,435	1,282	8.88
Abdomen	6,483	470	7.25
Upper Extremity	6,138	71	1.16
Spine	2,977	210	7.05
External/Other	848	44	5.19
Face	690	71	10.29
Neck	368	61	16.58

A patient can have injuries in multiple body regions.

Figure 24a

## Incidents with AIS $\geq 3$ by AIS Body Region



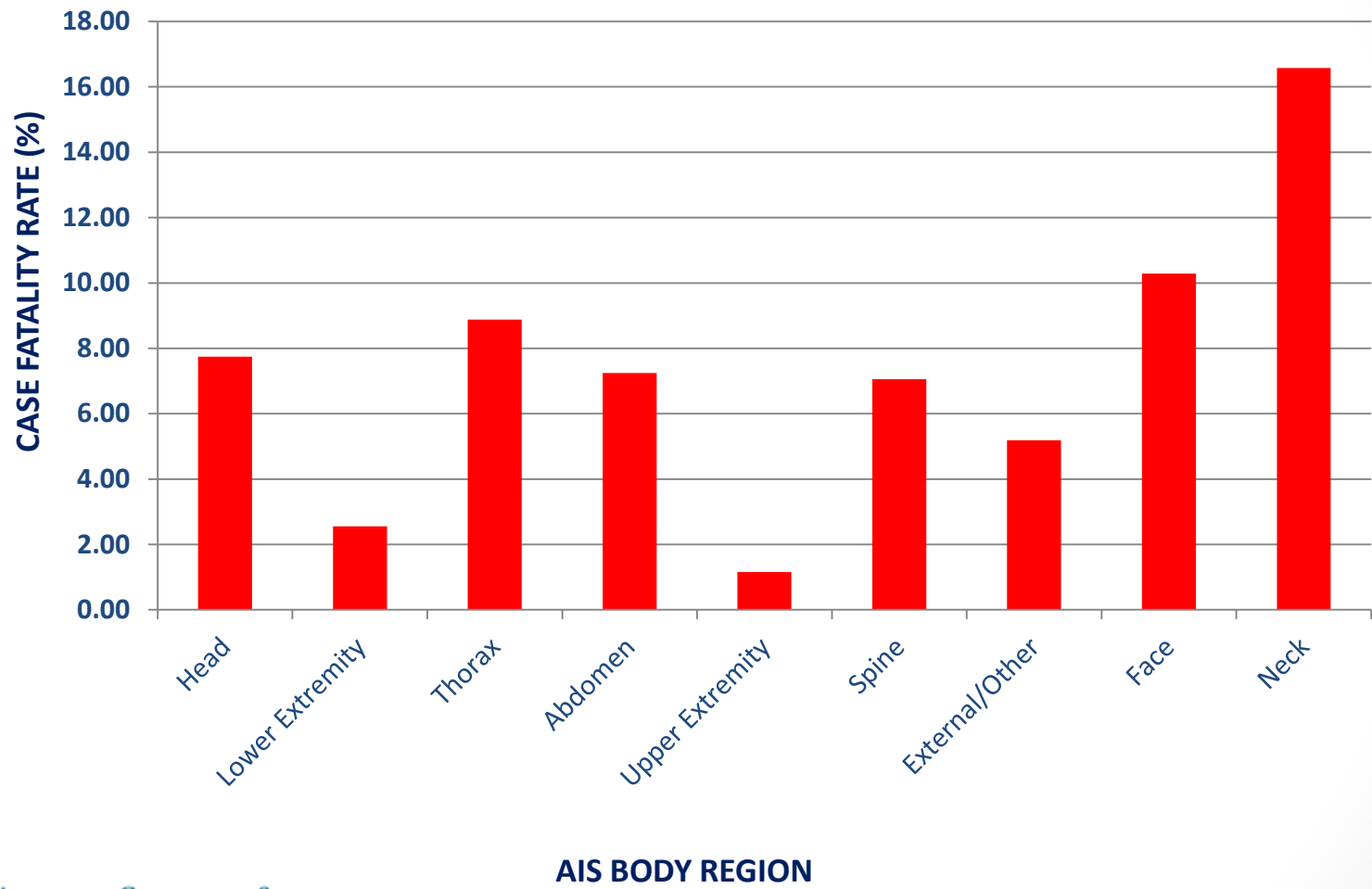
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Figure 24b

## Case Fatality Rate with AIS ≥ 3 by AIS Body Region



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**AIS BODY REGION**

Table  
25

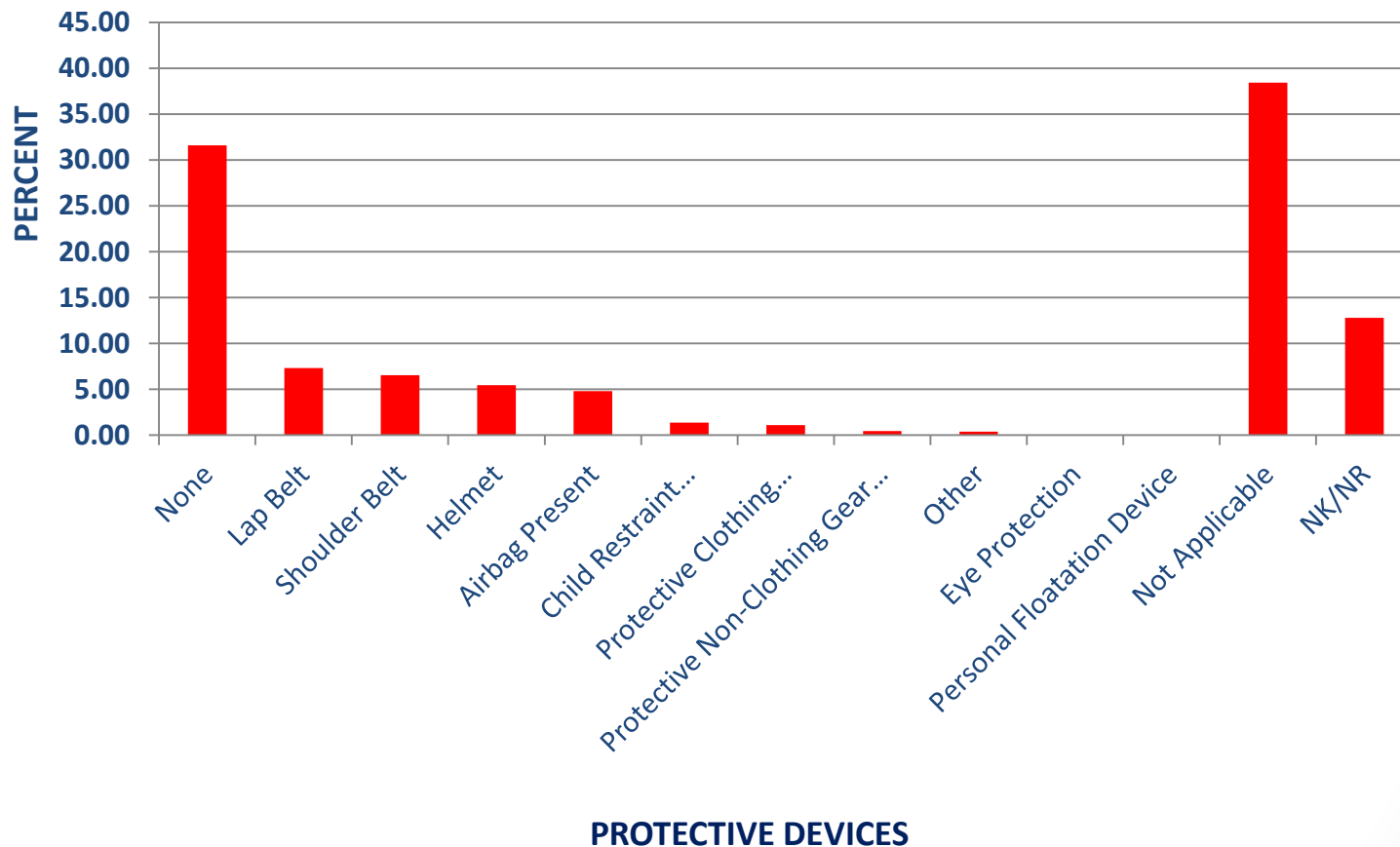
## Incidents by Protective Devices

PROTECTIVE DEVICES	NUMBER	PERCENT
None	48,309	31.60
Lap Belt	11,201	7.33
Shoulder Belt	9,988	6.53
Helmet (e.g. bicycle, skiing, motorcycle)	8,356	5.47
Airbag Present	7,348	4.81
Child Restraint (booster seat or child car seat)	2,121	1.39
Protective Clothing (e.g., padded leather pants)	1,670	1.09
Protective Non-Clothing Gear (e.g., shin guards)	685	0.45
Other	605	0.40
Eye Protection	60	0.04
Personal Floatation Device	37	0.02
Not Applicable	58,759	38.43
NK/NR	19,594	12.82



Figure 25

## Incidents by Protective Devices





# OUTCOMES INFORMATION



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Table  
26

## Median Prehospital Time (in Minutes) by Mechanism of Injury

MECHANISM	NUMBER	MEDIAN
Cut/pierce	8,371	69
Drowning/submersion	6,809	85
Fall	4,663	35
Fire/flame	2,976	46
Firearm	2,884	75
Hot object/substance	2,366	99
Machinery	1,818	119
Motor Vehicle Traffic	1,157	91
Natural/environmental, Bites and stings	814	111
Natural/environmental, Other	663	85
Other specified and classifiable	450	55
Other specified, not elsewhere classifiable	394	60
Overexertion	338	95
Pedal cyclist, other	336	82
Pedestrian, other	312	89
Poisoning	124	56
Struck by, against	103	60
Suffocation	93	48
Transport, other	83	73
Unspecified	9	95
NK/NR	4	763



Figure 26

# Median Prehospital Time (in Minutes) by Selected Mechanism of Injury

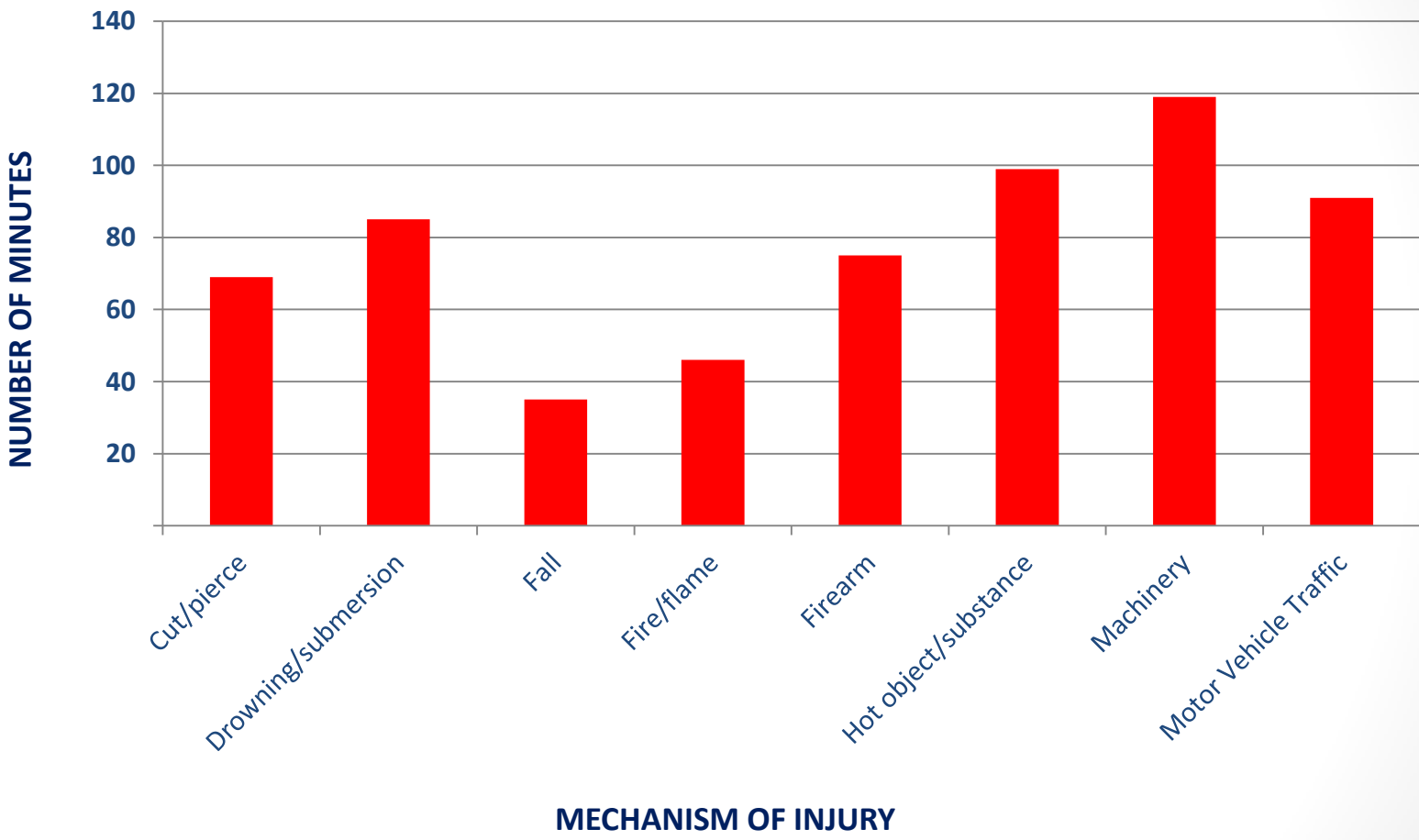


Table  
27

## Median Total Prehospital Time (in Minutes) by Injury Severity Score

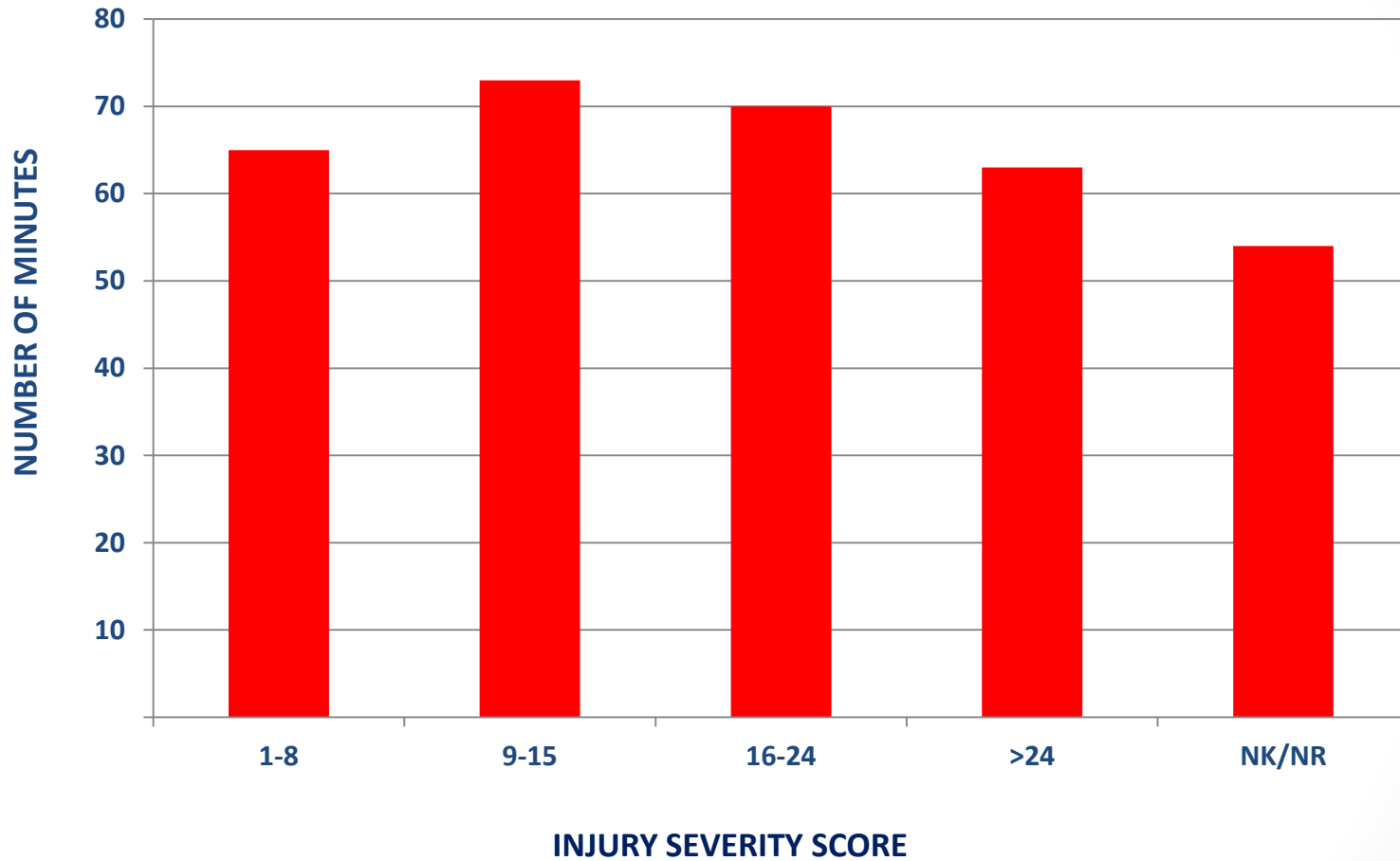
ISS	NUMBER	MEDIAN
1-8	46,015	65
9-15	22,350	73
16-24	10,838	70
>24	7,292	63
NK/NR	1,568	54

Injury Severity Score definitions can be found in Appendix B.



Figure 27

## Median Total Prehospital Time (in Minutes) by Injury Severity Score



Injury Severity Score definitions can be found in Appendix B.



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Table  
28

## Median Length of Stay (in Days) by Mechanism of Injury

MECHANISM	NUMBER	MEDIAN
Cut/pierce	16,211	2
Drowning/submersion	11,060	2
Fall	6,739	3
Fire/flame	5,410	2
Firearm	5,243	2
Hot object/substance	4,815	3
Machinery	4,490	2
Motor Vehicle Traffic	2,481	2
Natural/environmental, Bites and stings	1,659	2
Natural/environmental, Other	1,583	2
Other specified and classifiable	846	2
Other specified, not elsewhere classifiable	776	2
Overexertion	674	3
Pedal cyclist, other	615	2
Pedestrian, other	572	2
Poisoning	230	2
Struck by, against	169	3
Suffocation	143	3
Transport, other	129	2
Unspecified	25	3
NK/NR	13	2



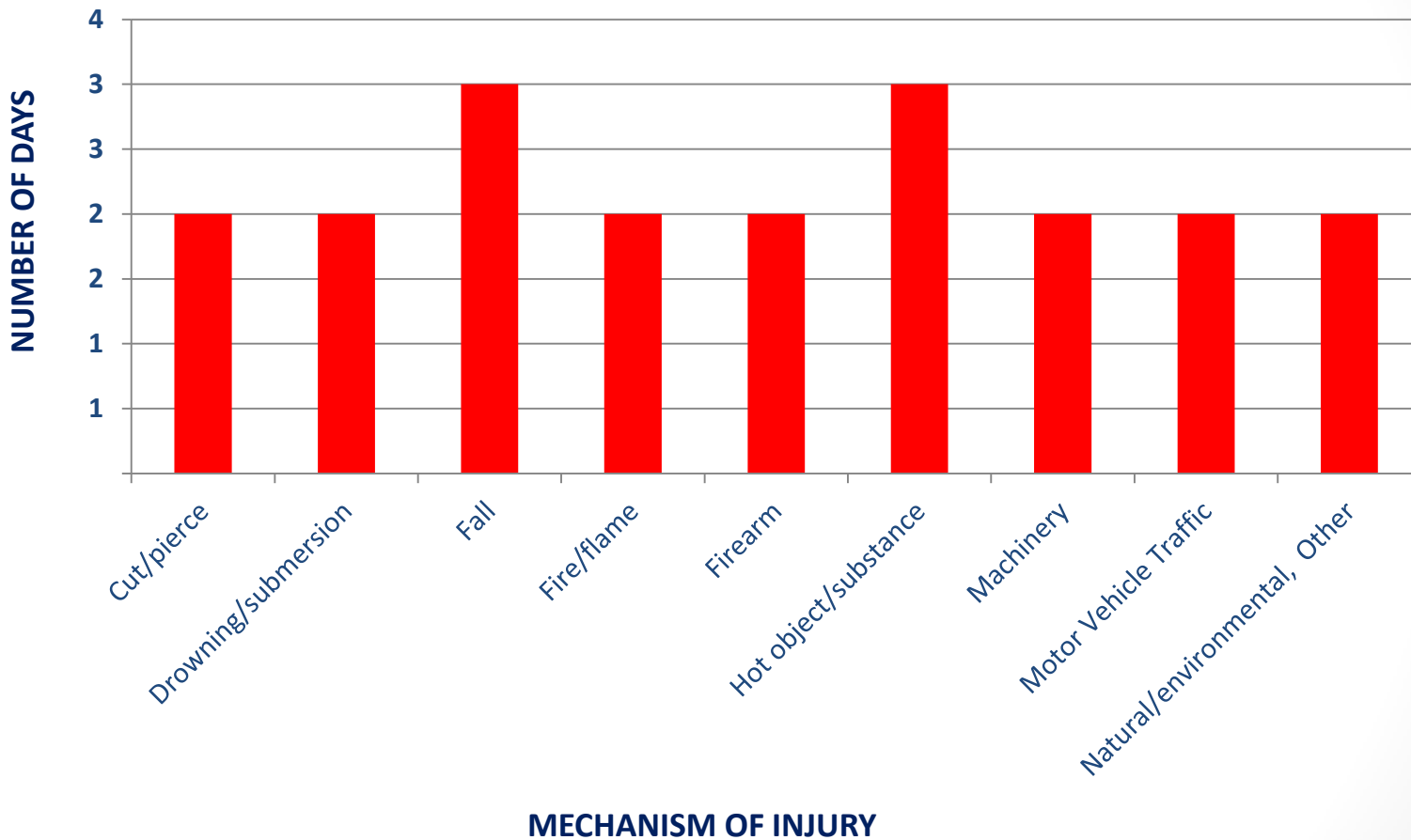
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Figure 28

