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National Trauma Data Bank 2015

Pediatric Annual Report

NTDB PEDIATRIC REPORT 2015

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EDITOR'S NOTE

The Pediatric Report of the National Trauma Data Bank (NTDB) 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 6 million records. The 2015 Pediatric Report is based on 143,996 2014 admission year records from 745 facilities.

In the interest of capturing a better picture of deaths in the NTDB, any patients who 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 hopes 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. 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.



EDITOR'S NOTE, CONT'D

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

Name of Figure, Committee on Trauma, American College of Surgeons. NTDB Annual/Pediatric Report 20XX. Chicago, IL. The content reproduced from the NTDB remains the full and exclusive copyrighted property of the American College of Surgeons. The American College of Surgeons is not responsible for any claims arising from works based on the original data, text, tables, or figures.



FACILITY INFORMATION



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Table
1

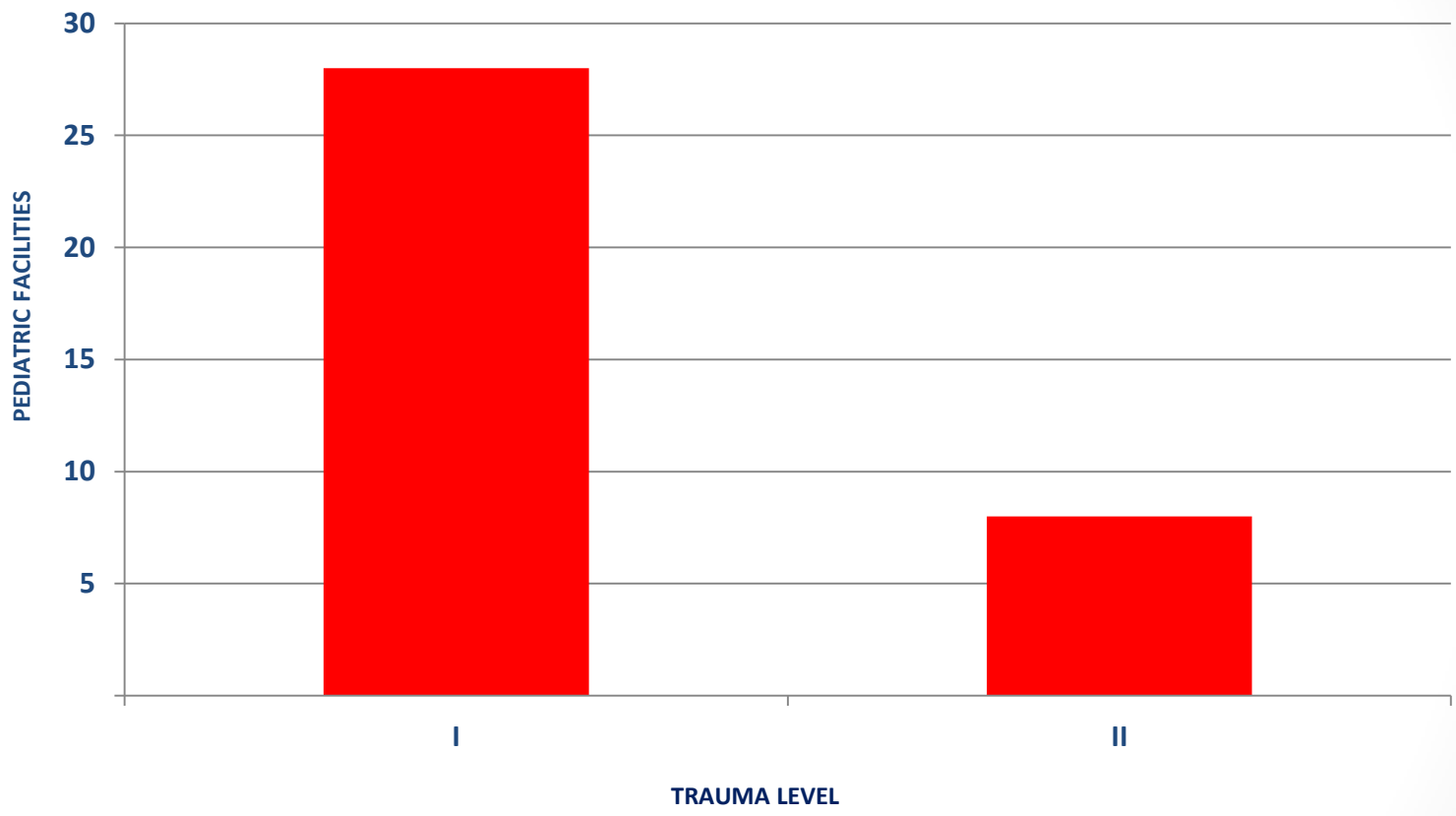
Pediatric-Only Facilities by Trauma Level

LEVEL	NUMBER	PERCENT
I	28	77.78
II	8	22.22
Total	36	100



Figure 1

Pediatric-Only Facilities by Trauma Level



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Table
2

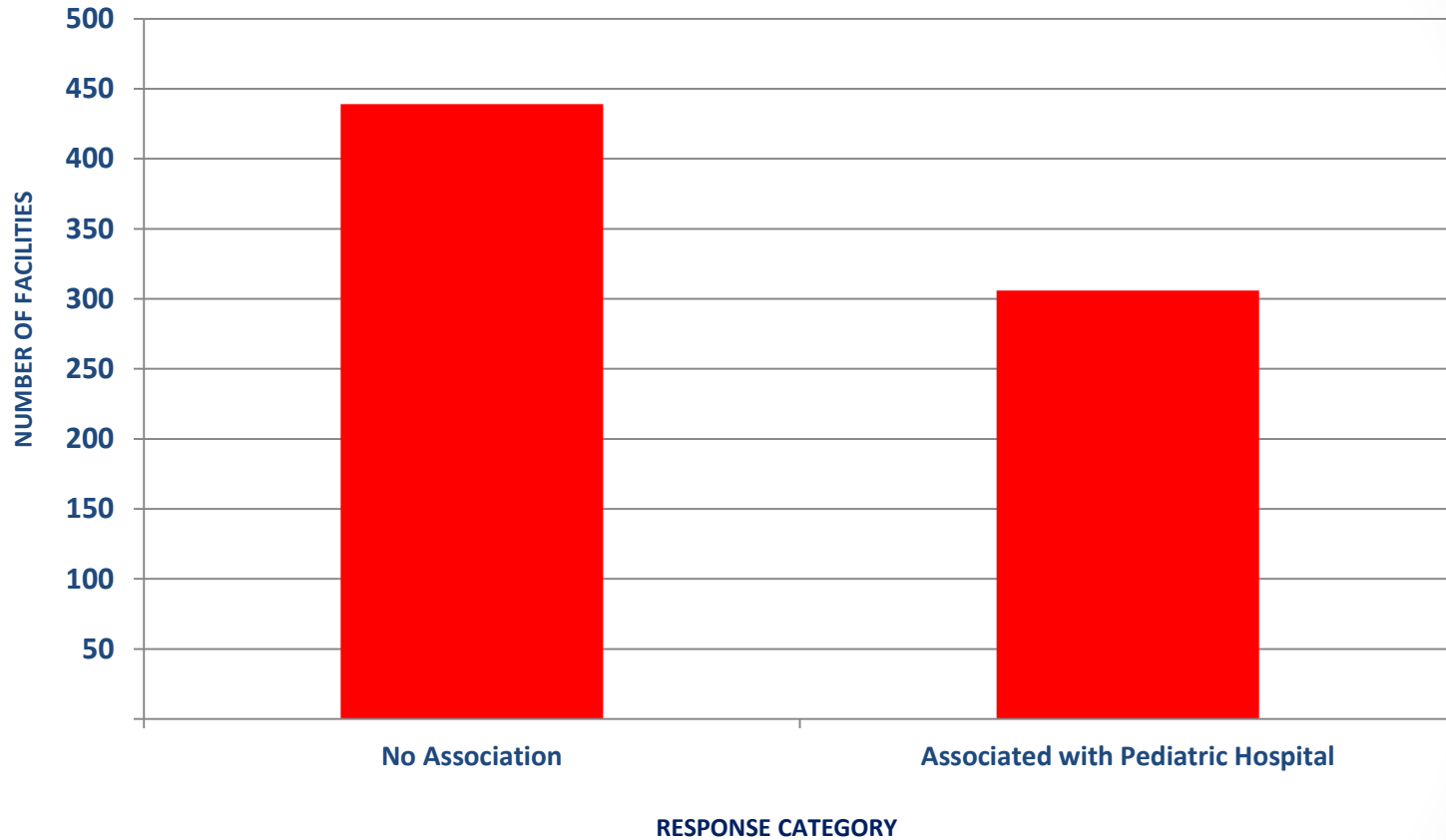
Facilities by Pediatric Hospital Association

PEDIATRIC ASSOCIATION	NUMBER	PERCENT
No Association	439	58.93
Associated with Pediatric Hospital	306	41.07
Total	745	100

This report table excludes one facility with no pediatric patients (patients aged <20).

Figure 2

Facilities by Pediatric Hospital Association



This figure excludes one facility with no pediatric patients (patients aged <20).

Table
3

Facilities by Presence of Pediatric Ward

PEDIATRIC WARD	NUMBER	PERCENT
No	249	33.42
Yes	496	66.58
Total	745	100

This report table excludes one facility with no pediatric patients (patients aged <20).



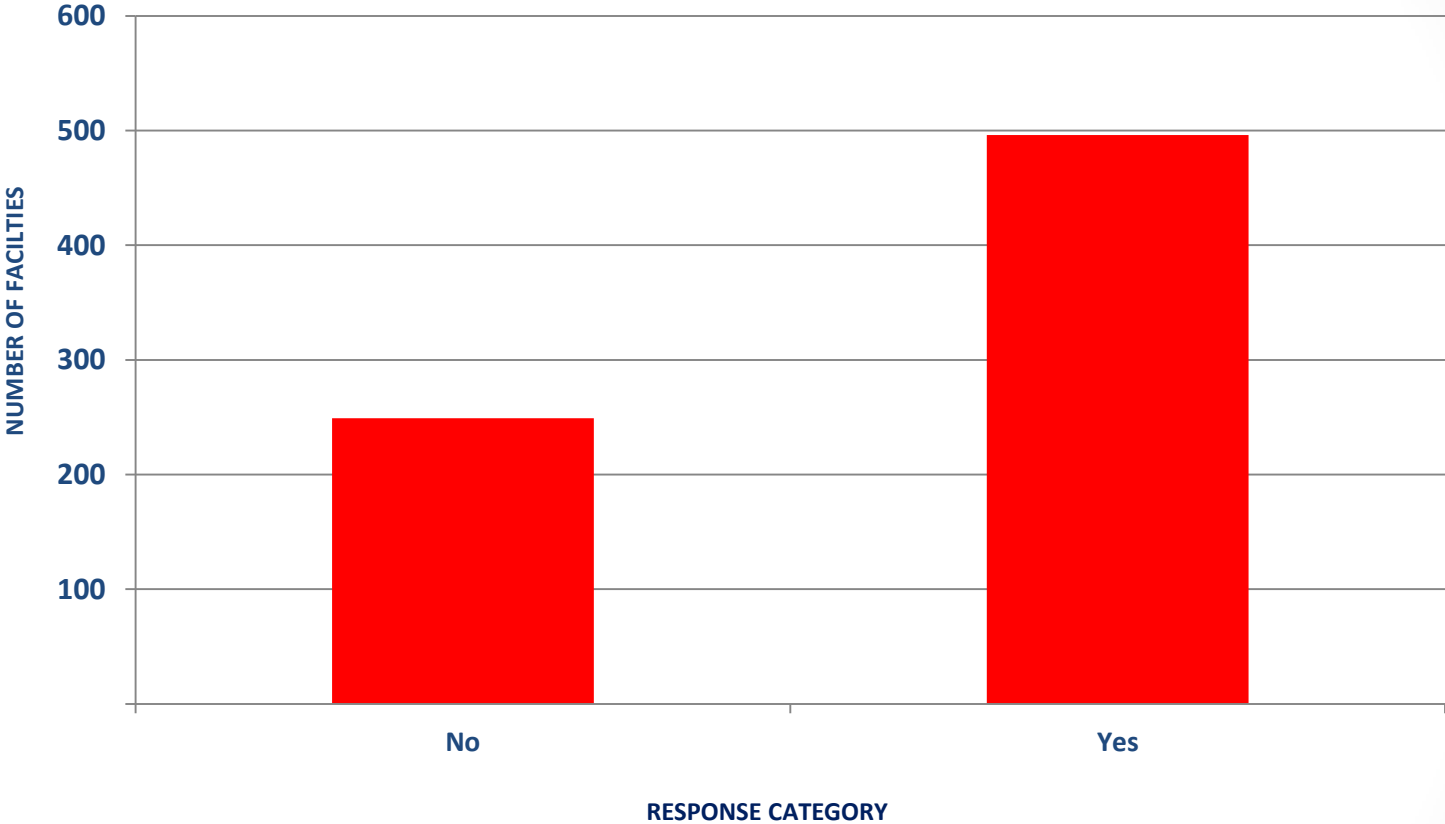
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Figure 3

Facilities by Presence of Pediatric Ward



This figure excludes one facility with no pediatric patients (patients aged <20).

Table
4

Facilities by Presence of Pediatric ICU

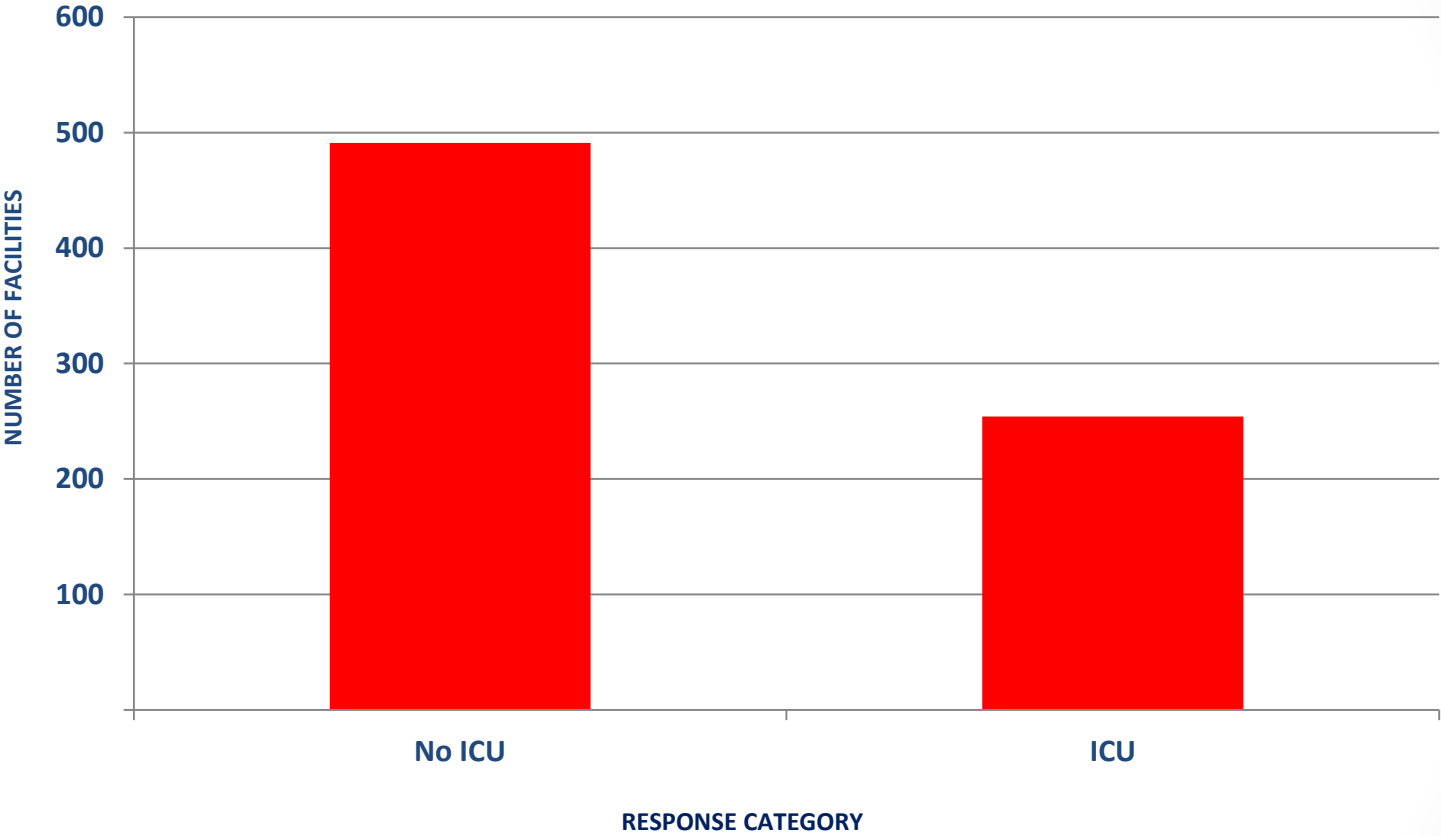
PEDIATRIC ICU	NUMBER	PERCENT
No ICU	491	65.91
ICU	254	34.09
Total	745	100

This report table excludes one facility with no pediatric patients (patients aged <20).



Figure 4

Facilities by Presence of Pediatric ICU



This figure excludes one facility with no pediatric patients (patients aged <20).



Table
5

Facilities by Pediatric Transfer Status

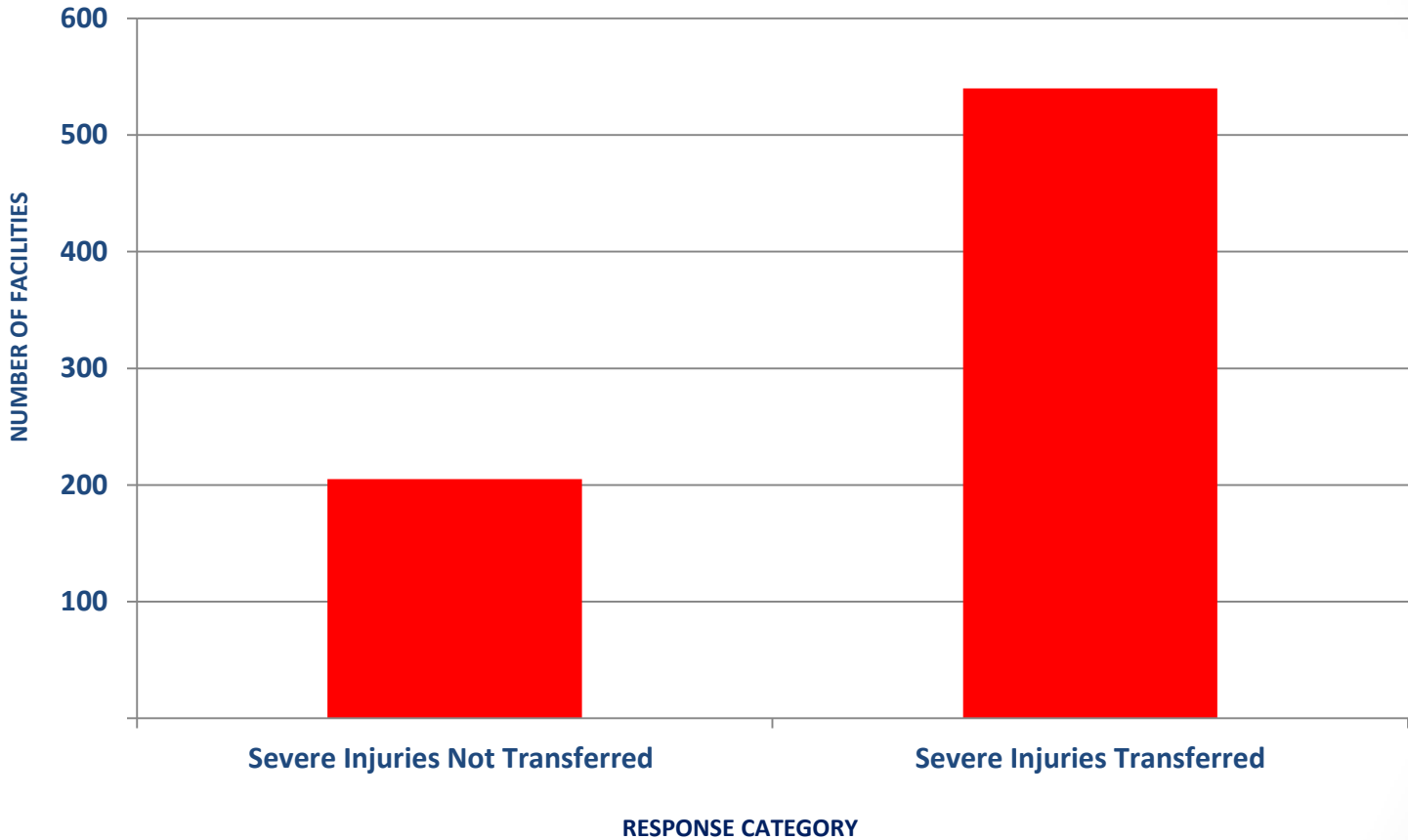
PEDIATRIC TRANSFER	NUMBER	PERCENT
Severe Injuries Not Transferred	205	27.52
Severe Injuries Transferred	540	72.48
Total	745	100

This report table excludes one facility with no pediatric patients (patients aged <20).



Figure 5

Facilities by Pediatric Transfer Status



This figure excludes one facility with no pediatric patients (patients aged <20).

Table
6

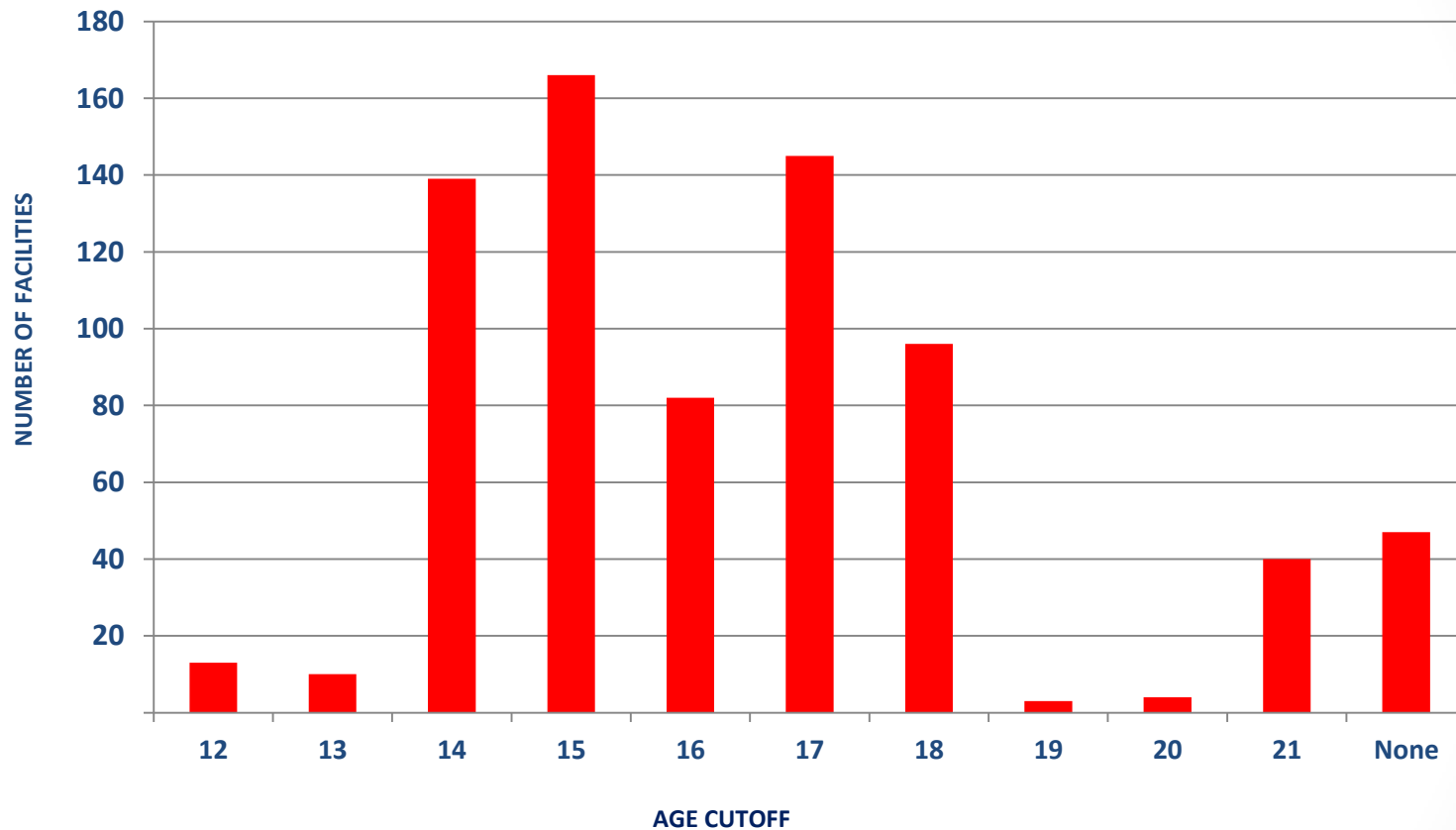
Facilities by Pediatric Age Cutoff

AGE	NUMBER	PERCENT
12	13	1.74
13	10	1.34
14	139	18.66
15	166	22.28
16	82	11.01
17	145	19.46
18	96	12.89
19	3	0.40
20	4	0.54
21	40	5.37
None	47	6.31
Total	745	100

This report table excludes one facility with no pediatric patients (patients aged <20).

Figure 6

Facilities by Pediatric Age Cutoff



This figure excludes one facility 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	9,334	6.48	222	2.38
1	7,140	4.96	144	2.02
2	6,619	4.60	118	1.78
3	6,031	4.19	96	1.59
4	5,905	4.10	70	1.19
5	6,531	4.54	64	0.98
6	6,514	4.52	67	1.03
7	5,963	4.14	59	0.99
8	5,146	3.57	47	0.91
9	4,683	3.25	43	0.92
10	4,674	3.25	42	0.90
11	4,902	3.40	46	0.94
12	5,452	3.79	57	1.05
13	6,449	4.48	76	1.18
14	7,306	5.07	96	1.31
15	7,824	5.43	149	1.90
16	9,167	6.37	241	2.63
17	10,355	7.19	307	2.96
18	11,478	7.97	390	3.40
19	12,523	8.70	485	3.87
Total	143,996	100	2,819	1.96



Figure 7A

Incidents by Age

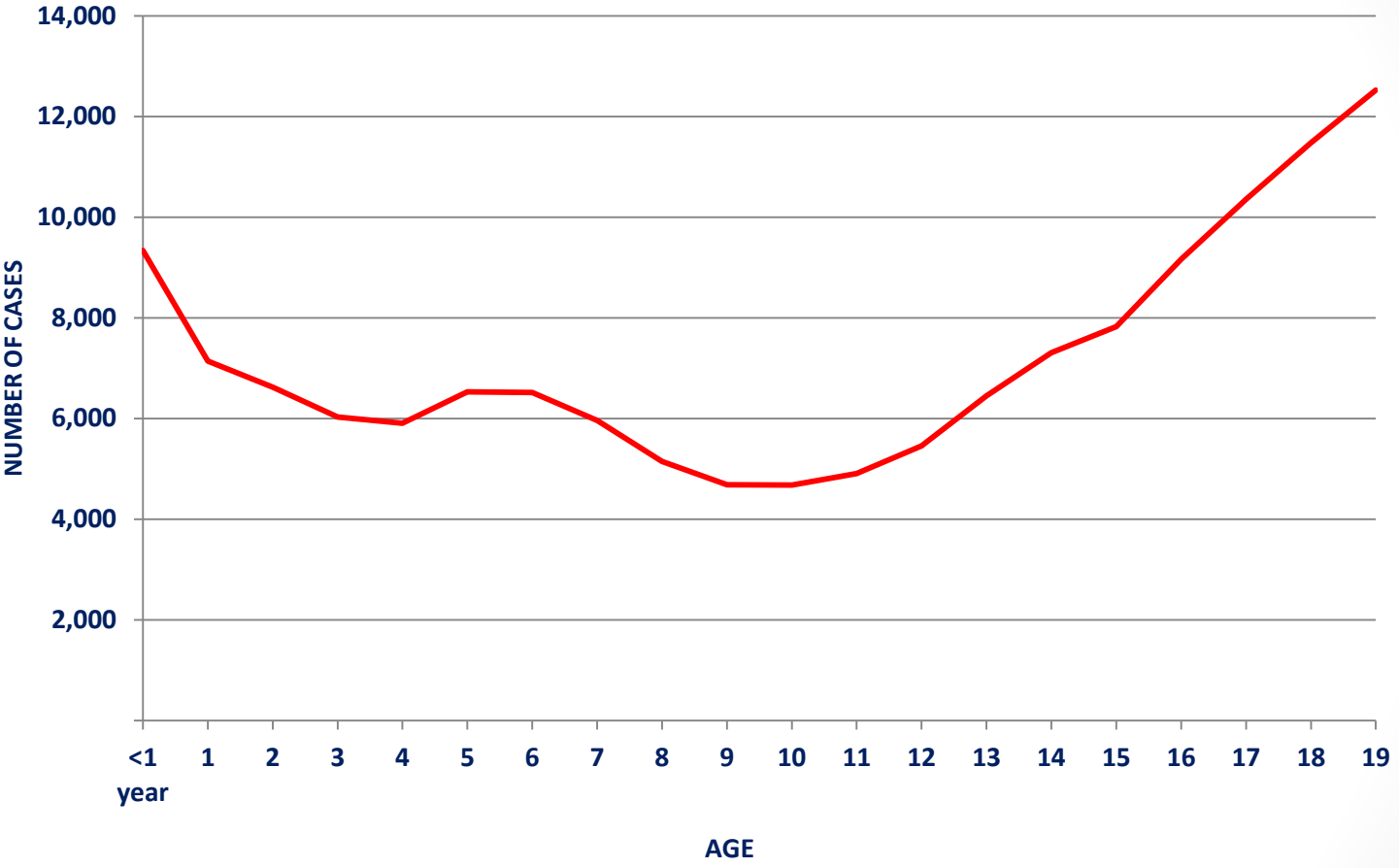


Figure 7B

Case Fatality Rate by Age

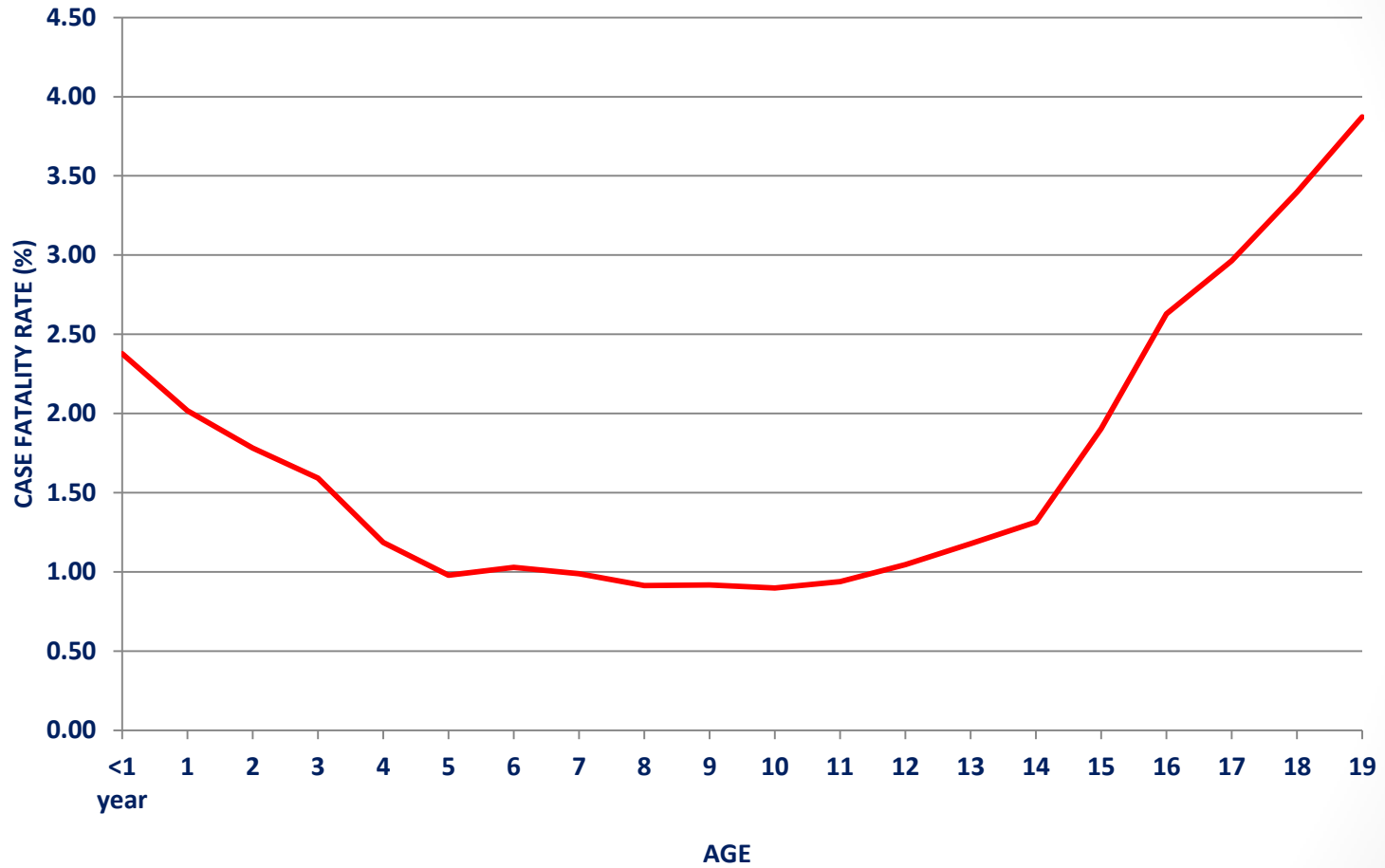


Table
8

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	4,076	5,258	90	132	2.21	2.51
1	3,021	4,116	65	79	2.15	1.92
2	2,673	3,946	44	74	1.65	1.88
3	2,499	3,530	44	52	1.76	1.47
4	2,422	3,481	30	40	1.24	1.15
5	2,654	3,877	26	38	0.98	0.98
6	2,635	3,878	24	43	0.91	1.11
7	2,429	3,532	24	35	0.99	0.99
8	2,049	3,097	14	33	0.68	1.07
9	1,784	2,897	14	29	0.78	1.00
10	1,738	2,935	16	26	0.92	0.89
11	1,672	3,230	19	27	1.14	0.84
12	1,683	3,768	20	37	1.19	0.98
13	1,710	4,738	20	56	1.17	1.18
14	1,924	5,381	30	66	1.56	1.23
15	2,161	5,663	43	106	1.99	1.87
16	2,789	6,378	57	184	2.04	2.88
17	3,020	7,329	70	237	2.32	3.23
18	3,236	8,232	89	301	2.75	3.66
19	3,340	9,180	94	391	2.81	4.26
Total	49,515	94,446	833	1,986	1.68	2.10