## Median Length of Stay (in Days) by Selected Mechanism of Injury



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Table  
29

## Median Length of Stay (in Days) by Injury Severity Score

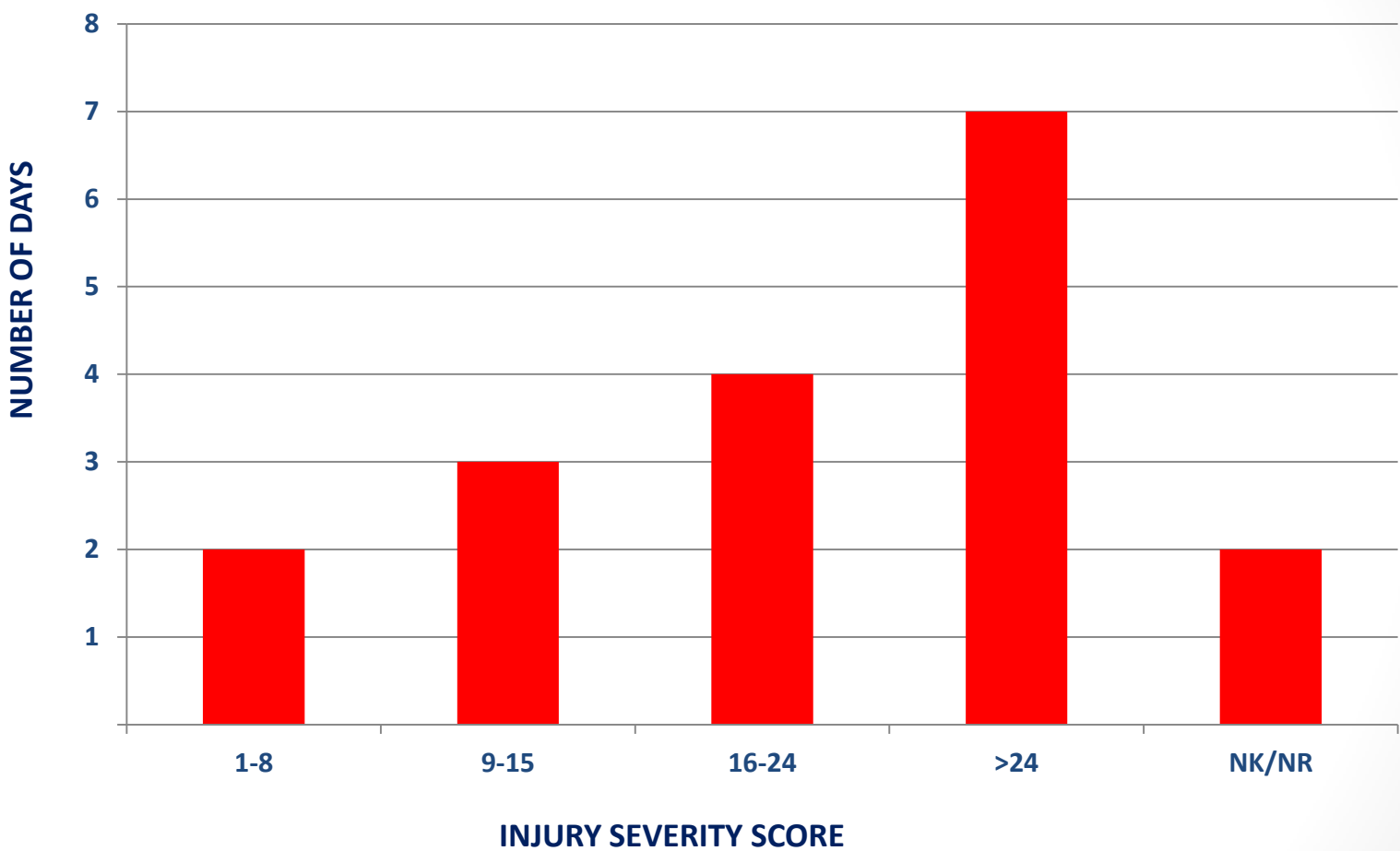
ISS	NUMBER	MEDIAN
1-8	88,451	2
9-15	35,983	3
16-24	15,955	4
>24	9,123	7
NK/NR	2,996	2

Injury Severity Score definitions can be found in Appendix B.



Figure 29

## Median Length of Stay (in Days) by Injury Severity Score



Injury Severity Score definitions can be found in Appendix B.

Table  
30

## Median Ventilator Days by Mechanism of Injury

MECHANISM	NUMBER	MEDIAN
Motor Vehicle Traffic	3,423	5
Firearm	754	3
Fall	633	3
Transport, other	521	4
Other specified and classifiable	502	5
Struck by, against	268	3
Cut/pierce	131	2
Fire/flame	123	4
Pedal cyclist, other	94	2
Unspecified	84	4
Suffocation	57	4
Drowning/submersion	38	3
Hot object/substance	37	4
Pedestrian, other	36	4
Other specified, not elsewhere classifiable	33	4
Natural/environmental, Other	31	3
Natural/environmental, Bites and stings	27	4
Machinery	18	5
Poisoning	5	3
Adverse effects, medical care	2	12
Overexertion	2	7

In patients with ventilator days > 0.



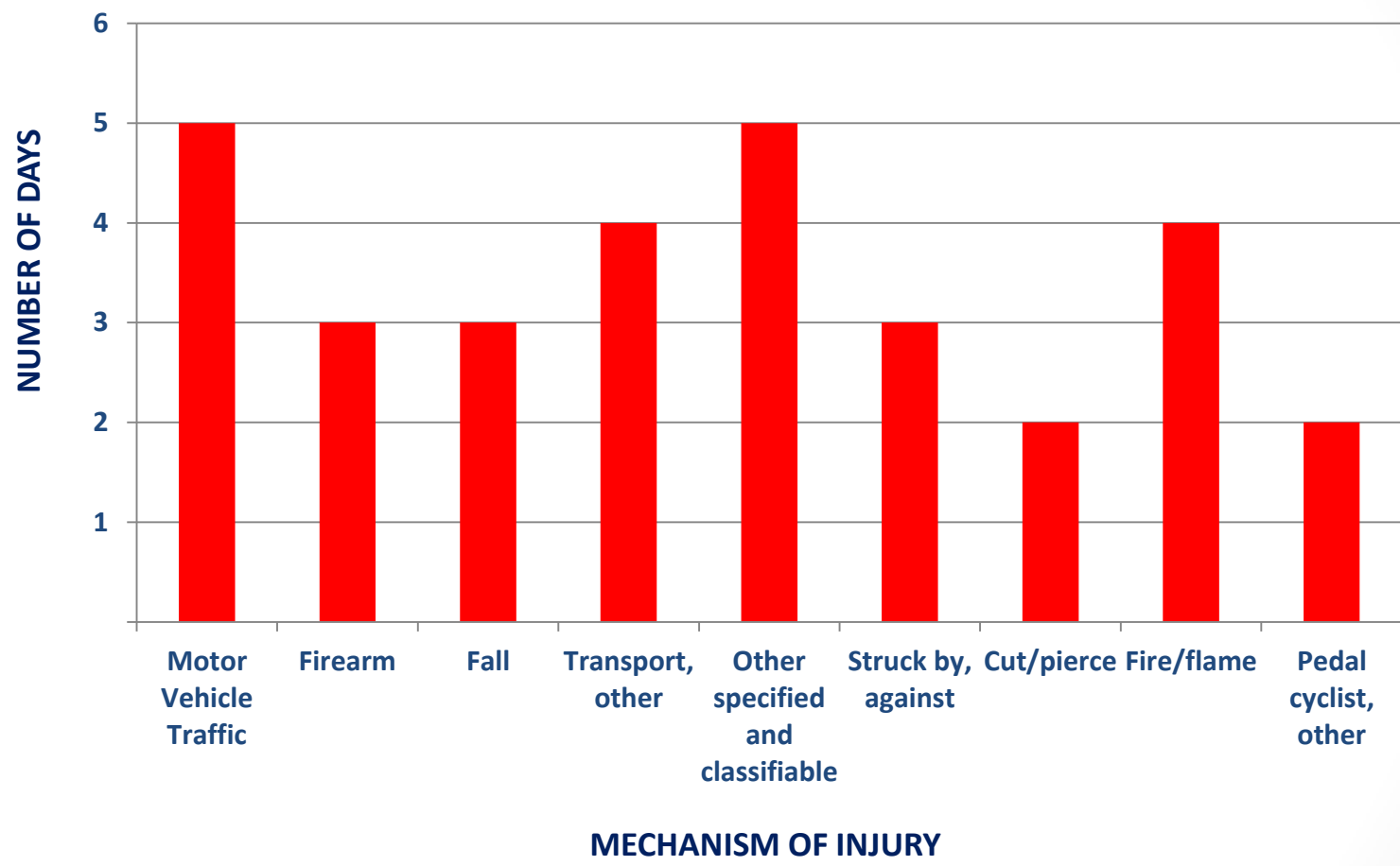
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Figure 30

## Median Ventilator Days by Selected Mechanism of Injury



In patients with ventilator days > 0.



Table  
31

## Median Ventilator Days by Injury Severity Score

ISS	NUMBER	MEDIAN
1-8	477	2
9-15	851	3
16-24	1,775	3
>24	3,673	6
NK/NR	45	3



Injury Severity Score definitions can be found in Appendix B.  
In patients with ventilator days > 0.

Figure 31

## Median Ventilator Days by Injury Severity Score



Injury Severity Score definitions can be found in Appendix B. In patients with ventilator days > 0.

Table  
32

## Median ICU Days by Mechanism of Injury

MECHANISM	NUMBER	MEDIAN
Motor Vehicle Traffic	8,220	4
Fall	3,669	2
Transport, other	1,773	3
Firearm	1,544	4
Struck by, against	1,439	2
Other specified and classifiable	1,079	4
Pedal cyclist, other	544	2
Cut/pierce	491	3
Hot object/substance	483	3
Fire/flame	350	5
Unspecified	256	3
Pedestrian, other	135	3
Natural/environmental, Bites and stings	129	2
Natural/environmental, Other	115	3
Other specified, not elsewhere classifiable	99	4
Suffocation	66	4
Drowning/submersion	57	4
Machinery	55	3
NK/NR	33	2
Poisoning	20	2
Overexertion	11	2

In patients with ICU days &gt; 0.



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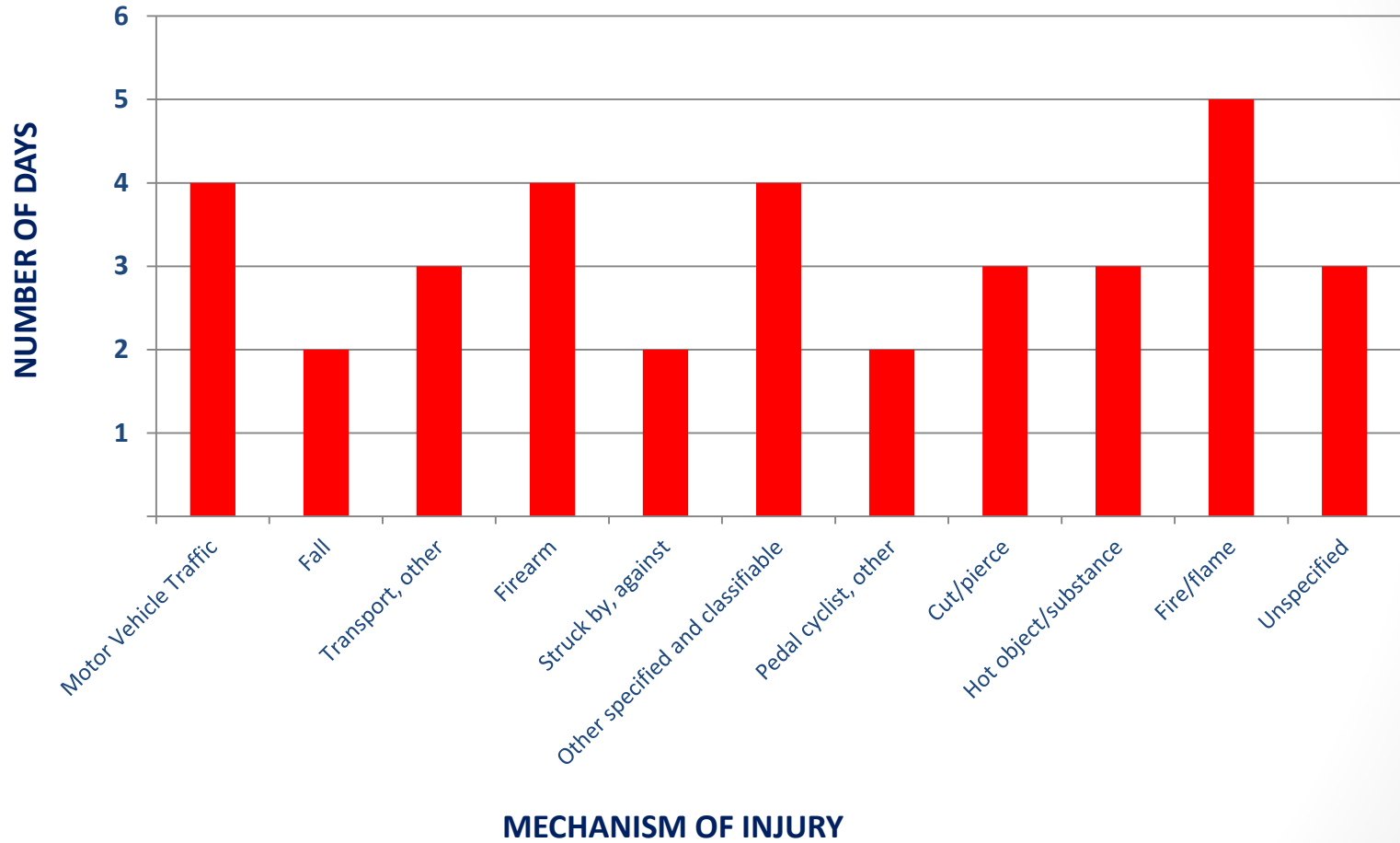
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Figure 32

## Selected Median ICU Days by Mechanism of Injury



In patients with ICU days > 0.



Table  
33

## Median ICU Days by Injury Severity Score

ISS	NUMBER	MEDIAN
1-8	3,473	2
9-15	4,584	3
16-24	6,442	3
>24	5,949	5
NK/NR	128	2

Injury Severity Score definitions can be found in Appendix B.  
In patients with ICU days > 0.



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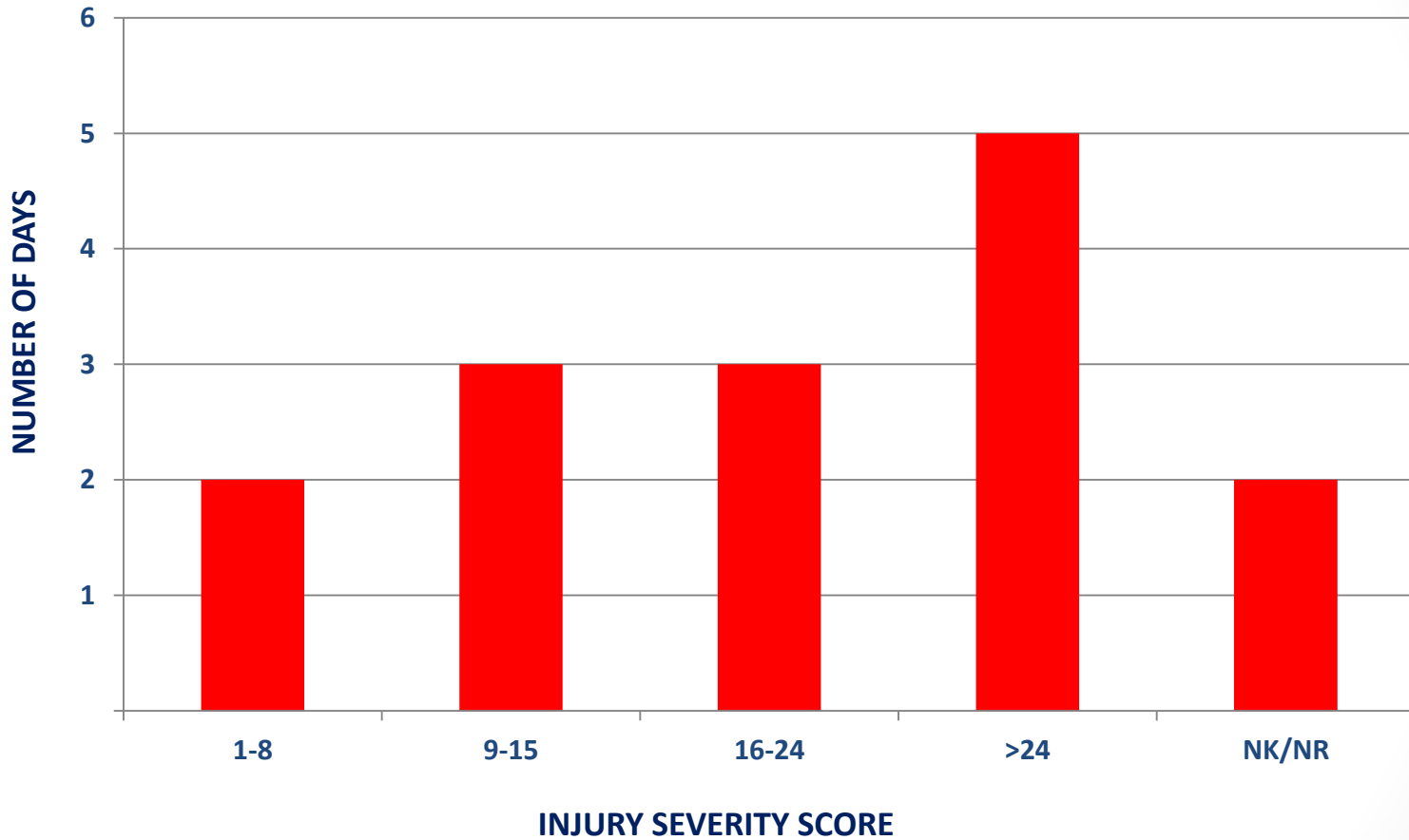
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Figure 33

## Median ICU Days by Injury Severity Score



Injury Severity Score definitions can be found in Appendix B.  
In patients with ICU days > 0.