Figure 8A

Incidents by Age and Gender

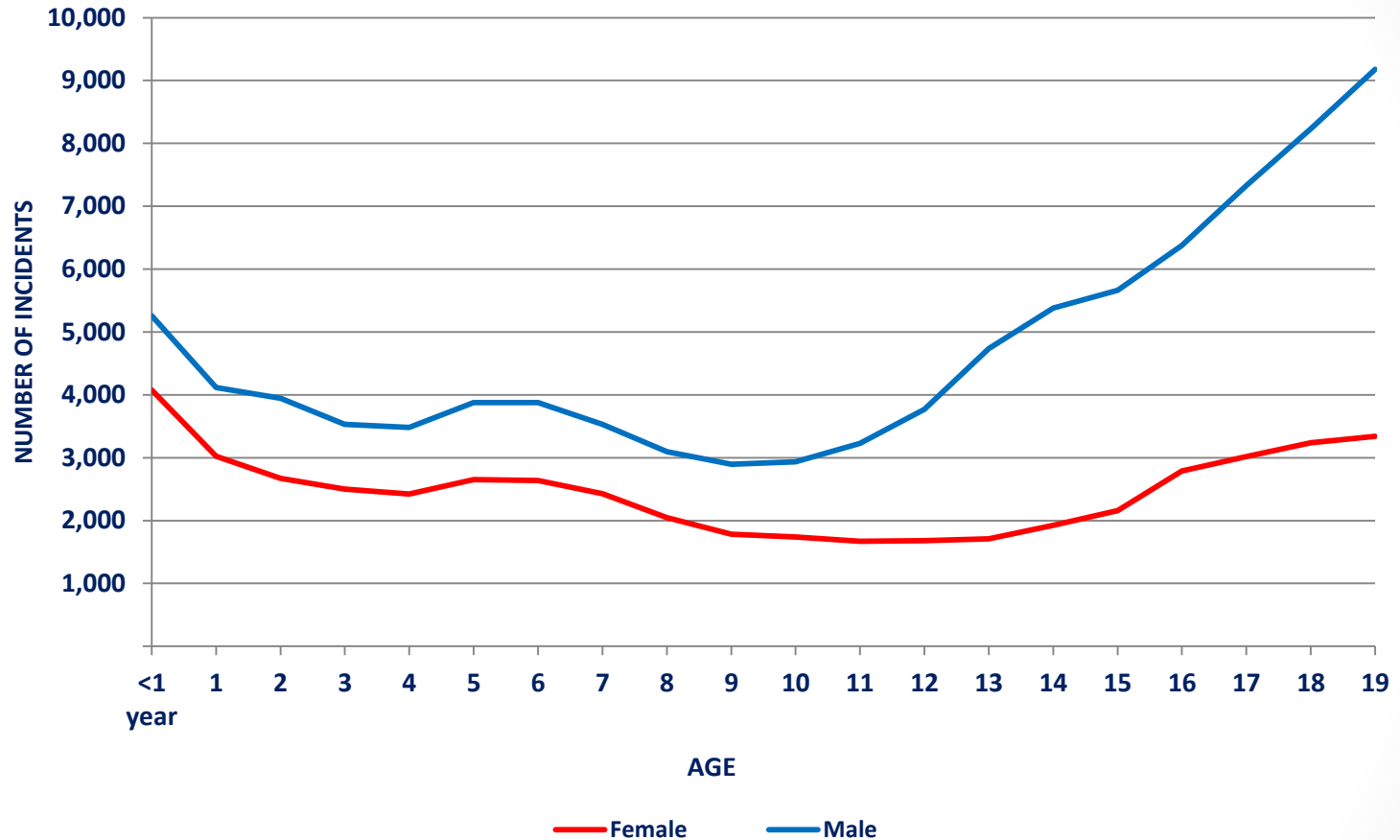


Figure 8B

Case Fatality Rate by Age and Gender

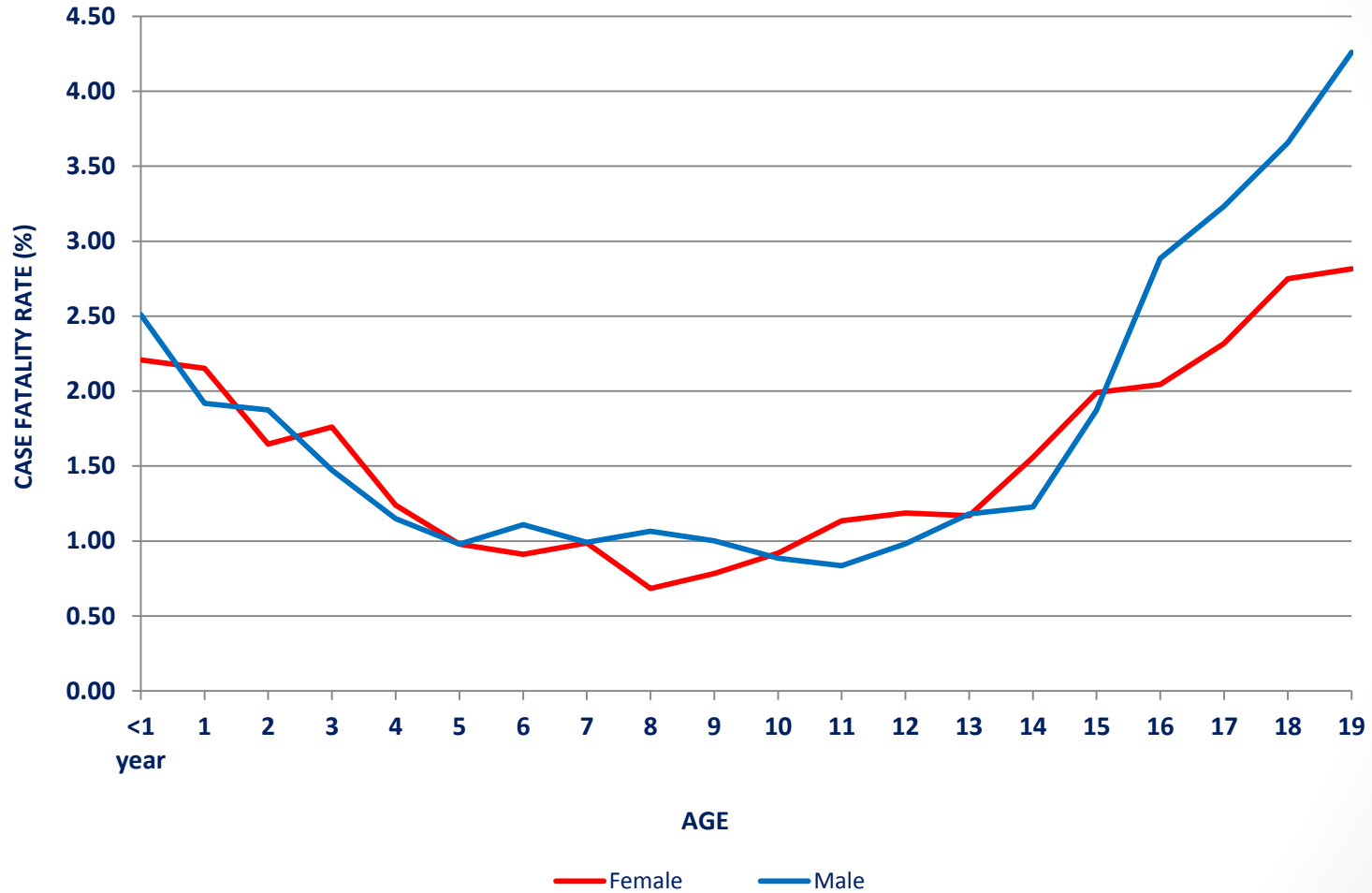


Table
9

Alcohol Use

ALCOHOL USE	NUMBER	PERCENT
No (confirmed by test)	26,838	18.64
No (not tested)	86,104	59.80
Yes (confirmed by test [beyond legal limit])	3,136	2.18
Yes (confirmed by test [trace levels])	2,252	1.56
Not Applicable	16,067	11.16
NK/NR	9,599	6.67
Total	143,996	100



Figure 9

Alcohol Use

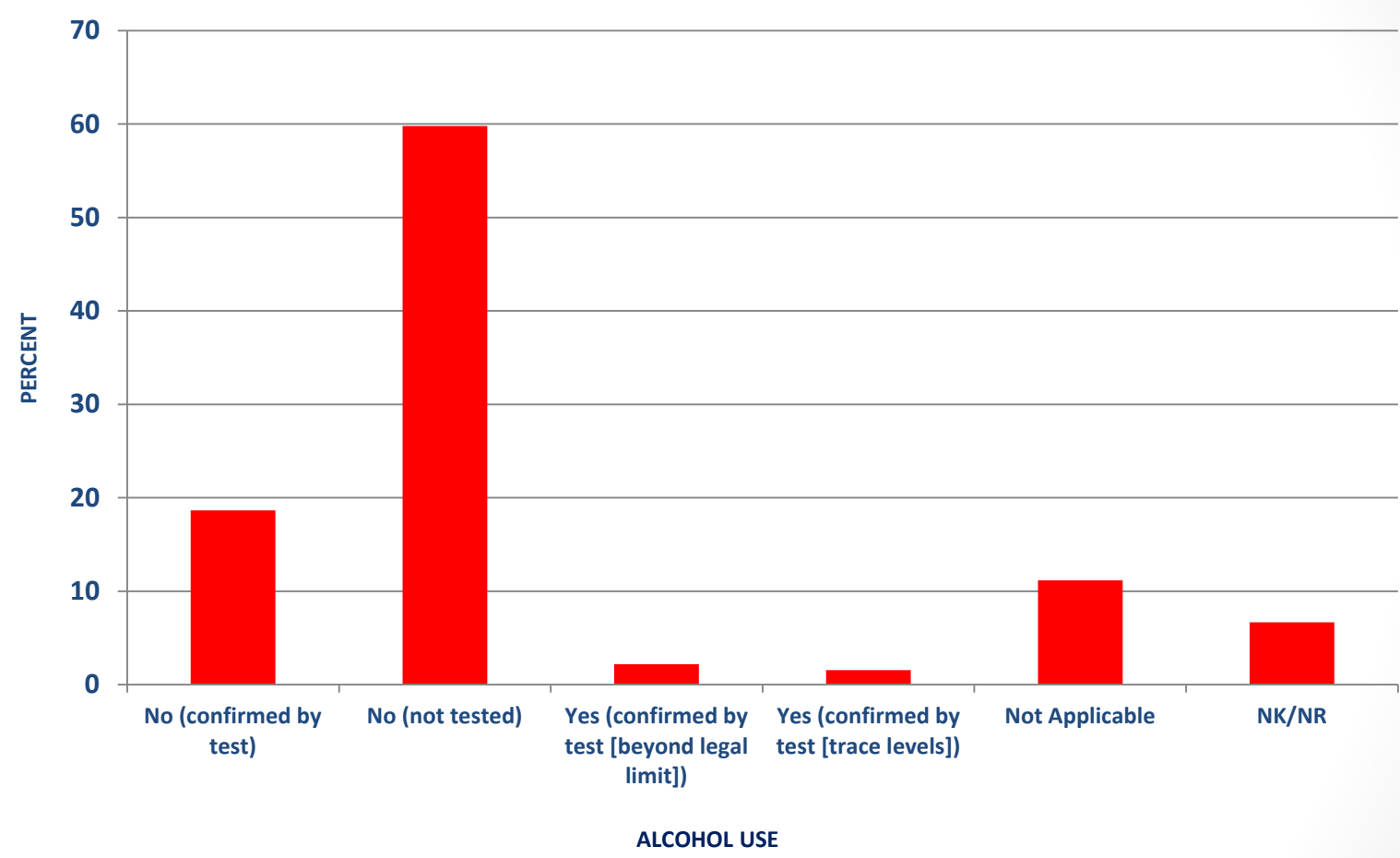


Table
10

Drug Use

DRUG USE	NUMBER	PERCENT
No (confirmed by test)	9,894	6.87
No (not tested)	99,759	69.28
Yes (confirmed by test [illegal drug use])	6,054	4.20
Yes (confirmed by test [prescription drug])	3,095	2.15
Not Applicable	12,844	8.92
NK/NR	12,350	8.58
Total	143,996	100



Figure 10

Drug Use

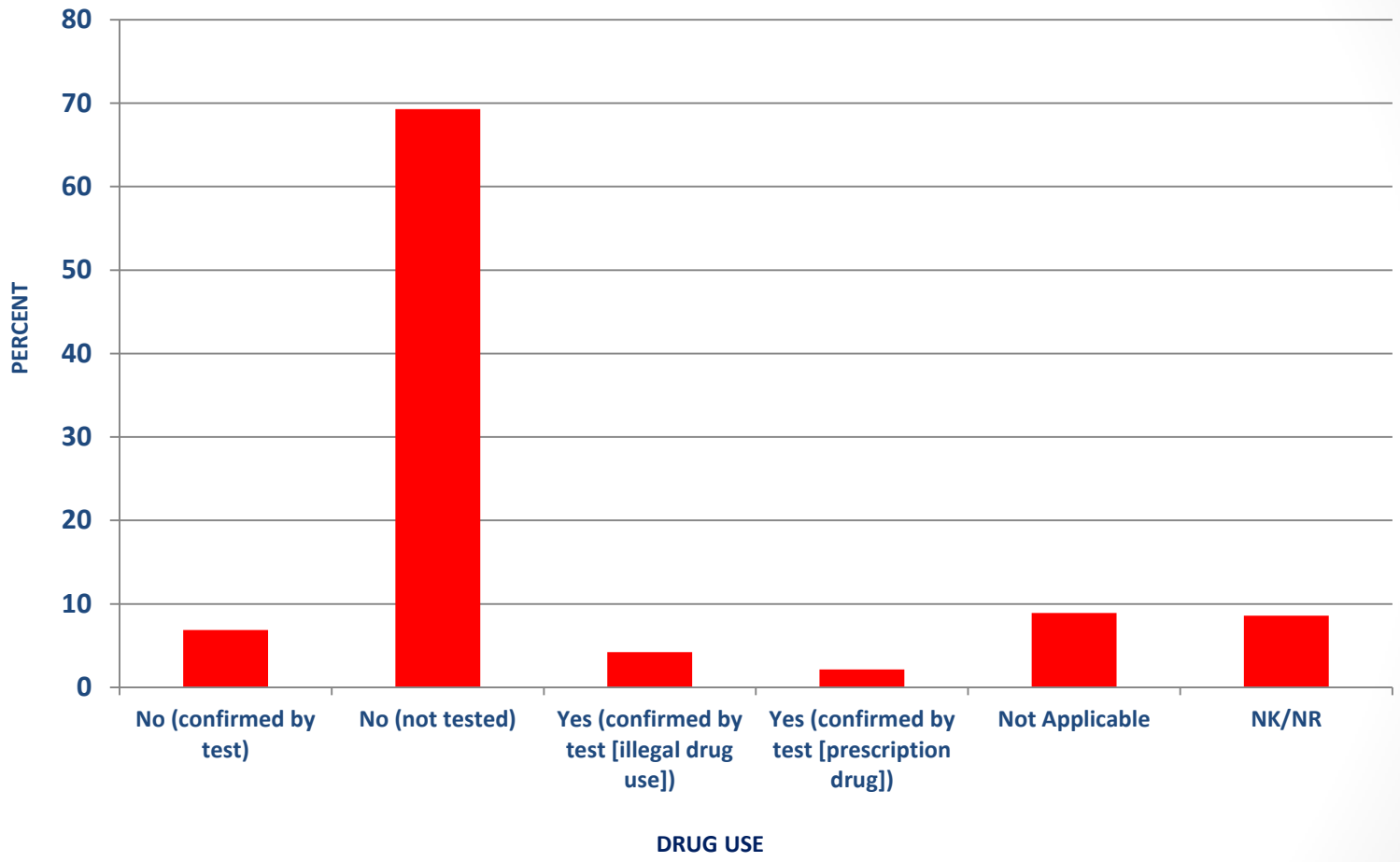


Table
11

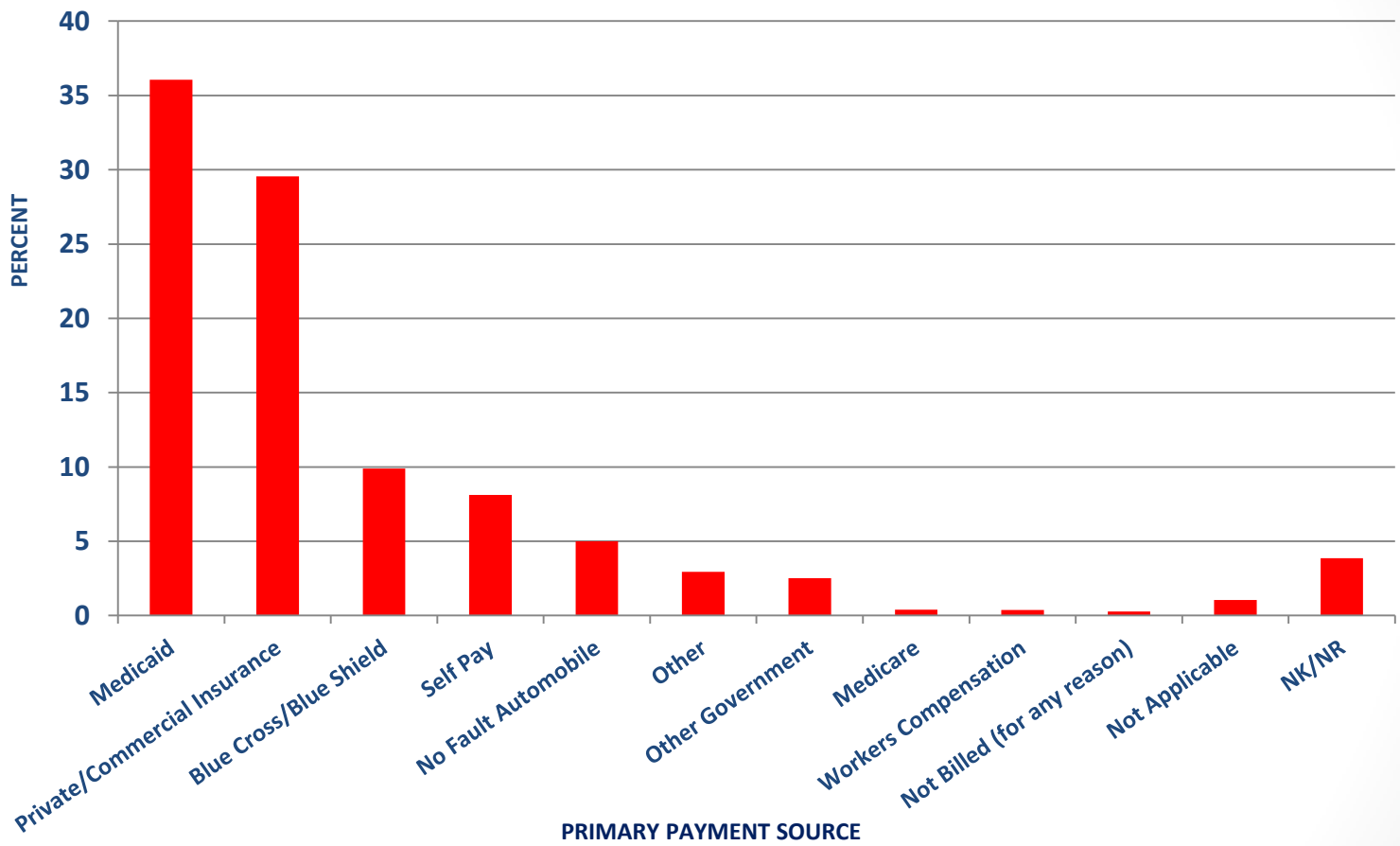
Primary Payment Source

PRIMARY PAYMENT SOURCE	NUMBER	PERCENT
Medicaid	51,907	36.05
Private/Commercial Insurance	42,548	29.55
Blue Cross/Blue Shield	14,231	9.88
Self Pay	11,687	8.12
No Fault Automobile	7,188	4.99
Other	4,251	2.95
Other Government	3,620	2.51
Medicare	569	0.40
Workers Compensation	551	0.38
Not Billed (for any reason)	387	0.27
Not Applicable	1,500	1.04
NK/NR	5,557	3.86
Total	143,996	100



Figure 11

Primary Payment Source



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	48,214	33.48	205	0.43
Motor Vehicle Traffic	33,030	22.94	1,129	3.42
Struck by, against	14,480	10.06	104	0.72
Transport, other	9,706	6.74	122	1.26
Firearm	5,888	4.09	703	11.94
Pedal cyclist, other	4,847	3.37	18	0.37
Other specified and classifiable	4,678	3.25	187	4.00
Cut/pierce	4,677	3.25	67	1.43
Hot object/substance	4,484	3.11	6	0.13
Natural/environmental, Bites and stings	2,615	1.82	7	0.27
Unspecified	1,660	1.15	58	3.49
Fire/flame	1,473	1.02	24	1.63
Other specified, not elsewhere classifiable	905	0.63	19	2.10
Overexertion	776	0.54	4	0.52
Natural/environmental, Other	650	0.45	4	0.62
Pedestrian, other	606	0.42	26	4.29
Machinery	557	0.39	5	0.90
Poisoning	219	0.15	1	0.46
Suffocation	198	0.14	54	27.27
Drowning/submersion	137	0.10	26	18.98
Adverse effects, medical care	22	0.02	0	0.00
Adverse effects, drugs	13	0.01	0	0.00
NK/NR	4,161	2.89	50	1.20
Total	143,996	100	2,819	1.96



Figure 12A

Incidents by Selected Mechanism of Injury

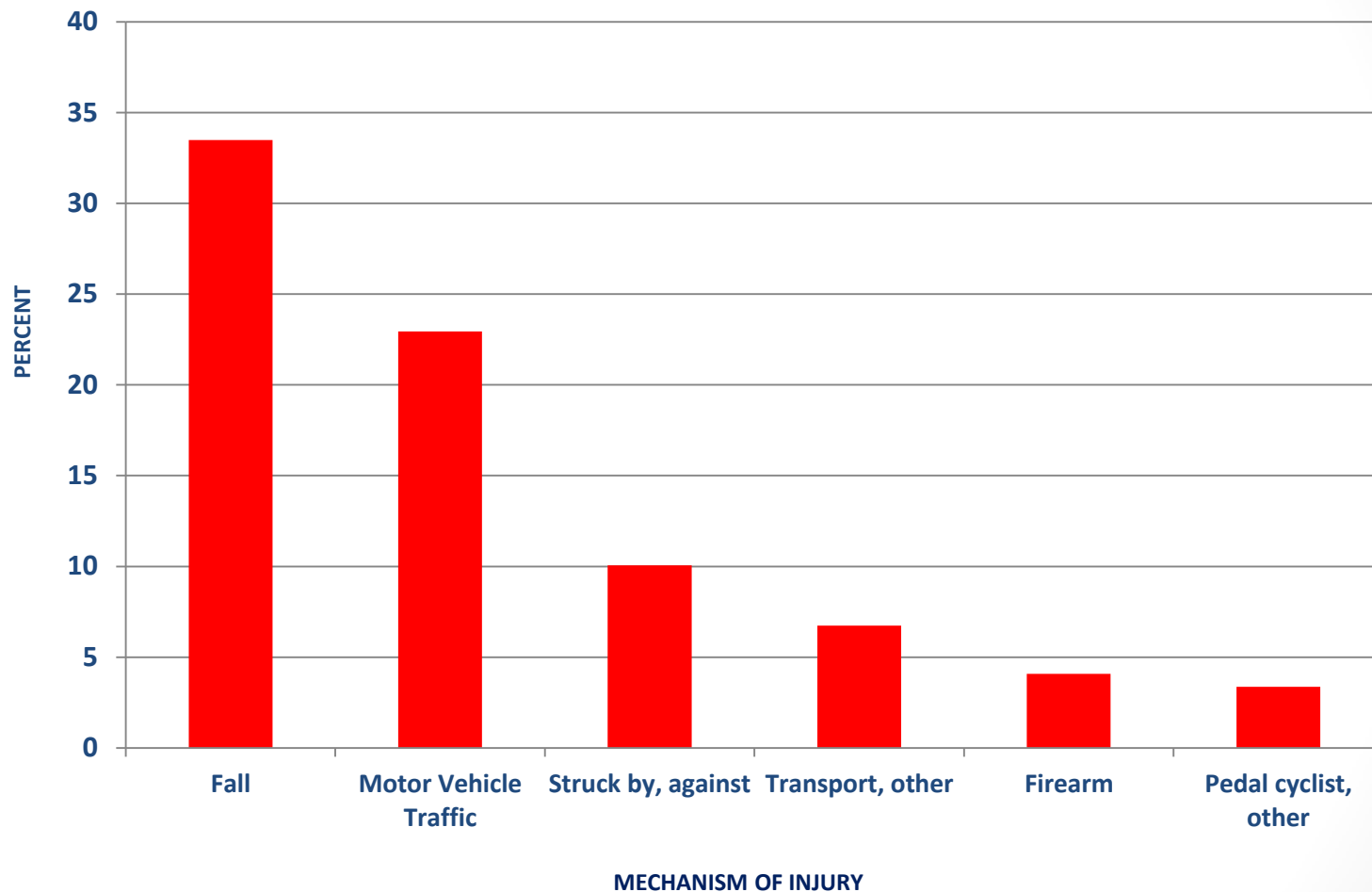


Figure 12B

Case Fatality Rate by Selected Mechanism of Injury

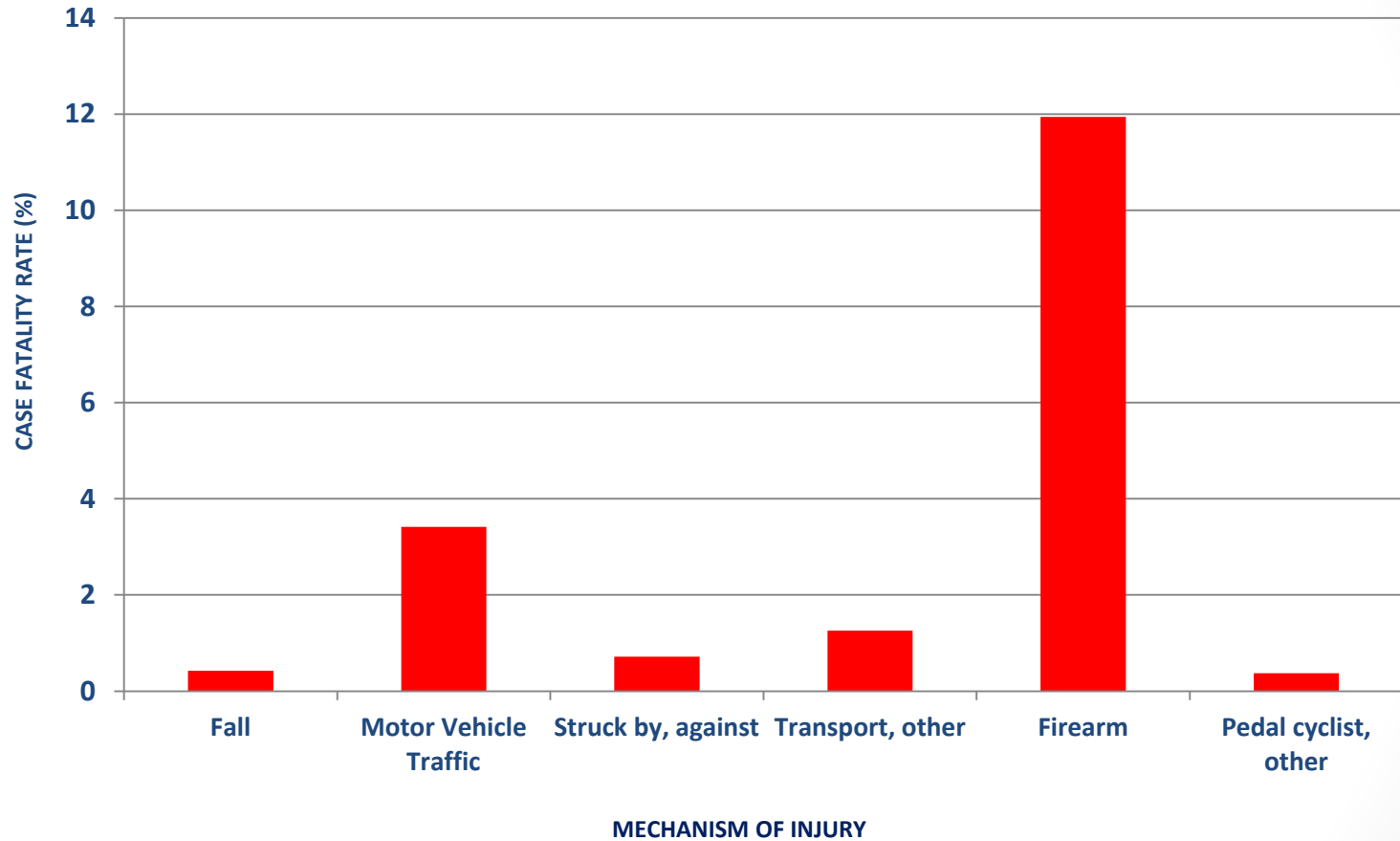


Table
13

Selected Mechanism of Injury by Age

AGE	FALL	MVT	STRUCK BY, AGAINST	TRANSPORT, OTHER	FIREARM	CUT/PIERCE
<1 year	4,916	430	356	41	36	38
1	2,976	580	411	50	21	98
2	3,389	705	473	113	32	107
3	3,046	771	476	149	53	127
4	3,106	829	384	181	41	105
5	3,602	879	402	249	42	140
6	3,502	950	419	293	35	105
7	2,913	992	427	327	36	105
8	2,227	860	446	330	36	97
9	1,915	826	436	335	39	98
10	1,739	863	489	384	52	108
11	1,756	880	583	473	61	99
12	1,855	945	792	597	79	106
13	1,967	1,174	1,044	744	151	185
14	1,952	1,495	1,264	929	221	248
15	1,676	1,938	1,351	920	440	320
16	1,499	3,147	1,251	969	706	432
17	1,473	4,044	1,322	936	930	545
18	1,306	5,164	1,068	831	1,342	718
19	1,399	5,558	1,086	855	1,535	896
Total	48,214	33,030	14,480	9,706	5,888	4,677



Figure 13

Incidents by Selected Mechanism of Injury by Age

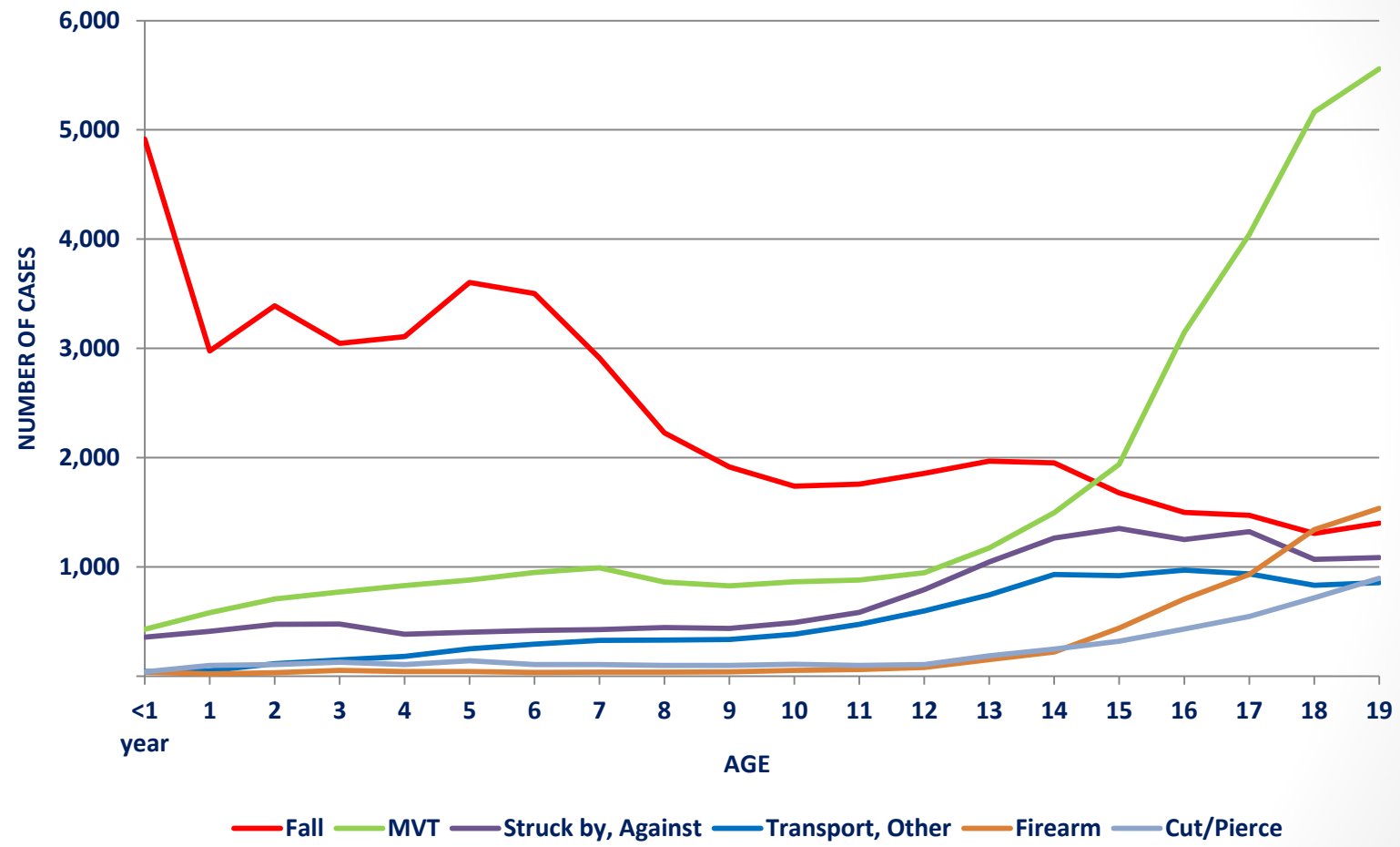


Table
14

Case Fatality Rate by Selected 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	0.65	6.98	1.40	0.00	30.56	2.63
1	0.57	7.41	1.95	0.00	19.05	1.02
2	0.50	6.38	1.90	1.77	18.75	0.93
3	0.49	3.89	1.05	0.00	20.75	0.00
4	0.29	4.22	0.26	3.31	17.07	1.90
5	0.11	3.75	1.24	2.41	19.05	0.00
6	0.17	3.79	1.19	1.71	14.29	1.90
7	0.31	3.13	0.47	1.83	11.11	0.95
8	0.36	2.44	0.22	0.91	13.89	0.00
9	0.16	3.15	0.23	0.30	12.82	2.04
10	0.23	1.97	0.61	1.56	7.69	0.00
11	0.28	1.93	0.34	0.63	19.67	1.01
12	0.32	2.86	0.76	0.50	11.39	0.00
13	0.41	2.04	0.19	0.81	14.57	0.00
14	0.15	2.21	0.32	0.97	13.12	2.02
15	0.42	2.89	0.52	0.65	12.50	0.63
16	0.67	3.37	0.56	1.65	9.77	1.85
17	0.88	3.14	0.76	1.28	11.51	2.20
18	0.77	3.29	1.12	1.81	11.03	1.53
19	1.36	3.99	0.83	1.99	11.86	2.01
Total	0.43	3.42	0.72	1.26	11.94	1.43



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Figure 14

Case Fatality Rate by Selected Mechanism of Injury by Age

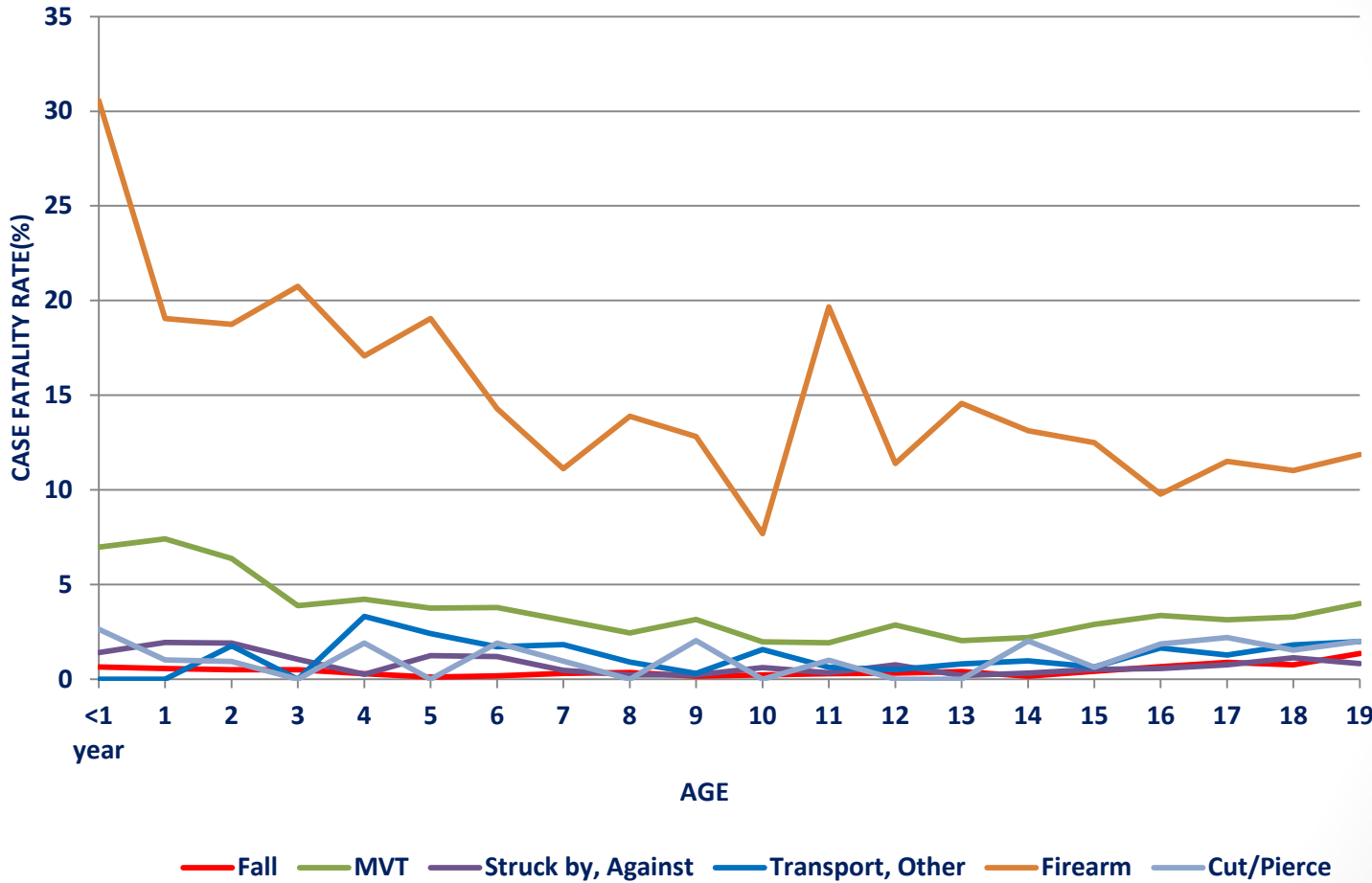


Table
15

Incidents and Case Fatality Rate by Mechanism of Injury and Gender

MECHANISM	PERCENT (FEMALE)	PERCENT (MALE)	CASE FATALITY RATE (FEMALE)	CASE FATALITY RATE (MALE)
Fall	36.81	31.75	0.38	0.45
Motor Vehicle Traffic	26.89	20.86	3.03	3.68
Transport, other	6.49	6.87	1.12	1.32
Struck by, against	6.39	11.98	0.79	0.70
Hot object/substance	3.90	2.70	0.26	0.04
Other specified and classifiable	3.45	3.15	4.92	3.47
NK/NR	3.11	2.78	0.78	1.45
Natural/environmental, Bites and stings	2.34	1.54	0.43	0.14
Pedal cyclist, other	2.30	3.93	0.26	0.40
Cut/pierce	2.19	3.80	1.01	1.56
Firearm	1.52	5.43	13.38	11.73
Unspecified	1.12	1.17	3.95	3.26
Fire/flame	0.78	1.15	1.56	1.66
Other specified, not elsewhere classifiable	0.56	0.66	1.80	2.23
Natural/environmental, Other	0.52	0.42	0.00	1.02
Overexertion	0.46	0.58	0.00	0.73
Pedestrian, other	0.42	0.42	4.81	4.02
Poisoning	0.27	0.09	0.00	1.20
Machinery	0.20	0.48	0.00	1.09
Suffocation	0.15	0.13	36.99	21.60
Drowning/submersion	0.11	0.09	16.36	20.73
Adverse effects, medical care	0.01	0.02	0.00	.
Adverse effects, drugs	0.00	0.01	0.00	.
Total



Figure 15A

Incidents by Mechanism of Injury and Gender

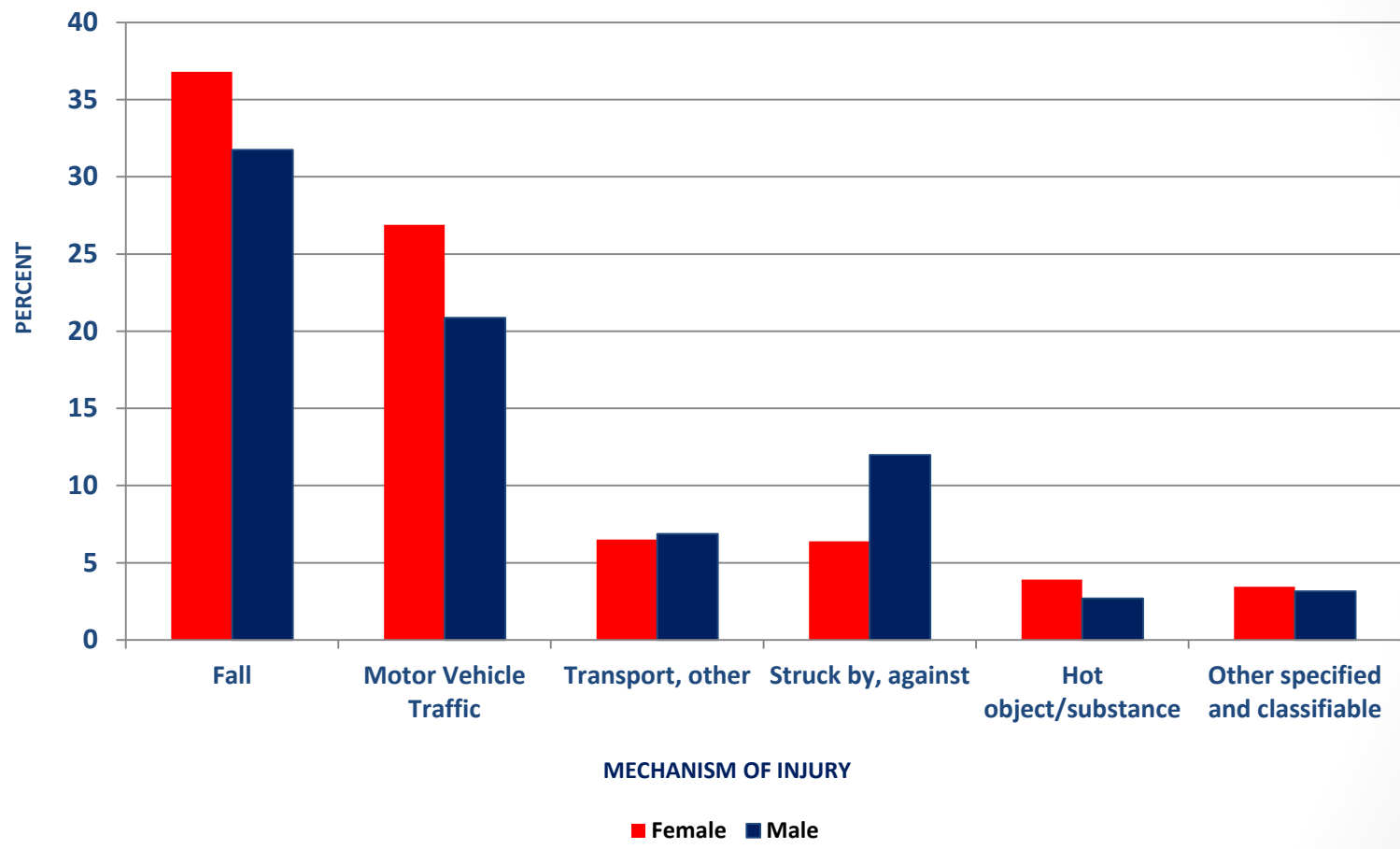


Figure 15B

Case Fatality Rate by Mechanism of Injury and Gender

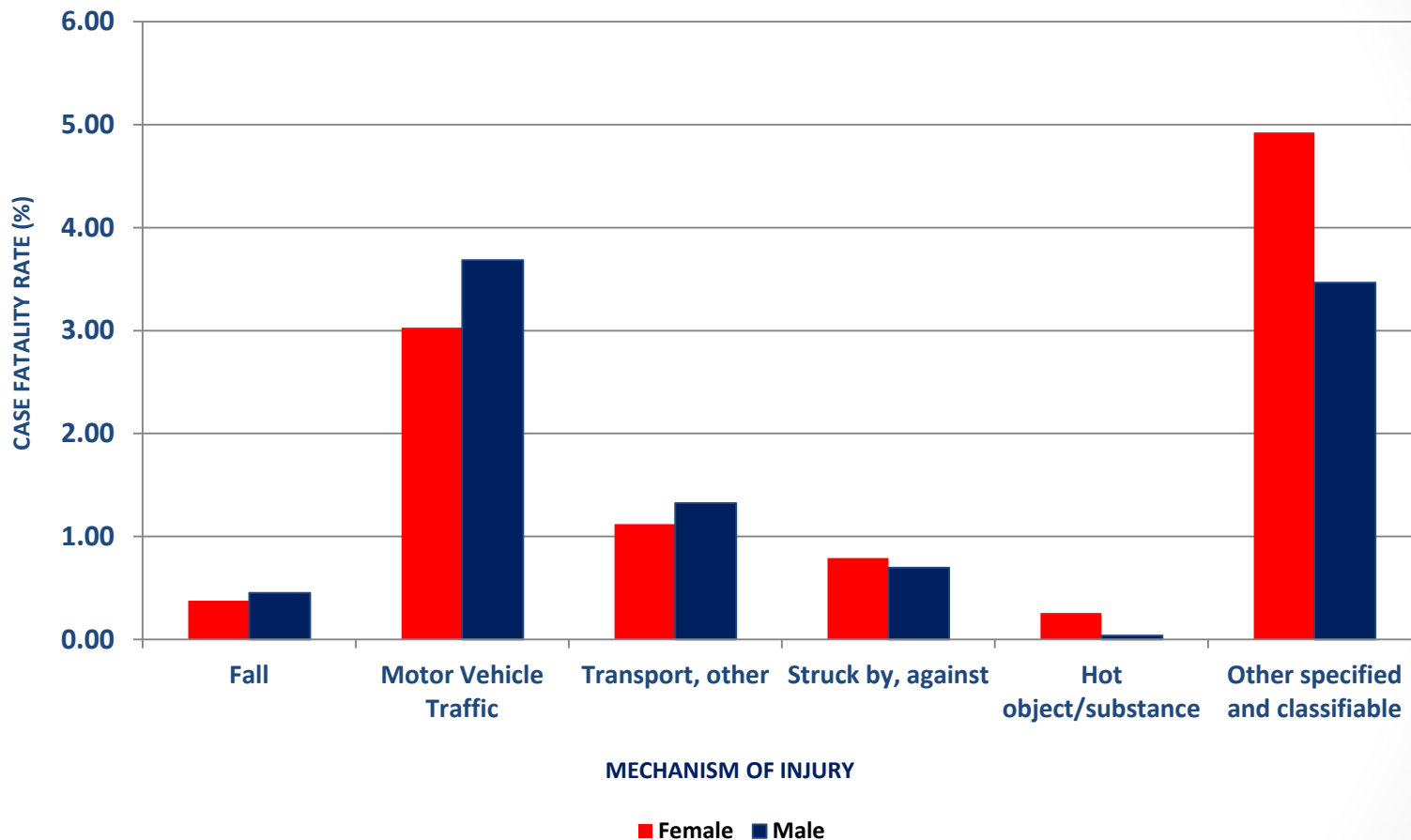


Table
16

Incidents by Comparative Injury Severity Scores (ISS)

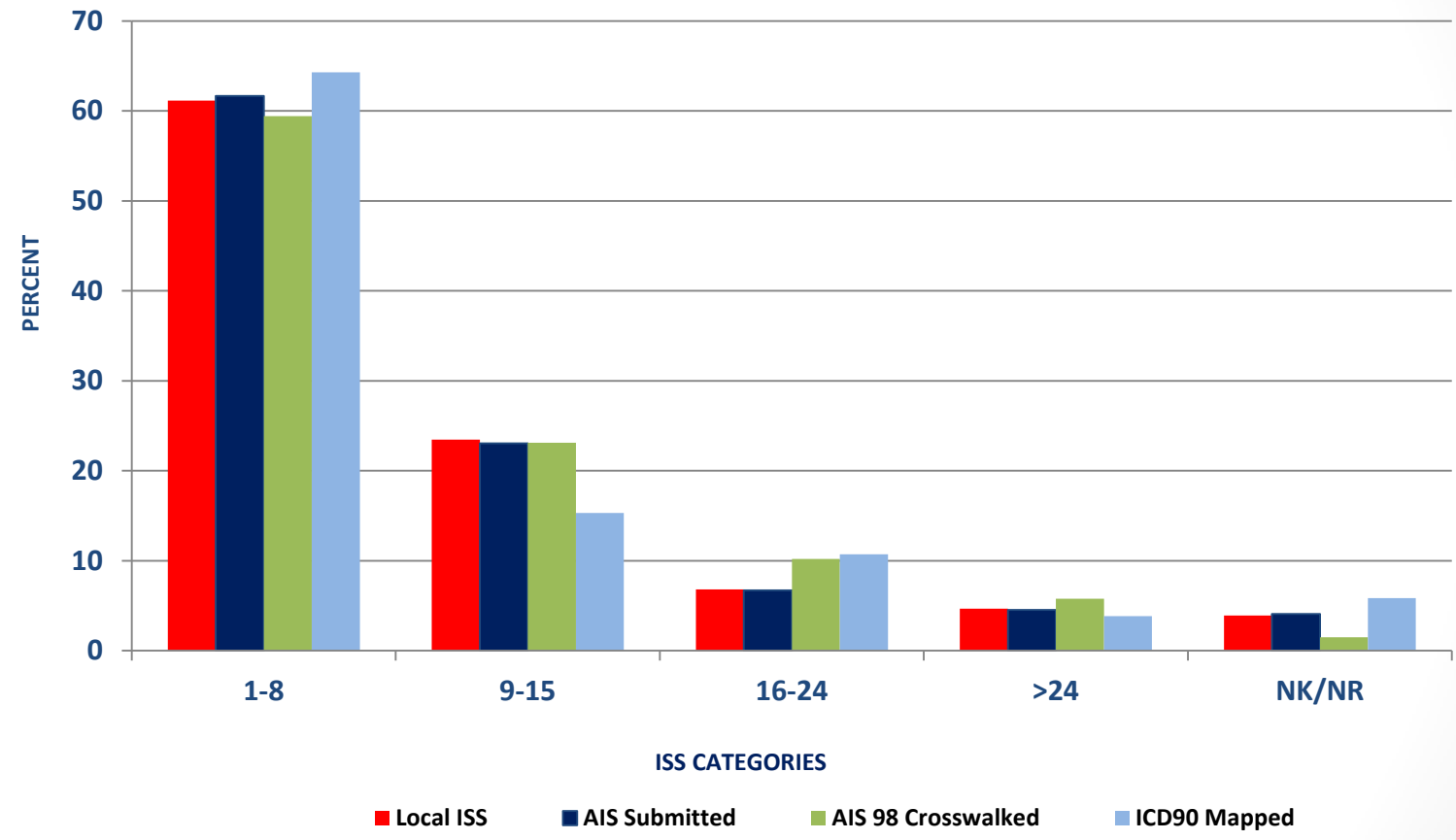
ISS	LOCAL ISS		SUBMITTED ISS		AIS98 CROSSWALKED ISS		ICDMAP-90 ISS	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
1-8	88,028	61.13	88,782	61.66	85,546	59.41	92,598	64.31
9-15	33,766	23.45	33,185	23.05	33,300	23.13	22,046	15.31
16-24	9,833	6.83	9,653	6.70	14,673	10.19	15,413	10.70
>24	6,741	4.68	6,515	4.52	8,340	5.79	5,525	3.84
NK/NR	5,628	3.91	5,861	4.07	2,137	1.48	8,414	5.84
Total	143,996	100	143,996	100	143,996	100	143,996	100

Injury Severity Score tables are generated using AIS98 Crosswalked ISS. Injury Severity Score definitions can be found in Appendix B.



Figure 16

Incidents by Comparative Injury Severity Scores (ISS)



Injury Severity Score tables are generated using AIS98 Crosswalked ISS. Injury Severity Score definitions can be found in Appendix B.

Table
17

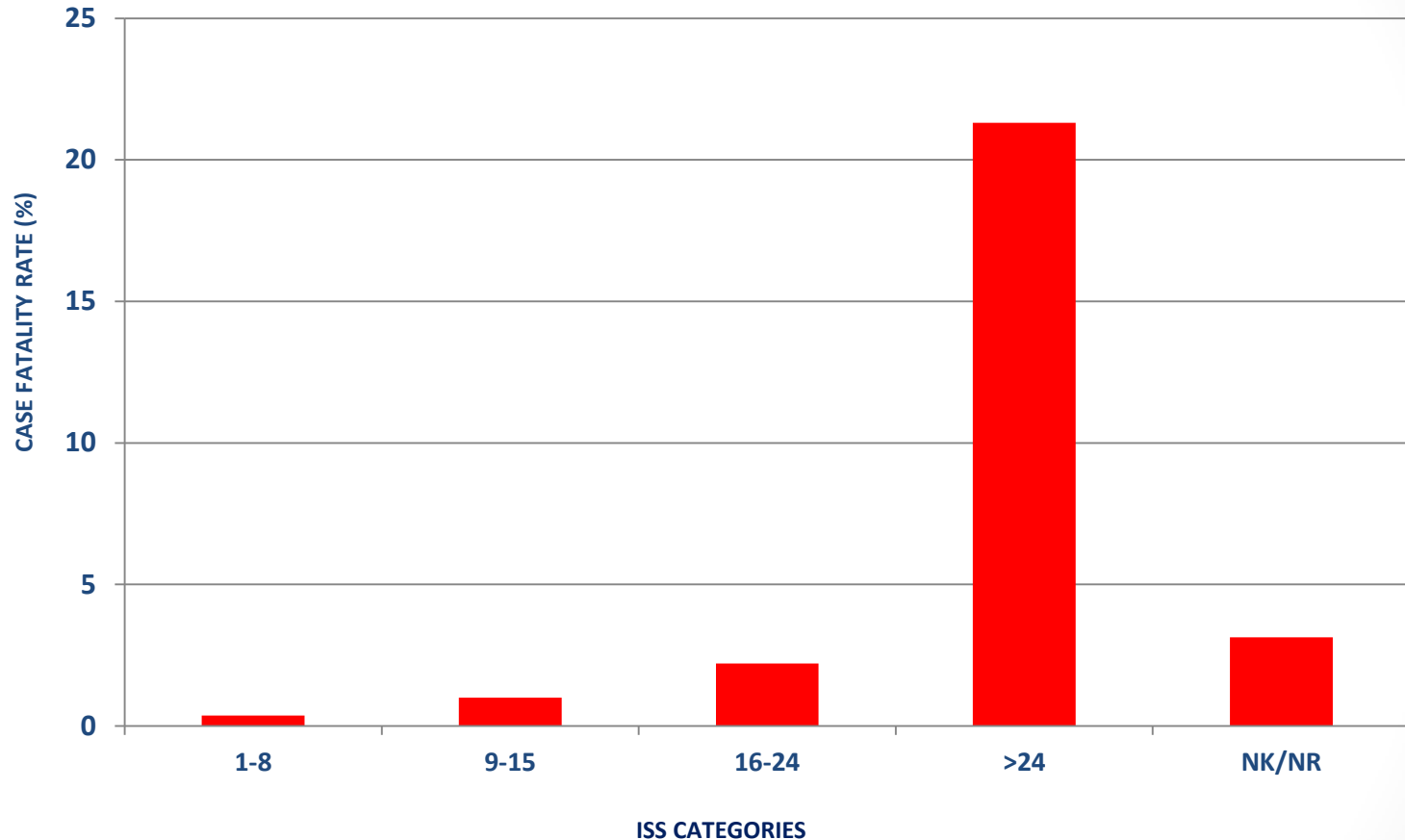
Incidents and Case Fatality Rate by Injury Severity Score (ISS)

ISS	NUMBER	PERCENT	DEATHS	CASE FATALITY RATE
1-8	85,546	59.41	316	0.37
9-15	33,300	23.13	335	1.01
16-24	14,673	10.19	324	2.21
>24	8,340	5.79	1,777	21.31
NK/NR	2,137	1.48	67	3.14
Total	143,996	100	2,819	1.96



Figure 17

Case Fatality Rate by Injury Severity Score (ISS)



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Injury Severity Score tables are generated using AIS98 Crosswalked ISS. Injury Severity Score definitions can be found in Appendix B.

Table
18

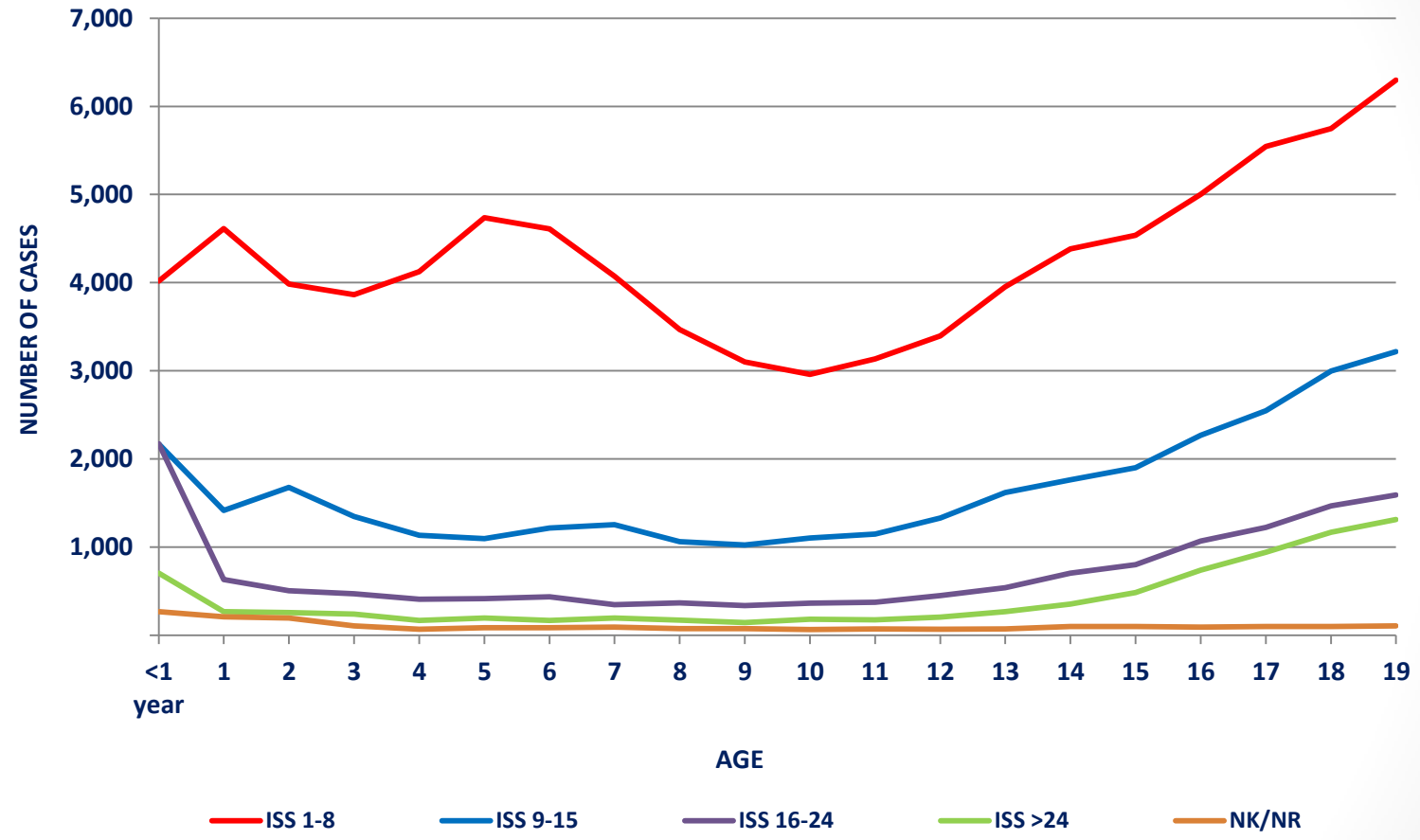
Incidents by Injury Severity Score (ISS) and Age

AGE	ISS 1-8	ISS 9-15	ISS 16-24	ISS >24	ISS NK/NR	Total
<1 year	4,020	2,170	2,172	705	267	9,334
1	4,613	1,416	632	269	210	7,140
2	3,985	1,679	504	256	195	6,619
3	3,864	1,347	472	241	107	6,031
4	4,124	1,135	408	168	70	5,905
5	4,736	1,098	416	197	84	6,531
6	4,608	1,216	435	169	86	6,514
7	4,075	1,253	347	195	93	5,963
8	3,468	1,063	369	170	76	5,146
9	3,100	1,025	338	143	77	4,683
10	2,961	1,102	364	181	66	4,674
11	3,134	1,149	373	175	71	4,902
12	3,396	1,330	451	205	70	5,452
13	3,954	1,619	538	267	71	6,449
14	4,383	1,764	705	354	100	7,306
15	4,537	1,902	801	484	100	7,824
16	5,001	2,268	1,068	739	91	9,167
17	5,545	2,548	1,223	941	98	10,355
18	5,746	2,997	1,467	1,169	99	11,478
19	6,296	3,219	1,590	1,312	106	12,523
Total	85,546	33,300	14,673	8,340	2,137	143,996

Injury Severity Score tables are generated using AIS98 Crosswalked ISS. Injury Severity Score definitions can be found in Appendix B.

Figure 18

Incidents by Injury Severity Score (ISS) and Age



Injury Severity Score tables are generated using AIS98 Crosswalked ISS. Injury Severity Score definitions can be found in Appendix B.

Table
19

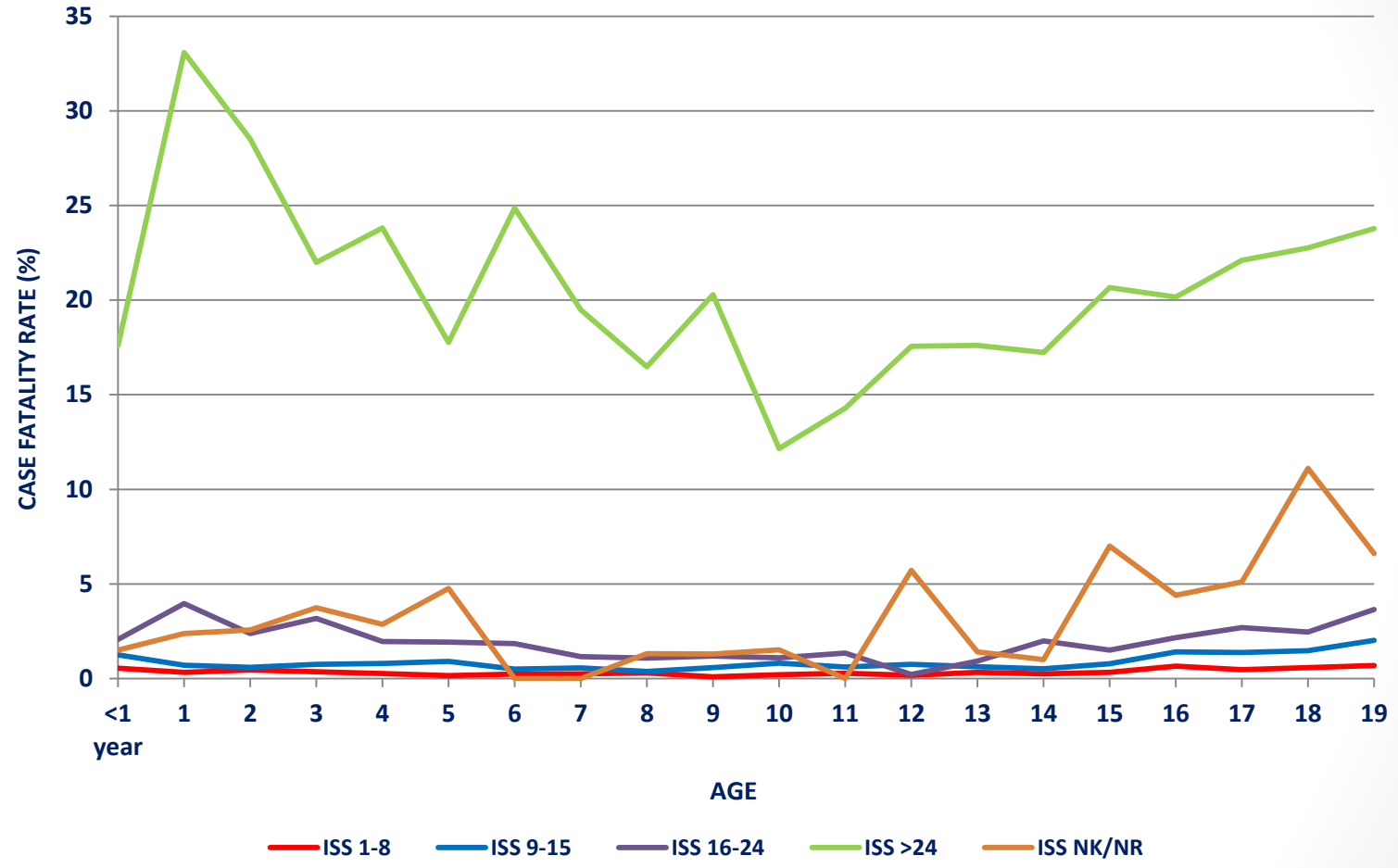
Case Fatality Rate by Injury Severity Score (ISS) and Age

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	22	0.55	27	1.24	45	2.07	124	17.59	124	1.50
1	15	0.33	10	0.71	25	3.96	89	33.09	89	2.38
2	18	0.45	10	0.60	12	2.38	73	28.52	73	2.56
3	14	0.36	10	0.74	15	3.18	53	21.99	53	3.74
4	11	0.27	9	0.79	8	1.96	40	23.81	40	2.86
5	7	0.15	10	0.91	8	1.92	35	17.77	35	4.76
6	11	0.24	6	0.49	8	1.84	42	24.85	42	0.00
7	10	0.25	7	0.56	4	1.15	38	19.49	38	0.00
8	10	0.29	4	0.38	4	1.08	28	16.47	28	1.32
9	3	0.10	6	0.59	4	1.18	29	20.28	29	1.30
10	6	0.20	9	0.82	4	1.10	22	12.15	22	1.52
11	9	0.29	7	0.61	5	1.34	25	14.29	25	0.00
12	6	0.18	10	0.75	1	0.22	36	17.56	36	5.71
13	13	0.33	10	0.62	5	0.93	47	17.60	47	1.41
14	11	0.25	9	0.51	14	1.99	61	17.23	61	1.00
15	15	0.33	15	0.79	12	1.50	100	20.66	100	7.00
16	33	0.66	32	1.41	23	2.15	149	20.16	149	4.40
17	26	0.47	35	1.37	33	2.70	208	22.10	208	5.10
18	33	0.57	44	1.47	36	2.45	266	22.75	266	11.11
19	43	0.68	65	2.02	58	3.65	312	23.78	312	6.60
Total	316	0.37	335	1.01	324	2.21	1,777	21.31	1,777	3.14



Figure 19

Case Fatality Rate by Injury Severity Score and Age



Injury Severity Score tables are generated using AIS98 Crosswalked ISS. Injury Severity Score definitions can be found in Appendix B.