Table  
34

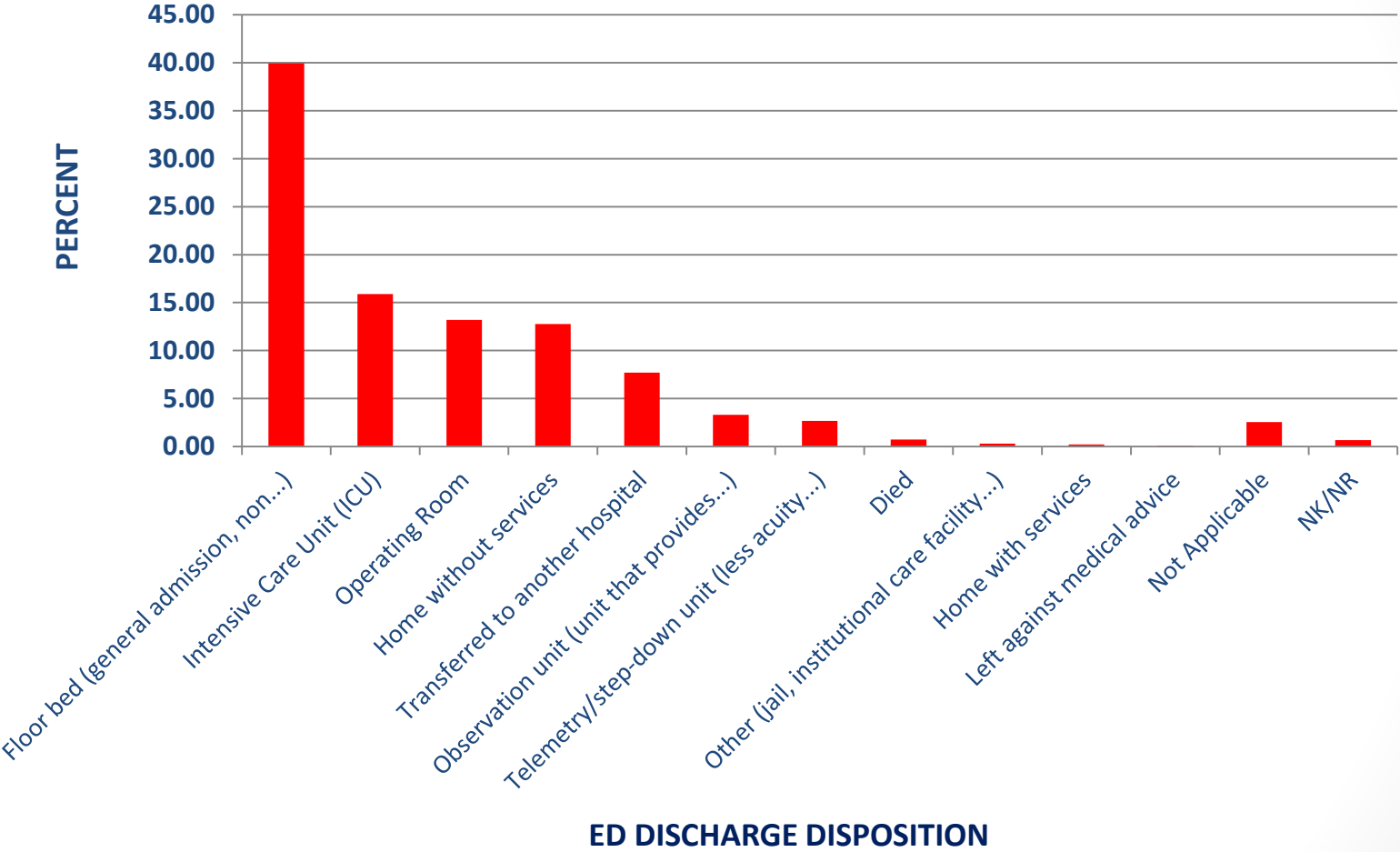
## Incidents by ED Discharge Disposition

ED DISCHARGE DISPOSITION	NUMBER	PERCENT
Floor bed (general admission, non specialty unit bed)	61,056	39.94
Intensive Care Unit (ICU)	24,297	15.89
Operating Room	20,177	13.20
Home without services	19,528	12.77
Transferred to another hospital	11,782	7.71
Observation unit (unit that provides < 24 hour stays)	5,061	3.31
Telemetry/step-down unit (less acuity than ICU)	4,100	2.68
Died	1,117	0.73
Other (jail, institutional care facility, mental health, etc.)	439	0.29
Home with services	300	0.20
Left against medical advice	154	0.10
Not Applicable	3,870	2.53
NK/NR	1,003	0.66
Total	152,884	100.00



Figure 34

## Incidents by ED Discharge Disposition



## Signs of Life

SIGNS OF LIFE	NUMBER	PERCENT
Arrived with NO signs of life	1,681	1.10
Arrived with signs of life	138,314	90.47
Not Applicable	6,418	4.20
NK/NR	6,471	4.23
Total	152,884	100.00

Indication of whether patient arrived at ED/Hospital with signs of life.



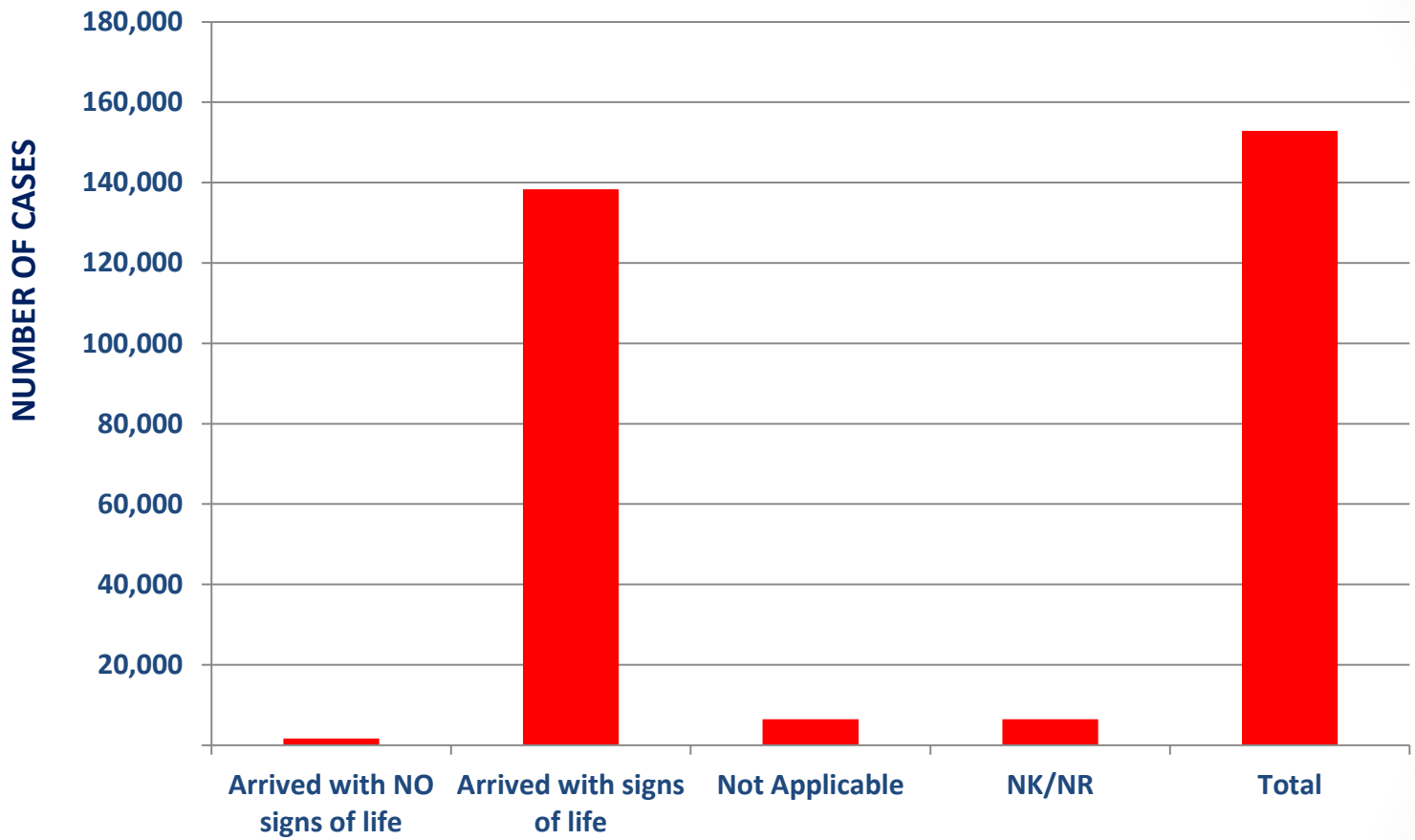
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Figure 35

## Signs of Life



Indication of whether patient arrived at ED/Hospital with signs of life.



Table  
36

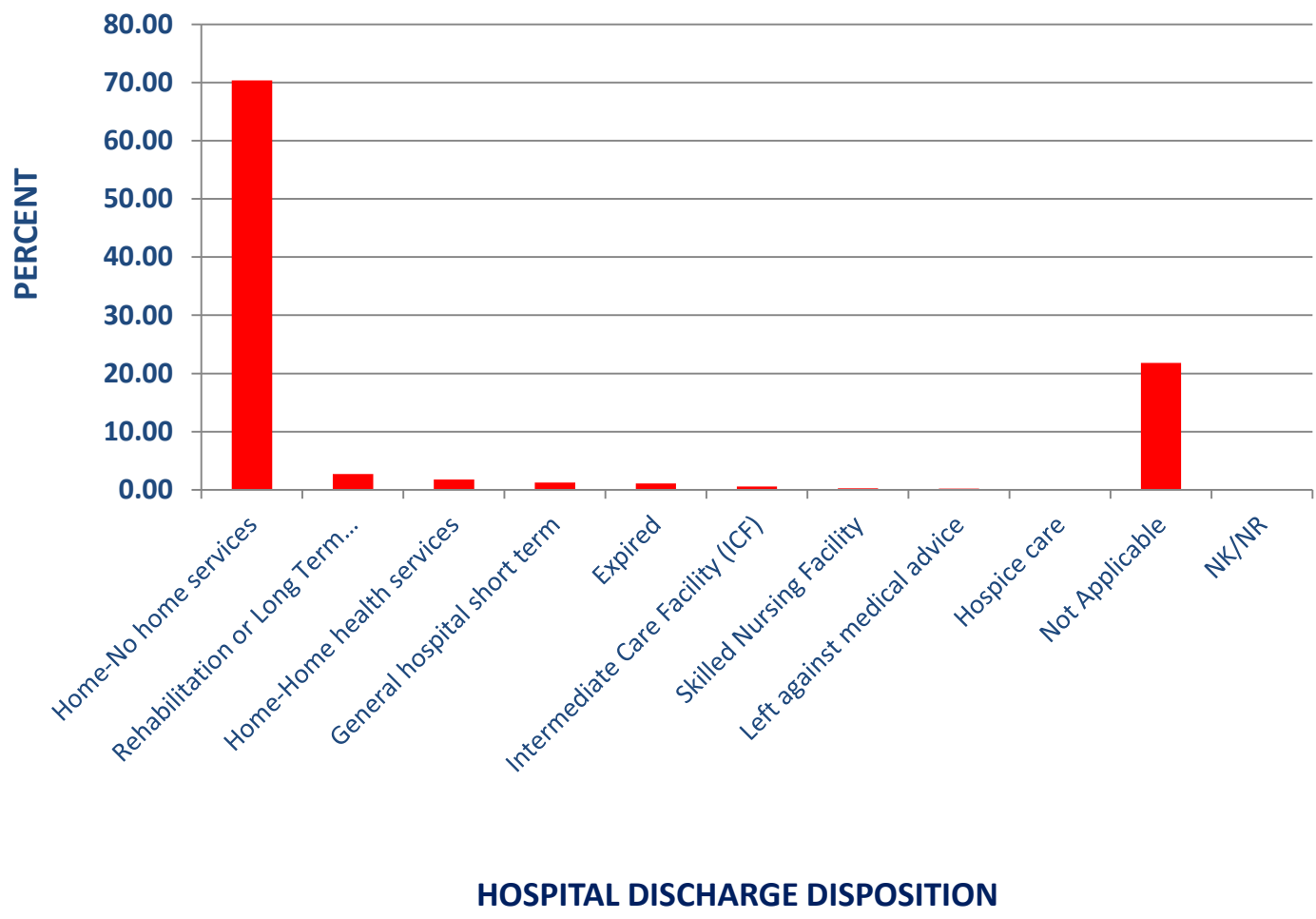
## Incidents by Hospital Discharge Disposition

HOSPITAL DISCHARGE DISPOSITION	NUMBER	PERCENT
Discharged home with no home services	107,592	70.37
Discharged/Transferred to another type of rehabilitation or long term care	4,113	2.69
Discharge/Transferred to home under care of organized home health service	2,682	1.75
Discharged/Transferred to a short-term general hospital for inpatient care	1,877	1.23
Expired	1,689	1.10
Discharged/Transferred to an Intermediate Care Facility (ICF)	887	0.58
Discharged/Transferred to Skilled Nursing Facility	350	0.23
Left against medical advice or discontinued care	288	0.19
Discharged/Transferred to hospice care	28	0.02
Not Applicable	33,320	21.79
NK/NR	58	0.04
Total	152,884	100.00



Figure 36

## Incidents by Hospital Discharge Disposition



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### HOSPITAL DISCHARGE DISPOSITION

# REGIONAL ANALYSIS



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Table  
37

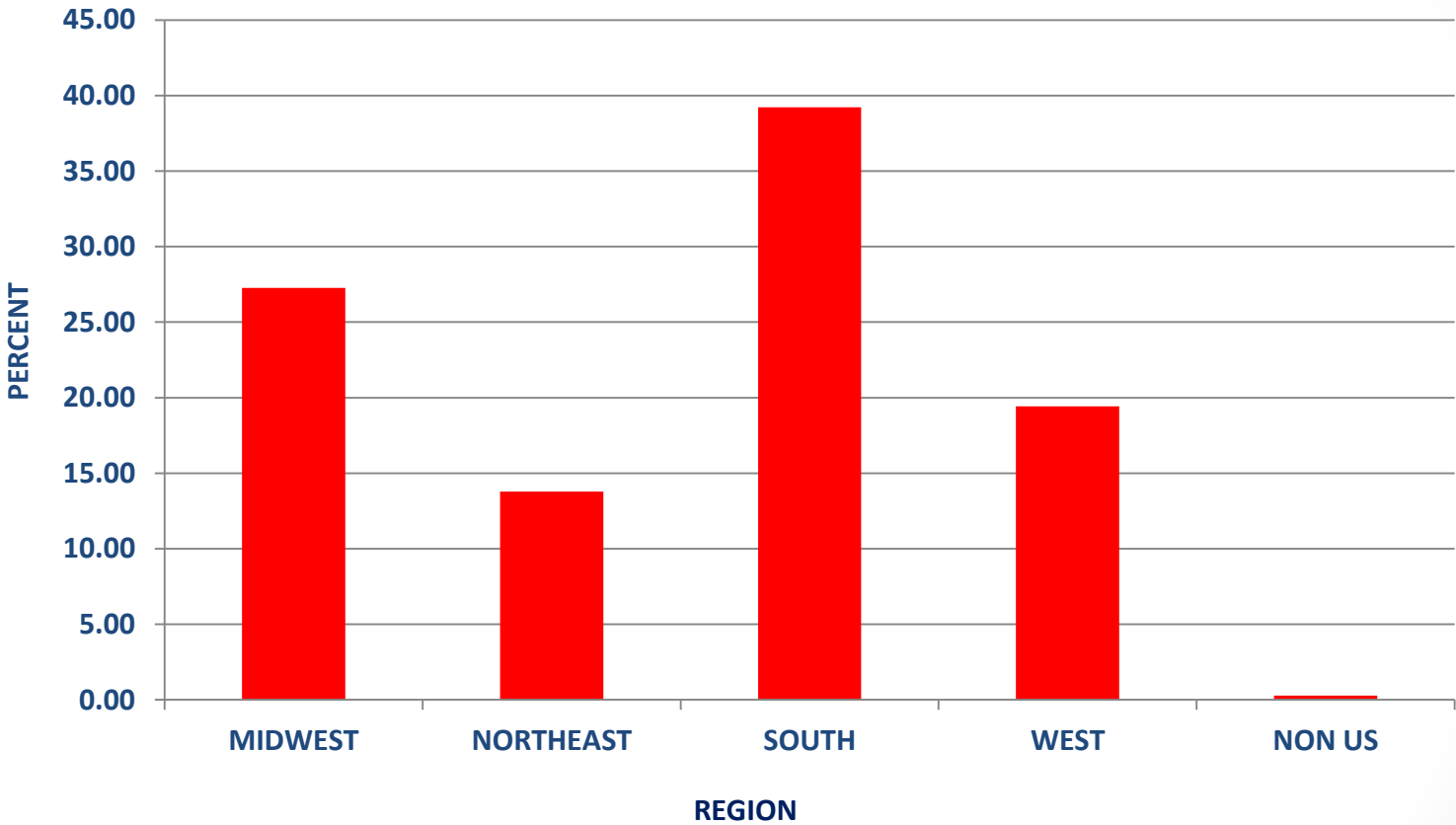
## Incidents by Region

REGION	NUMBER	PERCENT
MIDWEST	41,690	27.27
NORTHEAST	21,081	13.79
SOUTH	59,979	39.23
WEST	29,699	19.43
NON US	435	0.28
Total	152,884	100.00



Figure 37

# Incidents by Region



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Table  
38

## Case Fatality Rate by Region

REGION	NUMBER	DEATHS	CASE FATALITY RATE
MIDWEST	41,690	777	1.86
NORTHEAST	21,081	336	1.59
SOUTH	59,979	1,159	1.93
WEST	29,699	529	1.78
NON US	435	33	7.59
Total	152,884	2,834	1.85



Figure 38

## Case Fatality Rate by Region

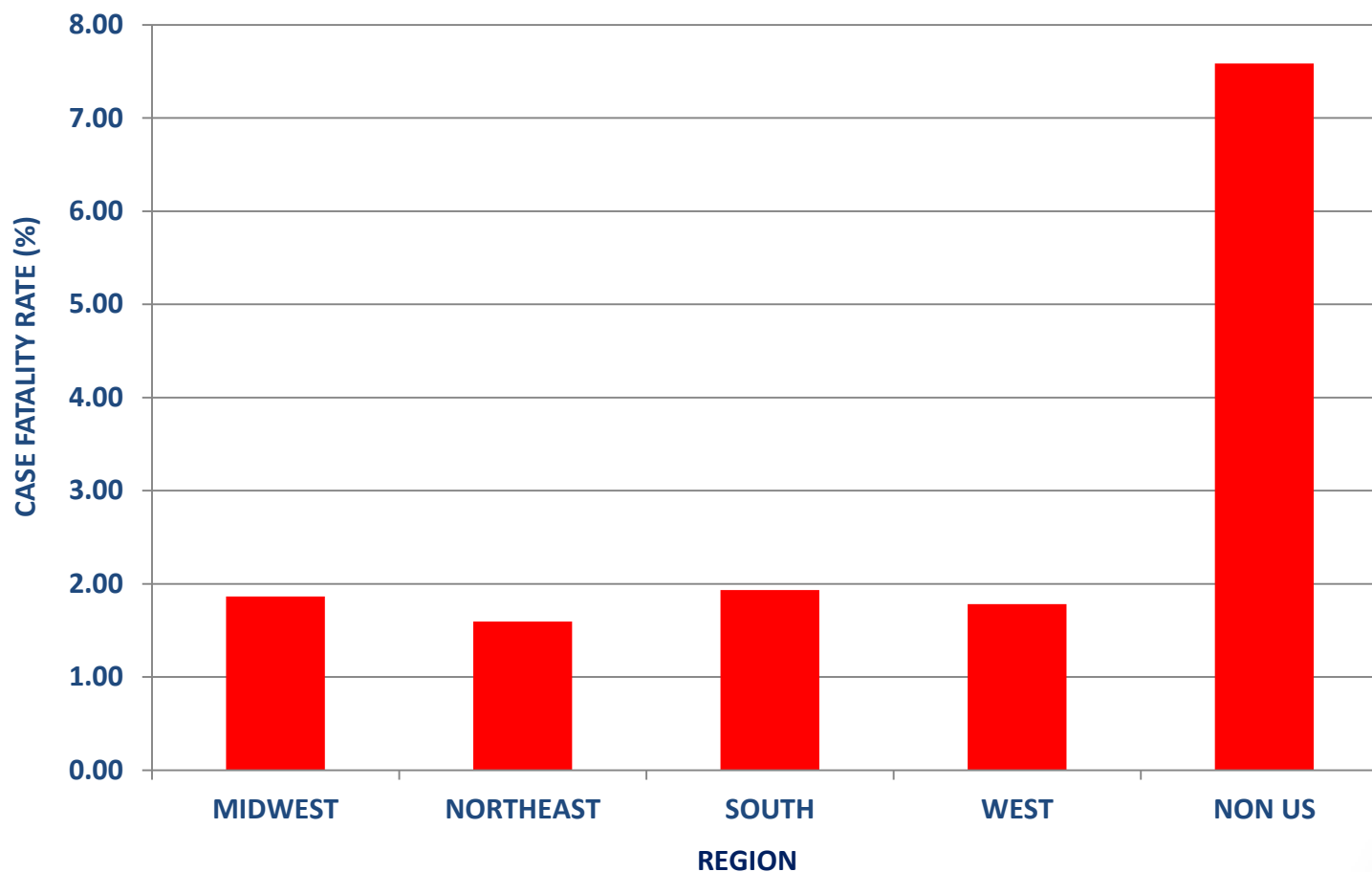


Table  
39

## Mechanism of Injury by Region

MECHANISM	NUMBER	MIDWEST PERCENT	NORTHEAST PERCENT	SOUTH PERCENT	WEST PERCENT
Fall	50,740	34.05	36.40	32.23	31.82
Motor Vehicle Traffic	38,109	22.62	21.32	25.55	29.09
Struck by, against	16,257	11.47	11.74	10.29	9.43
Transport, other	11,083	6.77	5.50	8.21	7.20
Firearm	6,757	4.86	3.94	4.16	4.71
Pedal cyclist, other	5,425	3.82	3.83	2.86	4.41
Cut/pierce	5,260	3.05	3.89	3.21	4.11
Other specified and classifiable	4,821	3.06	3.04	3.45	2.80
Hot object/substance	4,500	3.19	3.93	3.14	1.53
Natural/environmental, Bites and stings	2,484	1.70	1.16	2.01	1.09
Unspecified	1,660	1.15	1.25	1.09	0.89
Fire/flame	1,583	1.20	0.94	1.17	0.62
Other specified, not elsewhere classifiable	848	0.56	0.64	0.55	0.51
Overexertion	778	0.55	0.72	0.51	0.30
Pedestrian, other	674	0.40	0.40	0.45	0.52
Natural/environmental, Other	617	0.40	0.26	0.45	0.41
Machinery	574	0.52	0.43	0.32	0.24
NK/NR	232	0.06	0.38	0.12	0.16
Suffocation	170	0.16	0.09	0.10	0.08
Drowning/submersion	145	0.13	0.07	0.10	0.05
Poisoning	129	0.23	0.03	0.03	0.03
Adverse effects, medical care	25	0.02	0.04	0.01	0.01
Adverse effects, drugs	13	0.02	0.00	0.01	0.00
Total	152,884	100.00	100.00	100.00	100.00