Table
20

Incidents and Case Fatality Rate by Intent

INTENT	NUMBER	PERCENT	DEATHS	CASE FATALITY RATE
Unintentional	124,989	86.80	1,754	1.40
Assault	12,050	8.37	728	6.04
Self-inflicted	1,549	1.08	212	13.69
Undetermined	1,129	0.78	64	5.67
Other	118	0.08	11	9.32
NK/NR	4,161	2.89	50	1.20
Total	143,996	100.00	2,819	1.96



Figure 20A

Incidents by Intent

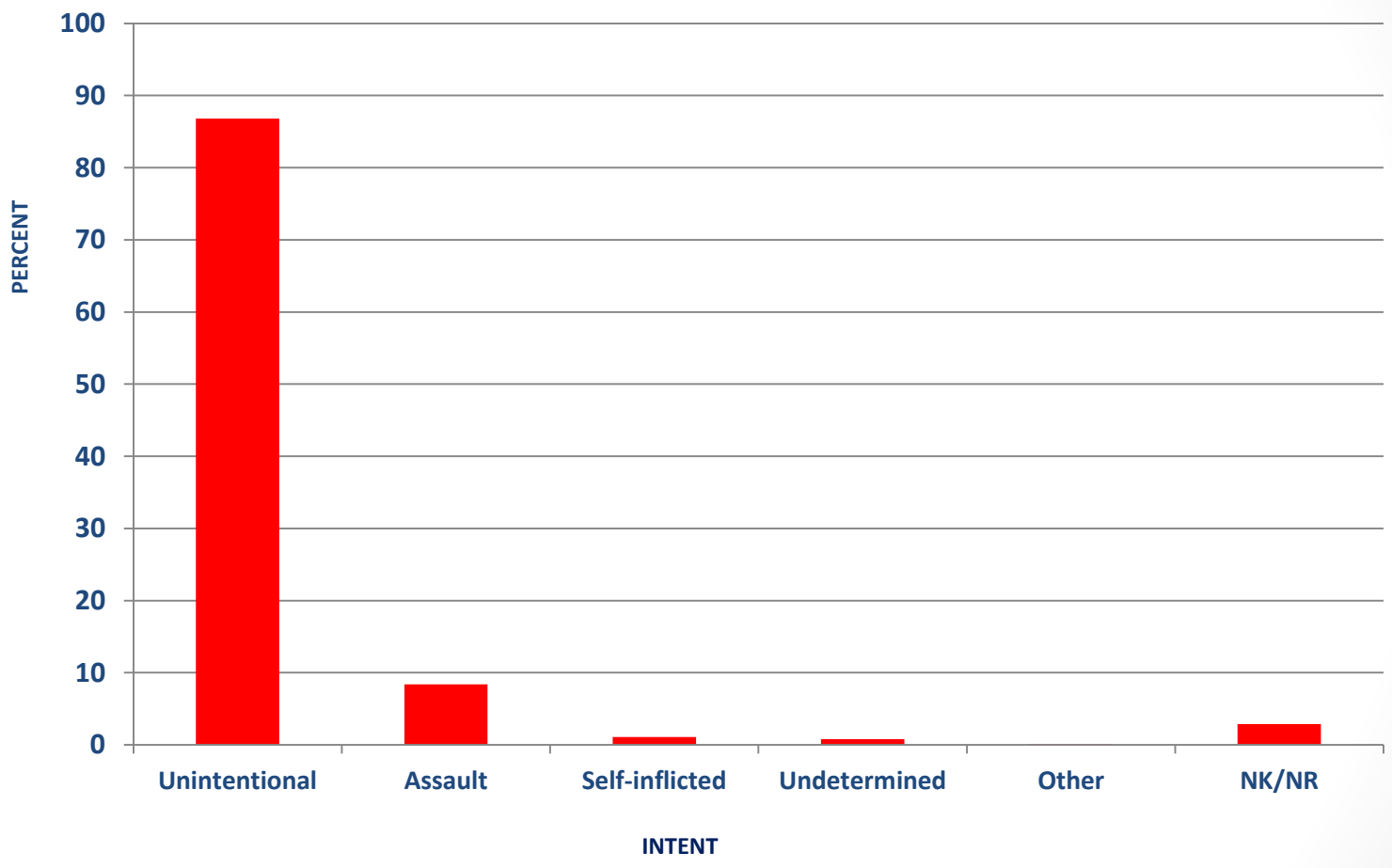


Figure 20B

Case Fatality Rate by Intent

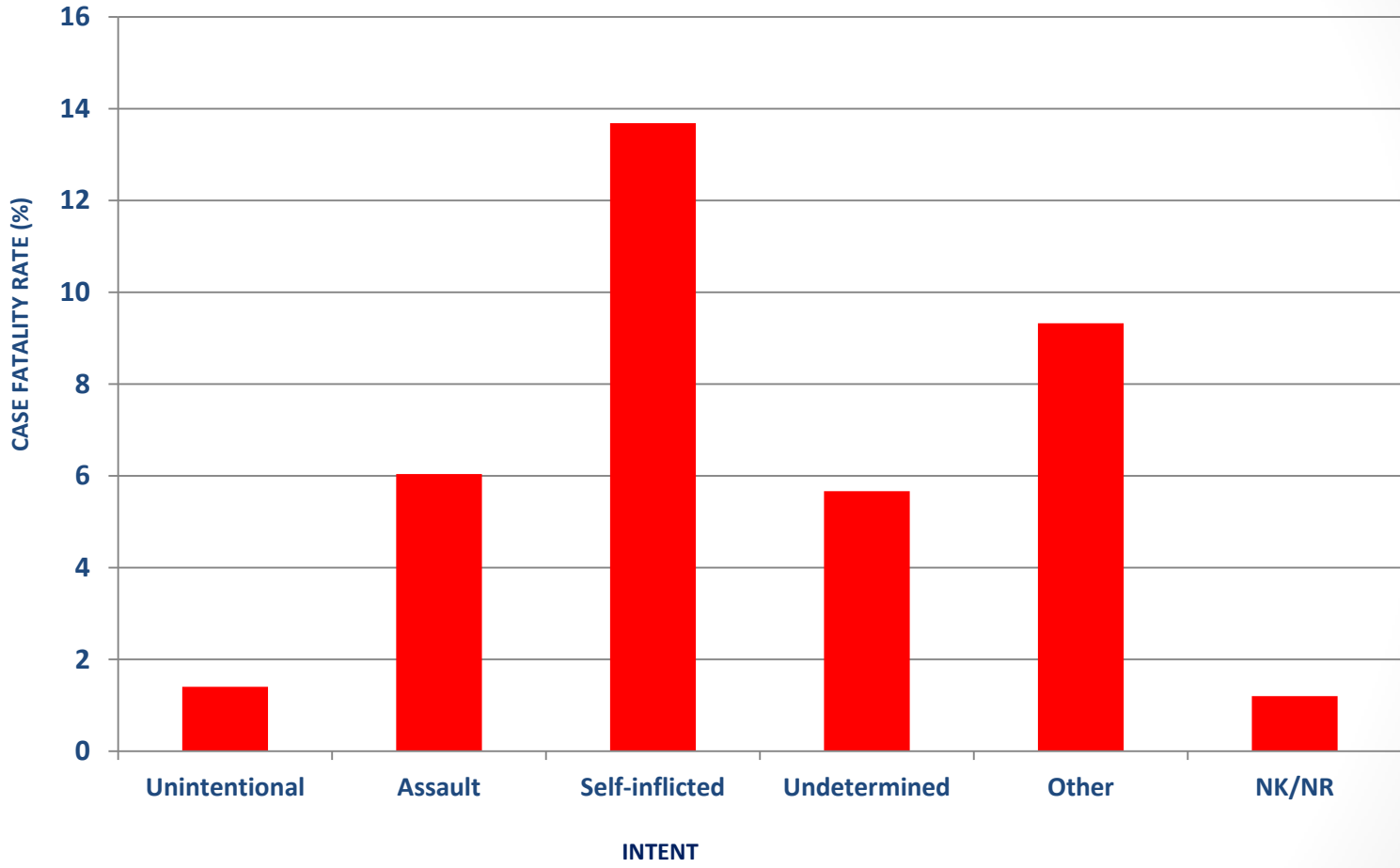


Table
21

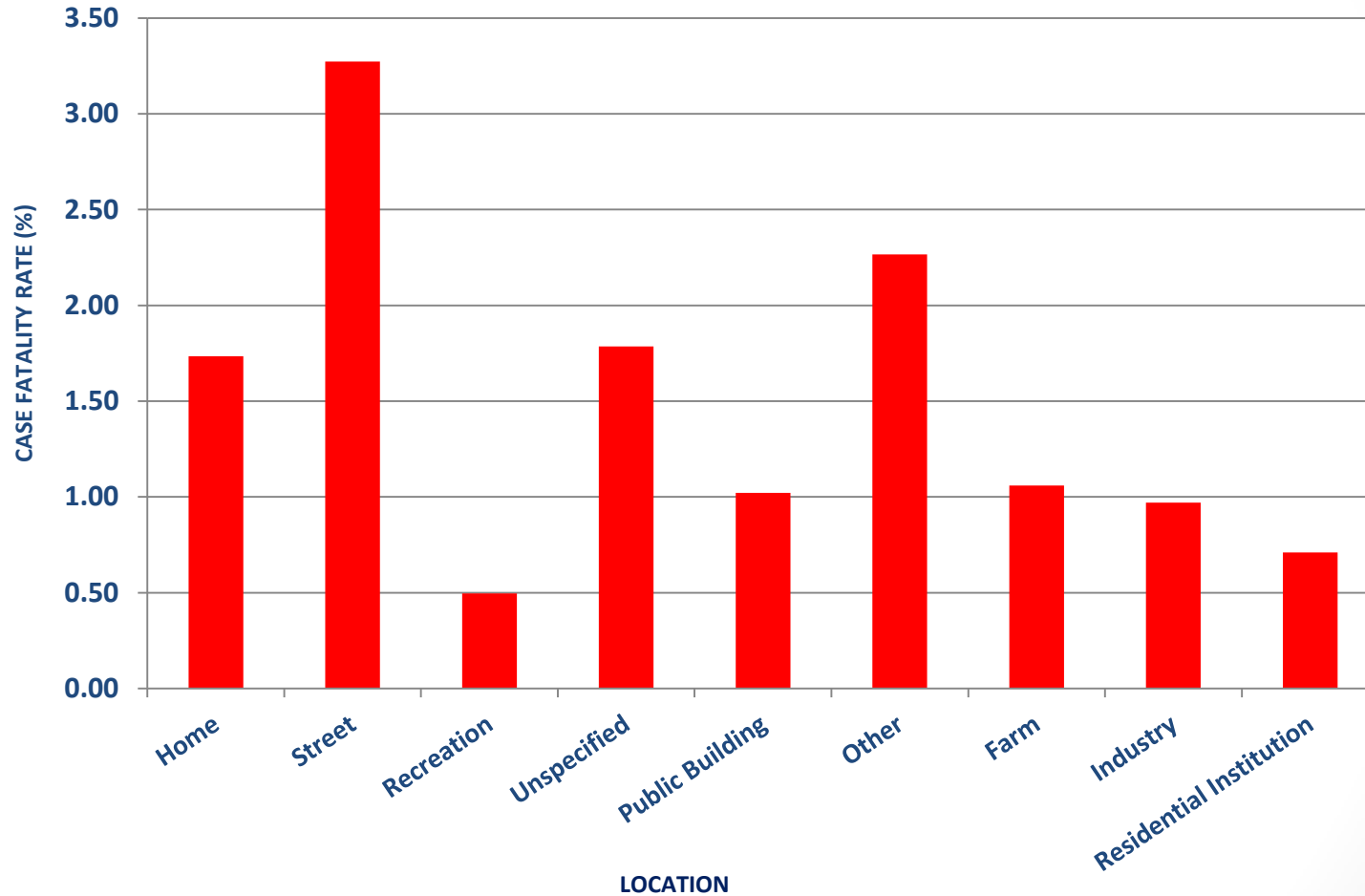
Incidents and Case Fatality Rate by Location E-Code

LOCATION E-CODE DESCRIPTION	NUMBER	PERCENT	DEATHS	CASE FATALITY RATE
Home	49,080	34.08	851	1.73
Street	41,277	28.67	1,351	3.27
Recreation	22,961	15.95	114	0.50
Unspecified	9,520	6.61	170	1.79
Public Building	9,108	6.33	93	1.02
Other	5,956	4.14	135	2.27
Farm	943	0.65	10	1.06
Industry	618	0.43	6	0.97
Residential Institution	563	0.39	4	0.71
Mine	19	0.01	.	.
Not Applicable	70	0.05	1	1.43
NK/NR	3,881	2.70	84	2.16
Total	143,996	100	2,819	1.96



Figure 21

Case Fatality Rate by Location E-Code



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Table
22

Incidents and Case Fatality Rate by AIS Body Region

AIS BODY REGION	NUMBER	PERCENT	DEATHS	CASE FATALITY RATE
Head	51,678	35.89	1,927	3.73
Upper Extremity	47,940	33.29	749	1.56
Lower Extremity	40,066	27.82	836	2.09
Face	32,900	22.85	964	2.93
Thorax	18,406	12.78	1,425	7.74
Abdomen	17,655	12.26	842	4.77
External/Other	17,106	11.88	427	2.50
Spine	12,767	8.87	455	3.56
Neck	2,732	1.90	199	7.28
NK/NR	1,714	1.19	72	4.20

A patient can have injuries in multiple body regions.

Figure 22A

Incidents by AIS Body Region

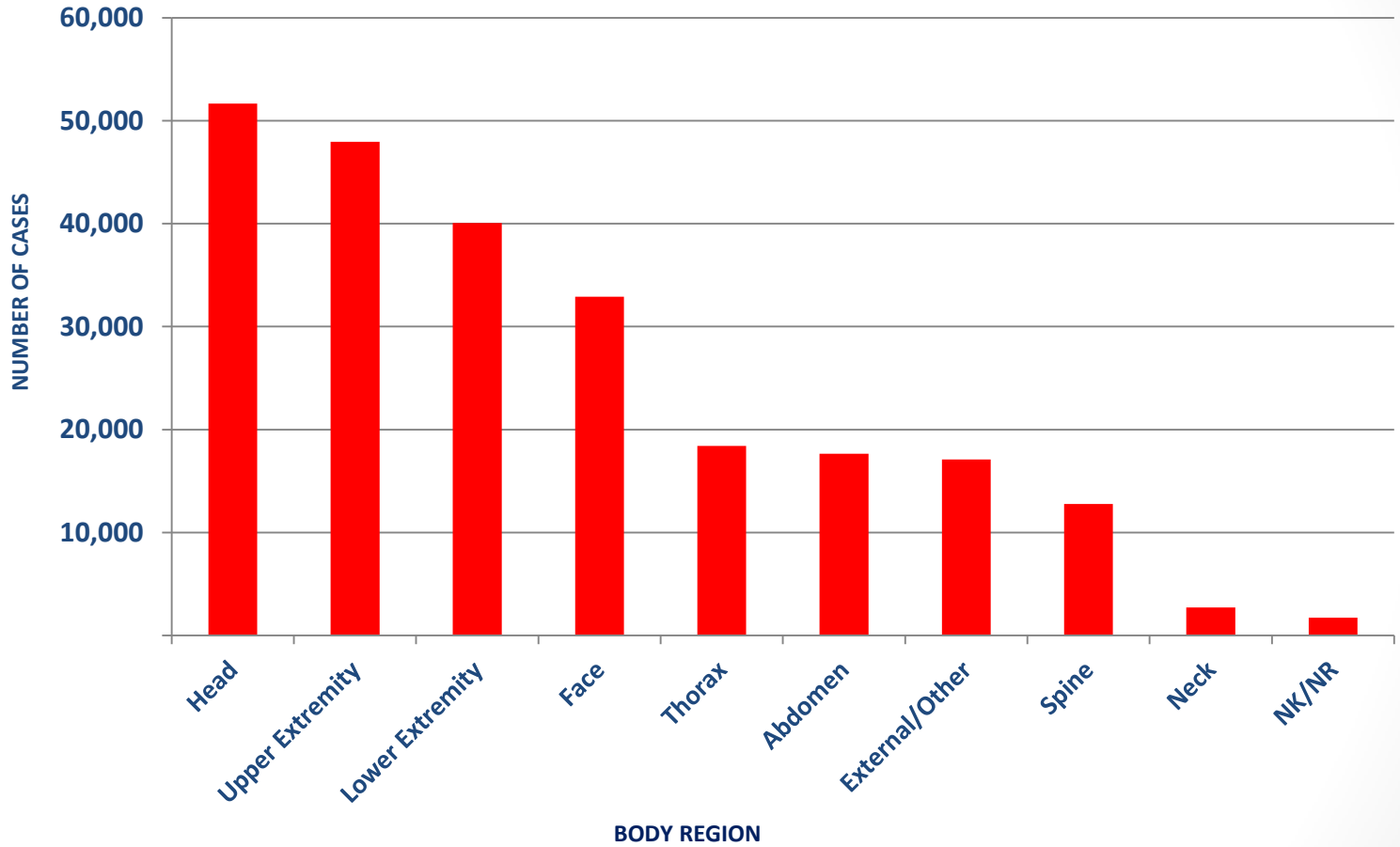


Figure 22B

Case Fatality Rate by AIS Body Region

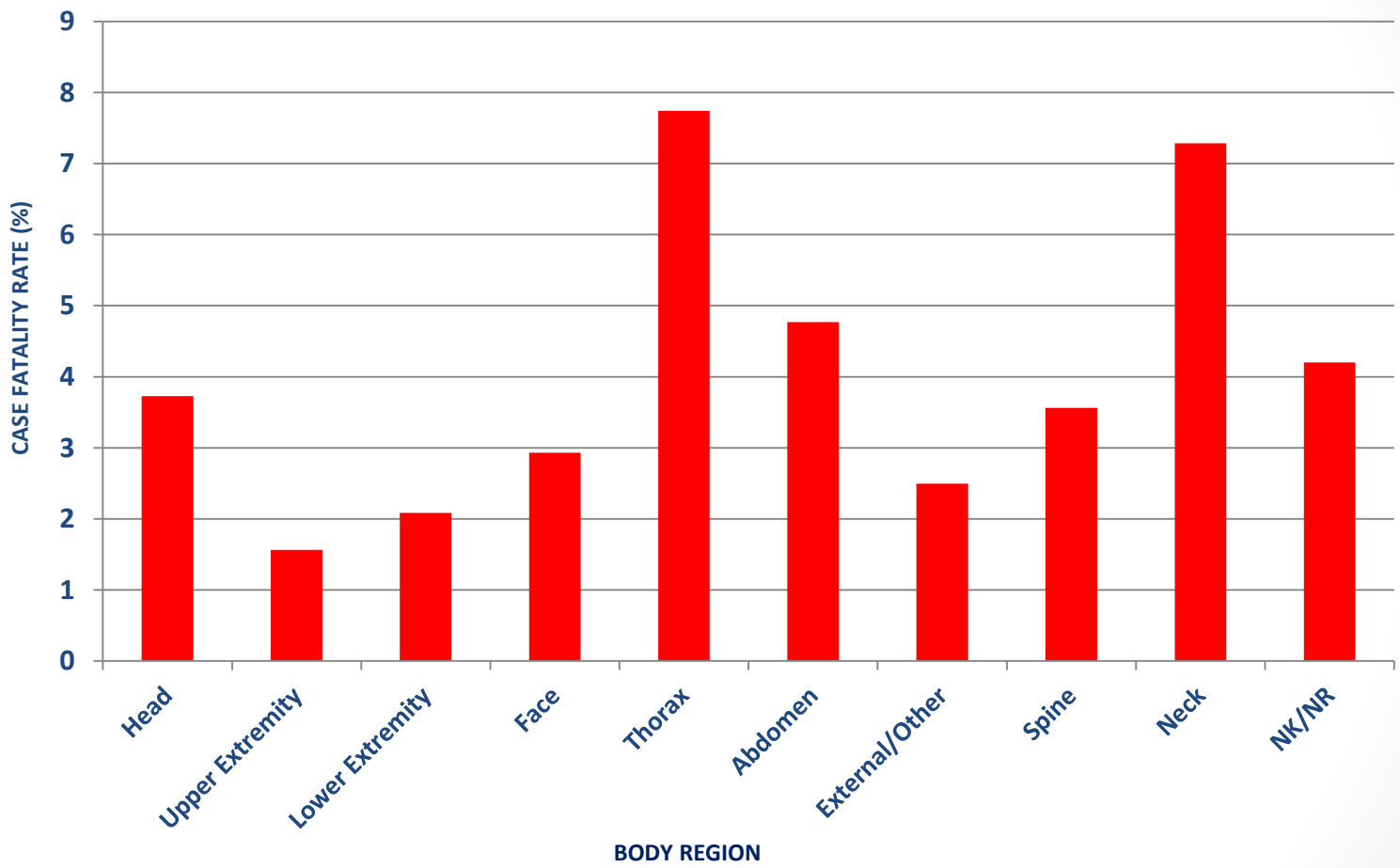


Table
23

Incidents and Case Fatality Rate with AIS \geq 3 by AIS Body Region

AIS BODY REGION	NUMBER	DEATHS	CASE FATALITY RATE
Head	21,604	15.00	1,706
Lower Extremity	14,548	10.10	357
Thorax	12,817	8.90	1,227
Abdomen	6,067	4.21	452
Upper Extremity	4,657	3.23	77
Spine	2,751	1.91	188
External/Other	845	0.59	31
Face	556	0.39	67
Neck	370	0.26	68

A patient can have injuries in multiple body regions.

Figure 23A

Incidents with AIS ≥ 3 by AIS Body Region

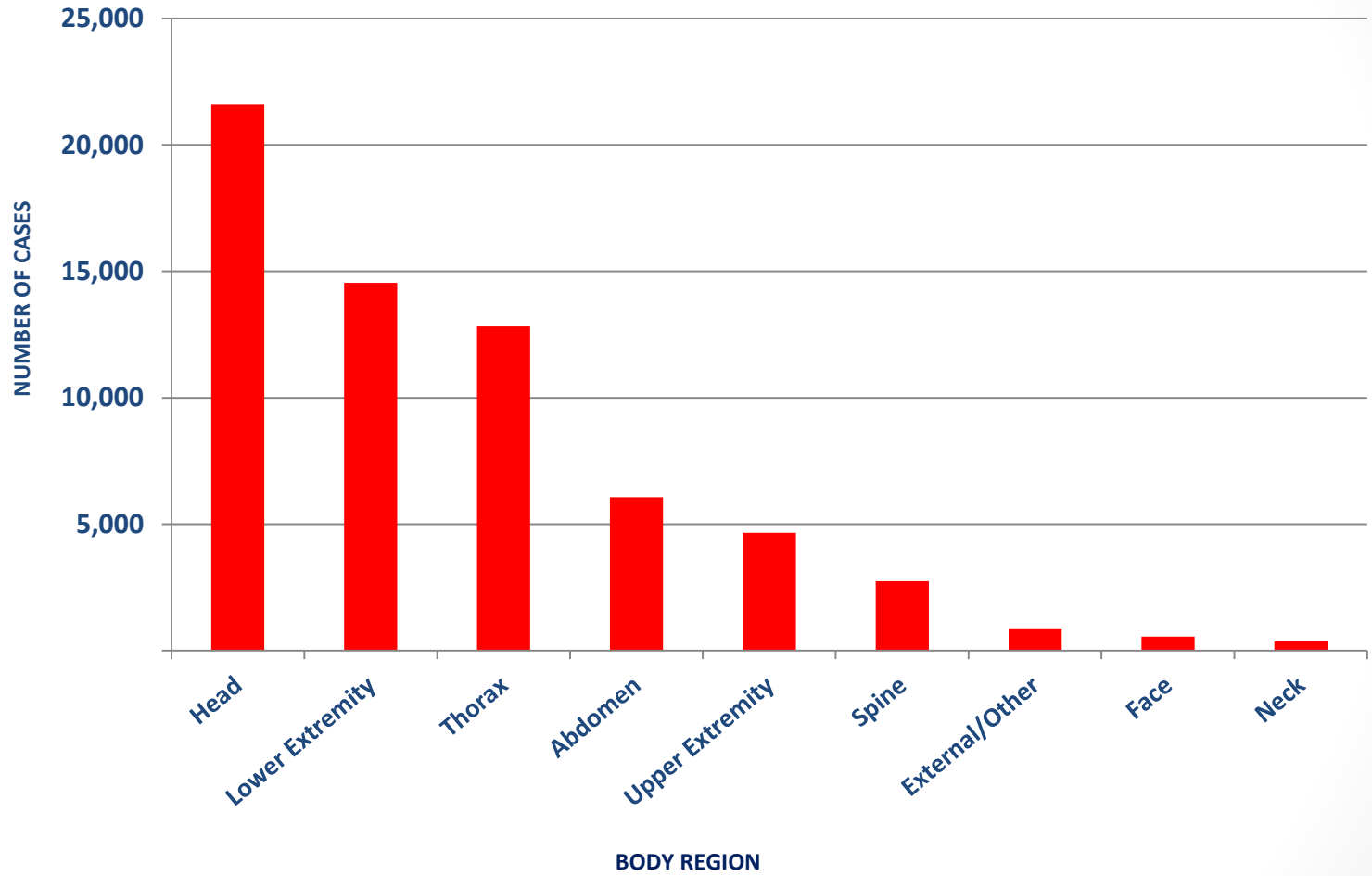
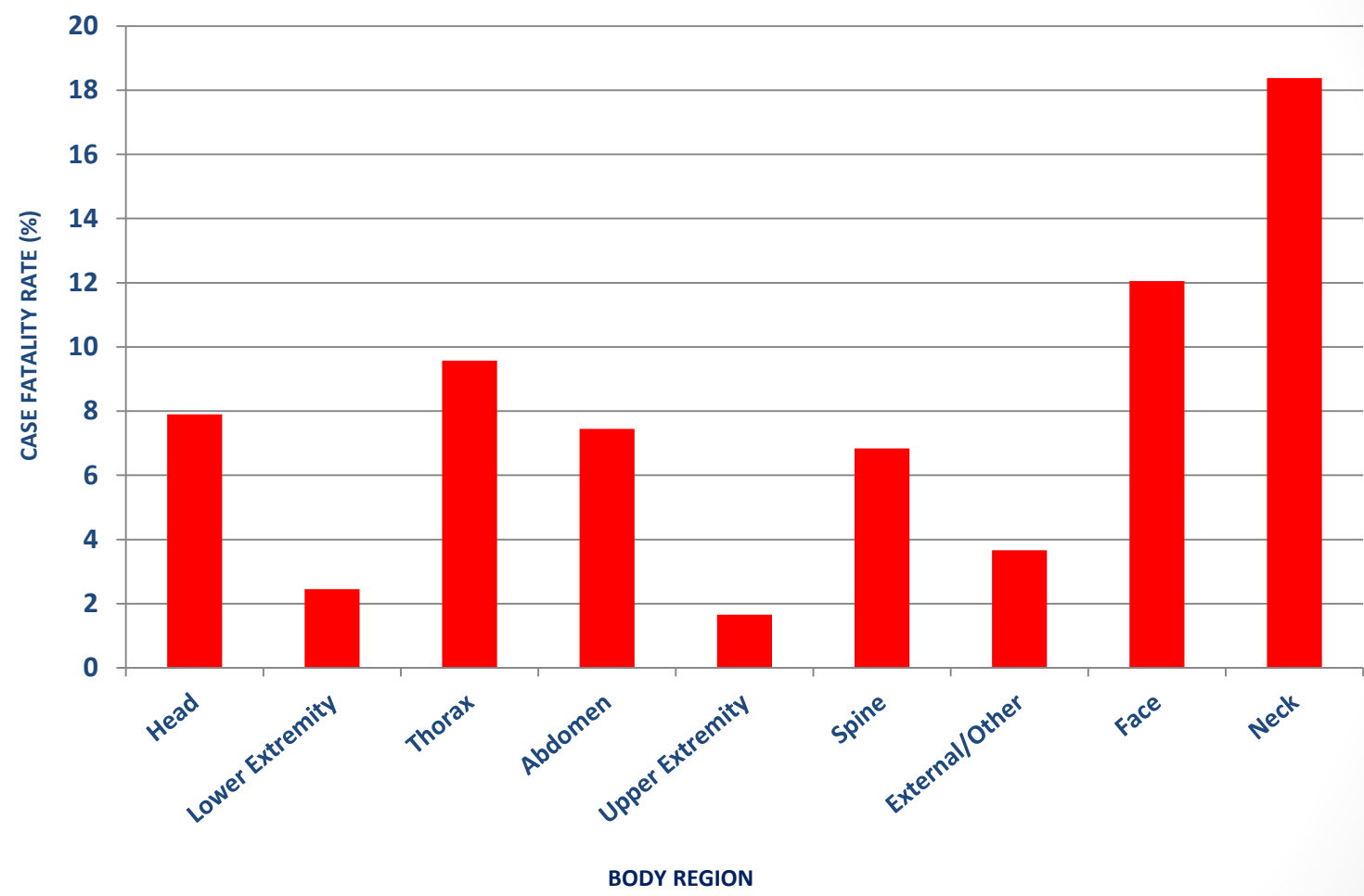


Figure 23B

Case Fatality Rate with AIS ≥ 3 by AIS Body Region



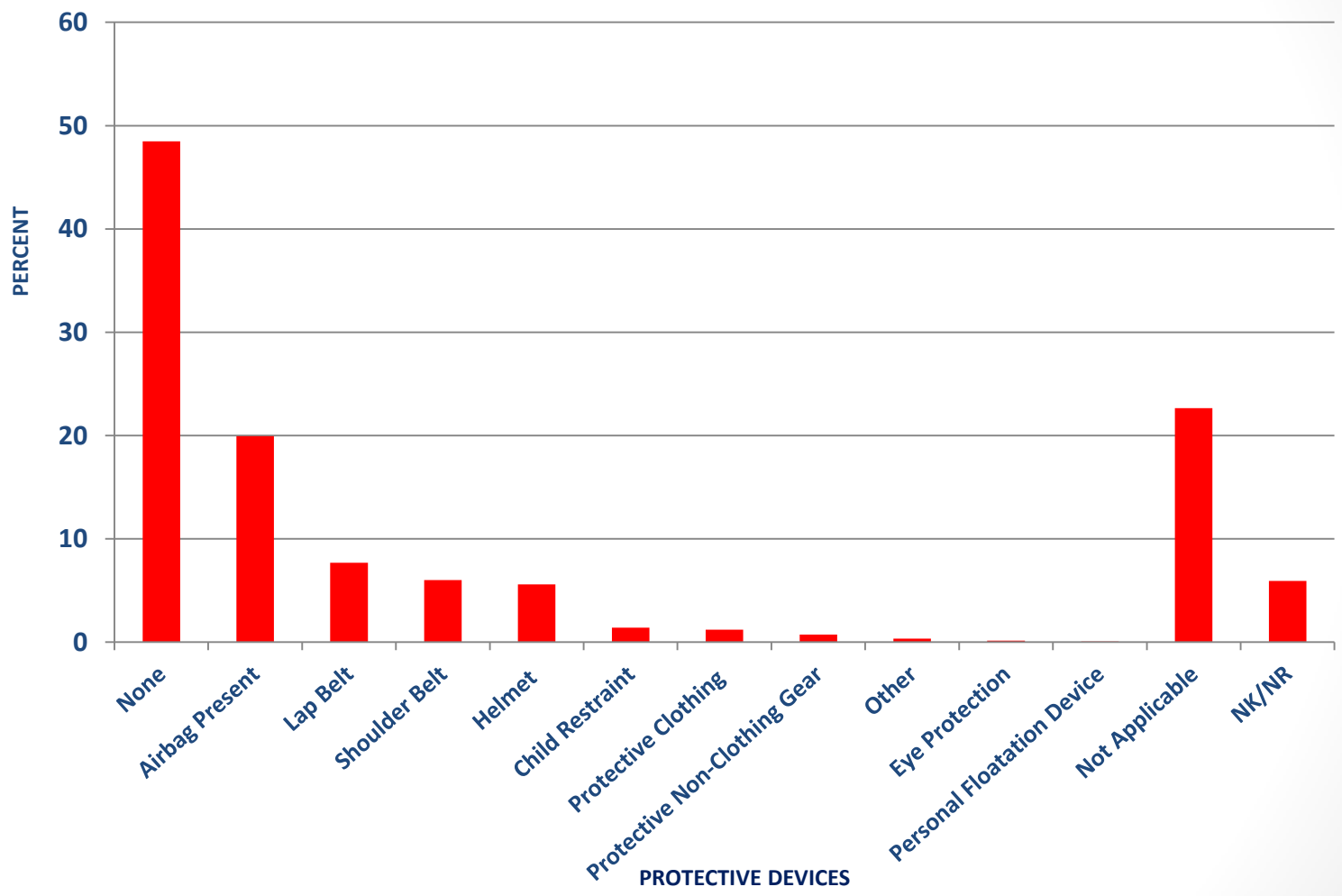
Incidents by Protective Devices

PROTECTIVE DEVICES	NUMBER	PERCENT
None	69,791	48.47
Airbag Present	28,720	19.94
Lap Belt	11,063	7.68
Shoulder Belt	8,657	6.01
Helmet (e.g. bicycle, skiing, motorcycle)	8,055	5.59
Child Restraint (booster seat or child car seat)	2,003	1.39
Protective Clothing (e.g., padded leather pants)	1,731	1.20
Protective Non-Clothing Gear (e.g., shin guards)	1,066	0.74
Other	511	0.35
Eye Protection	211	0.15
Personal Floatation Device	70	0.05
Not Applicable	32,624	22.66
NK/NR	8,551	5.94



Figure 24

Incidents by Protective Devices



OUTCOMES INFORMATION



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Table
25

Median Prehospital Time (in Minutes) by Mechanism of Injury

MECHANISM	NUMBER	MEDIAN
Fall	23,689	80
MVT Occupant	18,638	60
Struck by, against	7,973	70
Transport, other	6,466	82
MVT Pedestrian	4,826	41
Firearm	4,337	34
Cut/pierce	2,928	48
Pedal cyclist, other	2,786	73
Other specified and classifiable	2,437	99
NK/NR	2,276	86
Hot object/substance	2,038	91
MVT Motorcyclist	1,644	48
MVT Pedal cyclist	1,616	41
Natural/environmental, Bites and stings	1,321	87
Fire/flame	796	95
Unspecified	734	75
Pedestrian, other	447	59
Other specified, not elsewhere classifiable	433	75
Natural/environmental, Other	404	93
MVT Other	365	50
Machinery	336	84
Overexertion	330	76
MVT Unspecified	210	55
Poisoning	166	79
Suffocation	144	63
Drowning/submersion	110	56
Adverse effects, medical care	7	79
Adverse effects, drugs	6	68



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Figure 25

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

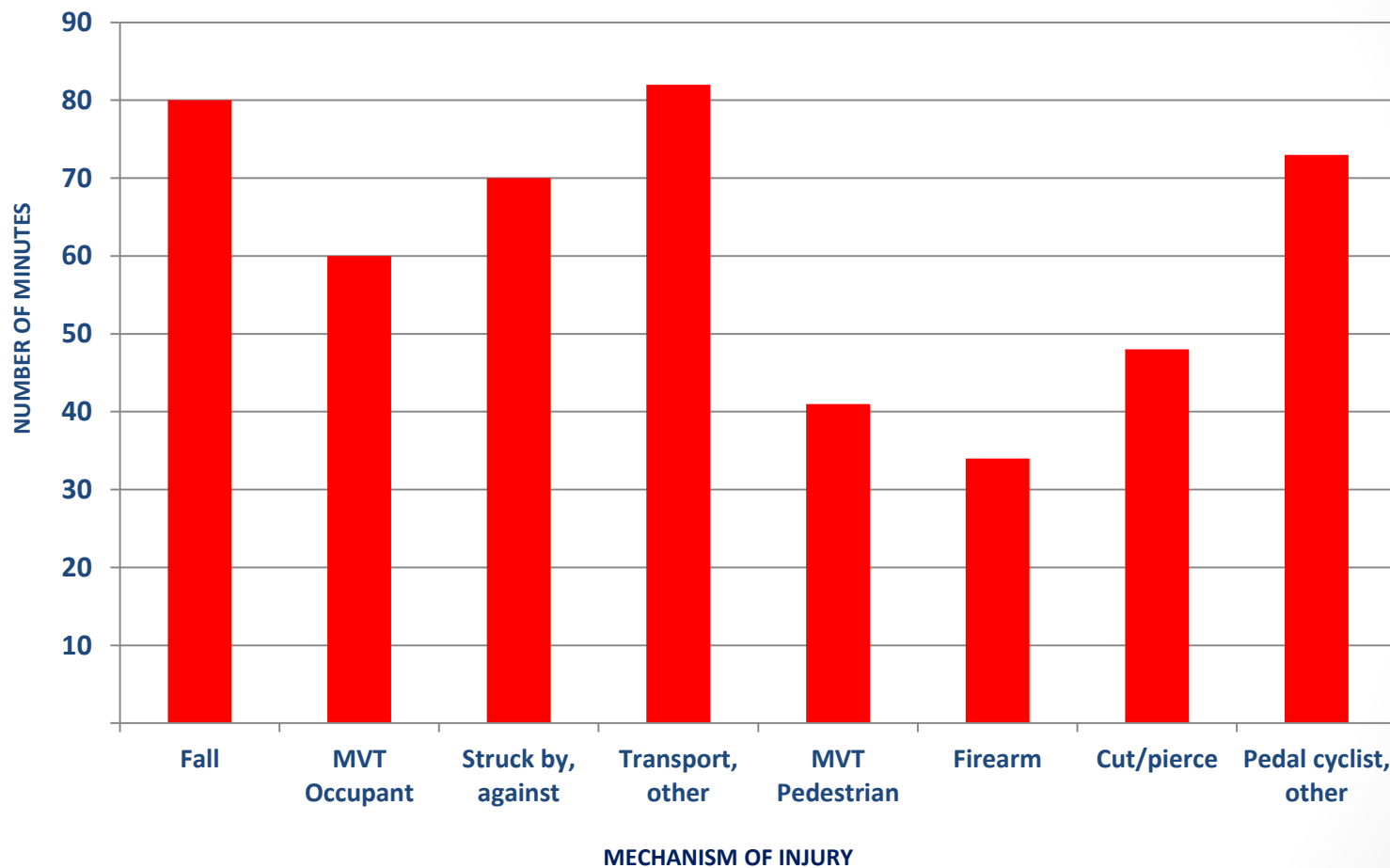


Table
26

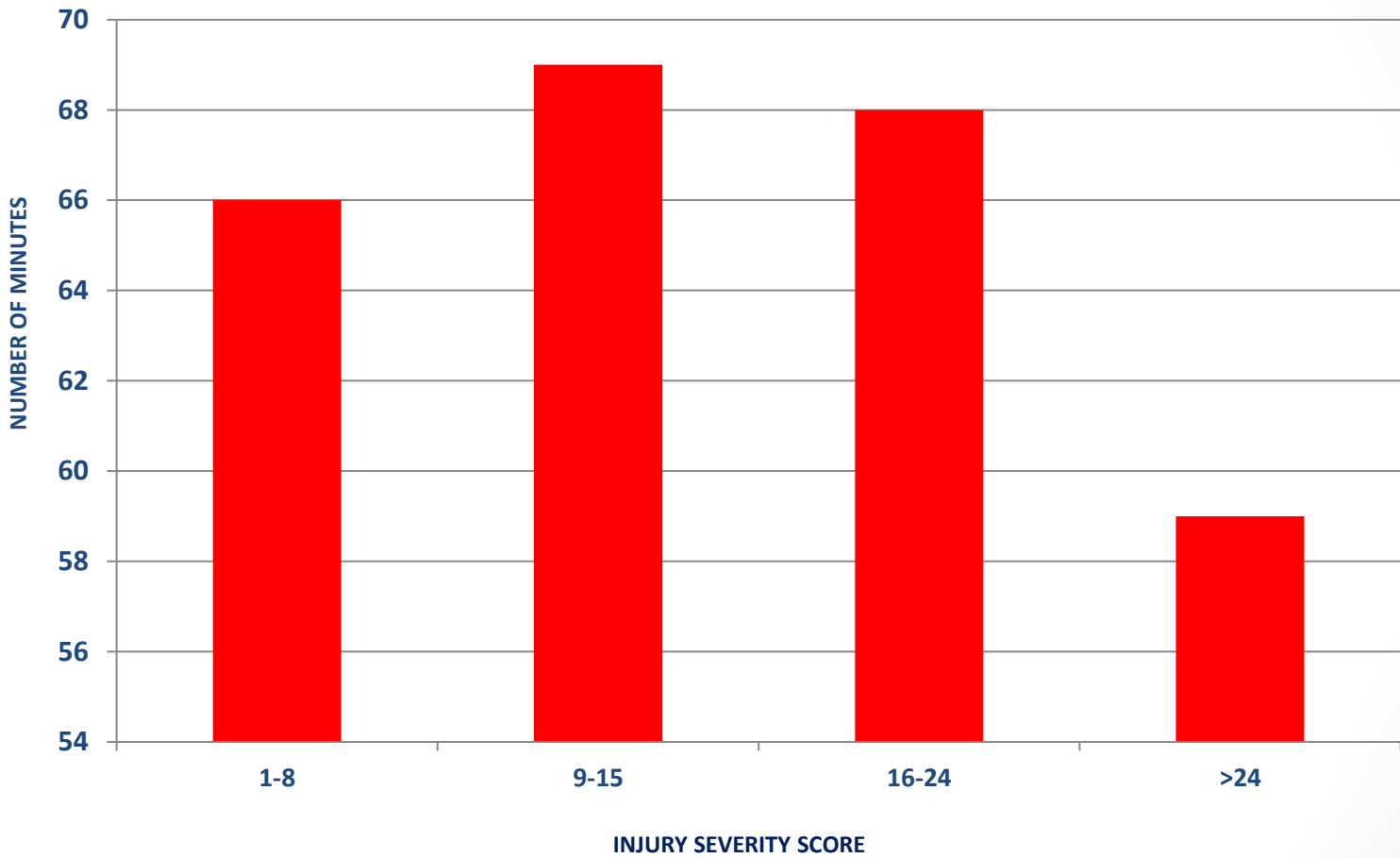
Median Total Prehospital Time (in Minutes) by Injury Severity Score (ISS)

ISS	NUMBER	MEDIAN
1-8	46,390	66
9-15	22,525	69
16-24	10,429	68
>24	6,953	59
NK/NR	1,166	54



Figure 26

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



Injury Severity Score tables are generated using AIS98 Crosswalked ISS. Injury Severity Score definitions can be found in Appendix B.

Table
27

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

MECHANISM	NUMBER	MEDIAN
Fall	48,156	2
MVT Occupant	22,487	2
Struck by, against	14,459	2
Transport, other	9,675	2
Firearm	5,880	3
MVT Pedestrian	5,733	3
Pedal cyclist, other	4,845	2
Cut/pierce	4,675	2
Other specified and classifiable	4,670	2
Hot object/substance	4,469	2
NK/NR	4,135	2
Natural/environmental, Bites and stings	2,611	2
MVT Motorcyclist	2,123	3
MVT Pedal cyclist	1,924	2
Unspecified	1,658	2
Fire/flame	1,467	2
Other specified, not elsewhere classifiable	904	2
Overexertion	775	2
Natural/environmental, Other	648	2
Pedestrian, other	605	2
Machinery	556	2
MVT Other	463	3
MVT Unspecified	279	2
Poisoning	218	2
Suffocation	198	2
Drowning/submersion	137	3
Adverse effects, medical care	22	5
Adverse effects, drugs	13	5



Figure 27

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

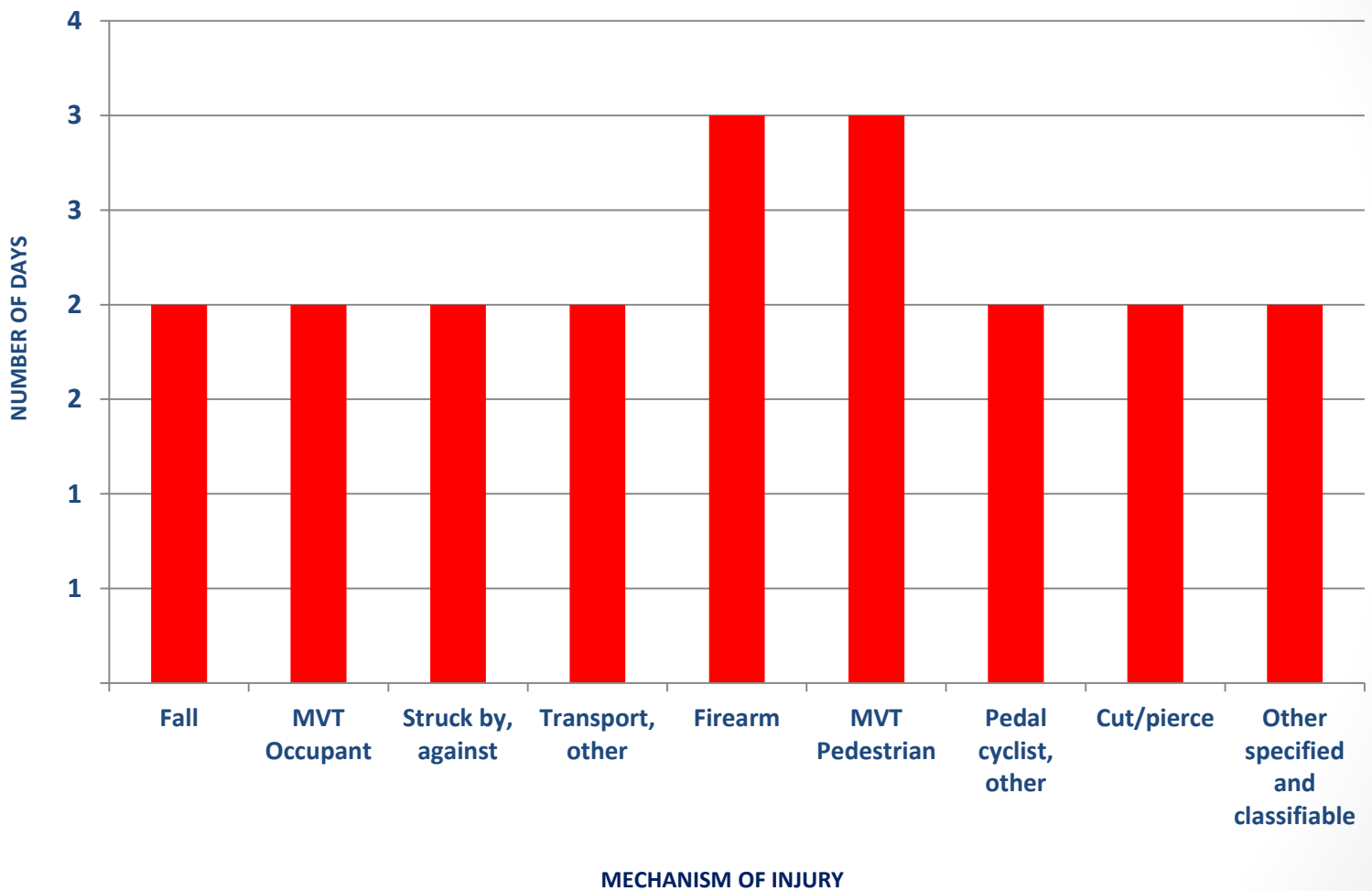


Table
28

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

ISS	NUMBER	MEDIAN
1-8	85,402	2
9-15	33,264	3
16-24	14,655	4
>24	8,328	6
NK/NR	2,136	2



Figure 28

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

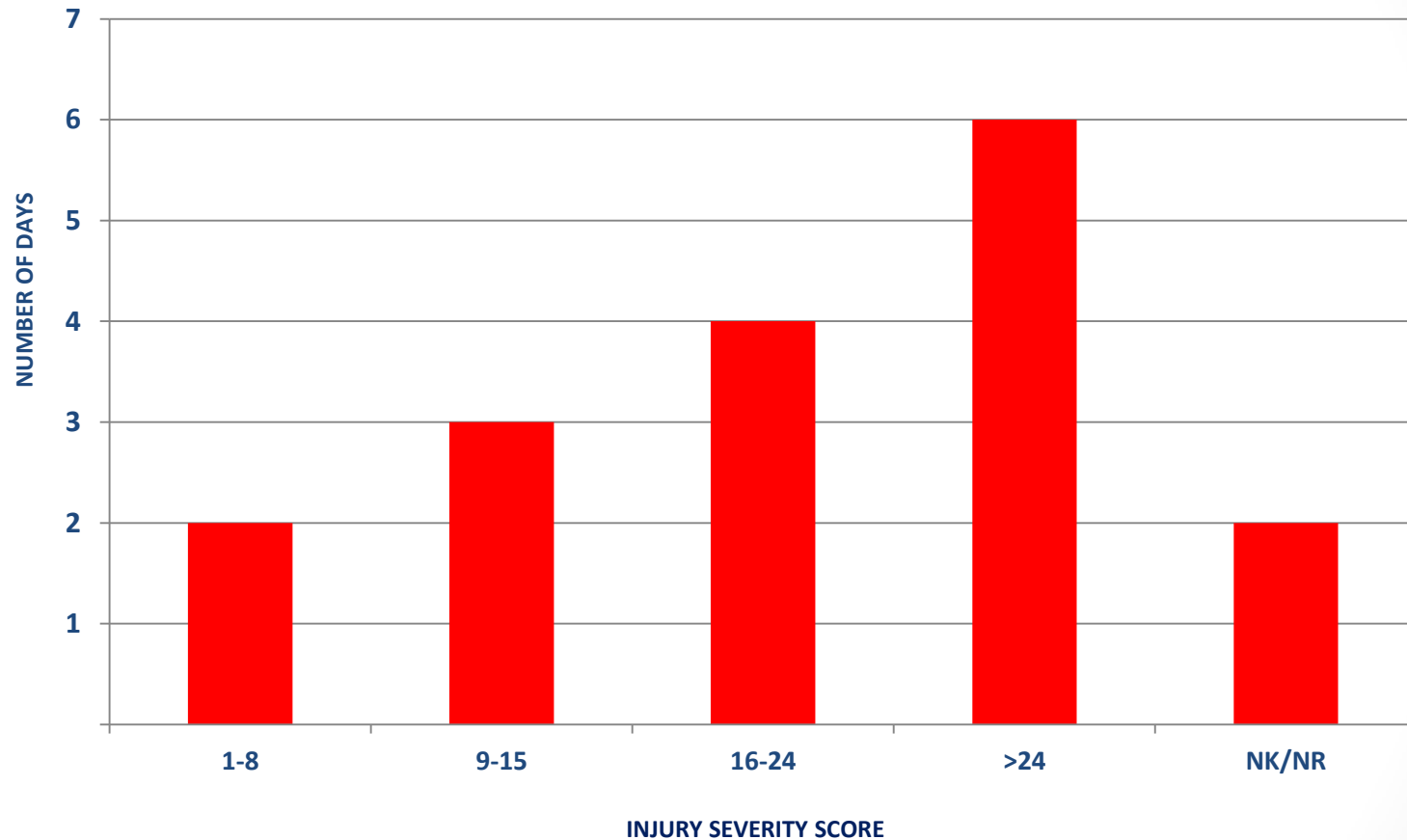


Table
29

Median Ventilator Days by Mechanism of Injury

MECHANISM	NUMBER	MEDIAN
MVT Occupant	2,003	4
Firearm	702	3
Fall	591	3
MVT Pedestrian	555	4
Other specified and classifiable	465	5
Struck by, against	259	3
MVT Motorcyclist	183	5
MVT Pedal cyclist	133	3
Cut/pierce	109	2
Fire/flame	100	4
Transport, other	459	3
Unspecified	132	5
NK/NR	140	5
Suffocation	67	4
Pedal cyclist, other	60	2
MVT Other	53	4
Pedestrian, other	42	3
Drowning/submersion	38	4
Other specified, not elsewhere classifiable	36	4
MVT Unspecified	36	7
Natural/environmental, Bites and stings	32	2
Hot object/substance	27	2
Natural/environmental, Other	26	3
Machinery	18	4
Poisoning	5	5
Adverse effects, medical care	3	16
Adverse effects, drugs	1	17

In patients with ventilator days > 0.



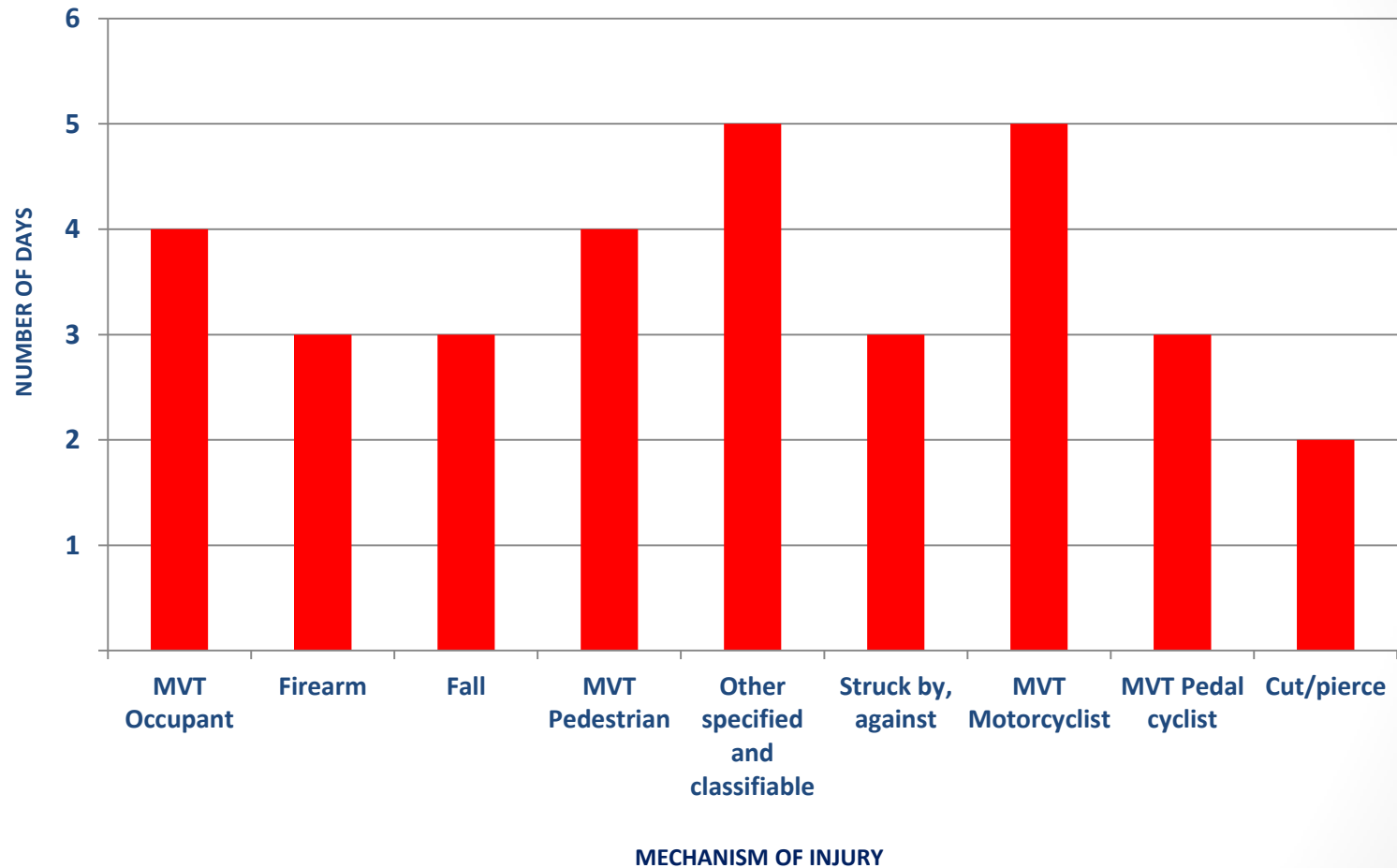
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Figure 29

Median Ventilator Days by Selected Mechanism of Injury



In patients with ventilator days > 0.



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Table
30

Median Ventilator Days by Injury Severity Score (ISS)

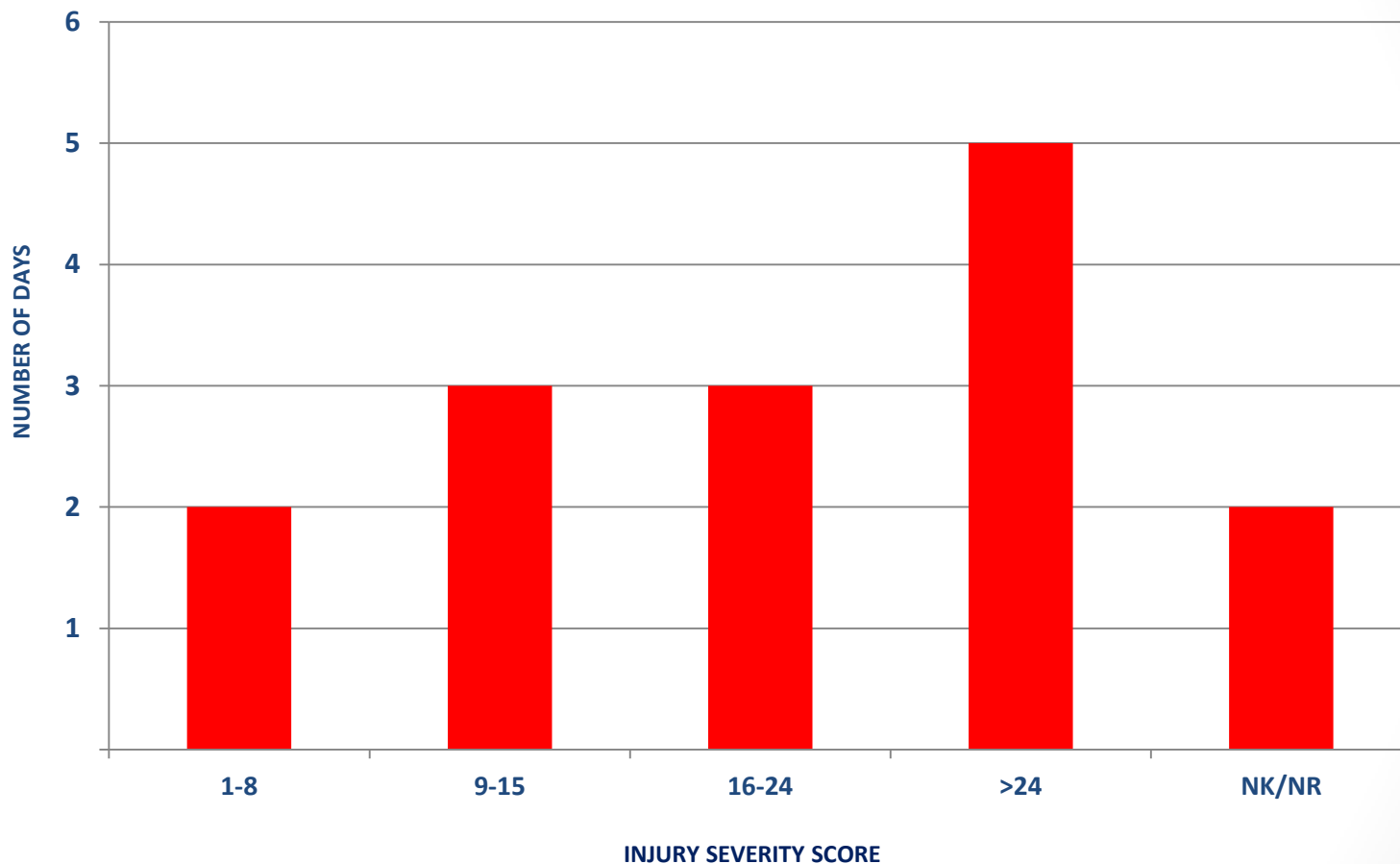
ISS	NUMBER	MEDIAN
1-8	507	2
9-15	772	3
16-24	1,562	3
>24	3,393	5
NK/NR	41	2

Injury Severity Score tables are generated using AIS98 Crosswalked ISS.
 Injury Severity Score definitions can be found in Appendix B.
 In patients with ventilator days > 0.



Figure 30

Median Ventilator Days by Injury Severity Score (ISS)



Injury Severity Score tables are generated using AIS98 Crosswalked ISS. Injury Severity Score definitions can be found in Appendix B. In patients with ventilator days > 0.



Table
31

Median ICU Days by Mechanism of Injury

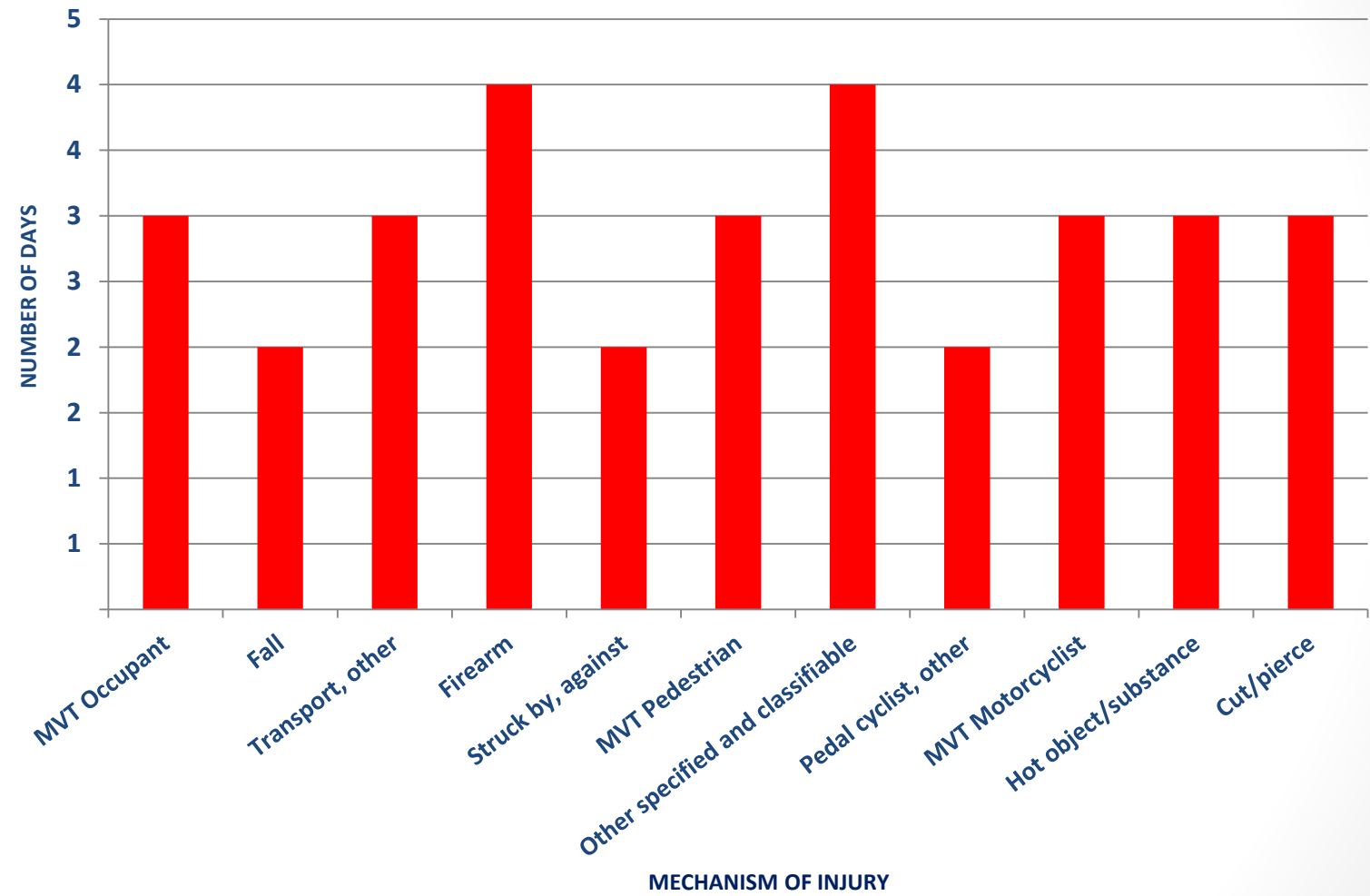
MECHANISM	NUMBER	MEDIAN
MVT Occupant	5,051	3
Fall	3,904	2
Transport, other	1,582	3
Firearm	1,442	4
Struck by, against	1,431	2
MVT Pedestrian	1,376	3
Other specified and classifiable	1,037	4
Pedal cyclist, other	505	2
MVT Motorcyclist	447	3
Hot object/substance	444	3
Cut/pierce	442	3
MVT Pedal cyclist	368	3
Unspecified	340	3
NK/NR	333	3
Fire/flame	284	6
MVT Other	150	3
Natural/environmental, Bites and stings	137	3
Natural/environmental, Other	131	3
Pedestrian, other	126	3
Other specified, not elsewhere classifiable	111	3
Suffocation	72	5
MVT Unspecified	71	5
Machinery	66	4
Drowning/submersion	59	4
Poisoning	19	3
Overexertion	12	3
Adverse effects, medical care	5	10
Adverse effects, drugs	4	3

In patients with ICU days > 0.



Figure 31

Median ICU Days by Selected Mechanism of Injury



In patients with ICU days > 0.

Table
32

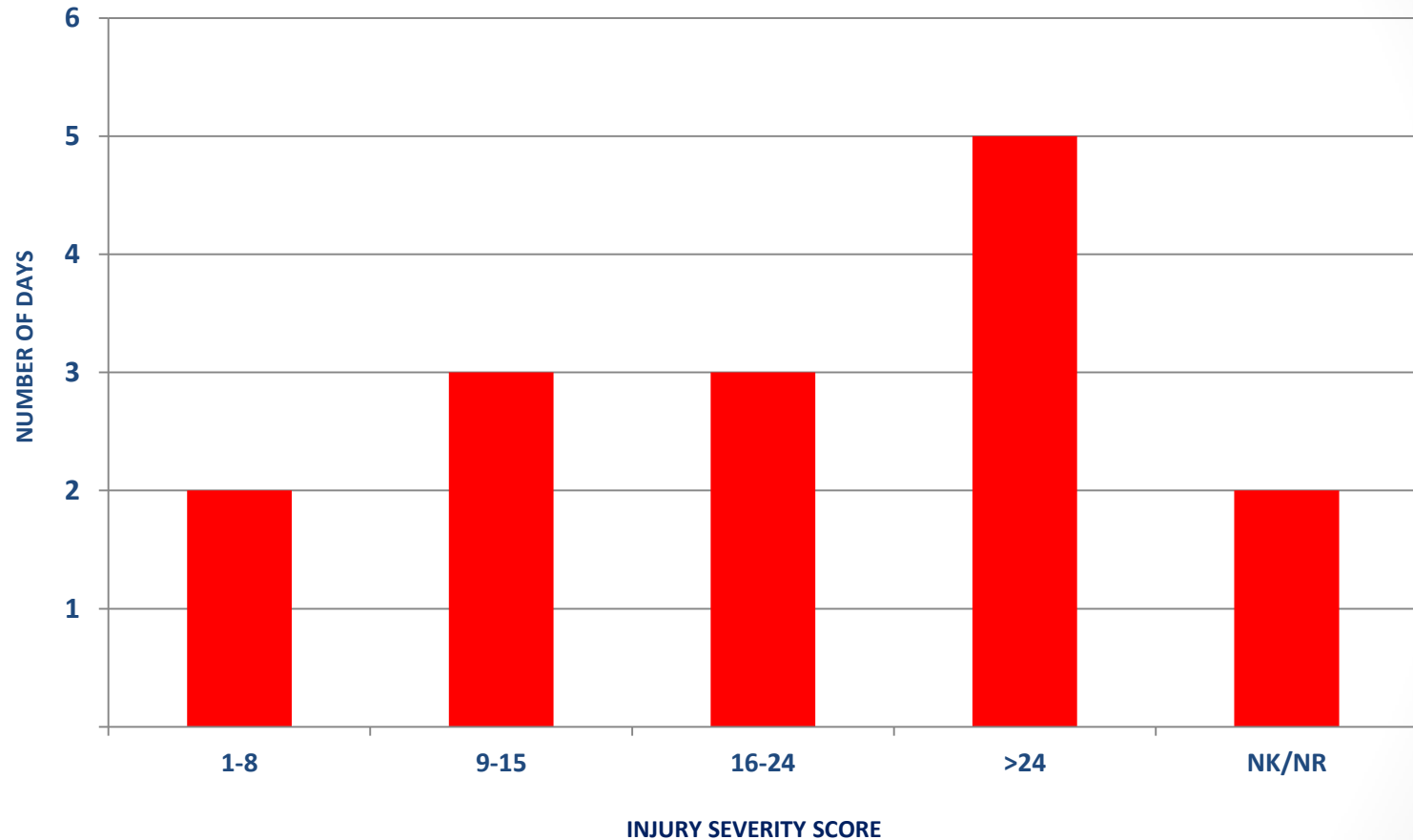
Median ICU Days by Injury Severity Score (ISS)

ISS	NUMBER	MEDIAN
1-8	3,548	2
9-15	4,484	3
16-24	6,195	3
>24	5,561	5
NK/NR	161	2

Injury Severity Score tables are generated using AIS98 Crosswalked ISS.
 Injury Severity Score definitions can be found in Appendix B.
 In patients with ICU days > 0.

Figure 32

Median ICU Days by Injury Severity Score (ISS)



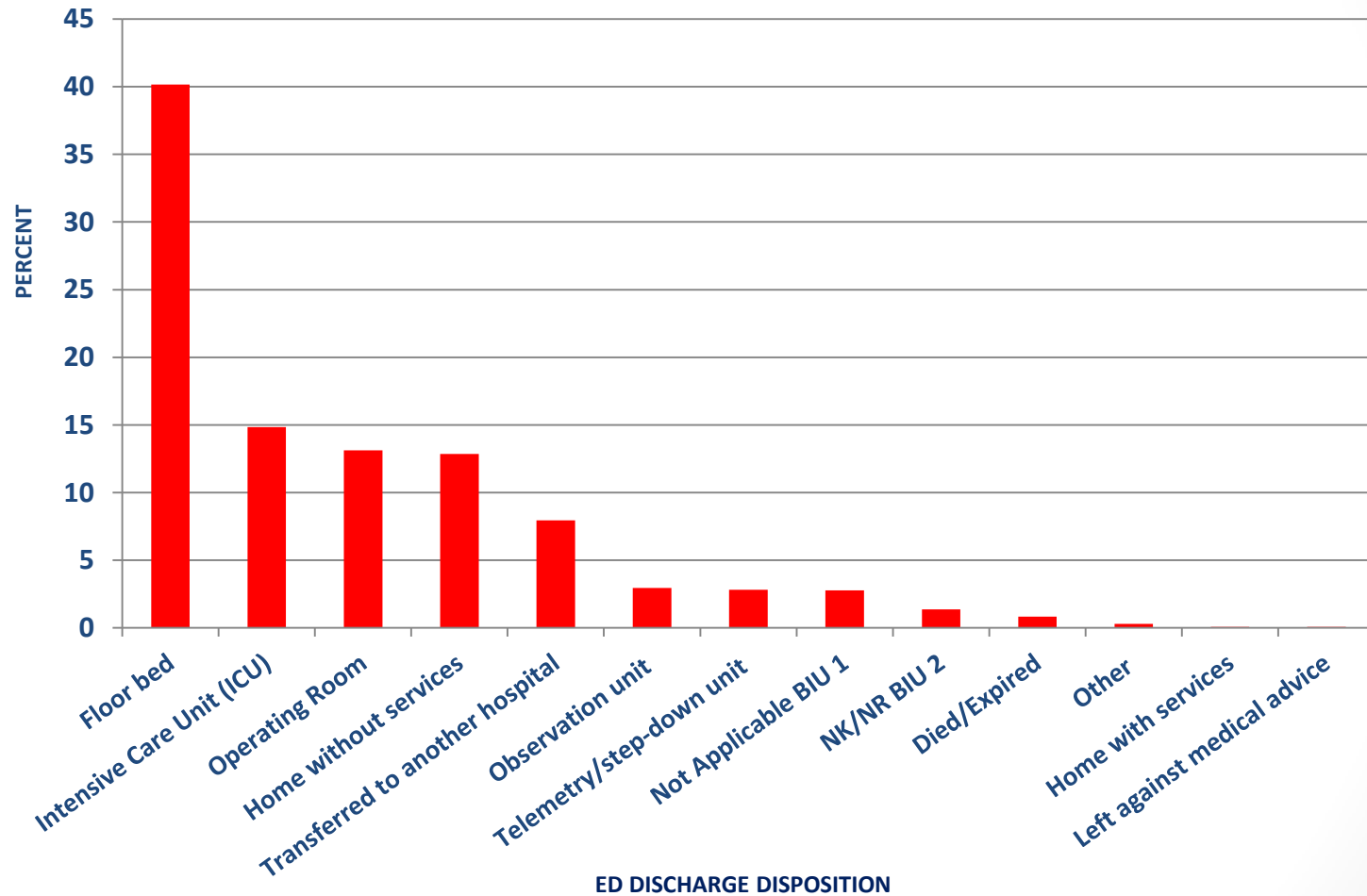
Incidents by ED Discharge Disposition

ED DISCHARGE DISPOSITION	NUMBER	PERCENT
Floor bed (general admission, non-specialty unit bed)	57,821	40.15
Intensive Care Unit (ICU)	21,363	14.84
Operating Room	18,883	13.11
Home without services	18,515	12.86
Transferred to another hospital	11,447	7.95
Observation unit (unit that provides < 24 hour stays)	4,230	2.94
Telemetry/step-down unit (less acuity than ICU)	4,053	2.81
Not Applicable	3,969	2.76
NK/NR	1,955	1.36
Died/Expired	1,188	0.83
Other (jail, institutional care facility, mental health, etc)	396	0.28
Home with services	91	0.06
Left against medical advice	85	0.06
Total	143,996	100



Figure 33

Incidents by ED Discharge Disposition



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Signs of Life

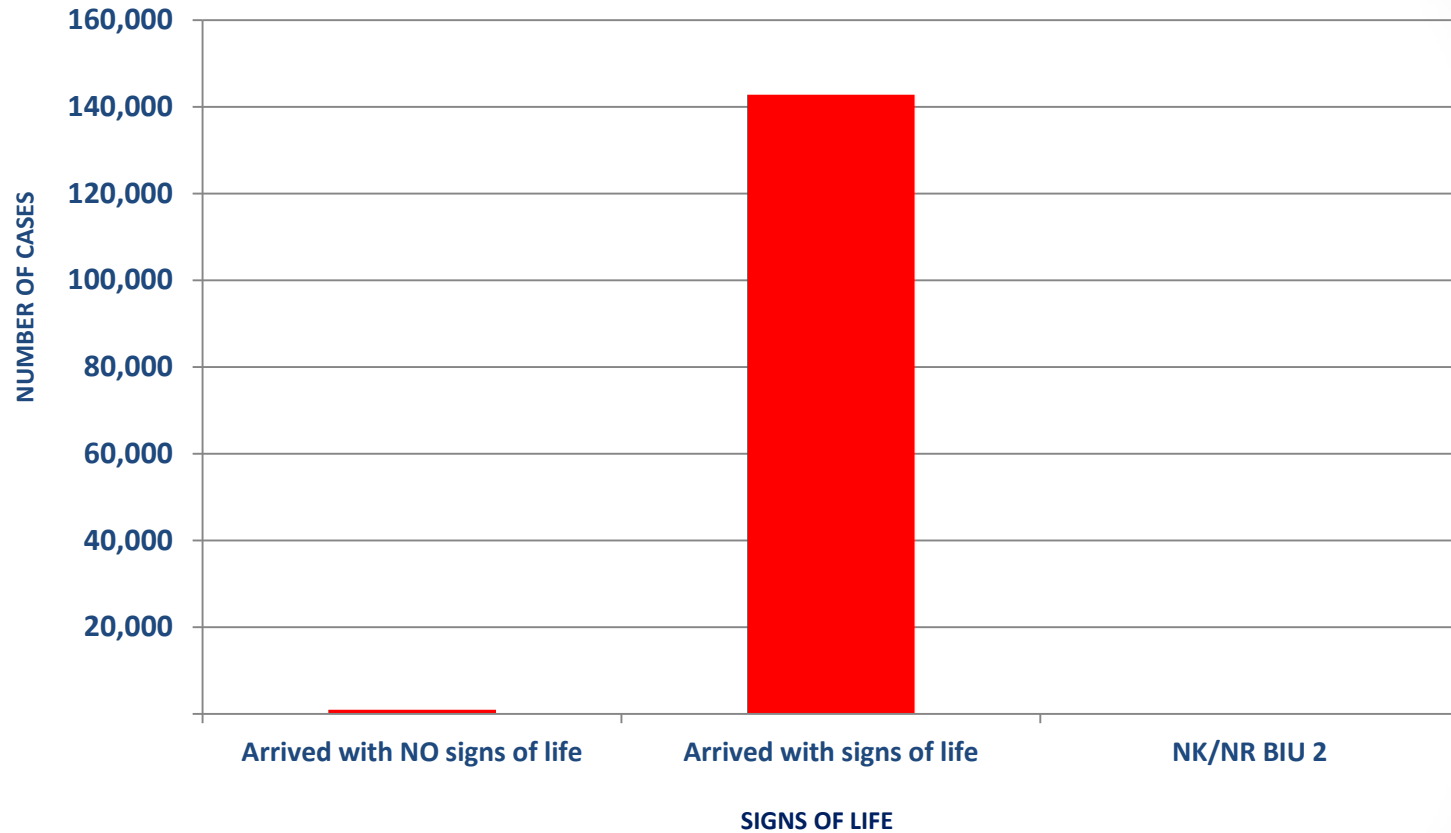
SIGNS OF LIFE	NUMBER	PERCENT
Arrived with NO signs of life	986	0.68
Arrived with signs of life	142,817	99.18
NK/NR	193	0.13
Total	143,996	100