Figure 39

## Selected Mechanism of Injury by Region

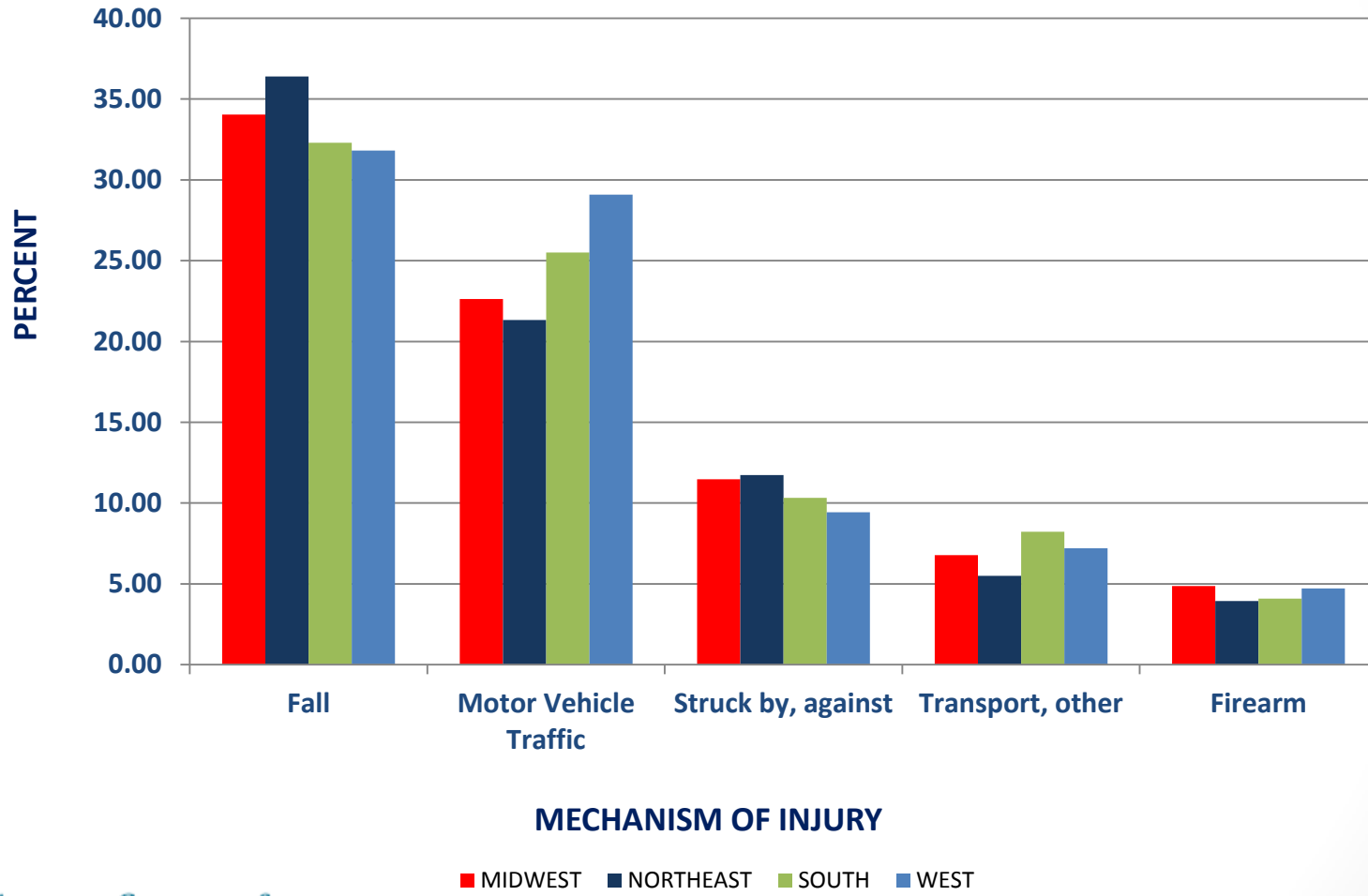


Table  
40

## Injury Severity Score by Region

ISS	NUMBER	MIDWEST PERCENT	NORTHEAST PERCENT	SOUTH PERCENT	WEST PERCENT
1-8	88,706	62.25	54.06	58.08	55.48
9-15	36,050	21.29	27.03	24.45	22.45
16-24	15,980	9.01	11.16	10.11	12.42
>24	9,137	5.06	5.71	6.24	6.68
NK/NR	3,011	2.39	2.04	1.12	2.97
Total	152,884	100.00	100.00	100.00	100.00

Injury Severity Score definitions can be found in Appendix B.



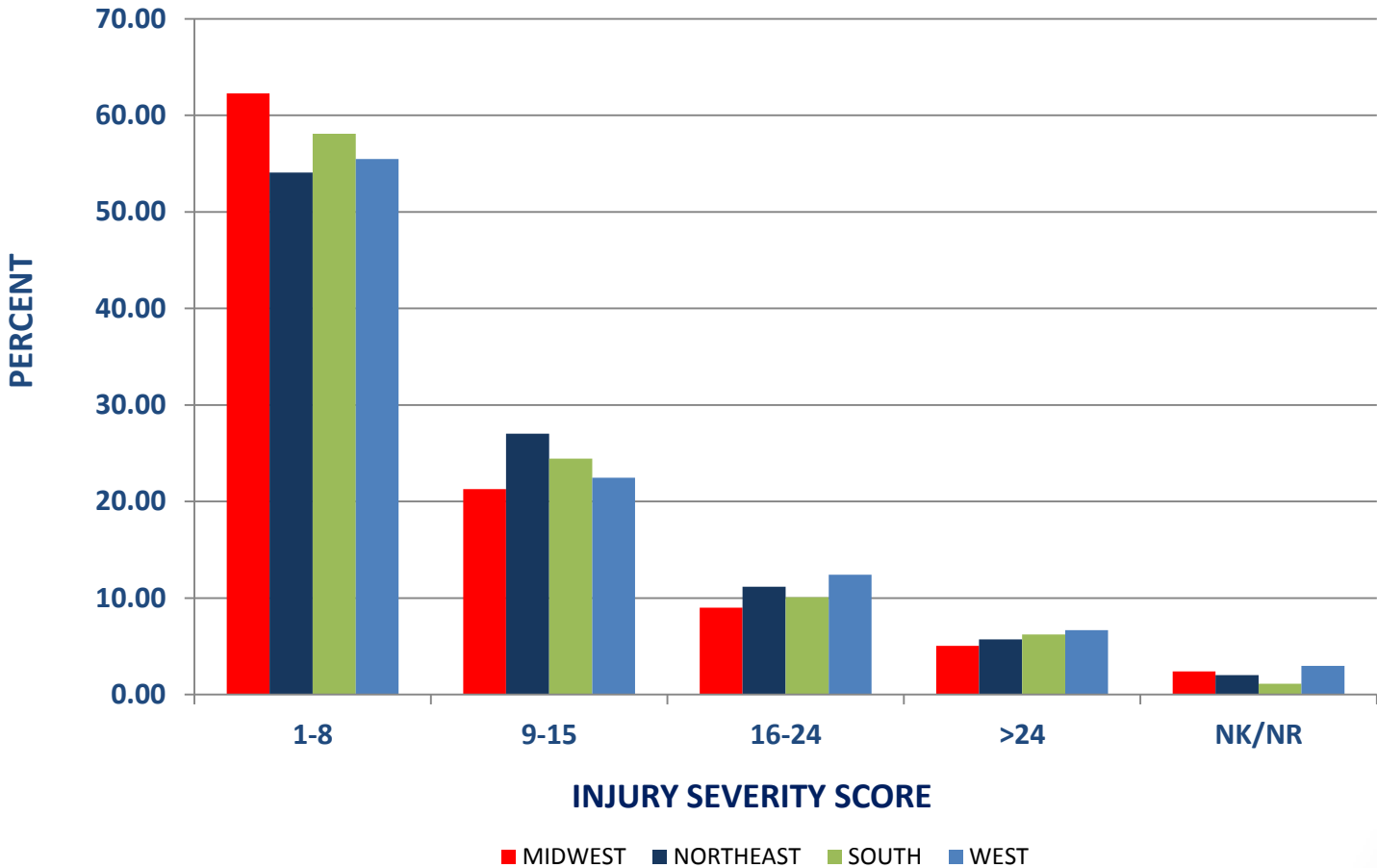
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Figure 40

## Injury Severity Score by Region



Injury Severity Score definitions can be found in Appendix B.



Table  
41

## Incidents by Rurality

CATEGORY	NUMBER	PERCENT
Urban	67,125	78.54
Suburban	6,214	7.27
Rural	9,532	11.15
Wilderness	2,598	3.04
Total	85,469	100.00

All rurality tables are determined by urban influence codes that are developed by the Office of Management and Budget. Urban Influence Codes only apply to incidents and are not available for every record in the NTDB.



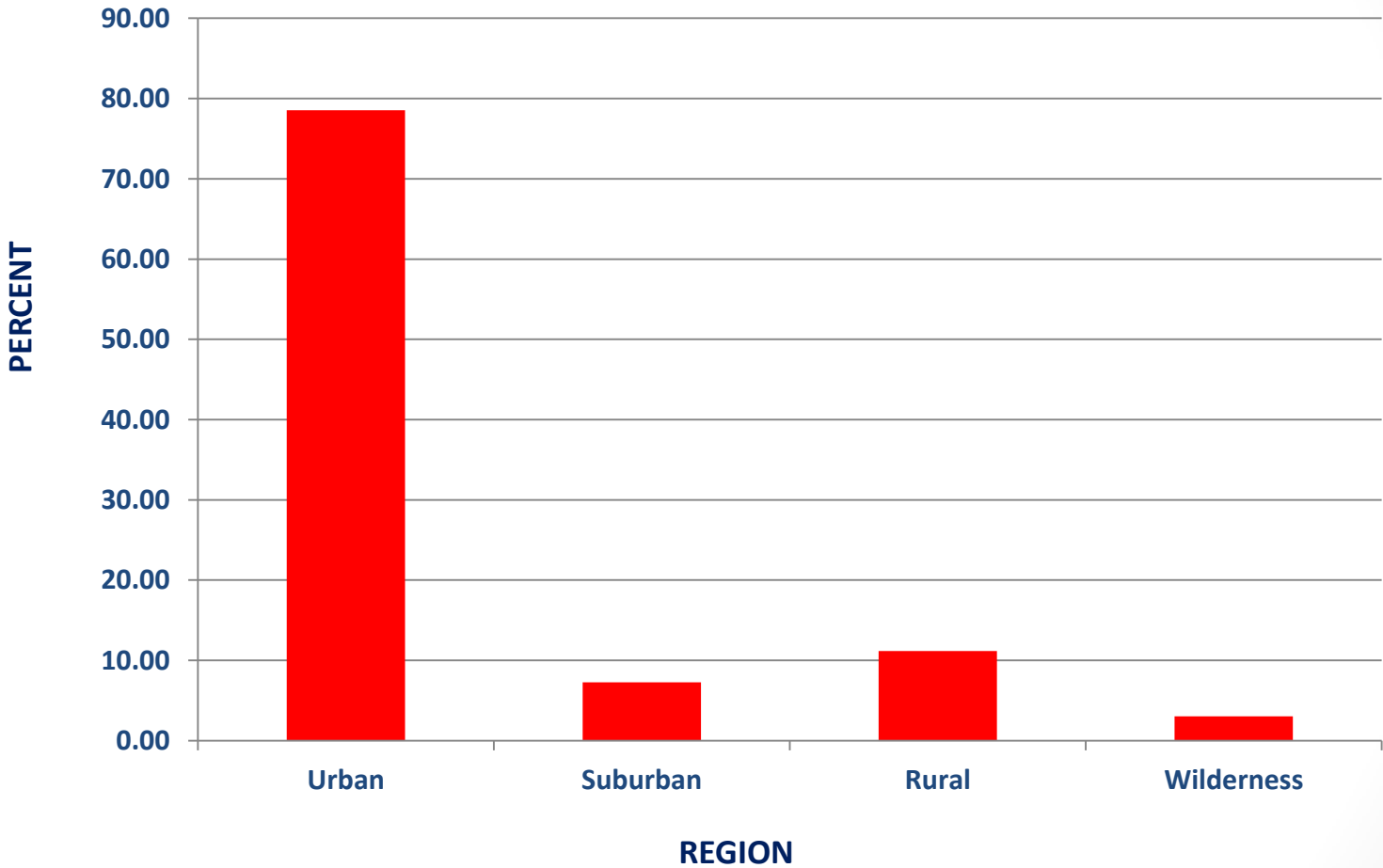
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Figure 41

# Incidents by Rurality



All rurality tables are determined by urban influence codes that are developed by the Office of Management and Budget. Urban Influence Codes only apply to incidents and are not available for every record in the NTDB.

Table  
42

## Case Fatality Rate by Rurality

CATEGORY	NUMBER	DEATHS	CASE FATALITY RATE
Urban	67,125	1,370	2.04
Suburban	6,214	102	1.64
Rural	9,532	148	1.55
Wilderness	2,598	37	1.42
Total	85,469	1,657	1.94

All rurality tables are determined by urban influence codes that are developed by the Office of Management and Budget. Urban Influence Codes only apply to incidents and are not available for every record in the NTDB.



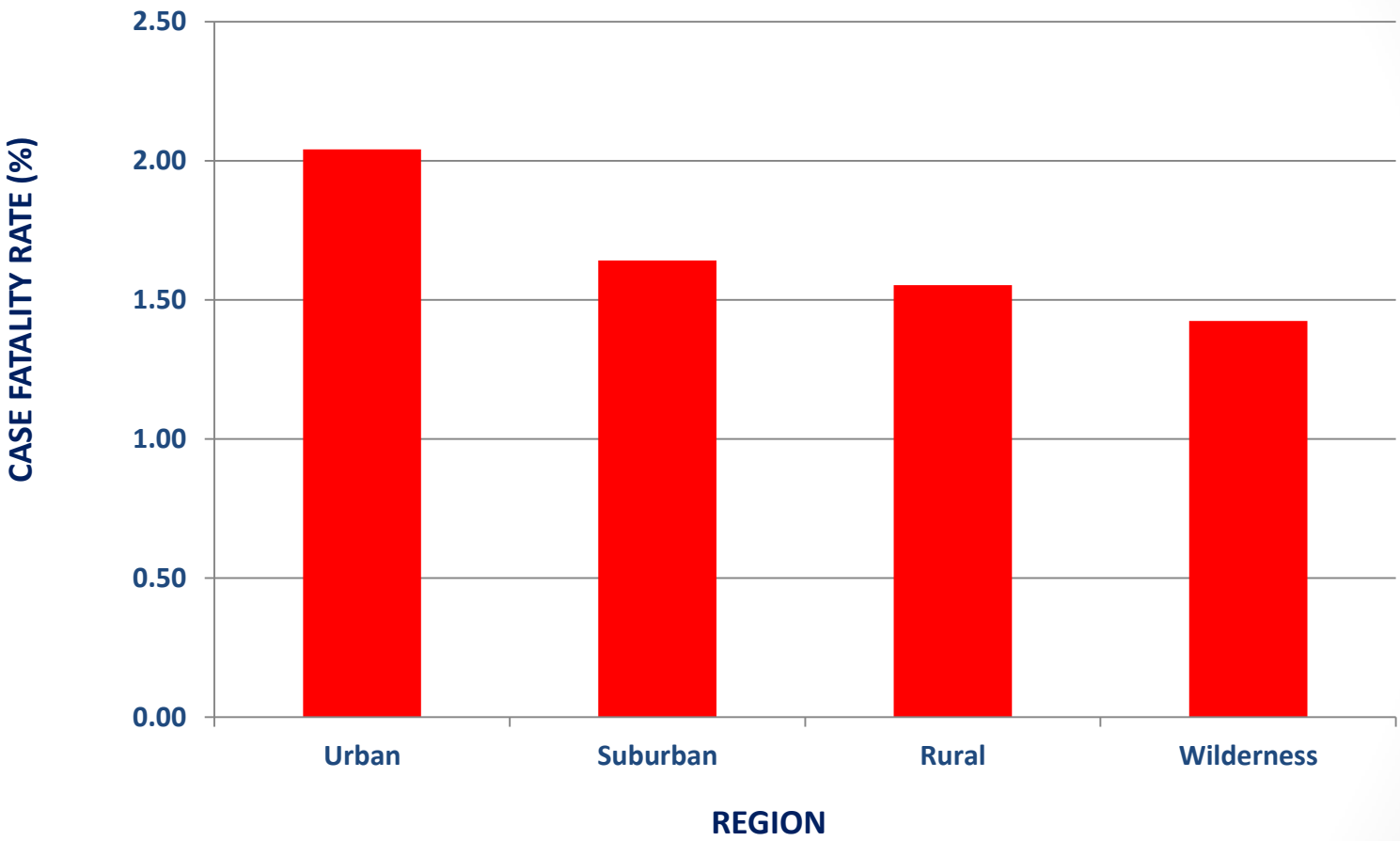
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Figure 42

## Case Fatality Rate by Rurality



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All rurality tables are determined by urban influence codes that are developed by the Office of Management and Budget. Urban Influence Codes only apply to incidents and are not available for every record in the NTDB.