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



Figure 34

Signs of Life



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

Table
35

Incidents by Hospital Discharge Disposition

HOSPITAL DISCHARGE DISPOSITION	NUMBER	PERCENT
Discharged to home or self-care (routine discharge)	100,742	69.96
Not Applicable	31,722	22.03
Discharged/Transferred to inpatient rehab or designated unit	3,062	2.13
Discharge/Transferred to home under care of organized home health service	2,777	1.93
Discharged/Transferred to a short-term general hospital for inpatient care	1,615	1.12
Deceased/Expired	1,578	1.10
Discharged/Transferred to another type of institution not defined elsewhere	661	0.46
Left against medical advice or discontinued care	466	0.32
Discharged/transferred to a psychiatric hospital or psychiatric distinct part unit of a hospital	428	0.30
Discharged/Transferred to Skilled Nursing Facility	325	0.23
Discharged/Transferred to court/law enforcement	278	0.19
Discharged/Transferred to an Intermediate Care Facility (ICF)	154	0.11
Discharged/Transferred to Long Term Care Hospital	125	0.09
Discharged/Transferred to hospice care	53	0.04
NK/NR	10	0.01
Total	143,996	100



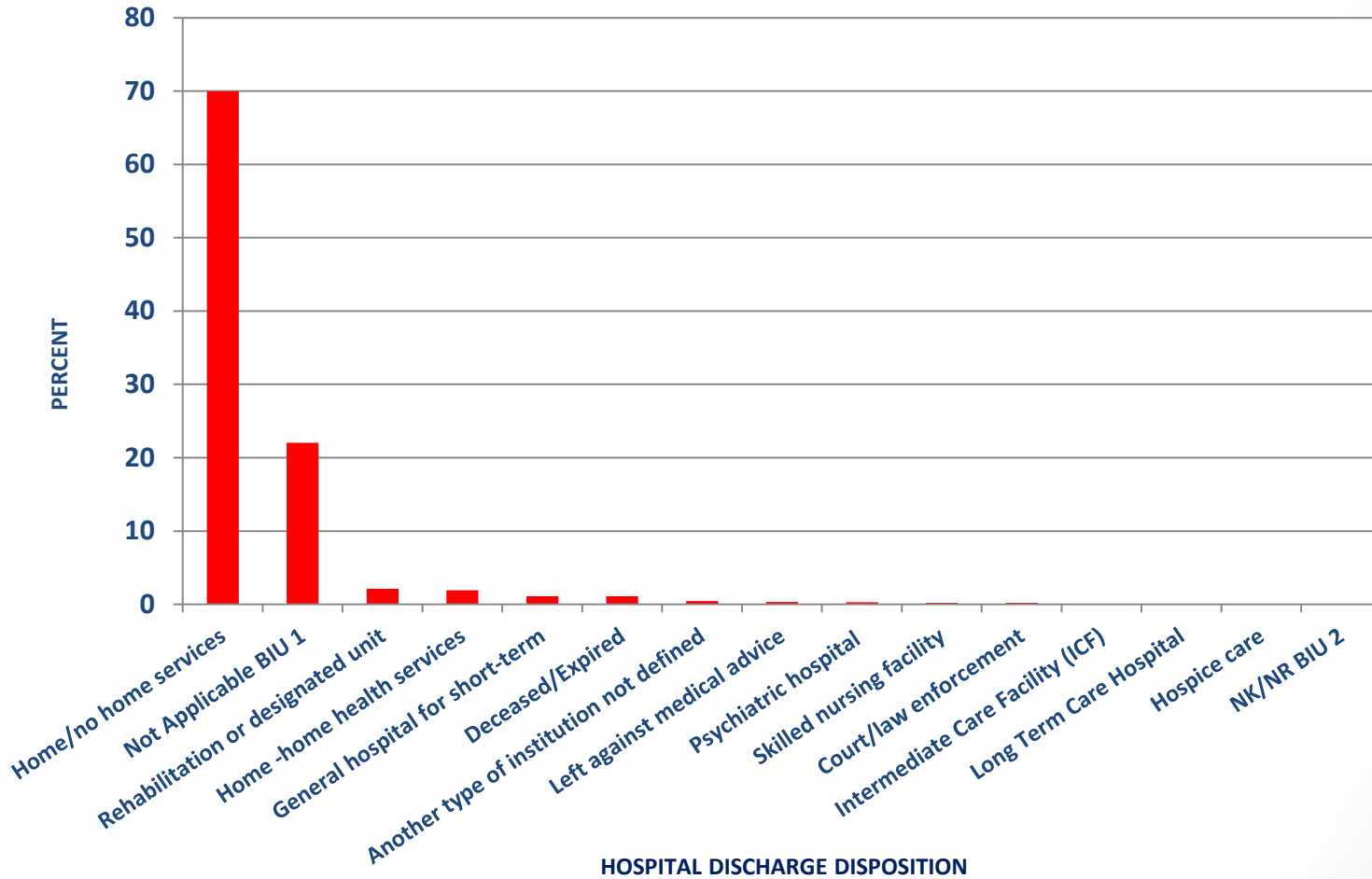
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Figure 35

Incidents by Hospital Discharge Disposition



REGIONAL ANALYSIS



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Table
36

Incidents by Region

REGION	NUMBER	PERCENT
South	58,666	40.74
Midwest	36,637	25.44
West	26,617	18.48
Northeast	21,626	15.02
Non-U.S.	450	0.31
Total	143,996	100



Figure 36

Incidents by Region

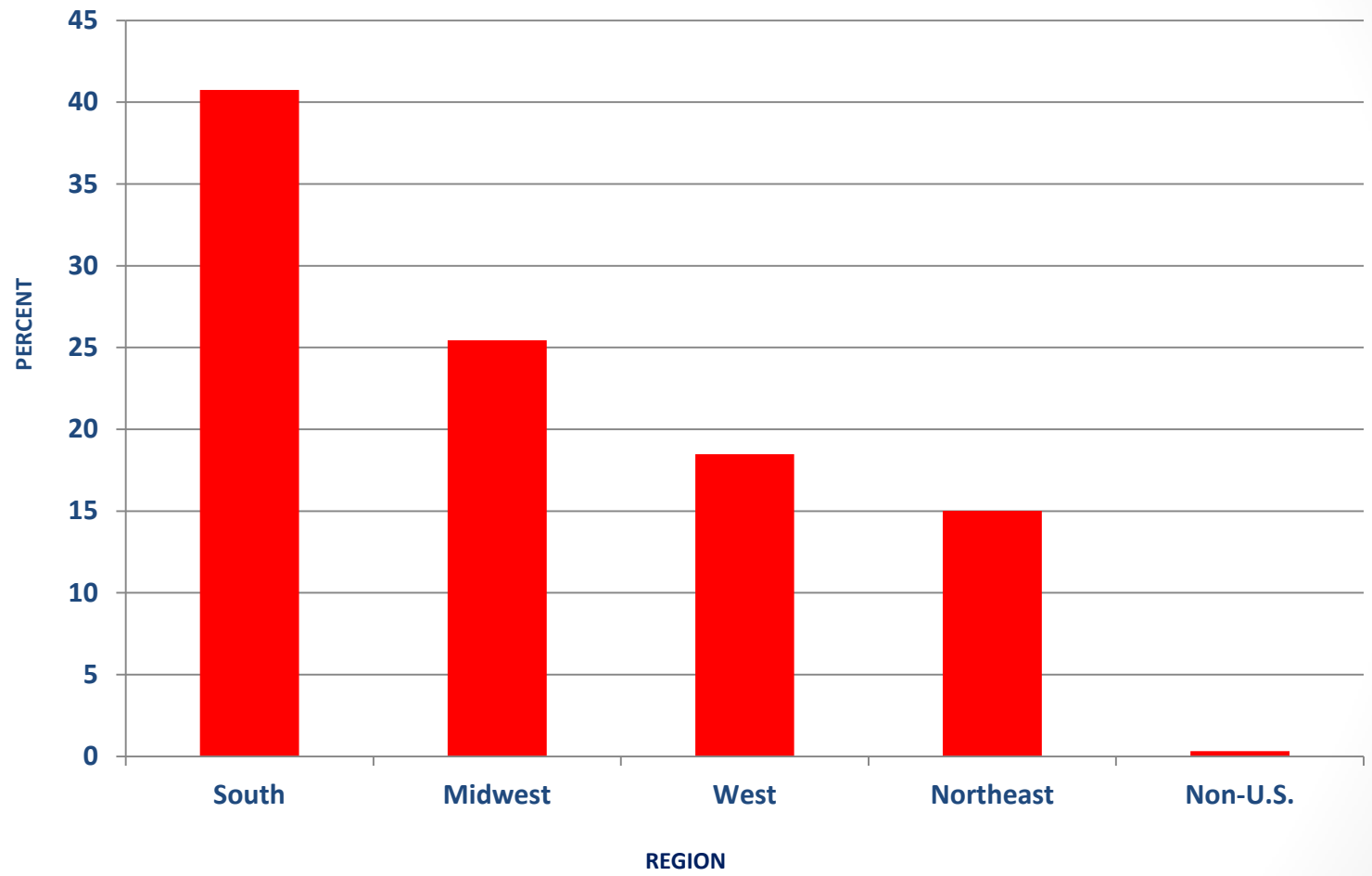


Table
37

Case Fatality Rate by Region

REGION	NUMBER	DEATHS	CASE FATALITY RATE
South	58,666	1,256	2.14
Midwest	36,637	562	1.53
West	26,617	467	1.75
Northeast	21,626	514	2.38
Non-U.S.	450	20	4.44
Total	143,996	2,819	1.96



Figure 37

Case Fatality Rate by Region

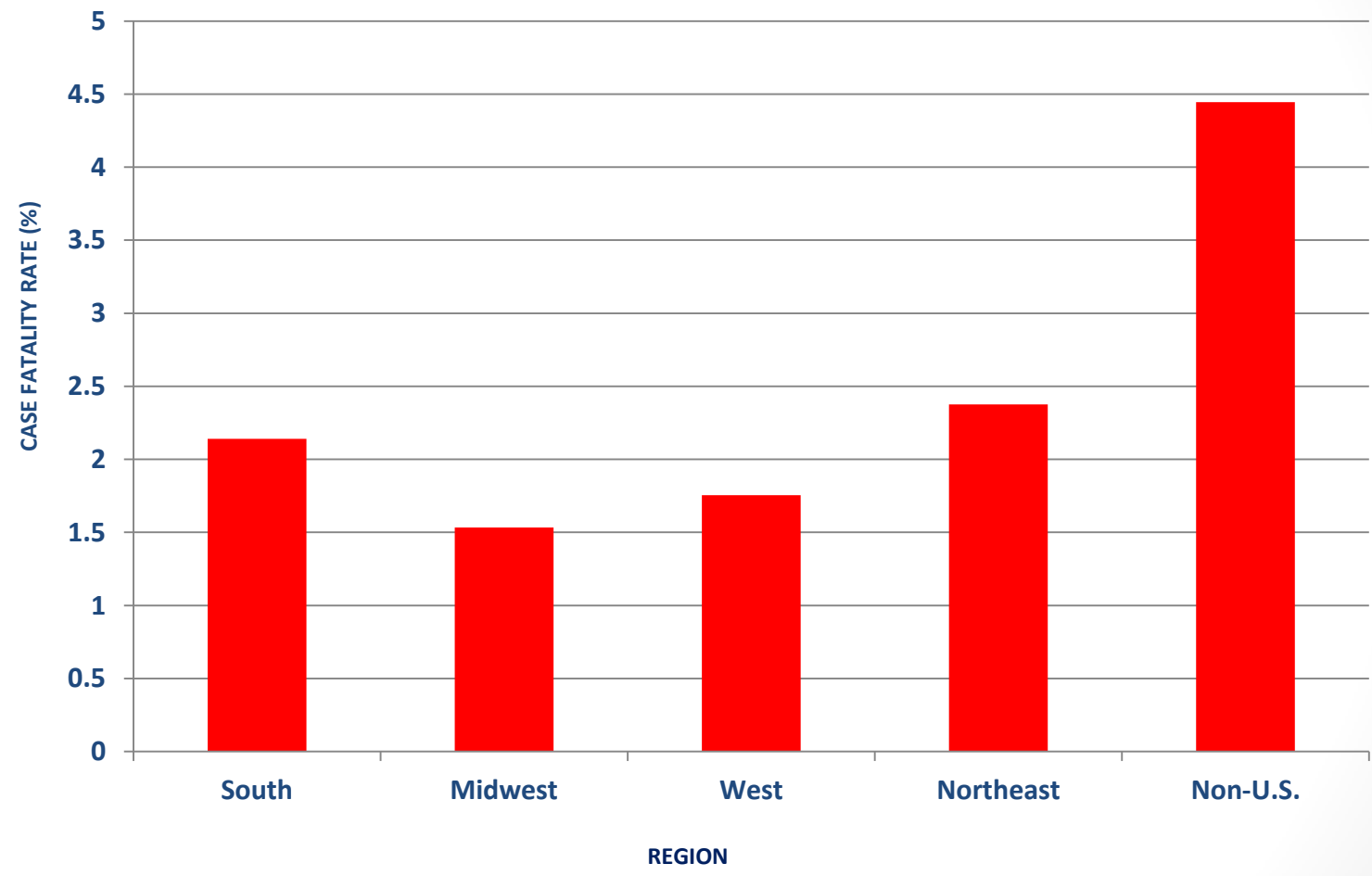


Table
38

Mechanism of Injury by Region

MECHANISM	NUMBER	MIDWEST PERCENT	NORTHEAST PERCENT	SOUTH PERCENT	WEST PERCENT	NON-U.S. PERCENT
Fall	48,214	31.55	38.76	32.72	33.71	22.89
Motor Vehicle Traffic	33,030	18.33	19.03	24.81	27.94	46.44
Struck by, against	14,480	9.62	11.73	10.16	9.14	5.33
Transport, other	9,706	5.96	5.12	7.45	7.51	10.00
Firearm	5,888	3.59	3.67	4.63	3.96	1.11
Pedal cyclist, other	4,847	3.45	3.97	2.75	4.15	1.78
Other specified and classifiable	4,678	3.13	3.02	3.58	2.89	1.56
Cut/pierce	4,677	3.19	3.75	2.97	3.48	6.44
Hot object/substance	4,484	2.98	3.96	3.58	1.65	0.00
NK/NR	4,161	10.84	0.21	0.15	0.22	0.00
Natural/environmental, Bites and stings	2,615	1.82	1.59	2.18	1.24	0.00
Unspecified	1,660	1.15	1.39	1.08	1.14	0.22
Fire/flame	1,473	1.12	0.91	1.19	0.61	0.44
Other specified, not elsewhere classifiable	905	0.59	0.89	0.61	0.51	0.00
Overexertion	776	0.57	0.80	0.55	0.27	0.00
Natural/environmental, Other	650	0.48	0.23	0.50	0.48	1.33
Pedestrian, other	606	0.34	0.43	0.43	0.47	2.22
Machinery	557	0.58	0.34	0.32	0.31	0.22
Poisoning	219	0.44	0.02	0.04	0.10	0.00
Suffocation	198	0.17	0.08	0.14	0.13	0.00
Drowning/submersion	137	0.08	0.06	0.12	0.08	0.00
Adverse effects, medical care	22	0.02	0.01	0.01	0.01	0.00
Adverse effects, drugs	13	0.01	0.01	0.01	0.01	0.00
Total	143,996	100	100	100	100	100



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Figure 38

Selected Mechanism of Injury by Region

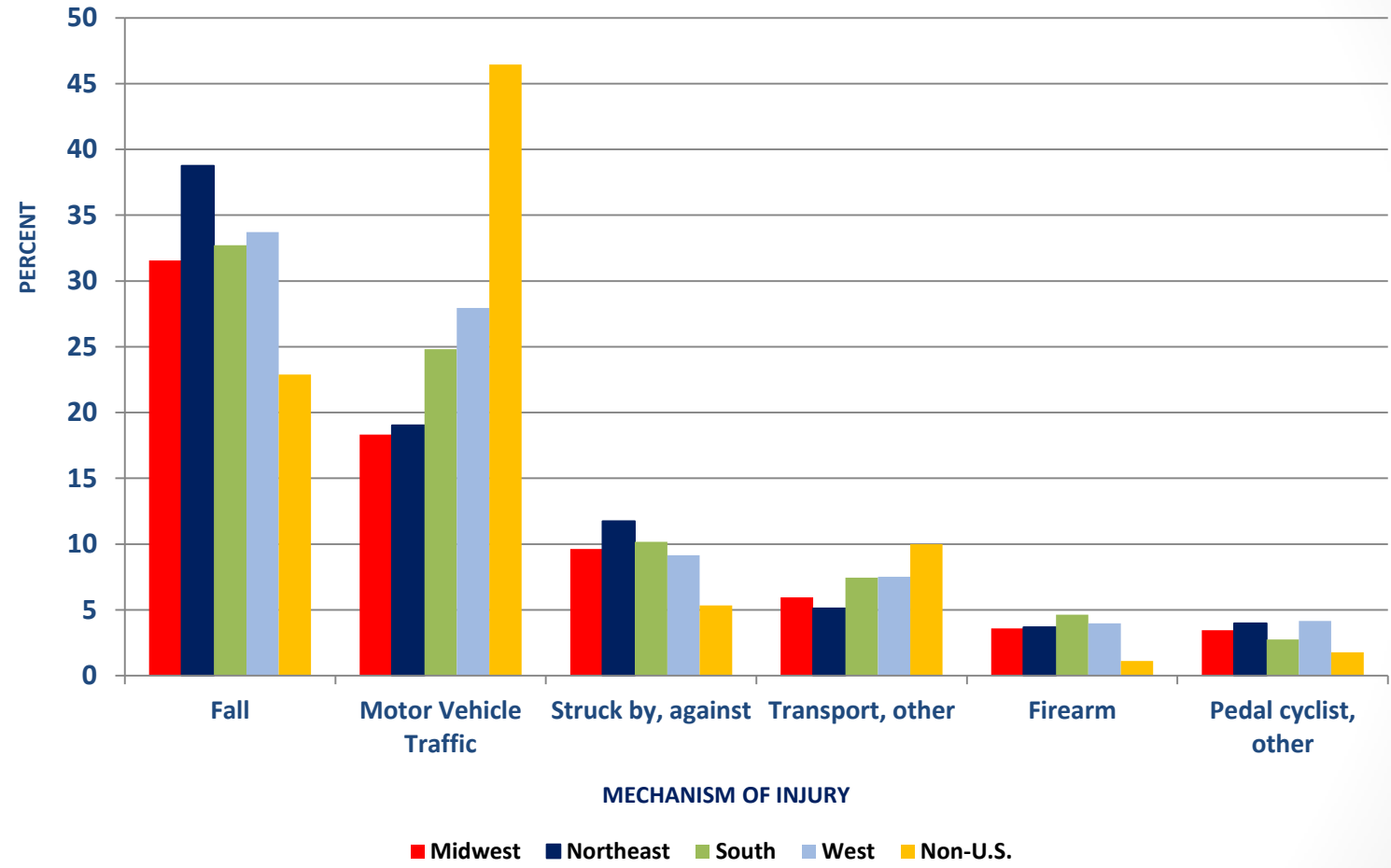


Table
39

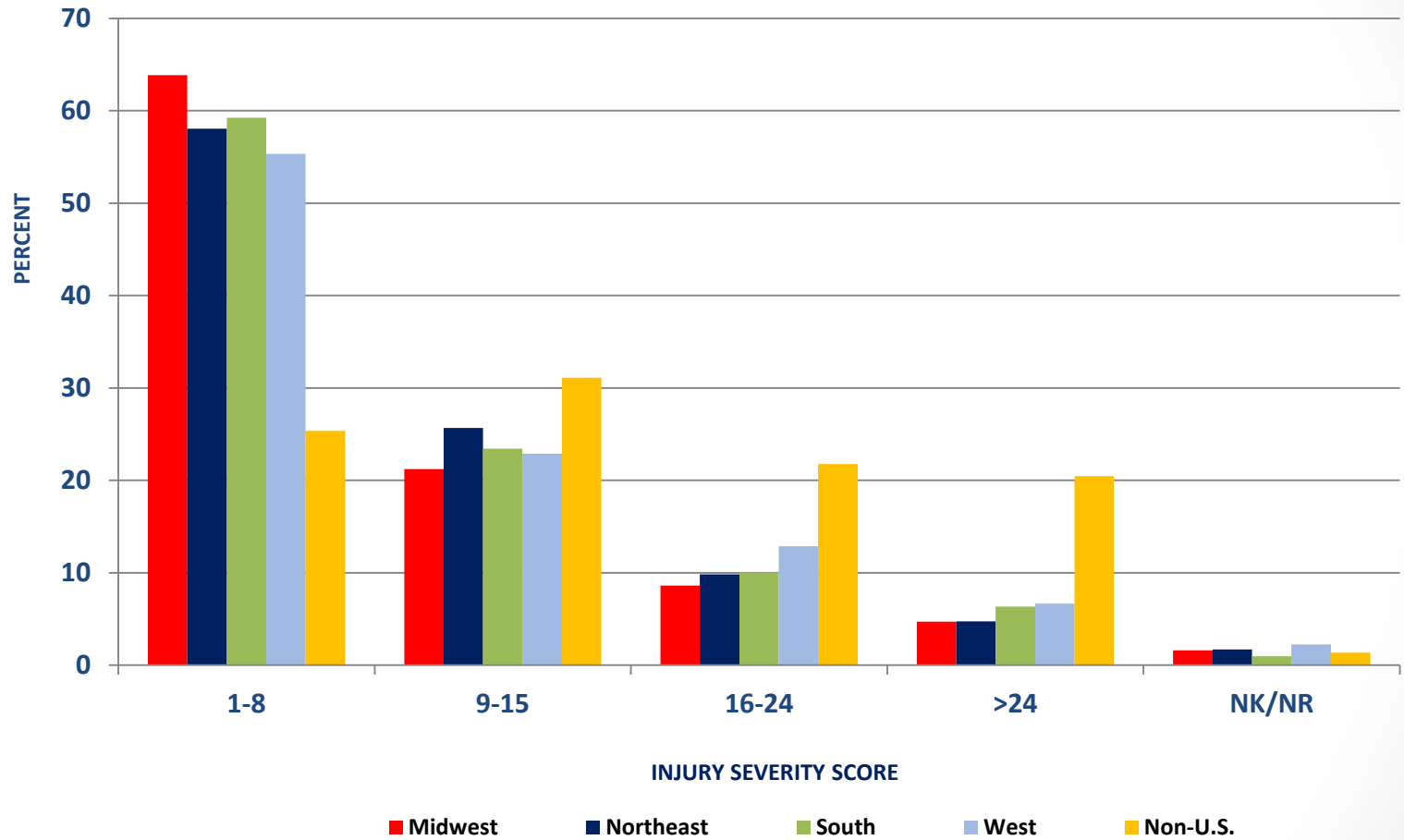
Injury Severity Score (ISS) by Region

ISS	NUMBER	MIDWEST PERCENT	NORTHEAST PERCENT	SOUTH PERCENT	WEST PERCENT	NON-U.S. PERCENT
1-8	85,546	63.85	58.06	59.24	55.34	25.33
9-15	33,300	21.22	25.66	23.42	22.90	31.11
16-24	14,673	8.62	9.83	10.00	12.86	21.78
>24	8,340	4.71	4.74	6.35	6.65	20.44
NK/NR	2,137	1.60	1.71	0.98	2.25	1.33
Total	143,996	100	100	100	100	100

Injury Severity Score tables are generated using AIS98 Crosswalked ISS. Injury Severity Score definitions can be found in Appendix B.

Figure 39

Injury Severity Score (ISS) by Region



Injury Severity Score tables are generated using AIS98 Crosswalked ISS. Injury Severity Score definitions can be found in Appendix B.

Table
40

Incidents by Rurality

CATEGORY	NUMBER	PERCENT
Urban	64,483	80.19
Suburban	5,677	7.06
Rural	7,994	9.94
Wilderness	2,263	2.81
Total	80,417	100

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.



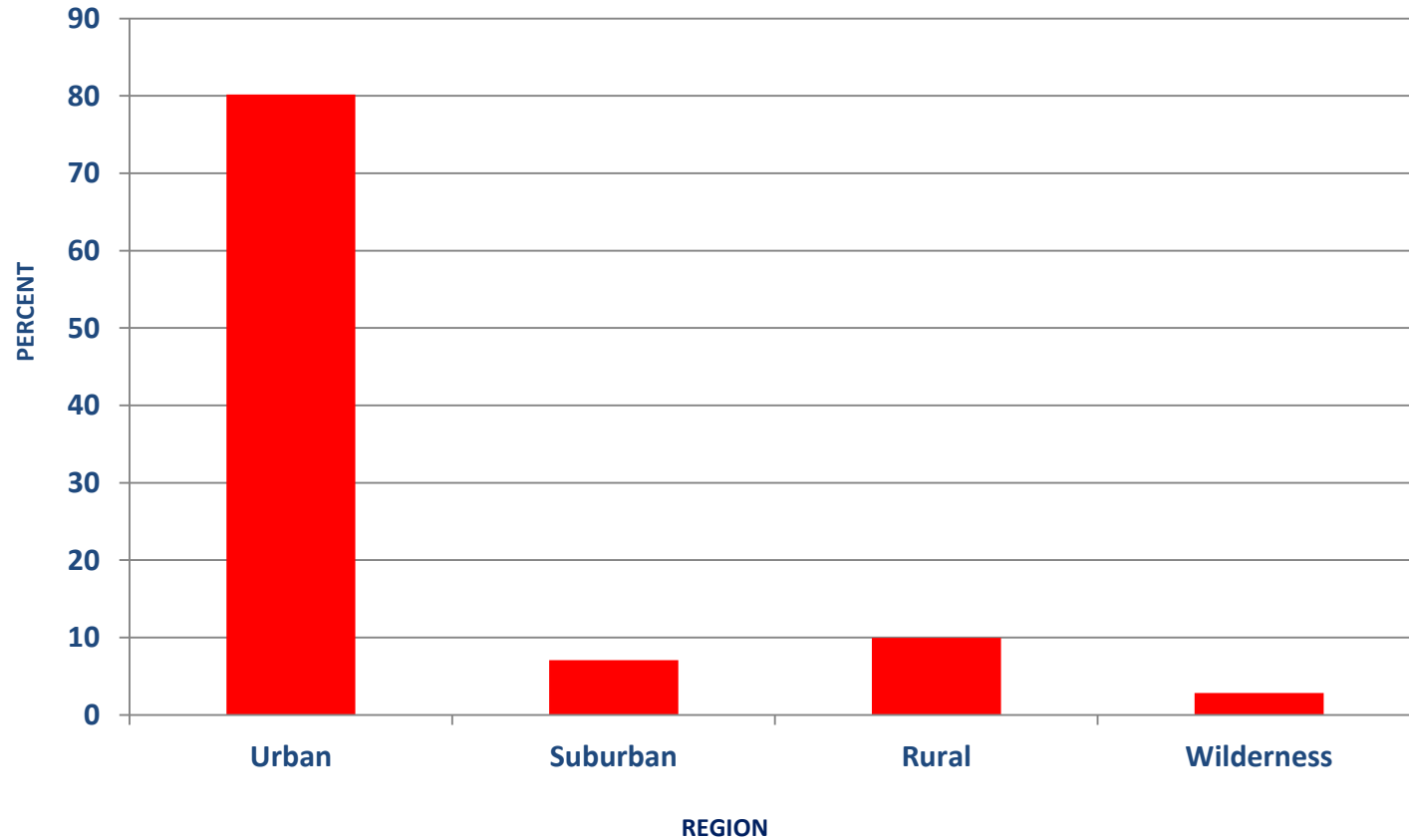
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Figure 40

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
41

Case Fatality Rate by Rurality

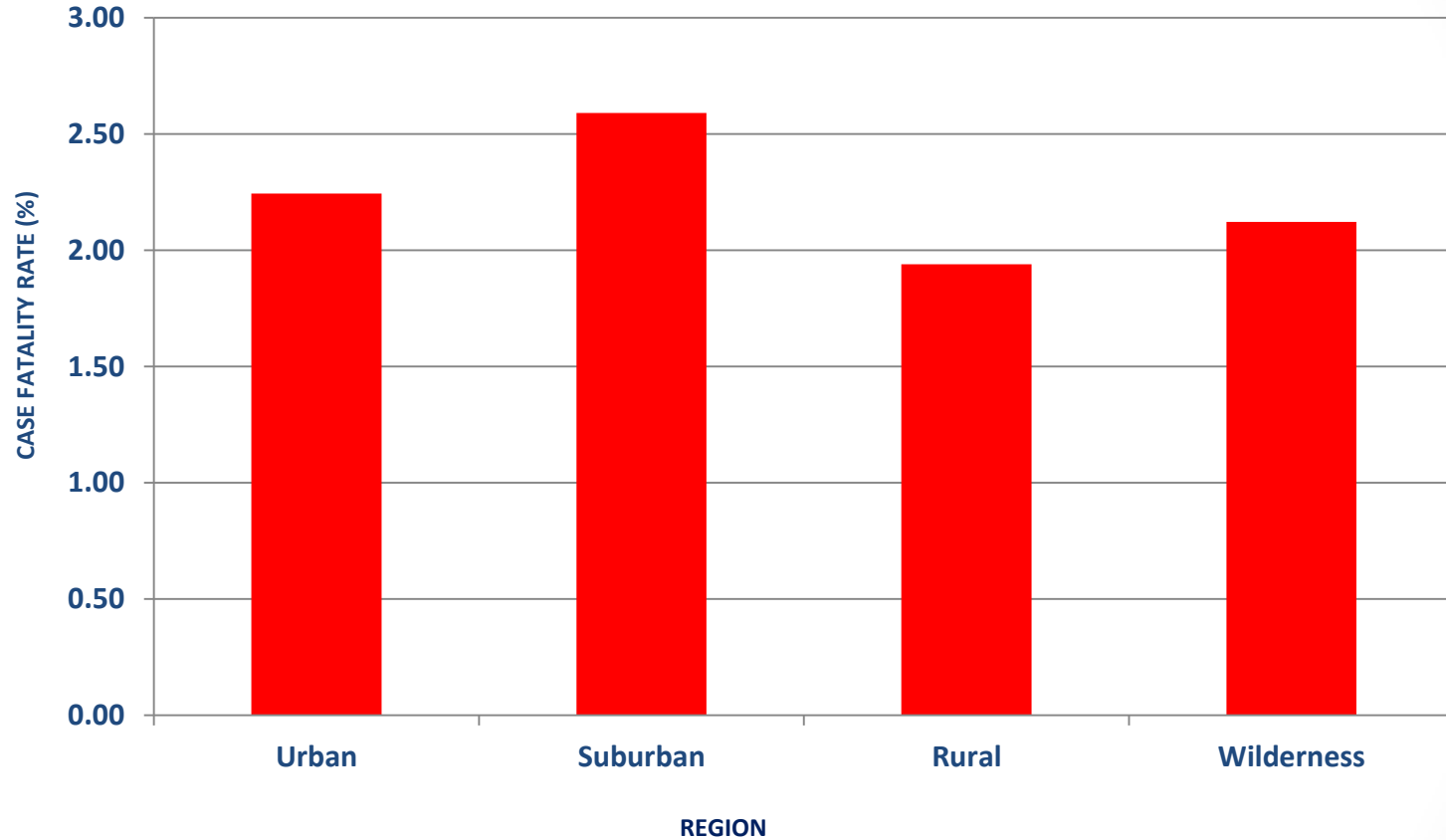
CATEGORY	NUMBER	DEATHS	CASE FATALITY RATE
Urban	64,483	1,447	2.24
Suburban	5,677	147	2.59
Rural	7,994	155	1.94
Wilderness	2,263	48	2.12
Total	80,417	2,819	3.51

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 41

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
42

Mechanism of Injury by Rurality

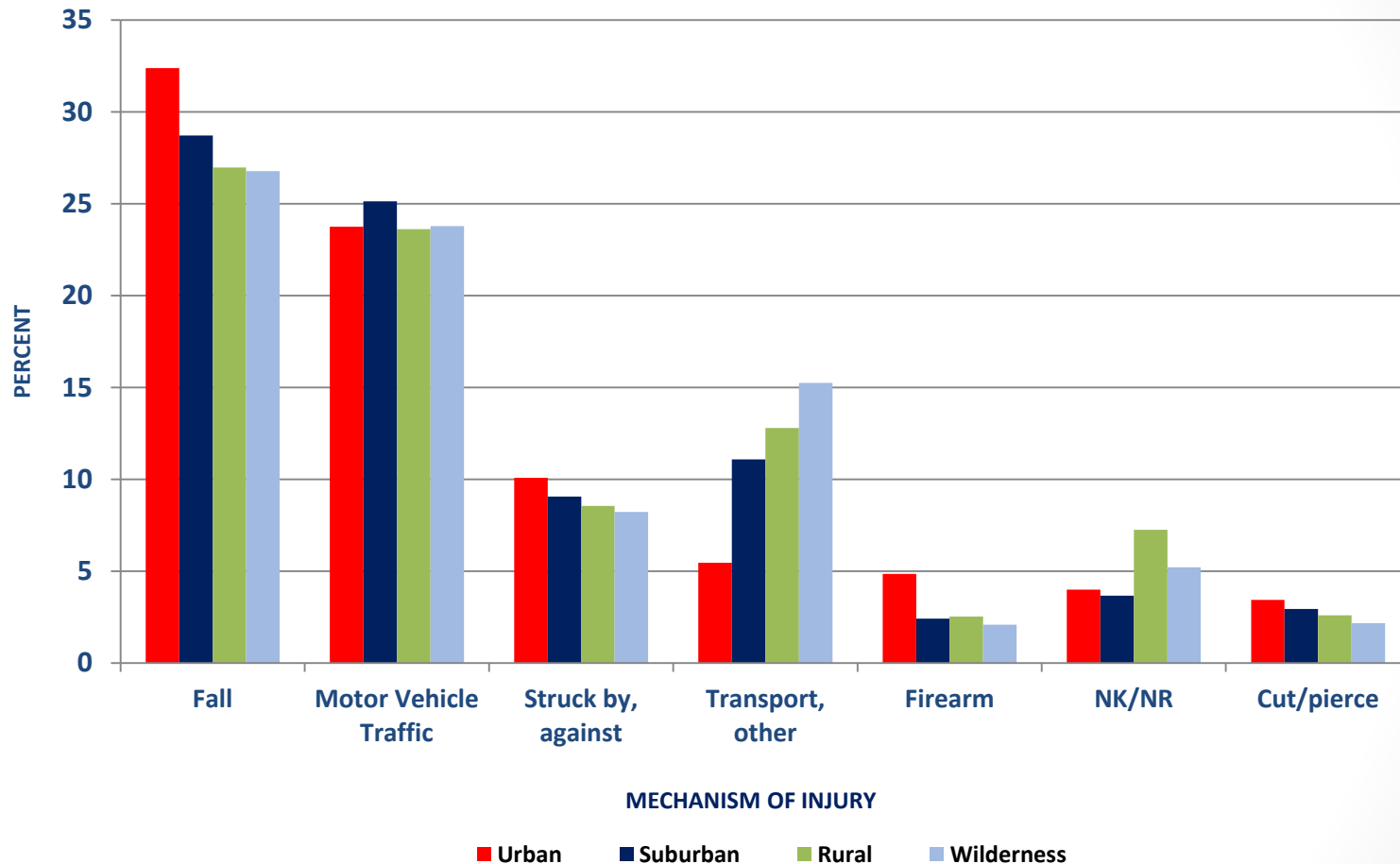
MECHANISM	NUMBER (URBAN)	PERCENT (URBAN)	NUMBER (SUBURBAN)	PERCENT (SUBURBAN)	NUMBER (RURAL)	PERCENT (RURAL)	NUMBER (WILDERNESS)	PERCENT (WILDERNESS)
Fall	20,876	32.37	1,630	28.71	2,156	26.97	606	26.78
Motor Vehicle Traffic	15,309	23.74	1,426	25.12	1,888	23.62	538	23.77
Struck by, against	6,499	10.08	514	9.05	683	8.54	186	8.22
Transport, other	3,521	5.46	629	11.08	1,023	12.80	345	15.25
Firearm	3,123	4.84	137	2.41	202	2.53	47	2.08
NK/NR	2,574	3.99	208	3.66	580	7.26	118	5.21
Cut/pierce	2,210	3.43	167	2.94	208	2.60	49	2.17
Hot object/substance	2,151	3.34	156	2.75	189	2.36	52	2.30
Other specified and classifiable	2,059	3.19	202	3.56	297	3.72	91	4.02
Pedal cyclist, other	2,057	3.19	176	3.10	199	2.49	64	2.83
Natural/environmental, Bites and stings	1,162	1.80	135	2.38	155	1.94	41	1.81
Fire/flame	617	0.96	87	1.53	108	1.35	39	1.72
Unspecified	609	0.94	43	0.76	45	0.56	12	0.53
Other specified, not elsewhere classifiable	376	0.58	32	0.56	40	0.50	6	0.27
Overexertion	314	0.49	21	0.37	27	0.34	10	0.44
Pedestrian, other	289	0.45	33	0.58	41	0.51	7	0.31
Natural/environmental, Other	220	0.34	32	0.56	67	0.84	22	0.97
Machinery	173	0.27	29	0.51	49	0.61	16	0.71
Poisoning	157	0.24	3	0.05	21	0.26	3	0.13
Suffocation	102	0.16	9	0.16	10	0.13	7	0.31
Drowning/submersion	70	0.11	8	0.14	4	0.05	4	0.18
Adverse effects, medical care	10	0.02	0	0.00	1	0.01	0	0.00
Adverse effects, drugs	5	0.01	0	0.00	1	0.01	0	0.00
Total	64,483	100	5,677	100	7,994	100	2,263	100

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 42

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.

Injury Severity Score (ISS) by Rurality

ISS	NUMBER (URBAN)	PERCENT (URBAN)	NUMBER (SUBURBAN)	PERCENT (SUBURBAN)	NUMBER (RURAL)	PERCENT (RURAL)	NUMBER (WILDERNESS)	PERCENT (WILDERNESS)
1-8	38,872	60.28	3,028	53.34	4,400	55.04	1,221	53.95
9-15	14,754	22.88	1,551	27.32	2,031	25.41	599	26.47
16-24	6,431	9.97	627	11.04	906	11.33	251	11.09
>24	3,776	5.86	428	7.54	581	7.27	178	7.87
NK/NR	650	1.01	43	0.76	76	0.95	14	0.62
Total	64,483	100	5,677	100	7,994	100	2,263	100

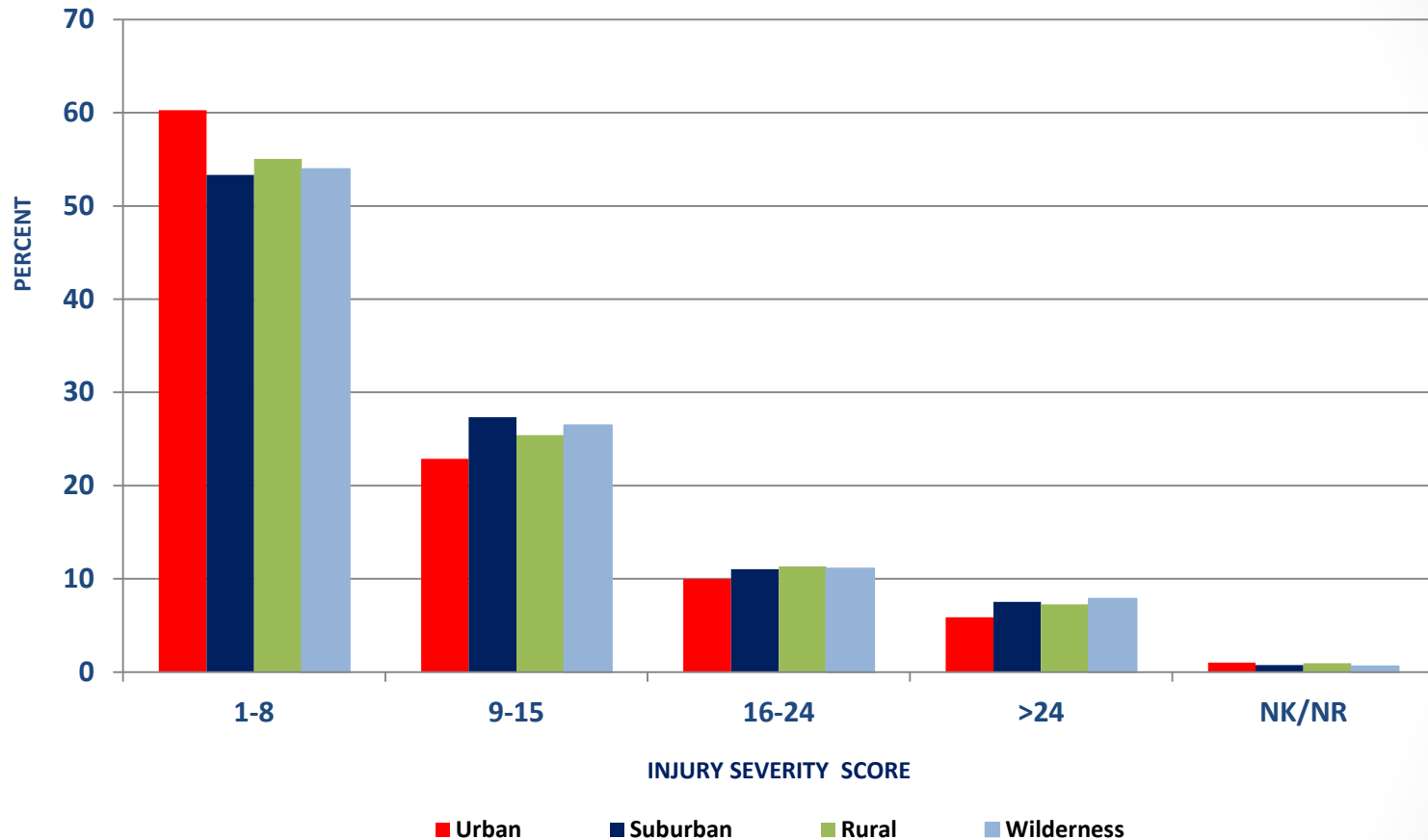
Injury Severity Score tables are generated using AIS98 Crosswalked ISS. Injury Severity Score definitions can be found in Appendix B.

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 43

Injury Severity Score (ISS) by Rurality



Injury Severity Score tables are generated using AIS98 Crosswalked ISS. 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



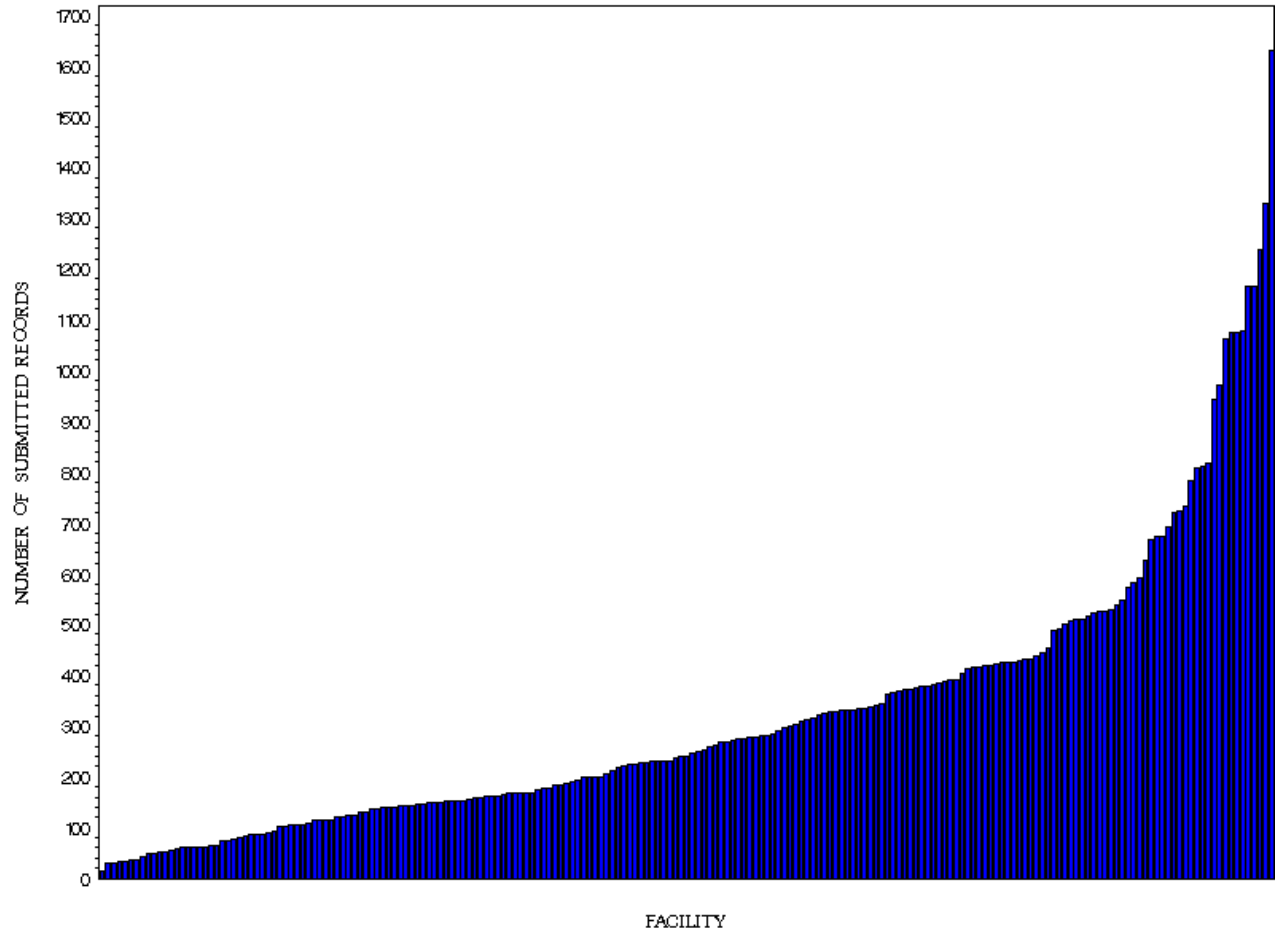
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Figure 44

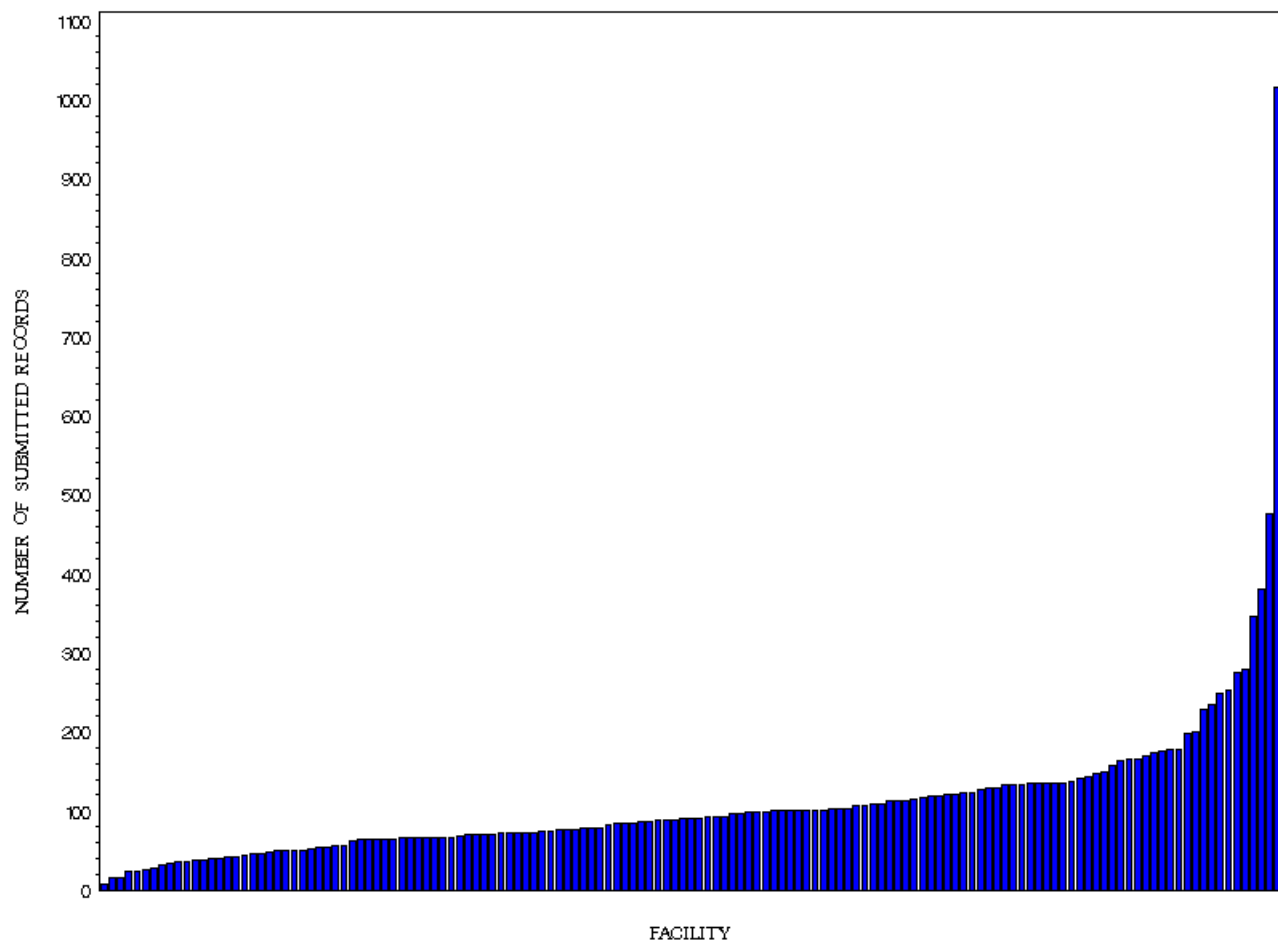
Number of Cases Submitted per Facility for Level I Facilities with Pediatric Cases (N=205)



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 45

Number of Cases Submitted per Facility for Level II Facilities with Pediatric Cases (Bedsized ≤ 400 , N=143)



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.



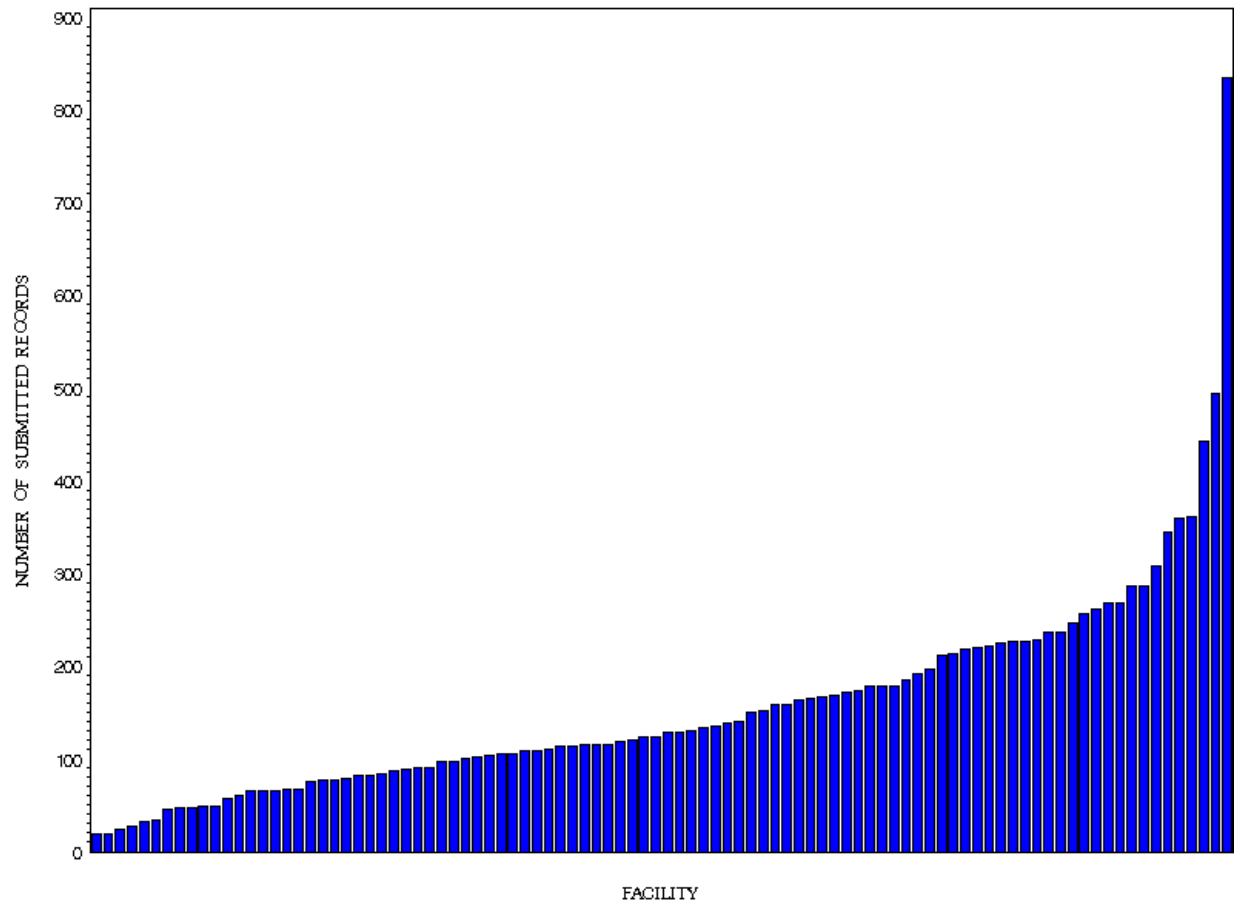
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Figure 46

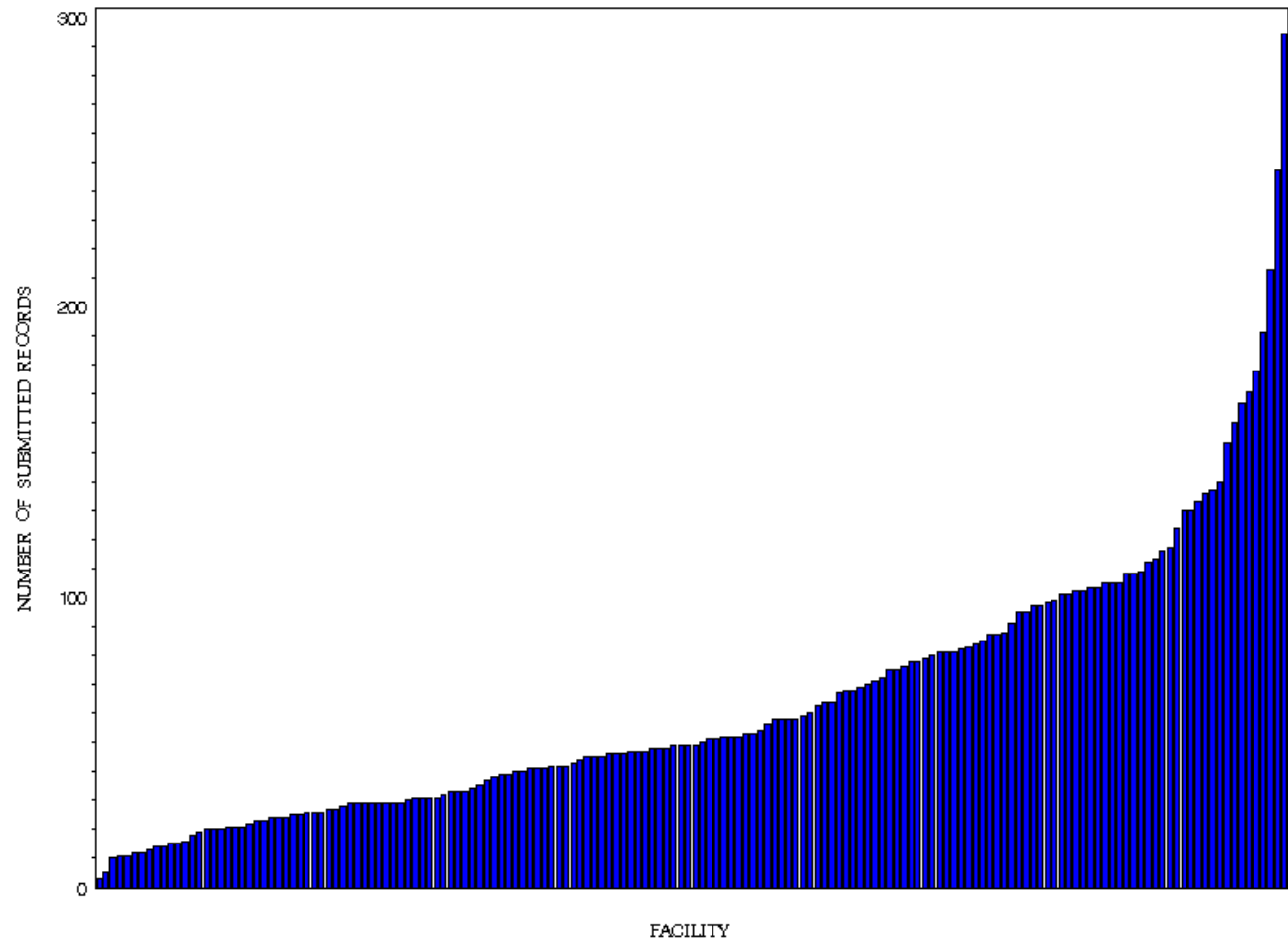
Number of Cases Submitted per Facility for Level II Facilities with Pediatric Cases (Bedsized > 400, N=96)



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

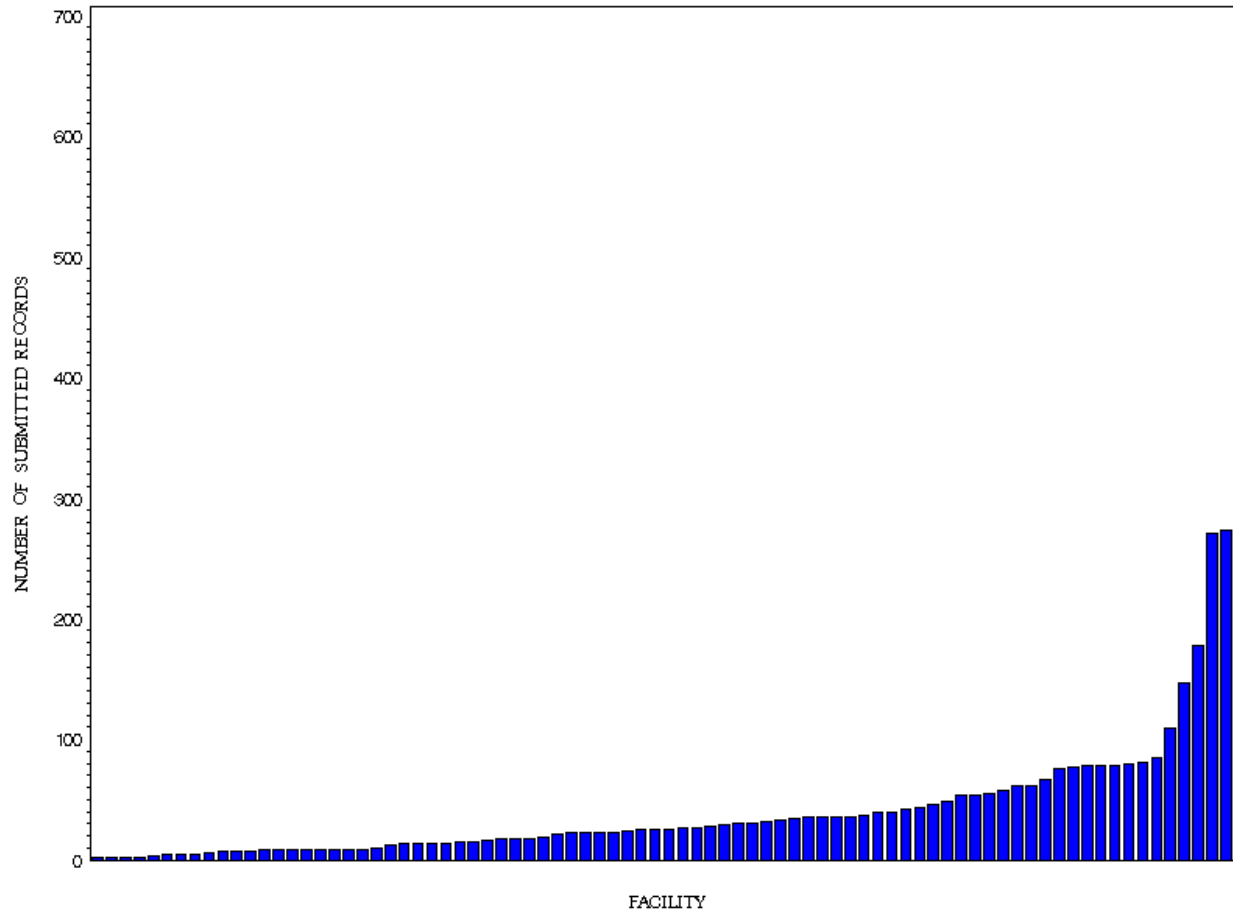
Number of Cases Submitted per Facility for Level III Facility with Pediatric Cases (N=166)



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 48

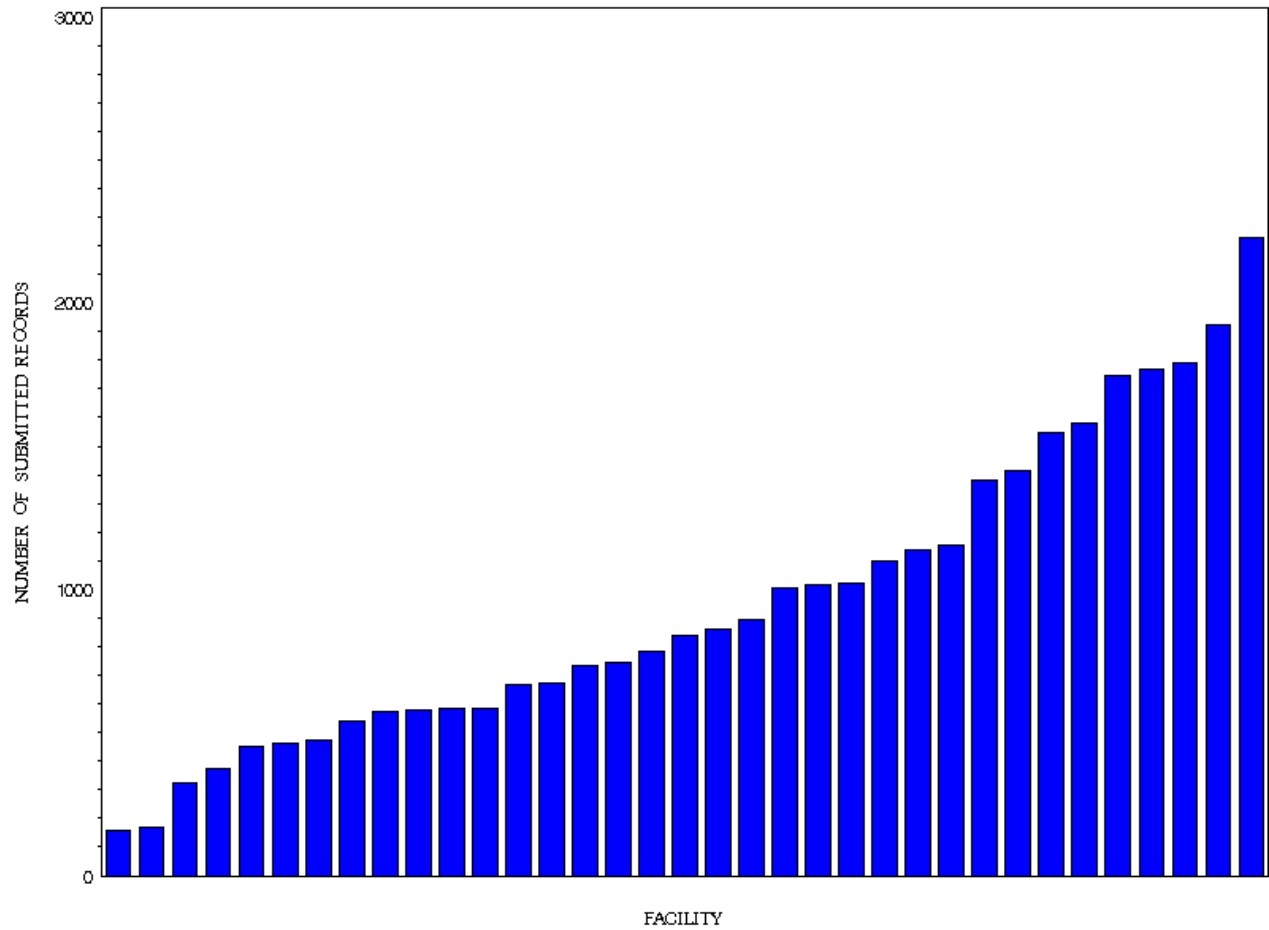
Number of Cases Submitted per Facility for Level IV, NA, or Other Facilities with Pediatric Cases (N=83)



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

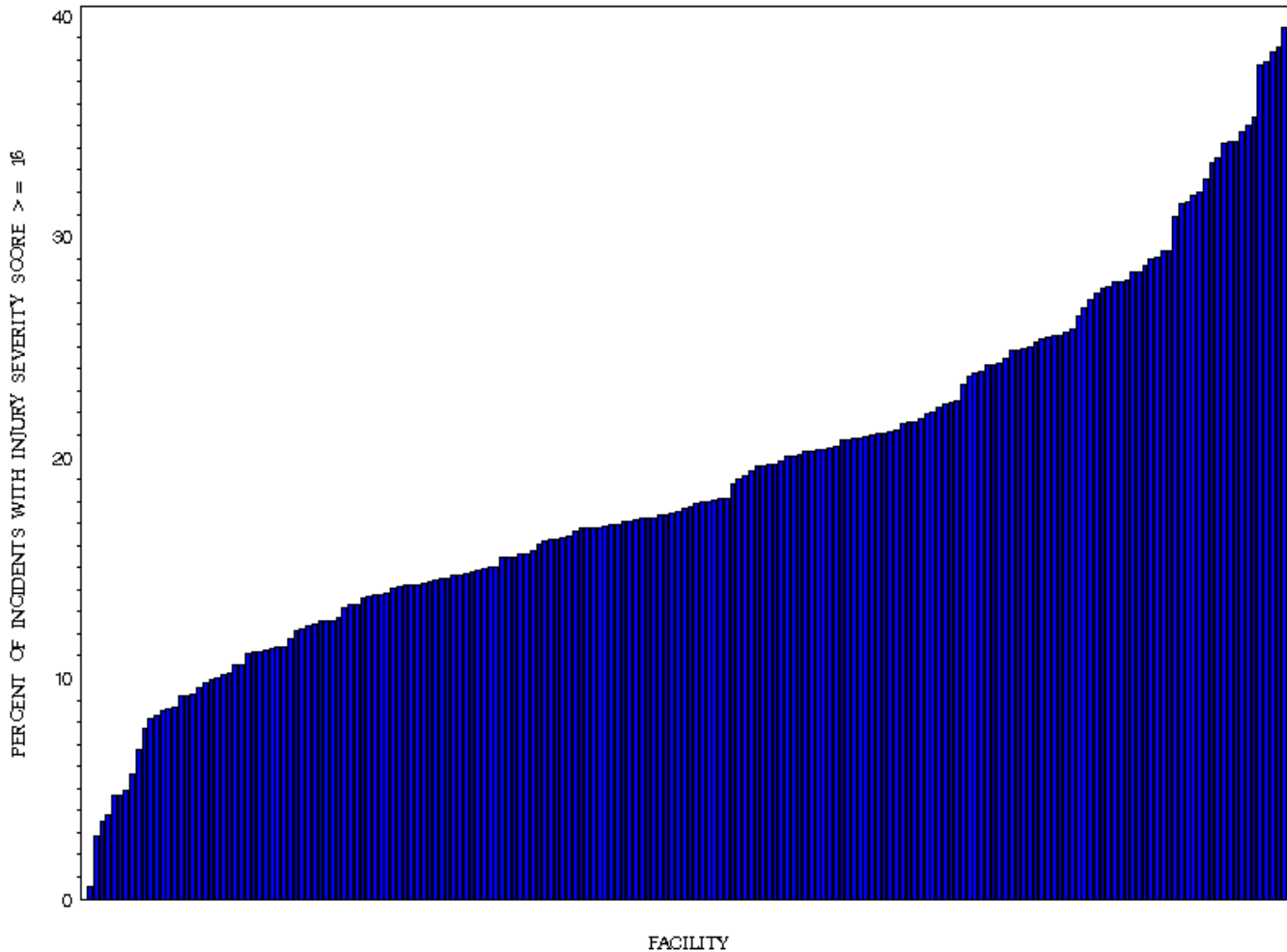
Number of Cases Submitted per Facility for Pediatric-Only Facilities (N=35)



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

Percent of Incidents with Injury Severity Score (ISS) ≥ 16 for Level I Facilities with Pediatric Cases (N=201)



One out of 201 hospitals had no records with ISS ≥ 16 . These facilities are omitted from the graph.



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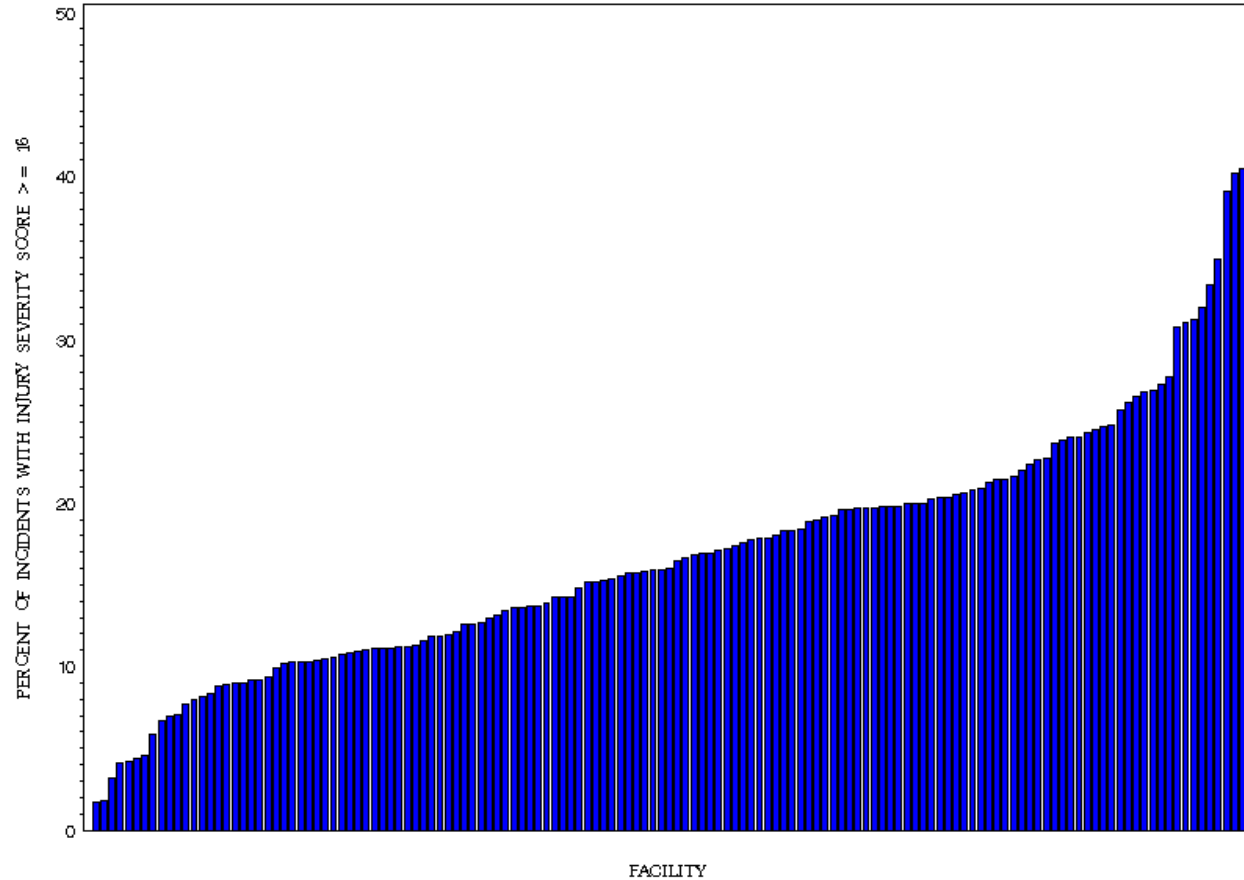
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Injury Severity Score tables are generated using AIS98 Crosswalked ISS. Injury Severity Score definitions can be found in Appendix B.