Table  
43

## Mechanism of Injury by Rurality

MECHANISM	NUMBER (URBAN)	PERCENT (URBAN)	NUMBER (SUBURBAN)	PERCENT (SUBURBAN)	NUMBER (RURAL)	PERCENT (RURAL)	NUMBER (WILDERNESS)	PERCENT (WILDERNESS)
Fall	22,186	33.05	1,761	28.34	2,596	27.23	647	24.90
Motor Vehicle Traffic	17,716	26.39	1,840	29.61	2,628	27.57	688	26.48
Struck by, against	7,090	10.56	570	9.17	851	8.93	227	8.74
Transport, other	3,803	5.67	721	11.60	1,331	13.96	482	18.55
Firearm	3,408	5.08	153	2.46	204	2.14	58	2.23
Cut/pierce	2,567	3.82	147	2.37	258	2.71	70	2.69
Pedal cyclist, other	2,186	3.26	173	2.78	274	2.87	72	2.77
Other specified and classifiable	2,114	3.15	224	3.60	377	3.96	94	3.62
Hot object/substance	1,963	2.92	166	2.67	272	2.85	58	2.23
Natural/environmental, Bites and stings	1,108	1.65	120	1.93	199	2.09	51	1.96
Unspecified	647	0.96	57	0.92	88	0.92	11	0.42
Fire/flame	609	0.91	91	1.46	135	1.42	43	1.66
Other specified, not elsewhere classifiable	381	0.57	18	0.29	48	0.50	6	0.23
Overexertion	316	0.47	32	0.51	23	0.24	5	0.19
Pedestrian, other	294	0.44	26	0.42	44	0.46	22	0.85
Natural/environmental, Other	211	0.31	40	0.64	90	0.94	26	1.00
Machinery	175	0.26	44	0.71	77	0.81	23	0.89
NK/NR	101	0.15	9	0.14	10	0.10	6	0.23
Suffocation	85	0.13	5	0.08	14	0.15	2	0.08
Poisoning	74	0.11	7	0.11	6	0.06	1	0.04
Drowning/submersion	72	0.11	9	0.14	7	0.07	6	0.23
Adverse effects, medical care	12	0.02	1	0.02	0	0.00	0	0.00
Adverse effects, drugs	7	0.01	0	0.00	0	0.00	0	0.00
Total	67,125	100.00	6,214	100.00	9,532	100.00	2,598	100.00

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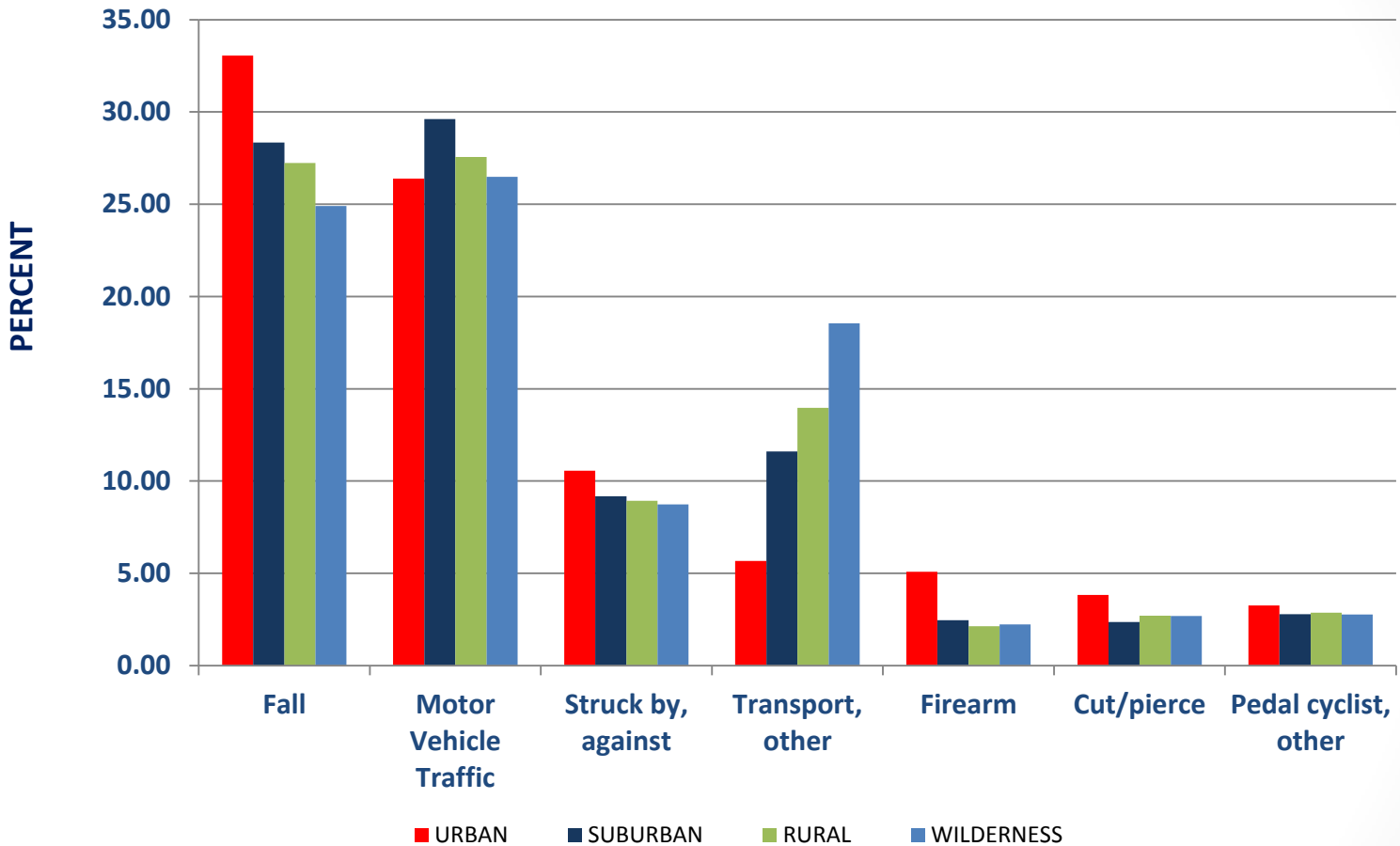
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All rurality tables are determined by urban influence codes that are developed by the Office of Management and Budget. Urban Influence Codes only apply to incidents and are not available for every record in the NTDB.



Figure 43

## Selected Mechanism of Injury by Rurality



All rurality tables are determined by urban influence codes that are developed by the Office of Management and Budget. Urban Influence Codes only apply to incidents and are not available for every record in the NTDB.

Table  
44

## Injury Severity Score by Rurality

ISS	NUMBER (URBAN)	PERCENT (URBAN)	NUMBER (SUBURBAN)	PERCENT (SUBURBAN)	NUMBER (RURAL)	PERCENT (RURAL)	NUMBER (WILDERNESS)	PERCENT (WILDERNESS)
1-8	39,400	58.70	3,192	51.37	5,379	56.43	1,364	52.50
9-15	15,746	23.46	1,658	26.68	2,325	24.39	746	28.71
16-24	6,774	10.09	810	13.04	1,037	10.88	302	11.62
>24	4,037	6.01	474	7.63	652	6.84	152	5.85
NK/NR	1,168	1.74	80	1.29	139	1.46	34	1.31
Total	67,125	100.00	6,214	100.00	9,532	100.00	2,598	100.00



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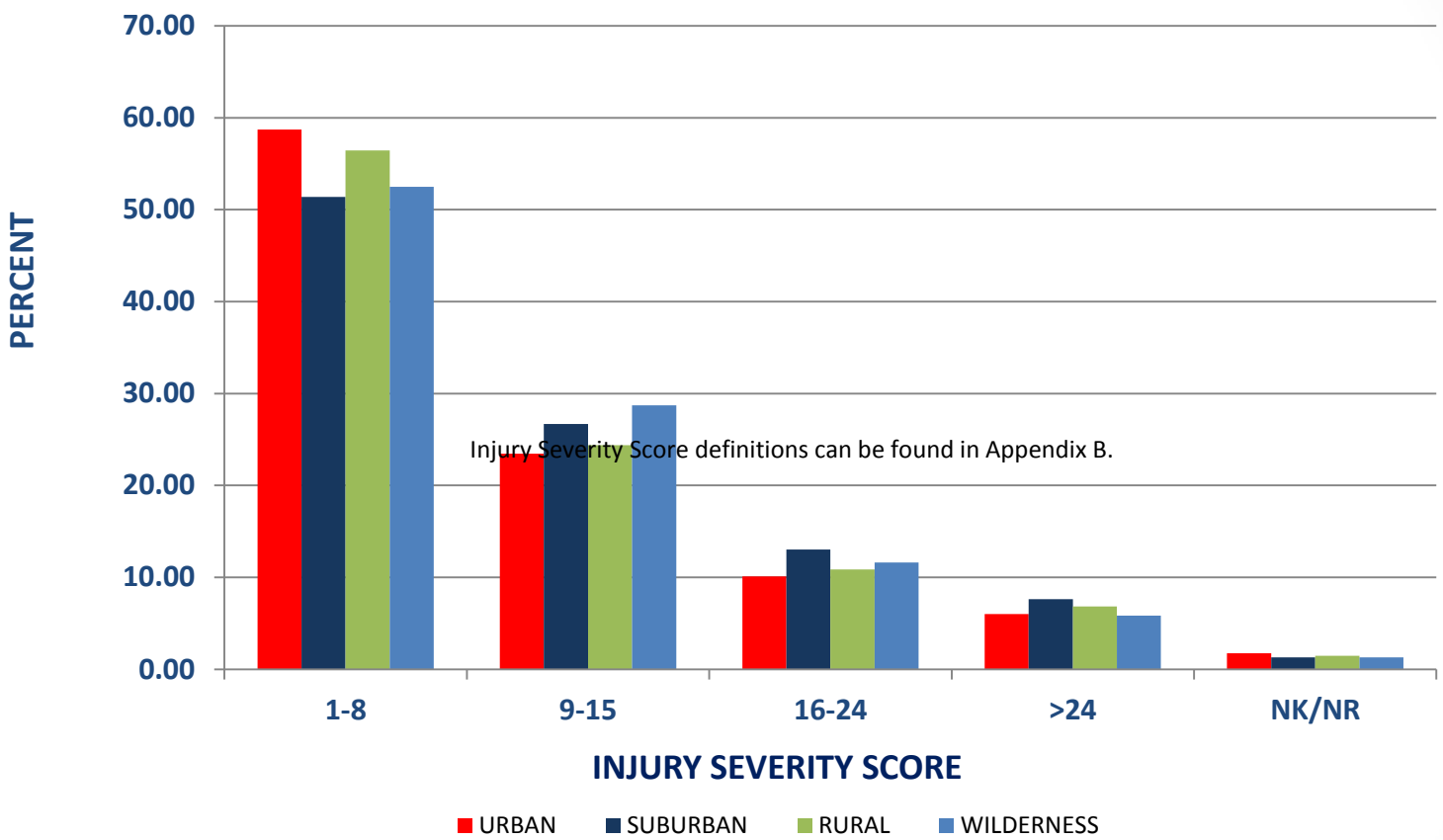
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Injury Severity Score definitions can be found in Appendix B.

All rurality tables are determined by urban influence codes that are developed by the Office of Management and Budget. Urban Influence Codes only apply to incidents and are not available for every record in the NTDB.

Figure 44

## Injury Severity Score by Rurality



Injury Severity Score definitions can be found in Appendix B.

All rurality tables are determined by urban influence codes that are developed by the Office of Management and Budget. Urban Influence Codes only apply to incidents and are not available for every record in the NTDB.





# COMPARATIVE ANALYSIS



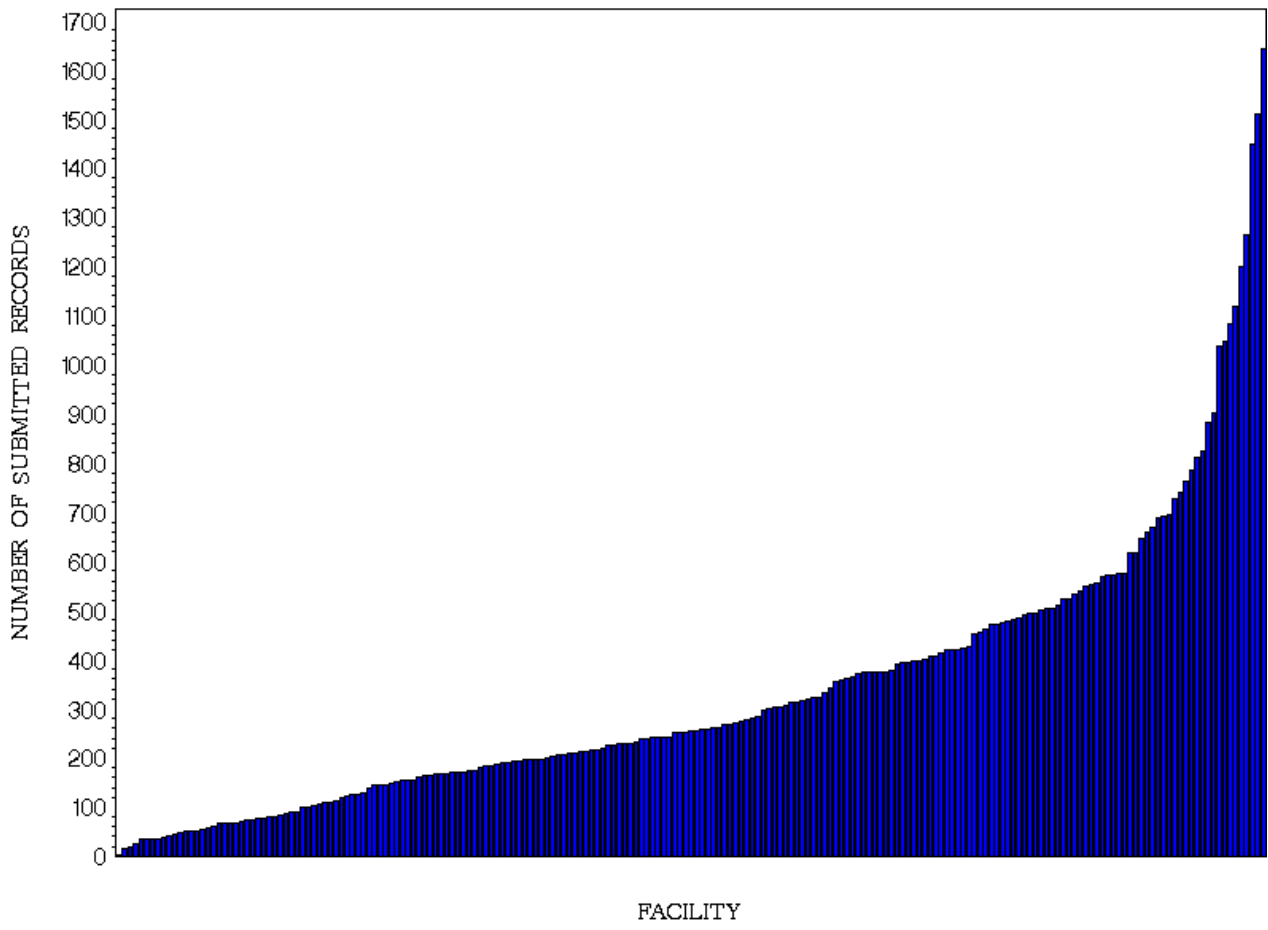
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Figure 45

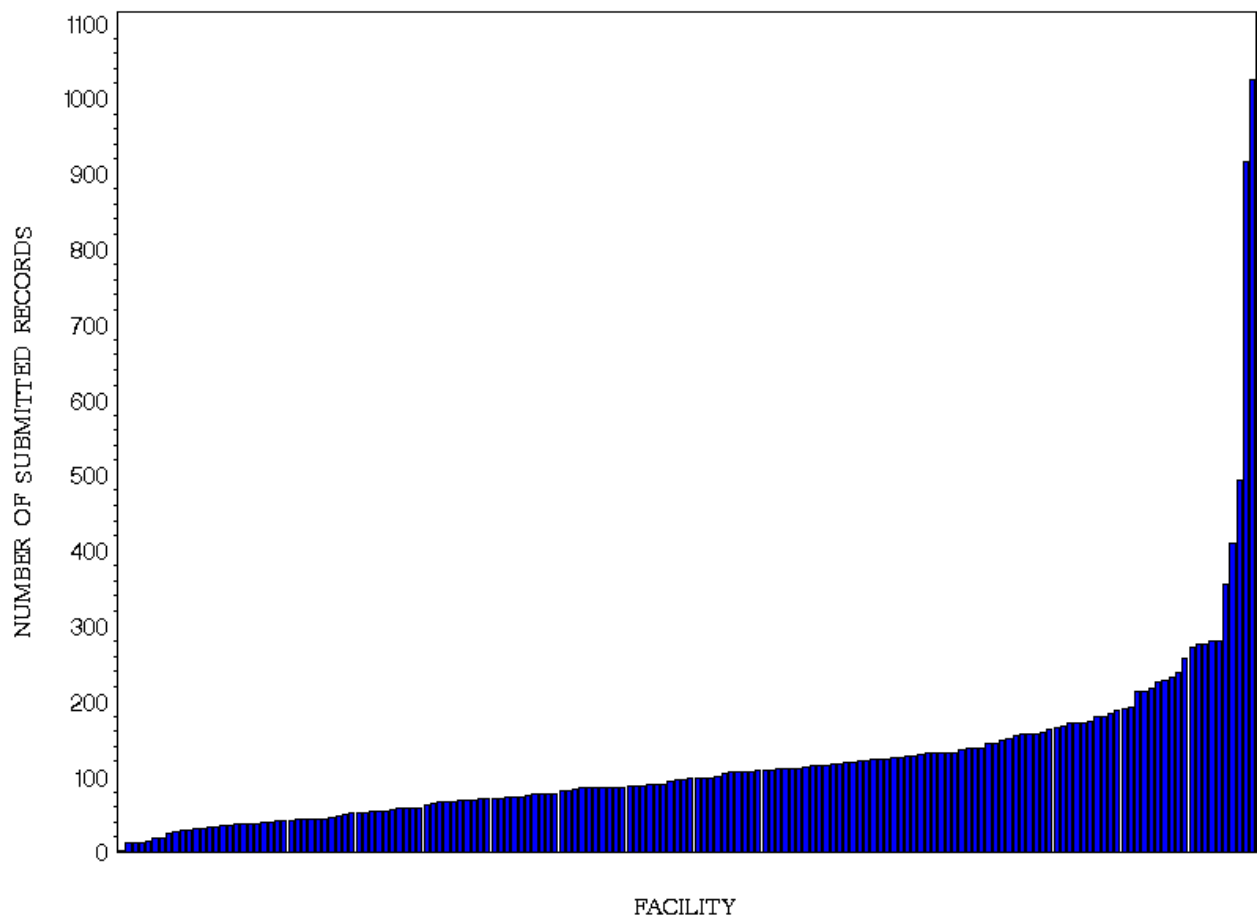
# Number of Cases Submitted per Facility for Level I Facilities with Pediatric Cases (N=207)



Only cases with valid trauma diagnosis code per the NTDB criteria are included in the analysis. Trauma level is based on ACS verification and state designation.

Figure 46

## Number of Cases Submitted per Facility for Level II Facilities with Pediatric Cases (Bedsized ≤ 400, N=168)

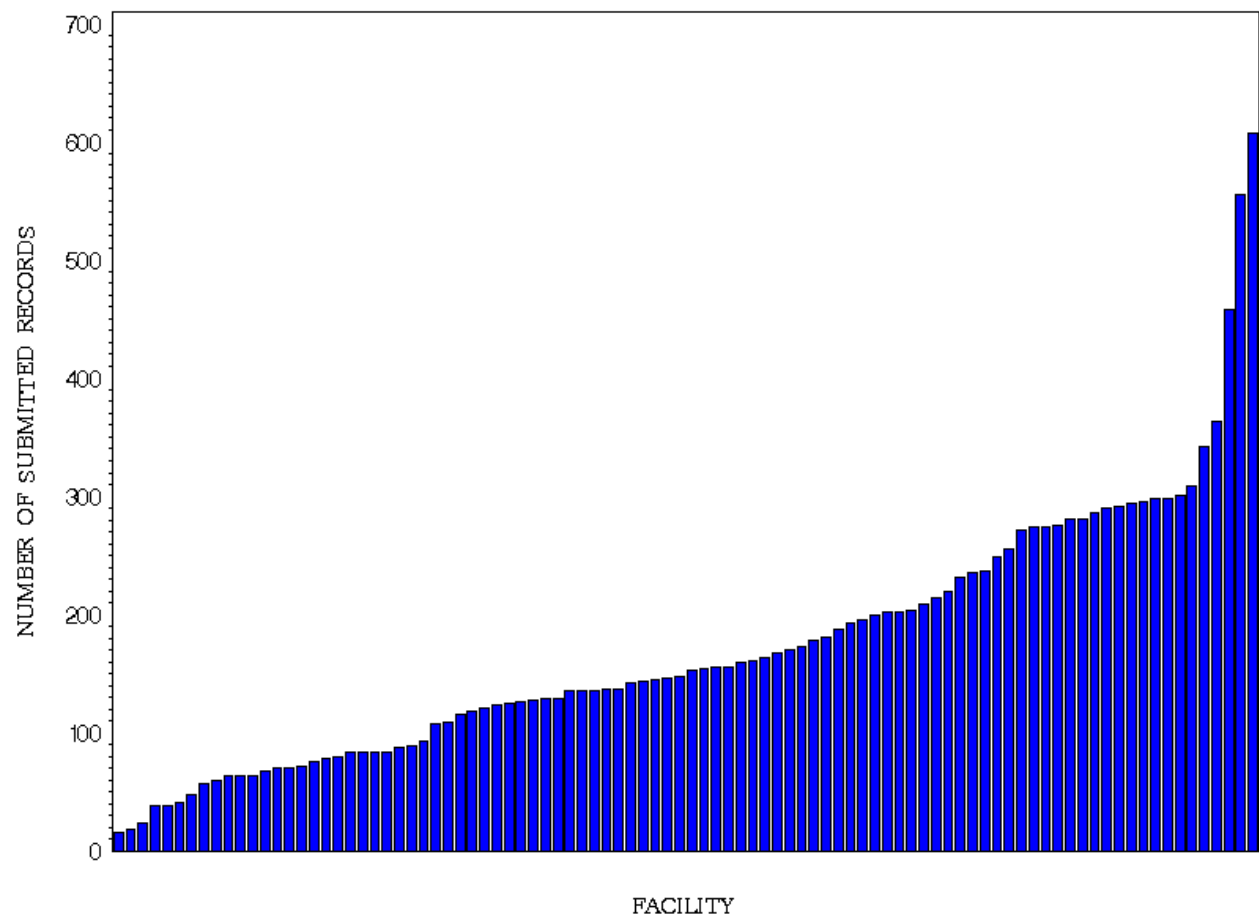


Only cases with valid trauma diagnosis code per the NTDB criteria are included in the analysis. Trauma level is based on ACS verification and state designation.



Figure 47

# Number of Cases Submitted per Facility for Level II Facilities with Pediatric Cases (Bedsized > 400, N=94)



Only cases with valid trauma diagnosis code per the NTDB criteria are included in the analysis. Trauma level is based on ACS verification and state designation.

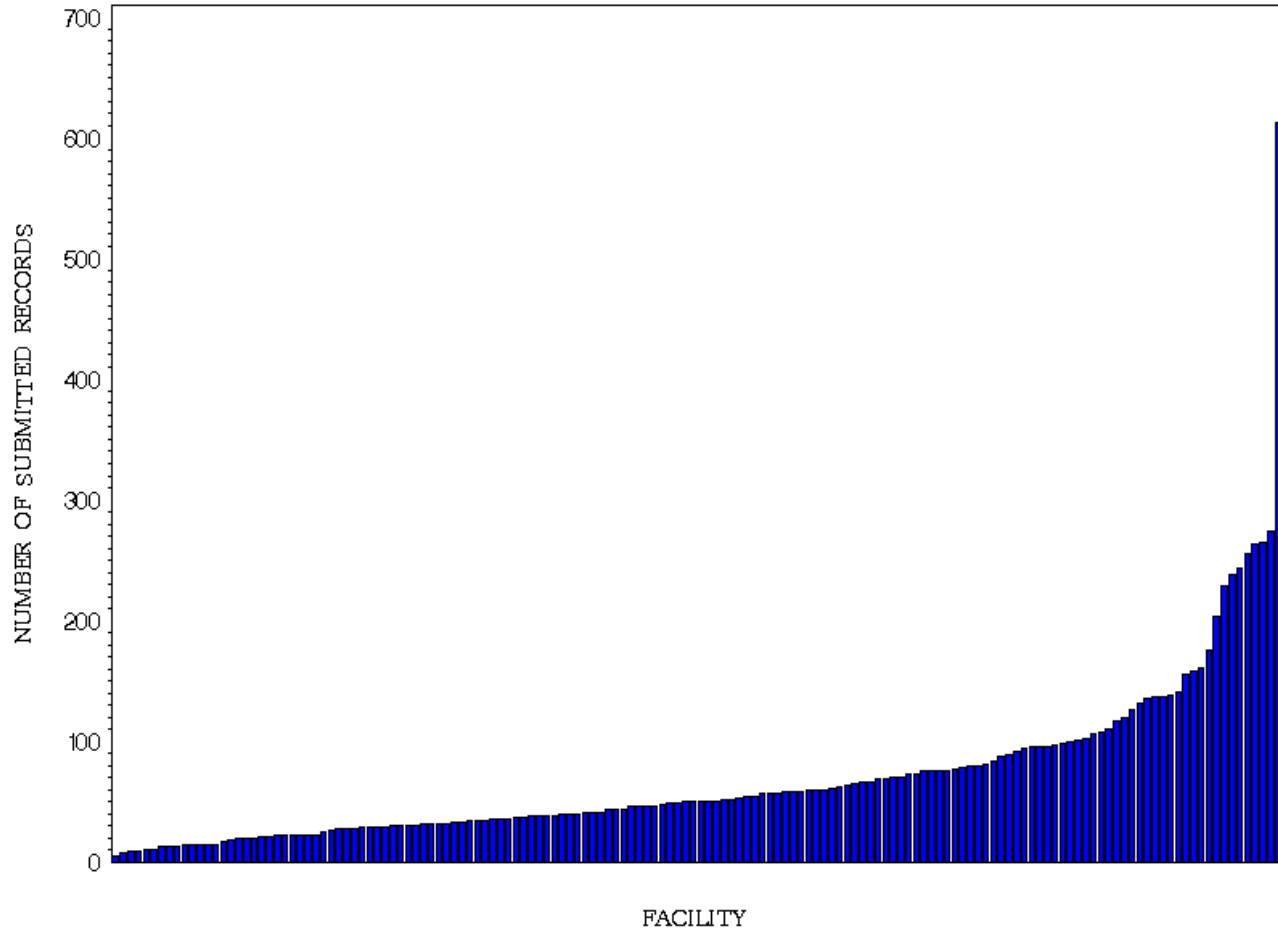


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Figure 48

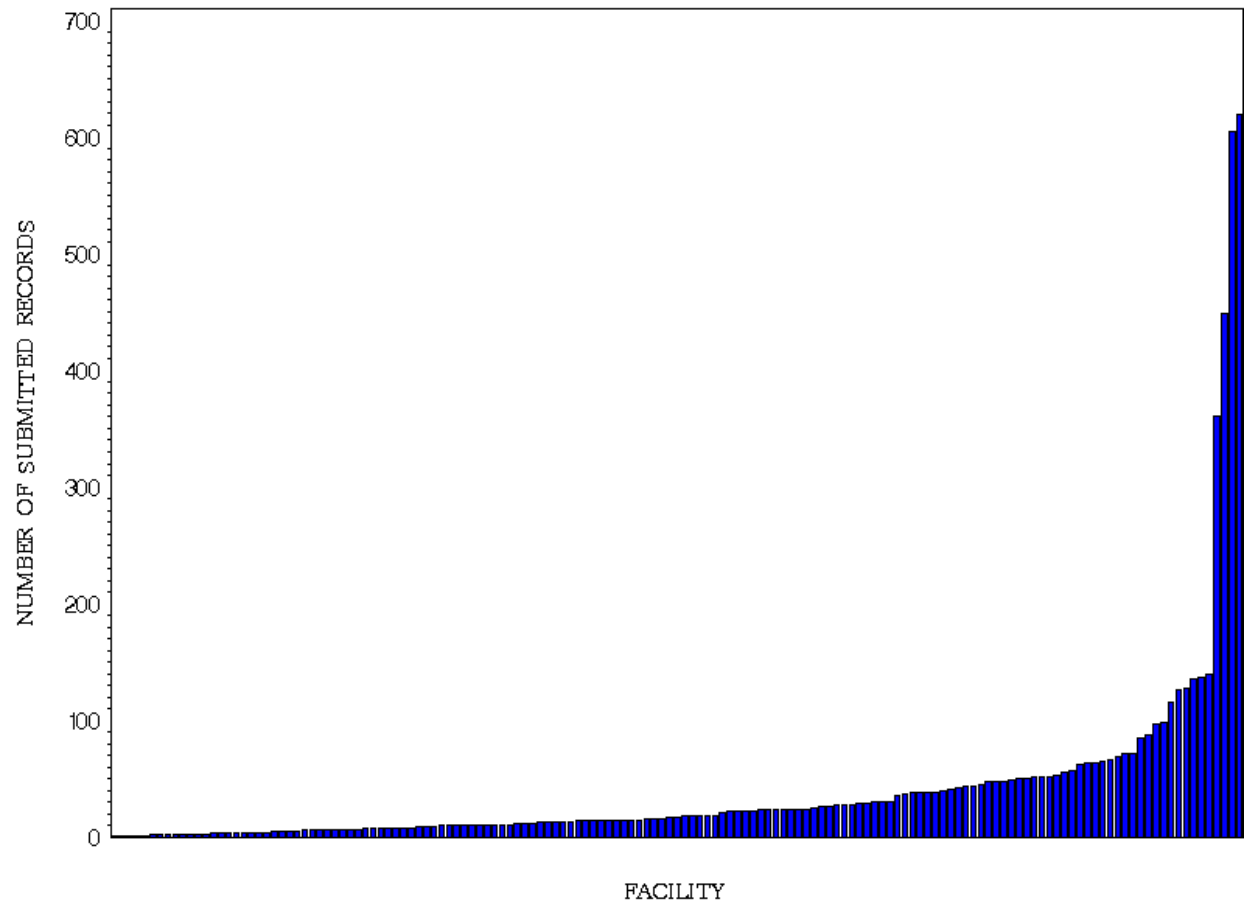
## Number of Cases Submitted per Facility for Level III Facility with Pediatric Cases (N=152)



Only cases with valid trauma diagnosis code per the NTDB criteria are included in the analysis. Trauma level is based on ACS verification and state designation.

Figure 49

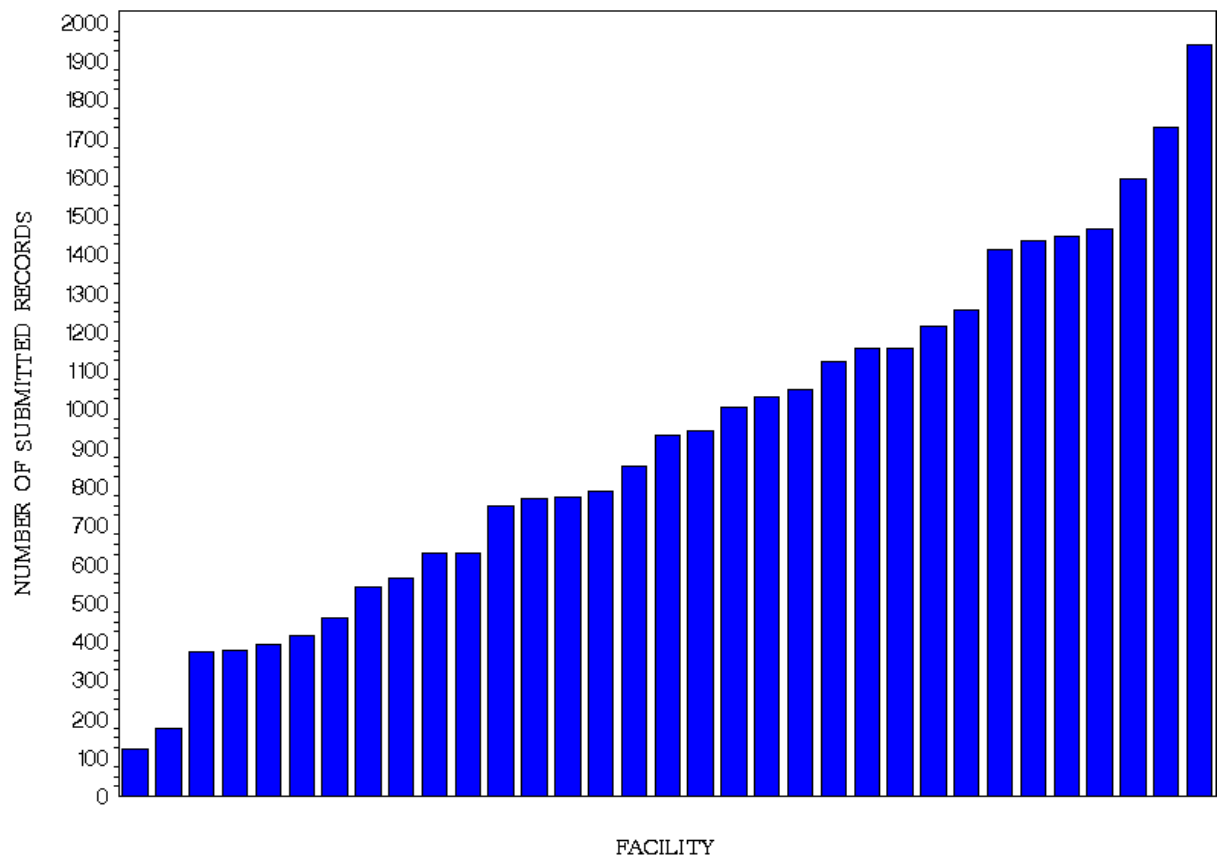
## Number of Cases Submitted per Facility for Level IV, NA, or other Facilities with Pediatric Cases (N=149)



Only cases with valid trauma diagnosis code per the NTDB criteria are included in the analysis. Trauma level is based on ACS verification and state designation.

Figure 50

## Number of Cases Submitted per Facility for Pediatric-Only Facilities (N=33)



Only cases with valid trauma diagnosis code per the NTDB criteria are included in the analysis. Trauma level is based on ACS verification and state designation.

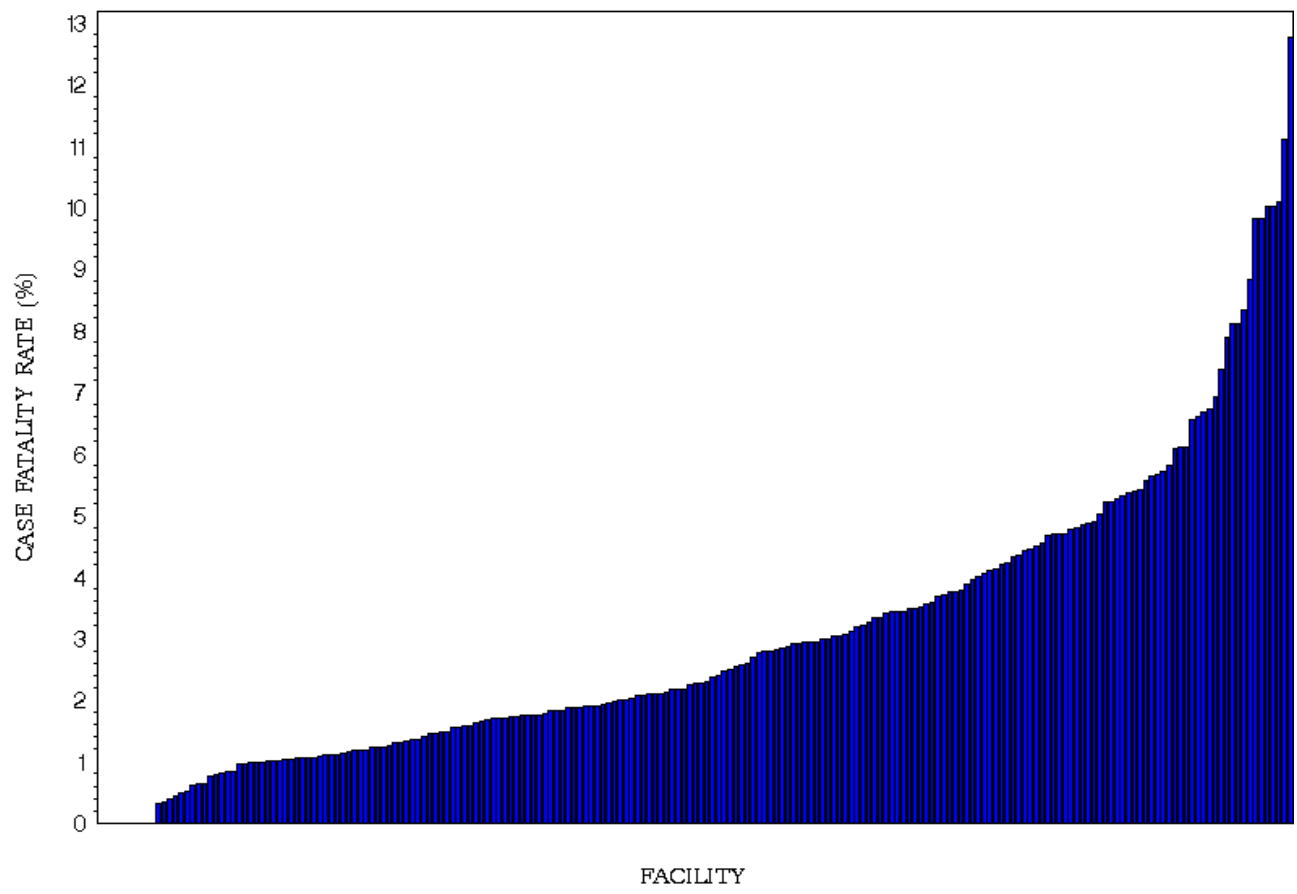


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Figure 51

## Case Fatality Rate per Facility for Level I Facilities with Pediatric Cases (N=207)

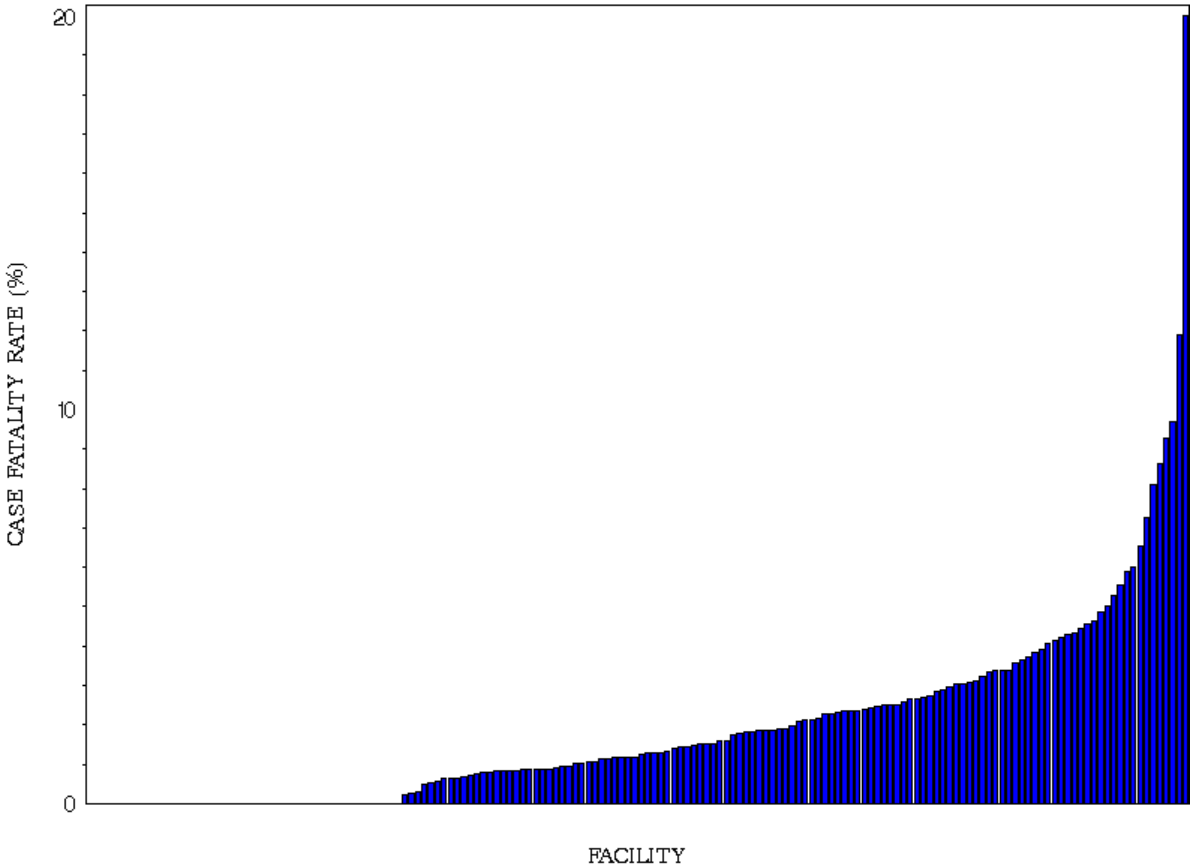


Ten out of 207 hospitals did not have any pediatric patients who died and are not visible in this graph.



Figure 52

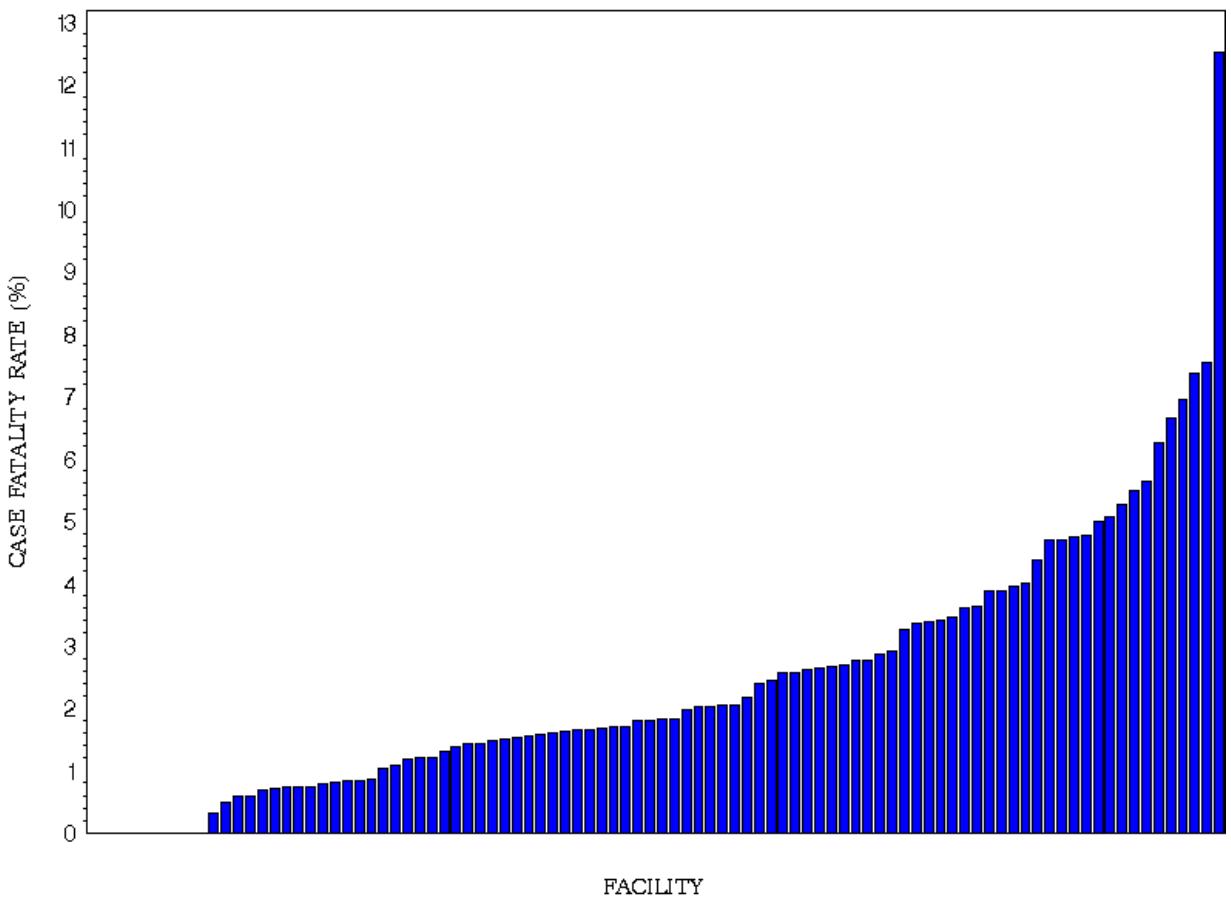
### Case Fatality Rate per Facility for Level II Facilities with Pediatric Cases (Bedsize ≤ 400, N=168)



Forty-eight out of 168 hospitals did not have any pediatric patients who died and are not visible in this graph.

Figure 53

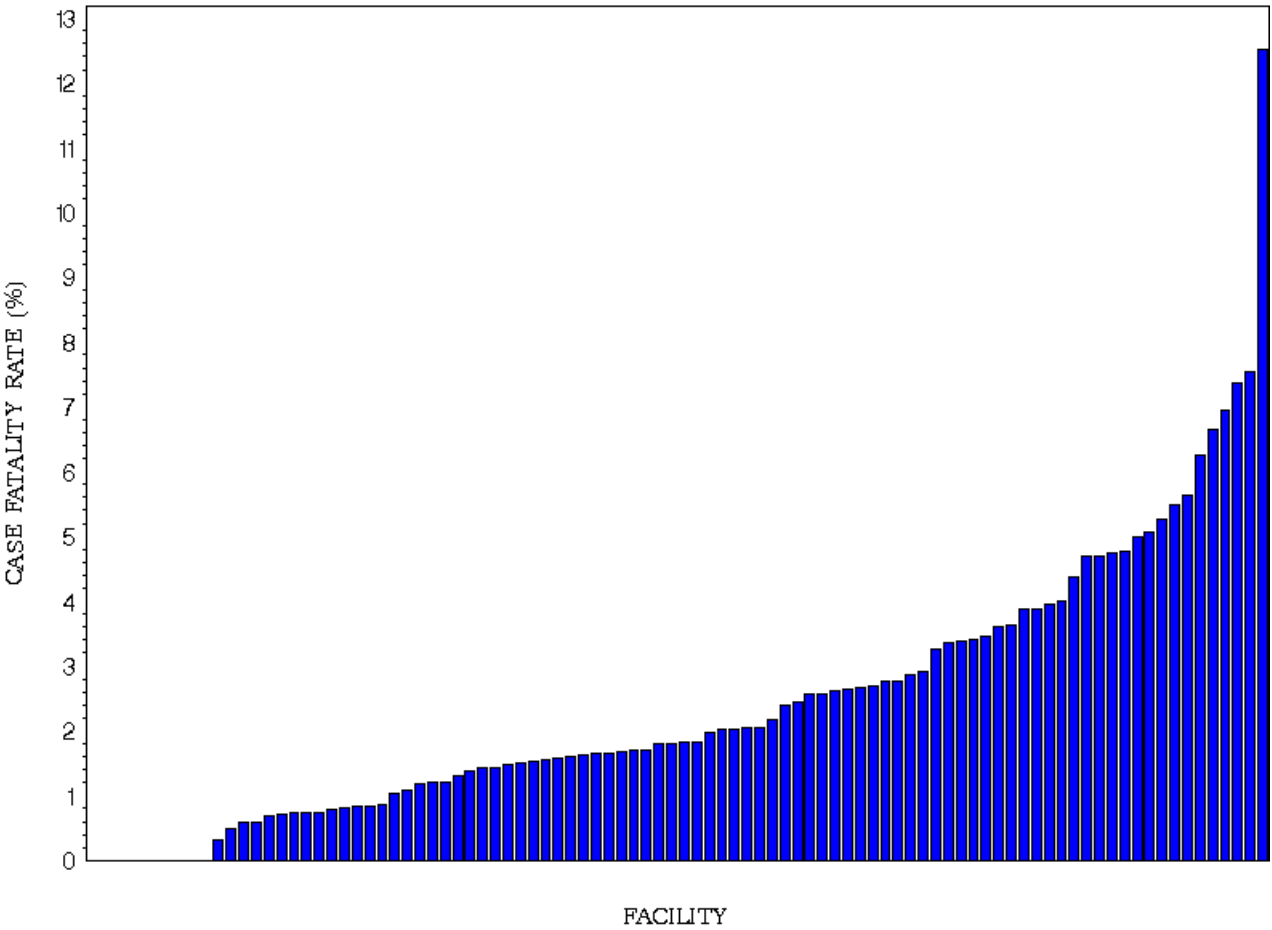
### Case Fatality Rate per Facility for Level II Facilities with Pediatric Cases (Bedsize > 400, N=94)



Ten out of 94 hospitals did not have any pediatric patients who died and are not visible in this graph.

Figure 54

# Case Fatality Rate per Facility for Level III Facilities with Pediatric Cases (N=152)



Ninety-nine out of 152 hospitals did not have any pediatric patients who died and are not visible in this graph.

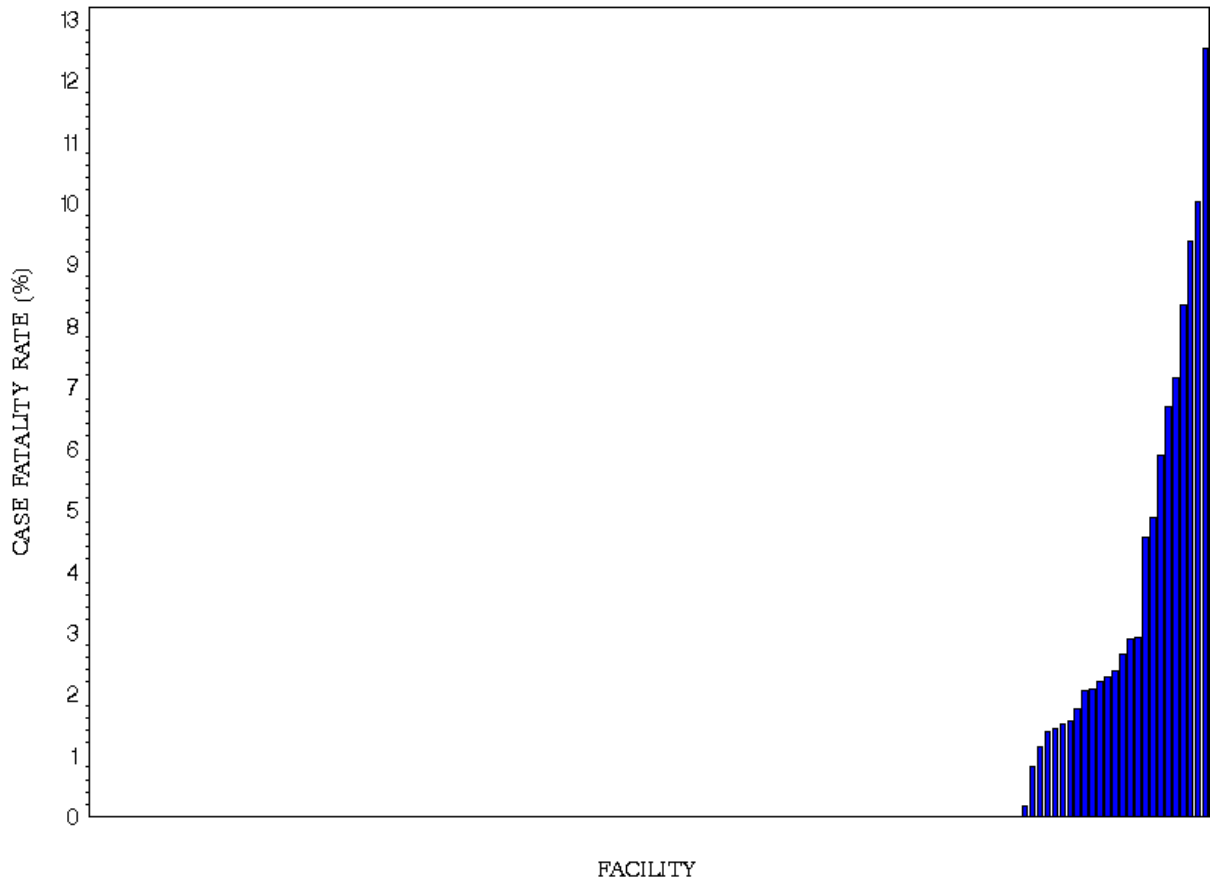


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Figure 55

## Case Fatality Rate per Facility for Level IV Facilities, NA, or other Facilities with Pediatric Cases (N=149)

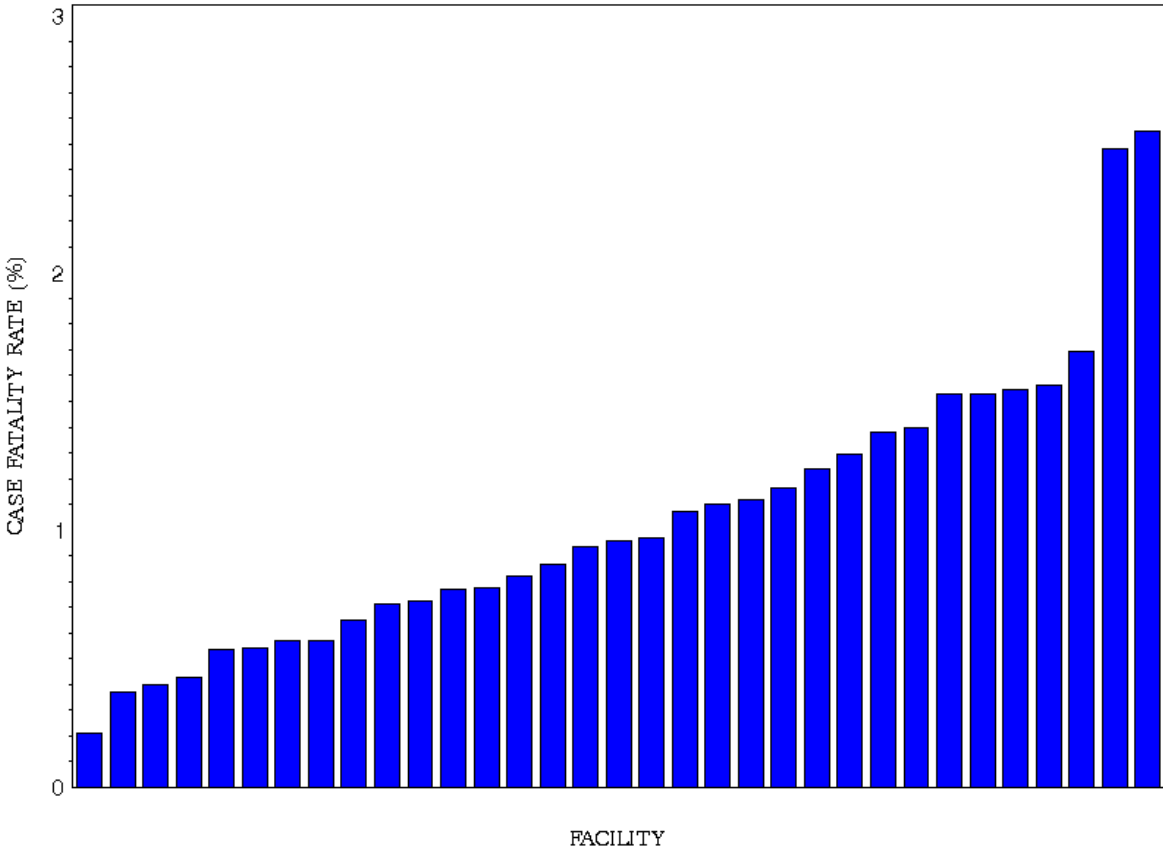


One hundred twenty-four out of 149 hospitals did not have any pediatric patients who died and are not visible in this graph.



Figure 56

# Case Fatality Rate per Facility for Pediatric-Only Facilities (N=33)



Only cases with valid trauma diagnosis code per the NTDB criteria are included in the analysis. Trauma level is based on ACS verification and state designation.

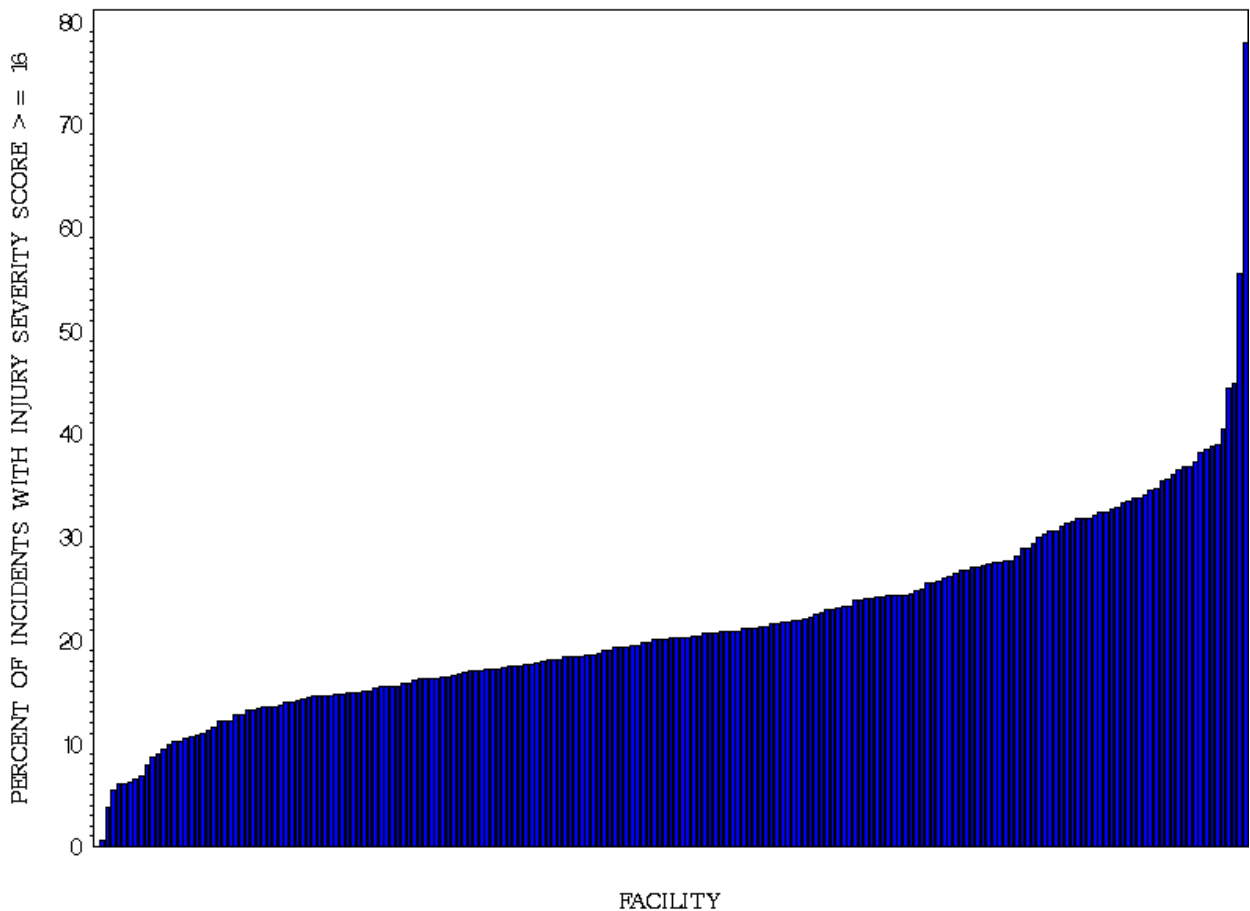


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Figure 57

## Percent of Incidents with Injury Severity Score $\geq 16$ for Level I Facilities with Pediatric Cases (N=207)



One out of 207 hospitals had no records with ISS  $\geq 16$ . This facility is omitted from the graph.



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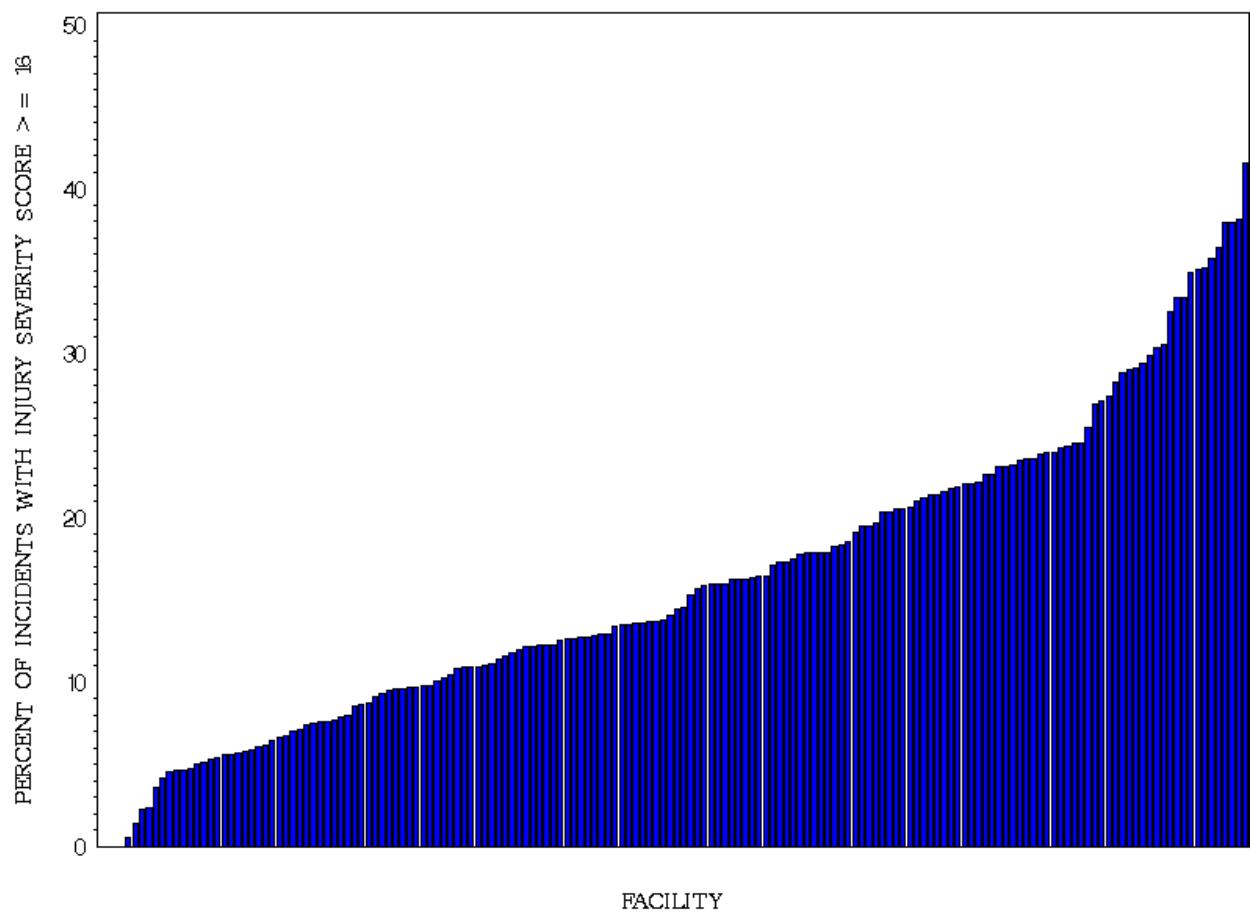
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ISS is calculated using AIS submitted by hospitals and then crosswalked to AIS98. If hospital does not submit AIS98, then ISS is based on AIS derived from ICDMAP-90.

Figure 58

## Percent of Incidents with Injury Severity Score $\geq 16$ for Level II Facilities with Pediatric Cases (Bedsize $\leq 400$ , N=168)



Four out of 168 hospitals had no records with ISS  $\geq 16$ . These facilities are omitted from the graph.

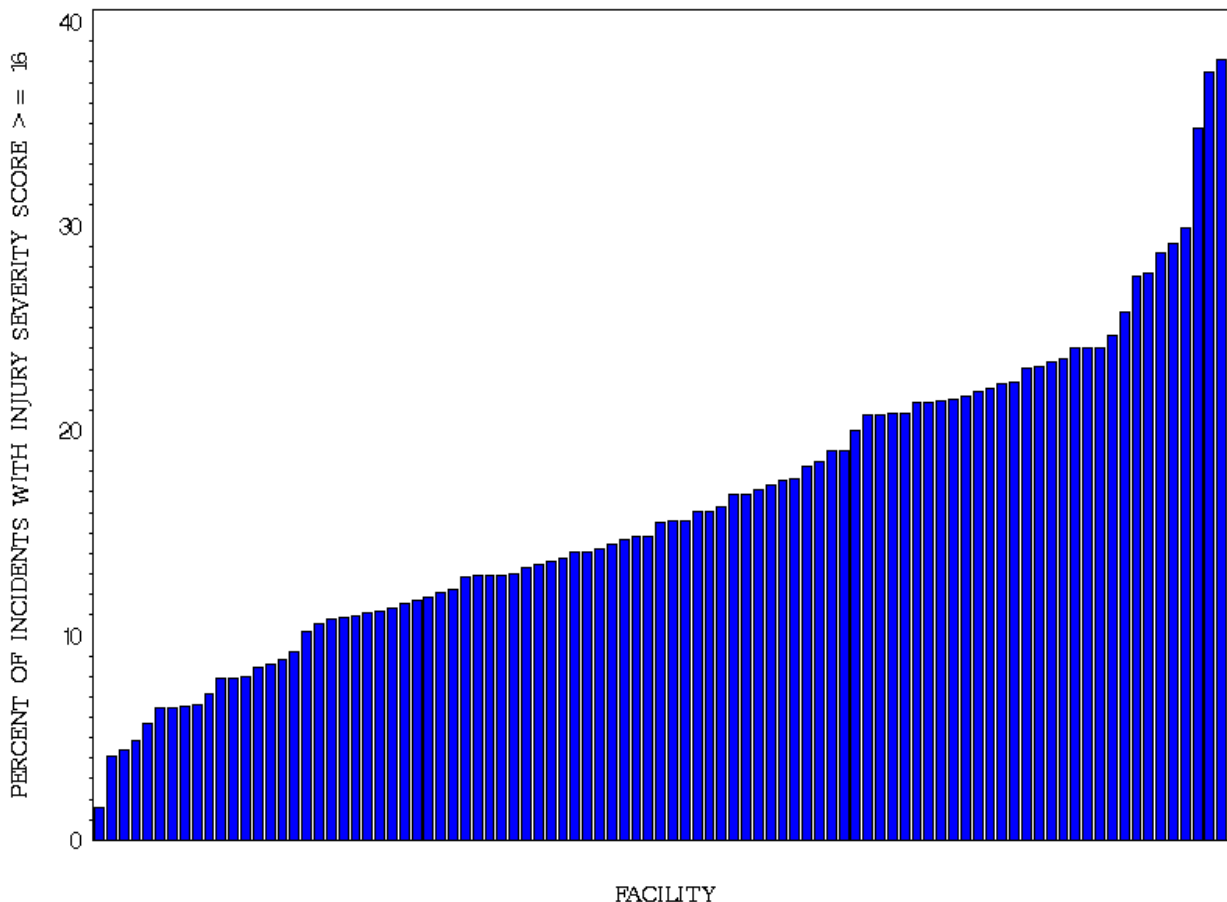


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ISS is calculated using AIS submitted by hospitals and then crosswalked to AIS98. If hospital does not submit AIS98, then ISS is based on AIS derived from ICDMAP-90.

Figure 59

## Percent of Incidents with Injury Severity Score $\geq 16$ for Level II Facilities with Pediatric Cases (Bedsize > 400, N=94)



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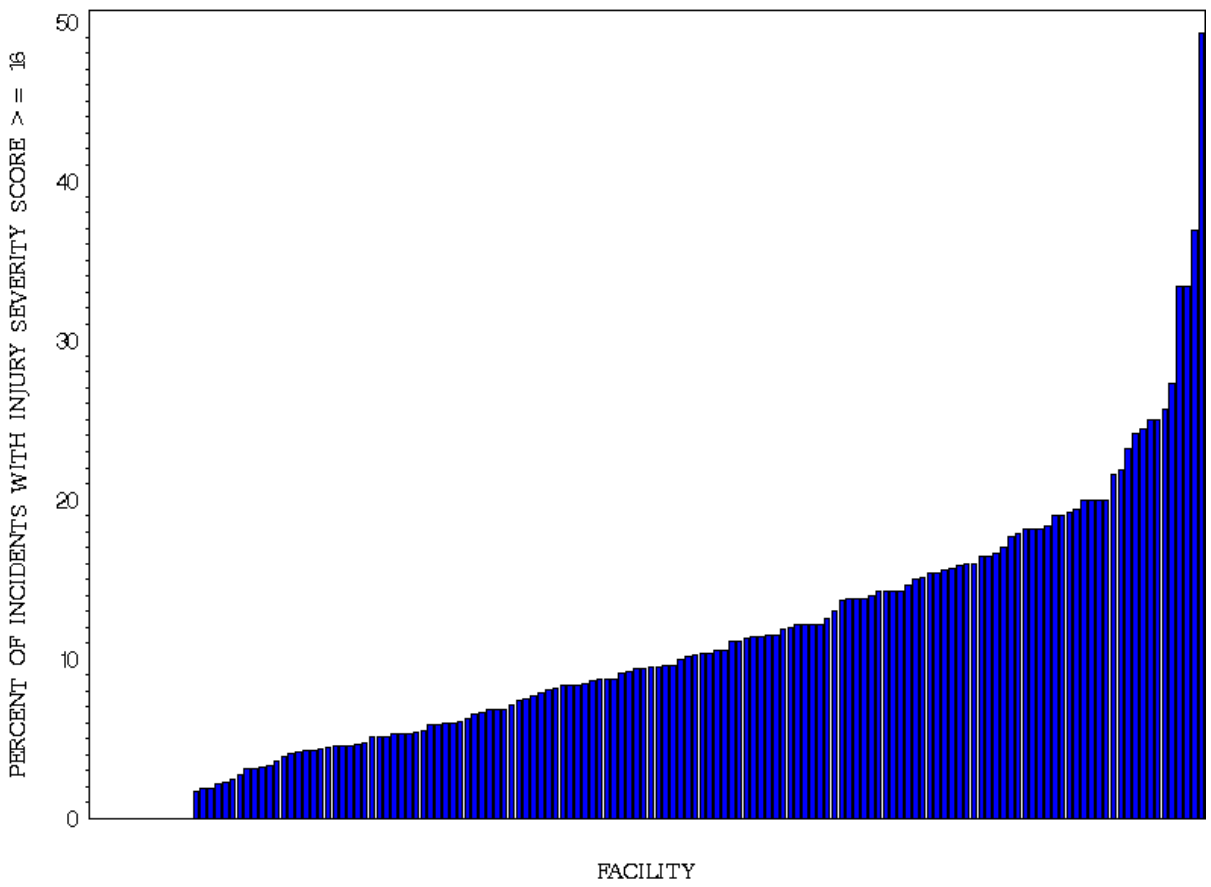
100 years

ISS is calculated using AIS submitted by hospitals and then crosswalked to AIS98. If hospital does not submit AIS98, then ISS is based on AIS derived from ICDMAP-90.



Figure 60

## Percent of Incidents with Injury Severity Score $\geq 16$ for Level III Facilities with Pediatric Cases (N=152)



Fourteen out of 152 hospitals had no records with ISS  $\geq 16$ . These facilities are omitted from the graph.

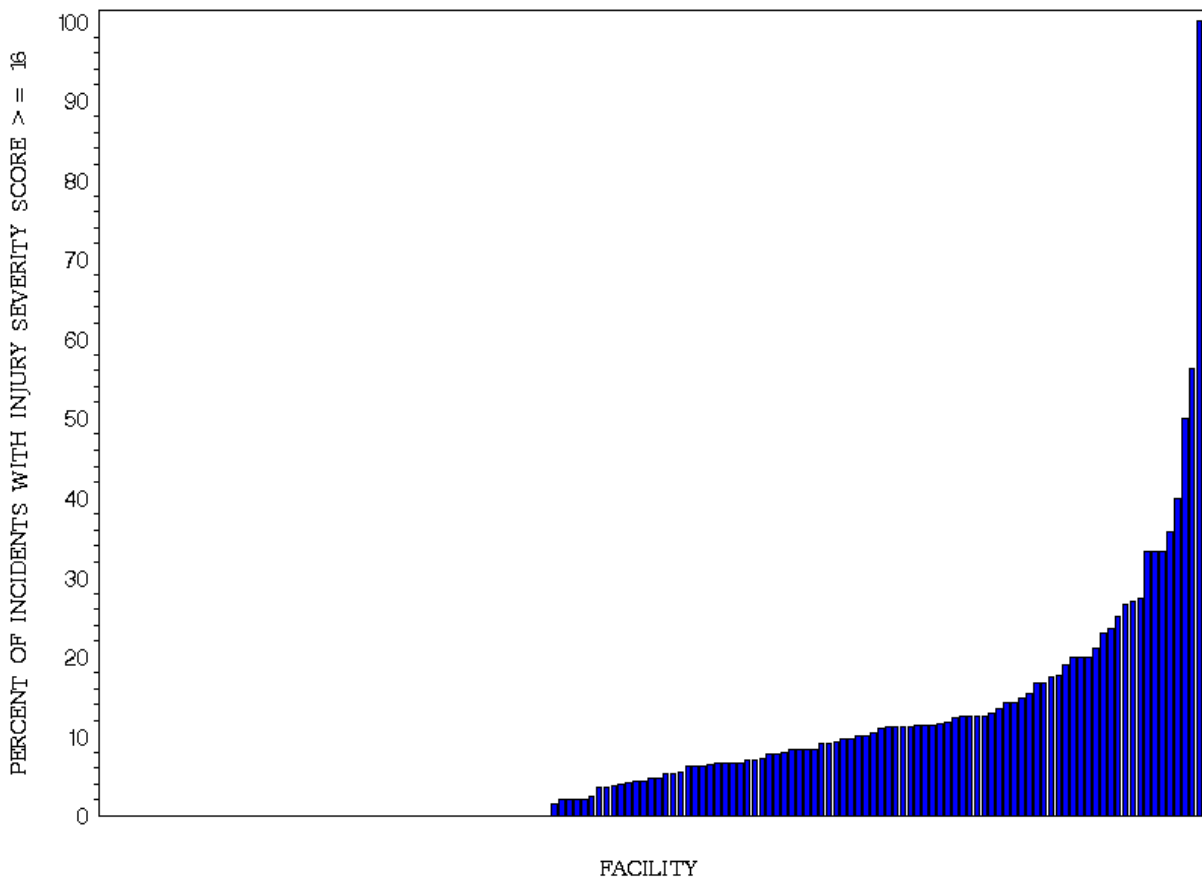


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ISS is calculated using AIS submitted by hospitals and then crosswalked to AIS98. If hospital does not submit AIS98, then ISS is based on AIS derived from ICDMAP-90.

Figure 61

Percent of Incidents with Injury Severity Score  $\geq 16$  for Level IV, NA, or other Facilities with Pediatric Cases (N=149)



Sixty-one out of 149 hospitals had no records with ISS  $\geq 16$ . These facilities are omitted from the graph.

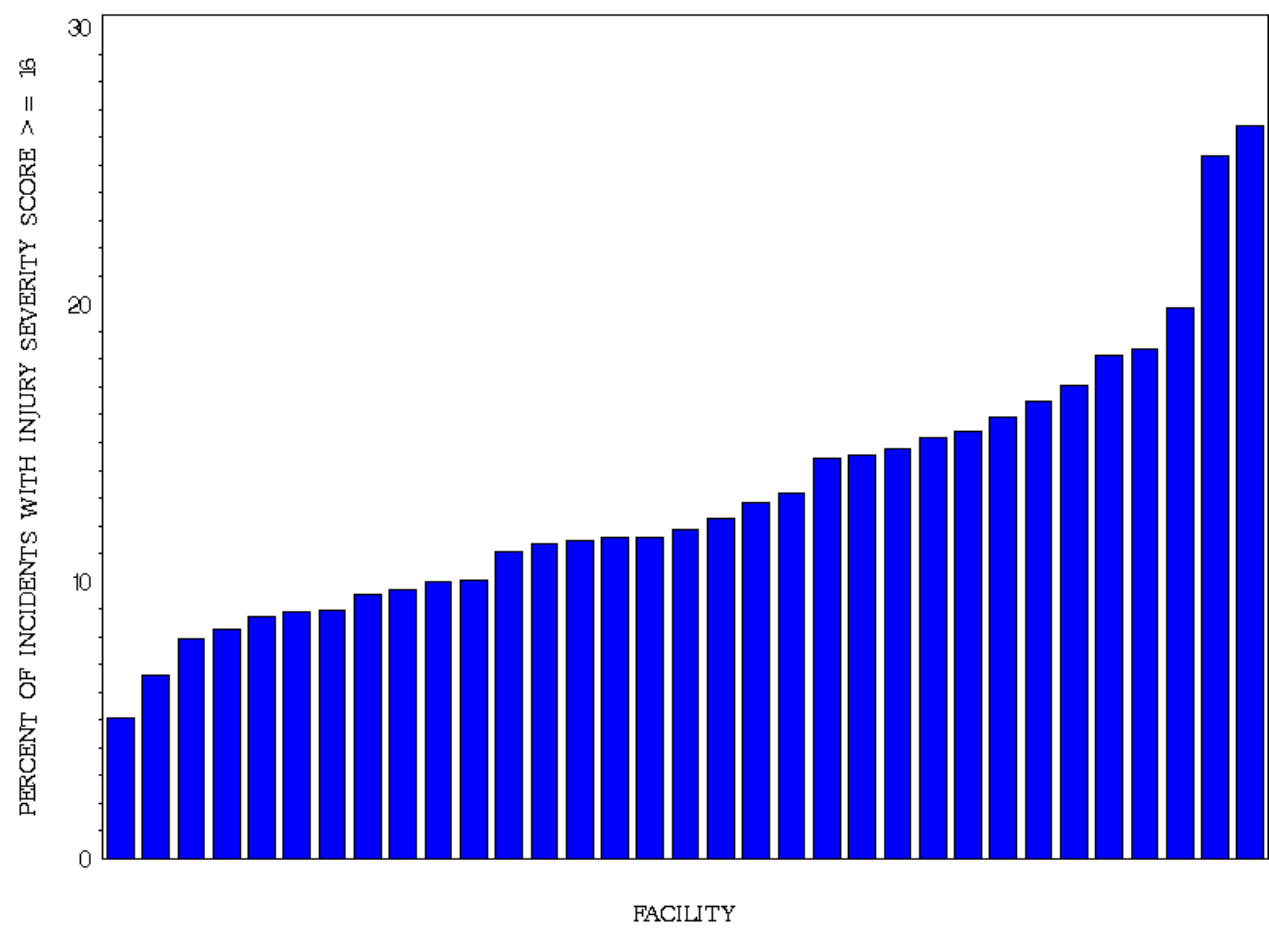


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ISS is calculated using AIS submitted by hospitals and then crosswalked to AIS98. If hospital does not submit AIS98, then ISS is based on AIS derived from ICDMAP-90.

Figure 62

## Percent of Incidents with Injury Severity Score $\geq 16$ for Pediatric-Only Facilities (N=33)



Only cases with valid trauma diagnosis code per the NTDB criteria are included in the analysis. Trauma level is based on ACS verification and state designation.



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ISS is calculated using AIS submitted by hospitals and then crosswalked to AIS98. If hospital does not submit AIS98, then ISS is based on AIS derived from ICDMAP-90.

# APPENDICES



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# APPENDIX A

## Definition of a Trauma Patient

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### Definition of a Trauma Patient adopted by NATIONAL TRAUMA DATA BANK

At least one of the following injury diagnostic codes defined in the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM): 800–959.9

**Excluding the following isolated injuries:**

- 905–909.9 (late effects of injury)
- 910–924.9 (superficial injuries, including blisters, contusions, abrasions, and insect bites)
- 930–939.9 (foreign bodies)

**AND MUST INCLUDE ONE OF THE FOLLOWING IN ADDITION TO (ICD-9-CM 800–959.9):**

- Hospital admission as defined by your trauma registry inclusion criteria; **OR**
- Patient transfer via EMS transport (including air ambulance) from one hospital to another hospital; **OR**
- Death resulting from the traumatic injury (independent of hospital admission or hospital transfer status)



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## APPENDIX B

### Comparative Injury Severity Score (ISS) Definitions

---

Local ISS: Injury Severity Scores as submitted by the facility.

AIS Submitted: Injury Severity Scores as calculated by the NTDB from AIS codes submitted by the facility.

AIS98 Crosswalked: Injury Severity Scores as calculated using AIS submitted by hospitals and then crosswalked to AIS98. If hospital does not submit AIS98 then ISS is based on AIS derived from ICDMAP-90.

AIS ICDMAP-90: Injury Severity Scores as calculated by the NTDB using ICD-9-CM diagnosis codes that are mapped to AIS90 codes using ICDMAP-90 software.



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## APPENDIX C

### E-Code Grouping: Recommended Framework for E-Code Groupings for Presenting Injury Mortality and Morbidity Data

Mechanism/Cause	Manner/Intent				
	Unintentional	Self-Inflicted	Assault	Undetermined	Other
Cut/pierce	E920.0–.9	E956	E966	E986	E974
Drowning/ submersion	E830.0–.9, E832.0–.9, E910.0–.9	E954	E964	E984	
Fall	E880.0–E886.9, E888	E957.0–.9	E968.1	E987.0–.9	
Fire/burn <sup>3</sup>	E890.0–E899, E924.0–.9	E958.1,.2,.7	E961, E968.0,.3, E979.3	E988.1,.2,.7	
Fire/flame <sup>3</sup>	E890.0–E899	E958.1	E968.0, E979.3	E988.1	
Hot object/ substance	E924.0–.9	E958.2,.7	E961,E968.3	E988.2,37	
Firearm <sup>3</sup>	E922.0–.3,.8,.9	E955.0–.4	E965.0–4, E979.4	E985.0–.4	E970
Machinery	E919 (.0–.9)				
Motor vehicle traffic <sup>2,3</sup>	E810–E819 (.0–.9)	E958.5	E968.5	E988.5	
Occupant	E810.–E819 (.0,.1)				
Motorcyclist	E810–E819 (.2,.3)				
Pedal cyclist	E810–E819 (.6)				
Pedestrian	E810–E819 (.7)				
Unspecified	E810–E819 (.9)				
Pedal cyclist, other	E800–E807 (.3) E820–E825 (.6), E826.1,.9 E827–E829(.1)				
Pedestrian, other	E800–E807(.2) E820–E825(.7) E826–E829(.0)				



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### E-Code Grouping: Recommended Framework for E-Code Groupings for Presenting Injury Mortality and Morbidity Data

Mechanism/Cause	Manner/Intent				
	Unintentional	Self-Inflicted	Assault	Undetermined	Other
Transport, other	E800–E807 (.0,.1,.8,.9) E820–E825 (.0–.5,.8,.9) E826.2–.8 E827–E829 (.2–.9) E831.0–.9, E833.0–E845.9	E958.6			E988.6
Natural/environmental	E900.00–E909, E928.0–.2	E958.3		E958.3	
Bites/stings <sup>3</sup>	E905.0–.6,.9 E906.0–.4,.5,.9				
Overexertion	E927				
Poisoning	E850.0–E869.9	E950.0–E952.9	E962.0–.9, E979.6,.7	E980.0– E982.9	E972
Struck by, against	E916–E917.9		E960.0; E968.2		E973, E975
Suffocation	E911–E913.9	E953.0–.9	E963	E983.0–.9	
Other specified and classifiable <sup>3,4</sup>	E846–E848, E914–E915 E918, E921.0–39, E922.4,.5 E923.0–.9, E925.0–E926.9 E928(.3–.5), E929.0–.5	E9555,.6,.7,.9 E958.0,.4	E960.1,E965.5–.9 E967.0–.9, E968.4,.6,.7 E979 (.0–.2,.5,.8,.9)	E985.5,.6,.7 E988.0,.4	E971, E978 E990–E994, E996 E997.0–.2
Unspecified	E887. E928.9, E929.9	E958.9	E968.9	E988.9	E976, E997.9
All Injury <sup>3</sup>	E800–E869, E880–E929	E950–E959	E960–E969, E979, E999.1	E980–E989	E970–E978, E990– E999.0
Adverse effects					E870–E879 E930.0–E949.9
Medical care					E870–E879
Drugs					E930.0–E949.9
All external causes					E800–E999





## APPENDIX C

### E-Code Grouping: Table Notes

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<sup>1</sup>Includes legal intervention (E970–E978) and operations of war (E990–E999).

<sup>2</sup>Three 4<sup>th</sup>-digit codes (.4 [occupant of streetcar], .5 [rider of animal], .8 [other specified person]) are not presented separately because of small numbers. However, because they are included in the overall motor vehicle traffic category, the sum of these categories can be derived by subtraction.

<sup>3</sup>Codes in bold are for morbidity coding only. For details see table 2.

<sup>4</sup>E849 (place of occurrence) has been excluded from the matrix. For mortality coding, an *ICD-9* E849 code does not exist. For morbidity coding, an *ICD-9-CME* E849 code should never be first-listed E-code and should only appear as an additional code to specify the place of occurrence of the injury incident.

**Note:** ICD-9 E codes for coding underlying cause of death apply to injury-related death data from 1979 through 1998. Then there is a new ICD-10 external cause of injury matrix that applies to death data from 1999 and after. This can be found on the National Center for Health Statistics website at <http://www.cdc.gov/nchs/about/otheract/ice/projects.htm>.

Reference MM WR 1997;46:1–30. Updated last time in 2009.



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## Resources

- [www.ntdb.org](http://www.ntdb.org) for more information about NTDB
- [www.ntdbdatacenter.com](http://www.ntdbdatacenter.com) to submit data to NTDB
- [www.ntdsdictionary.org](http://www.ntdsdictionary.org) for information on the data standard



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