Figure 51

Percent of Incidents with Injury Severity Score (ISS) ≥ 16 for Level II Facilities with Pediatric Cases (Bedsize ≤ 400 , N=143)

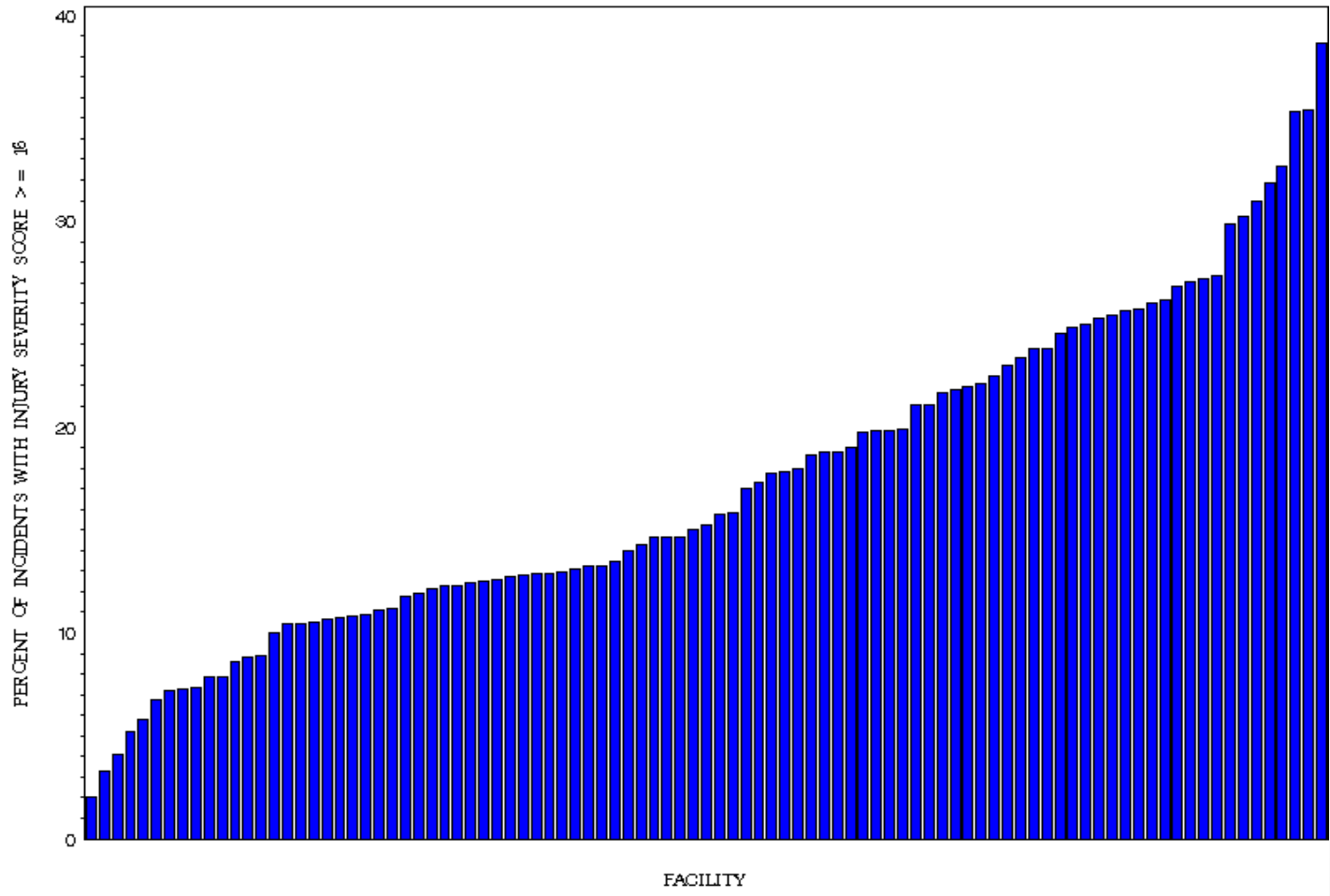


One out of 143 hospitals had no records with ISS ≥ 16 . These facilities are omitted from the graph.



Figure 52

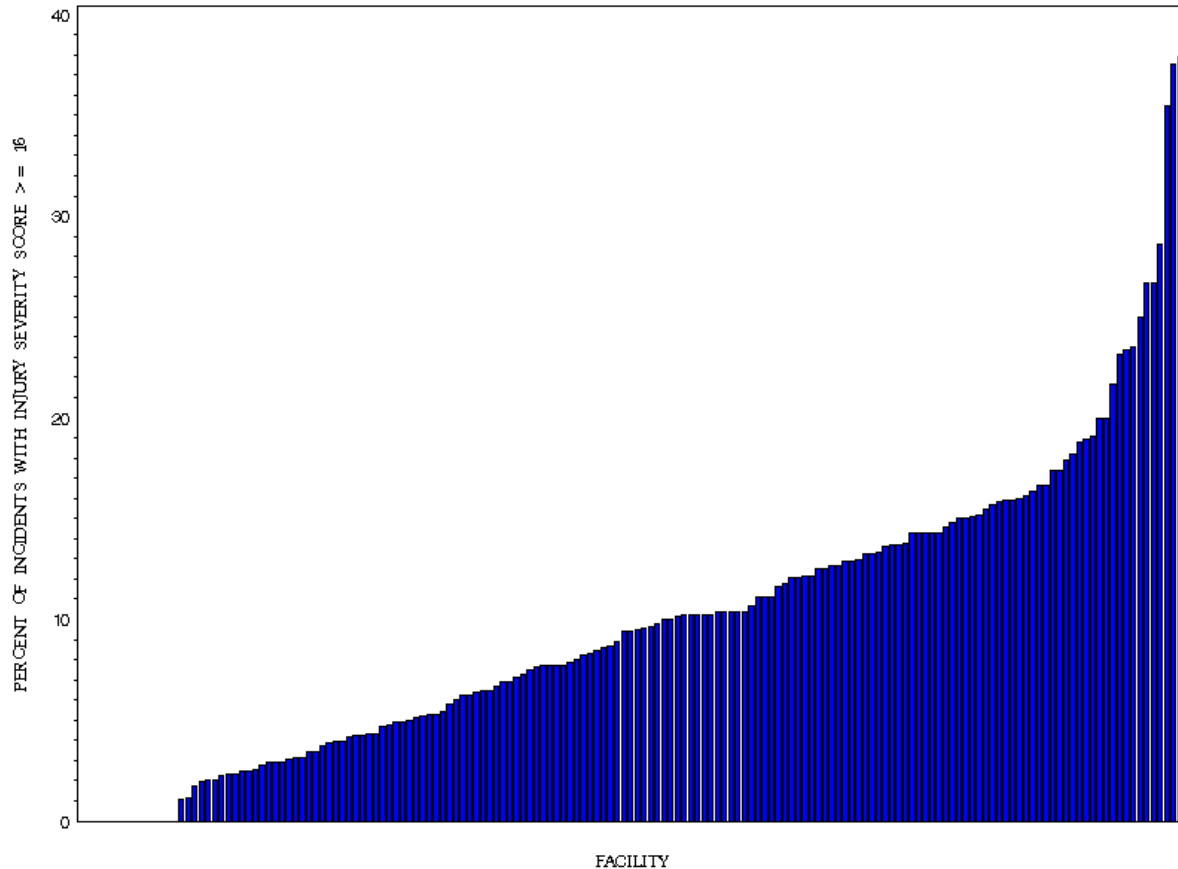
Percent of Incidents with Injury Severity Score (ISS) ≥ 16 for Level II Facilities with Pediatric Cases (Bedsize > 400, N=95)



Injury Severity Score tables are generated using AIS98 Crosswalked ISS. Injury Severity Score definitions can be found in Appendix B.

Figure 53

Percent of Incidents with Injury Severity Score (ISS) ≥ 16 for Level III Facilities with Pediatric Cases (N=166)



Fifteen out of 166 hospitals had no records with ISS ≥ 16 . These facilities are omitted from the graph.

Injury Severity Score tables are generated using AIS98 Crosswalked ISS. Injury Severity Score definitions can be found in Appendix B.



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Figure 54

Percent of Incidents with Injury Severity Score (ISS) ≥ 16 for Level IV, NA, or Other Facilities with Pediatric Cases (N=83)

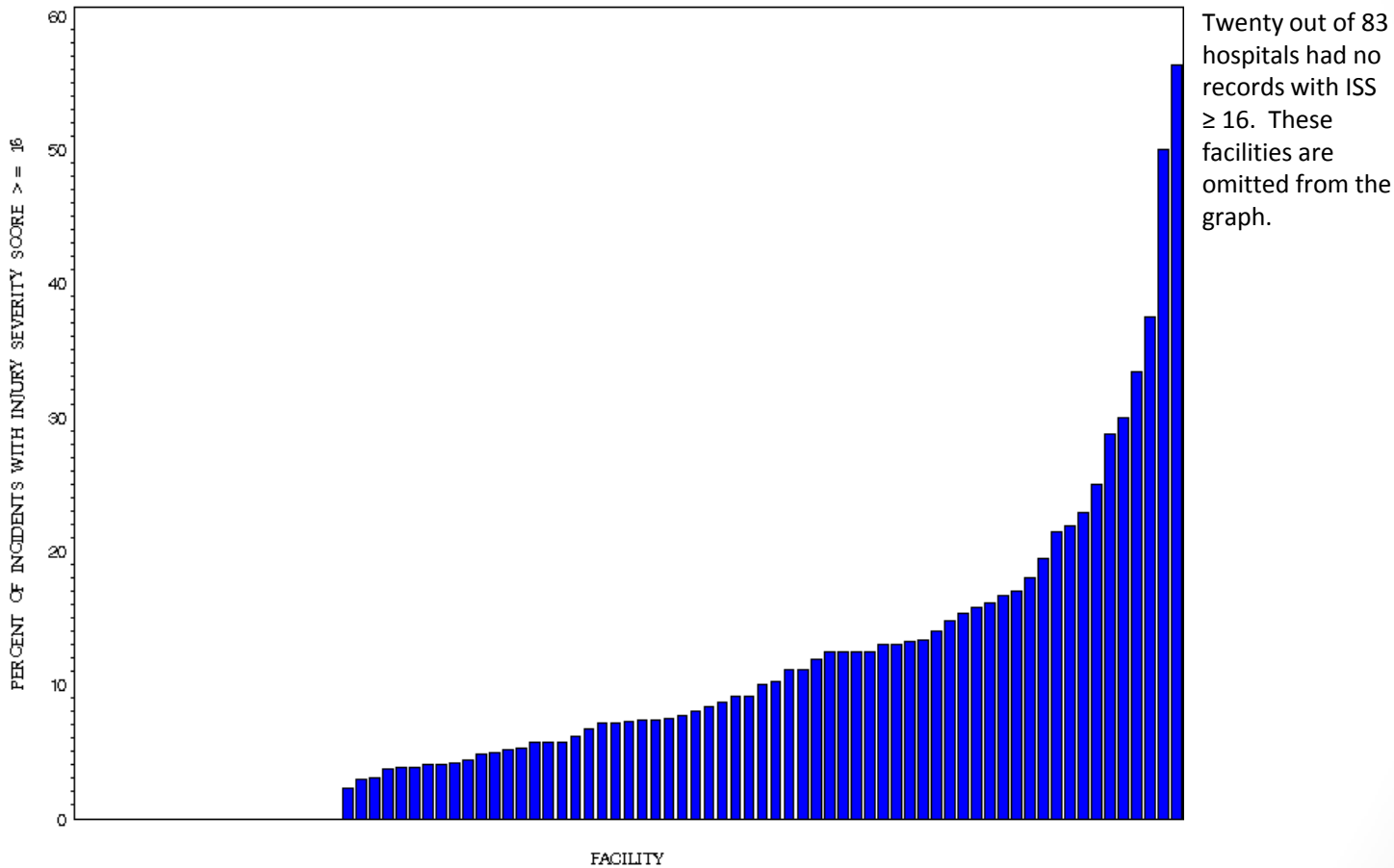
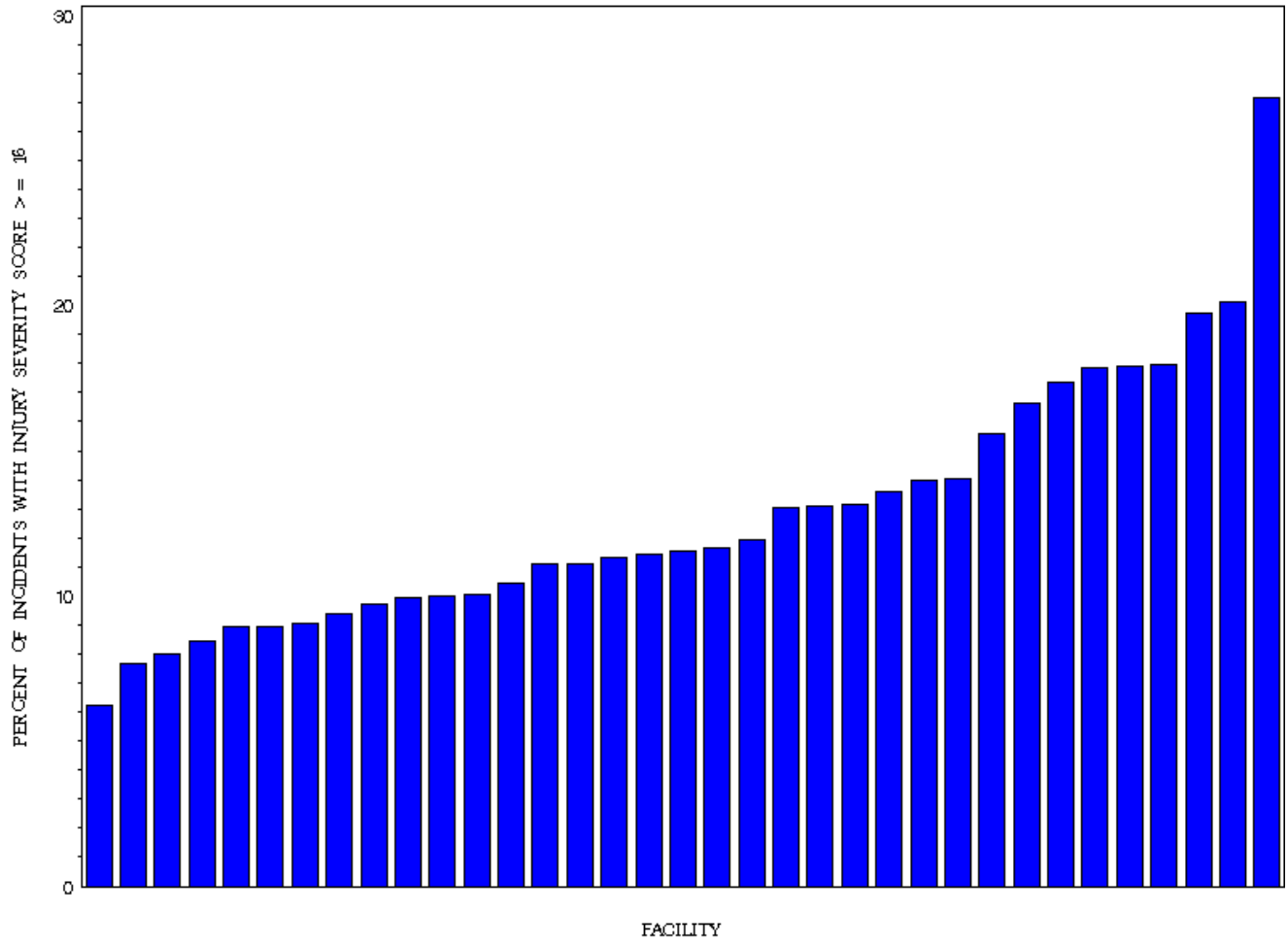


Figure 55

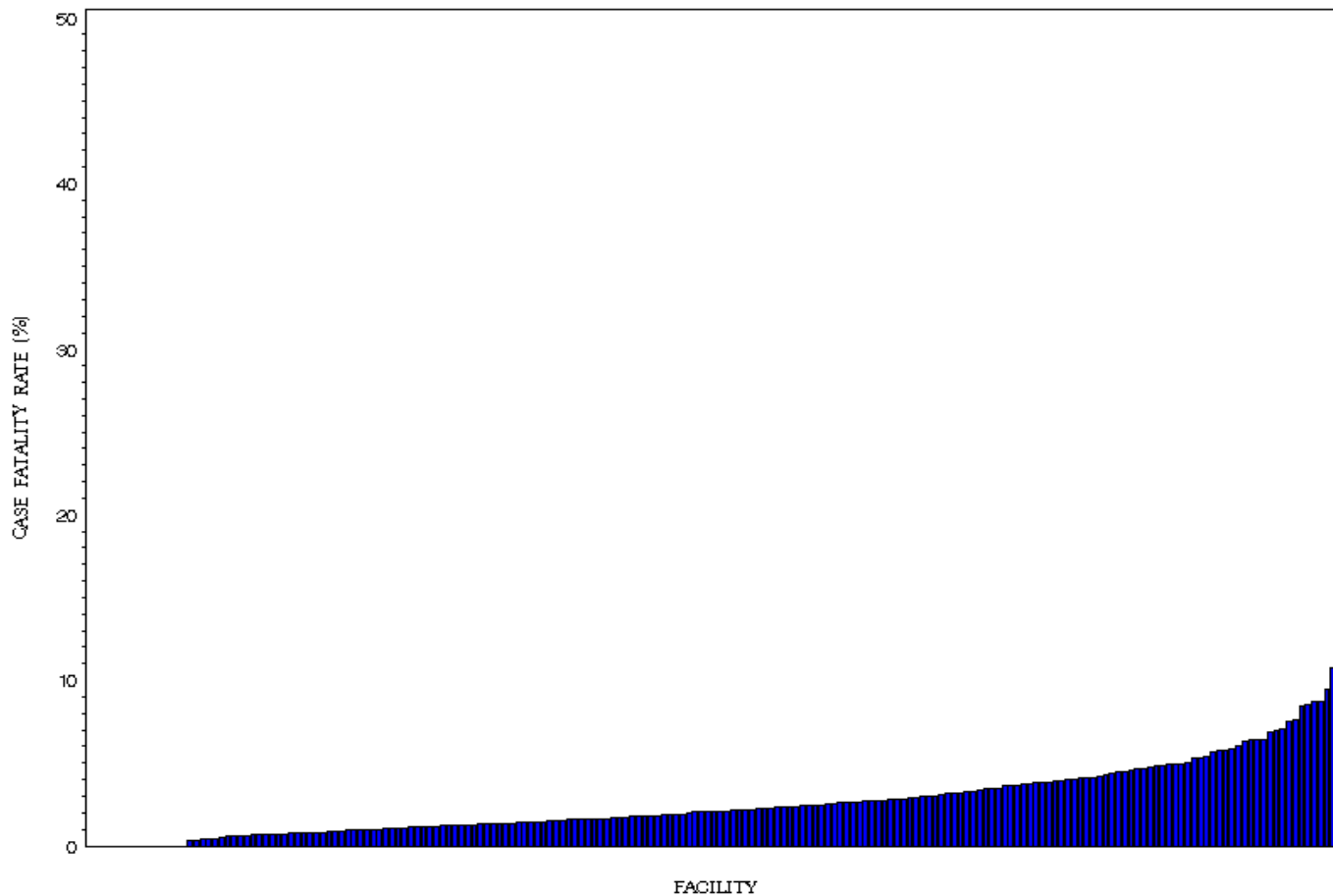
Percent of Incidents with Injury Severity Score (ISS) ≥ 16 for Pediatric-Only Facilities (N=35)



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 56

Case Fatality Rate per Facility for Level I Facilities with Pediatric Cases (N=200)



Sixteen out of 200 hospitals did not have any pediatric patients who died and are not visible in this graph.



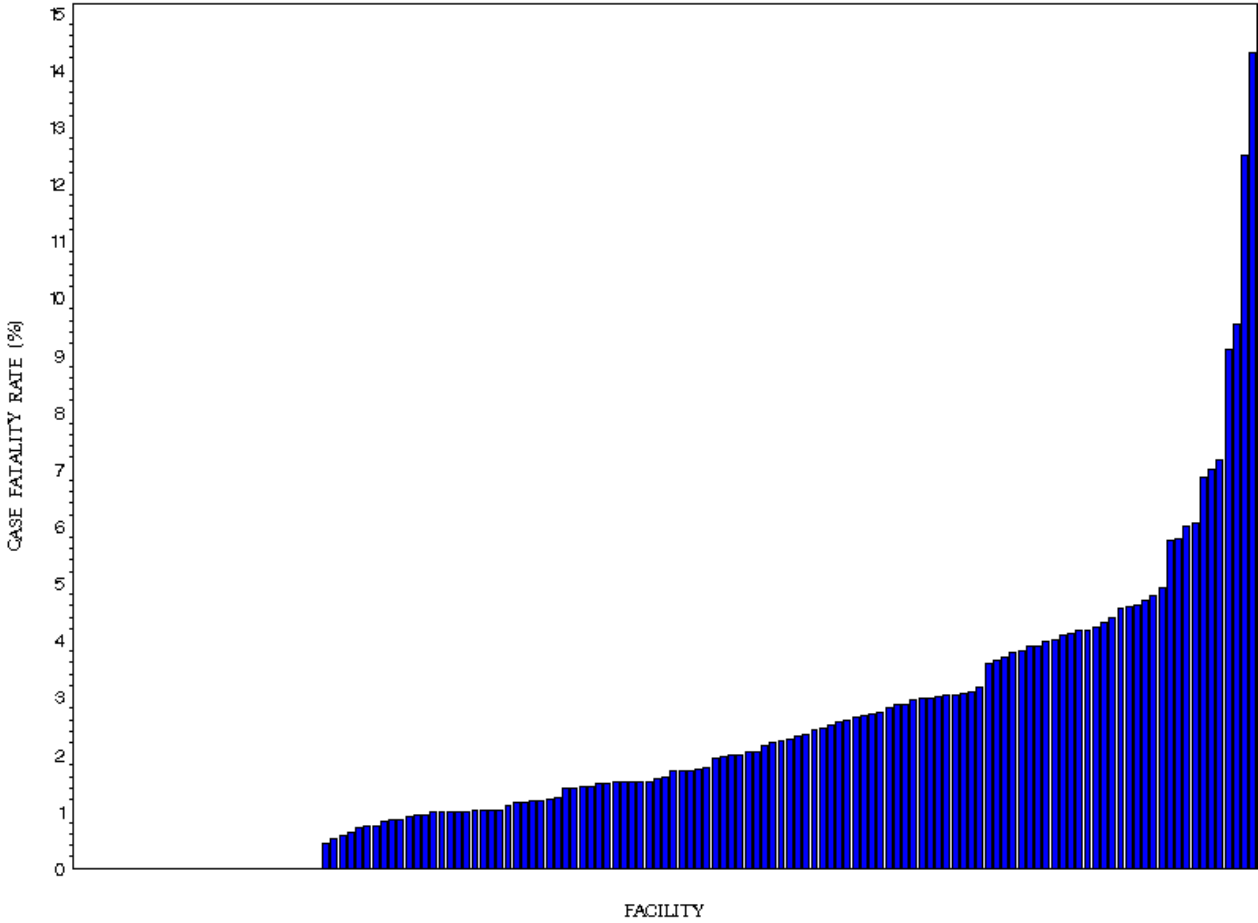
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Figure 57

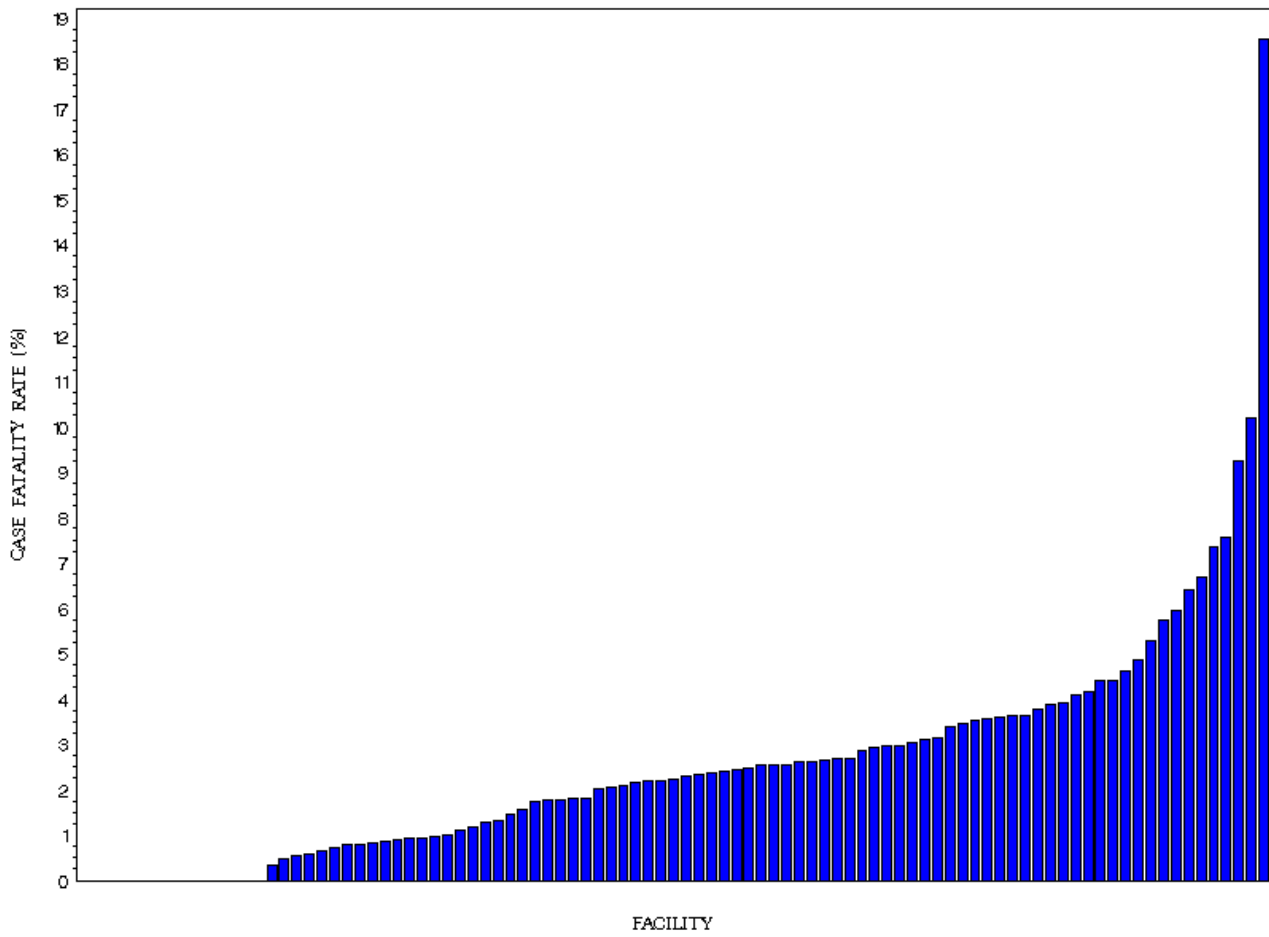
Case Fatality Rate per Facility for Level II Facilities with Pediatric Cases (Bedsize ≤ 400, N=143)



Thirty out of 143 hospitals did not have any pediatric patients who died and are not visible in this graph.

Figure 58

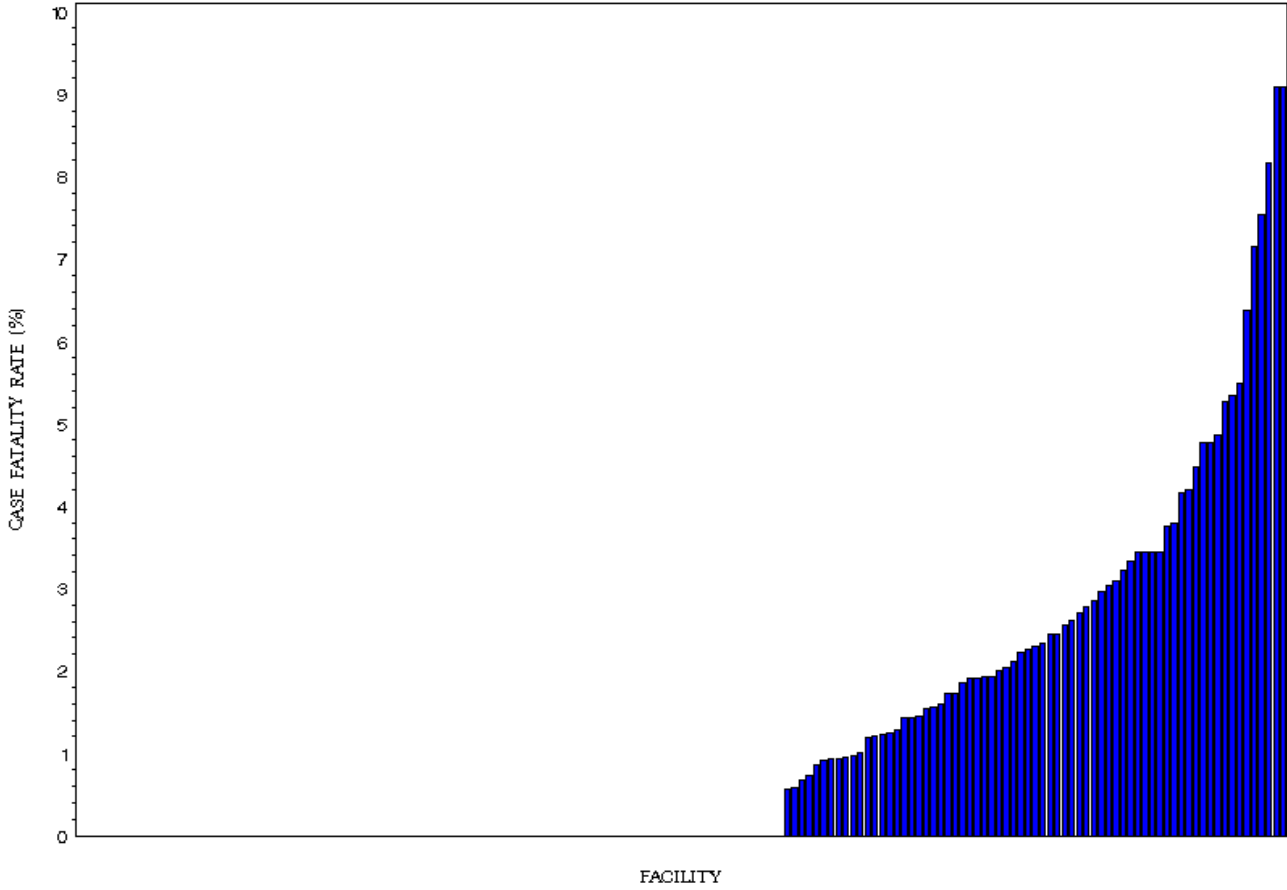
Case Fatality Rate per Facility for Level II Facilities with Pediatric Cases (Bedsize > 400, N=95)



Fifteen out of 95 hospitals did not have any pediatric patients who died and are not visible in this graph.

Figure 59

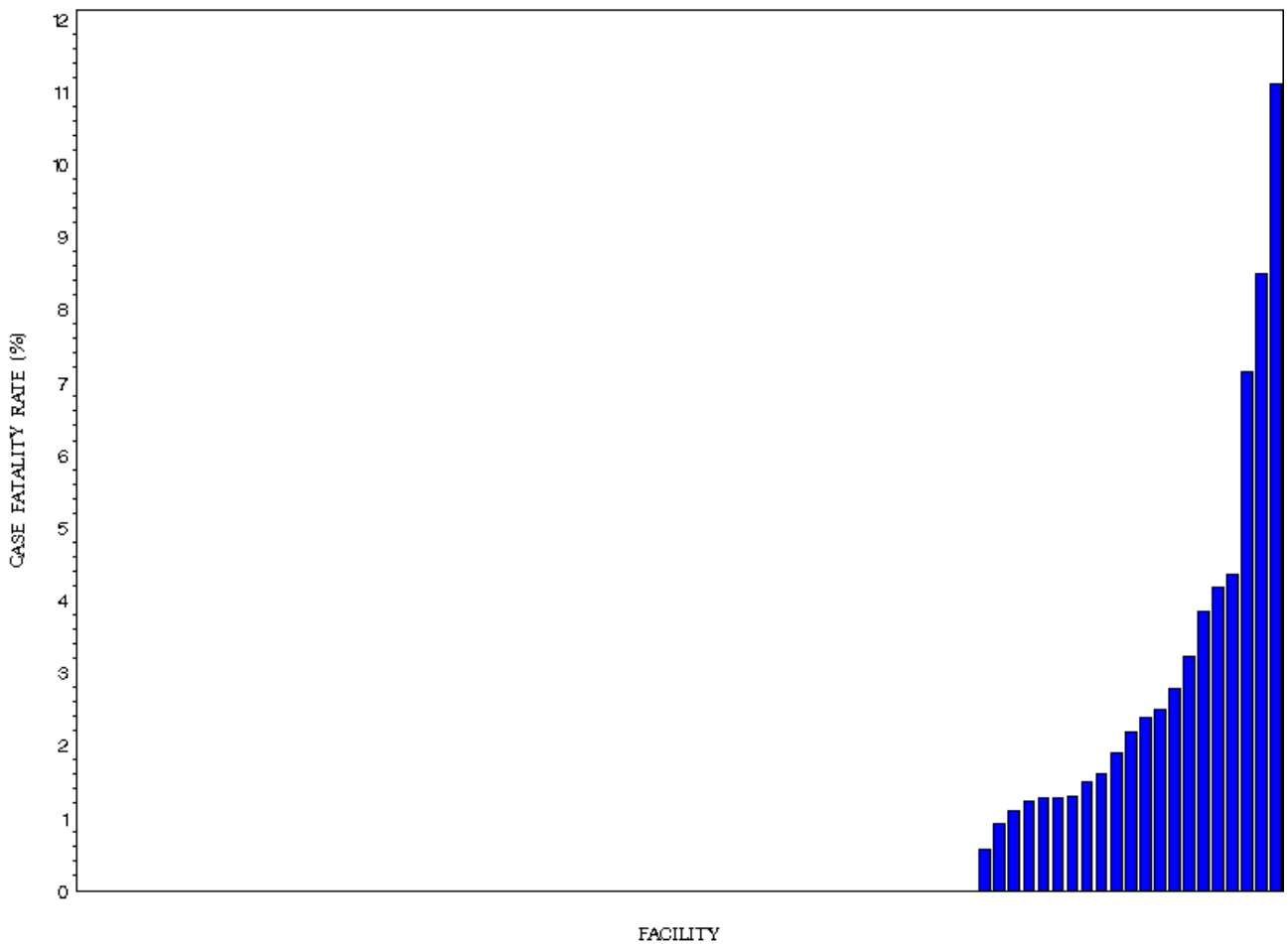
Case Fatality Rate per Facility for Level III Facilities with Pediatric Cases (N=166)



Ninety-seven out of 166 hospitals did not have any pediatric patients who died and are not visible in this graph.

Figure 60

Case Fatality Rate per Facility for Level IV Facilities, NA, or other Facilities with Pediatric Cases (N=83)



Sixty-two out of 83 hospitals did not have any pediatric patients who died and are not visible in this graph.



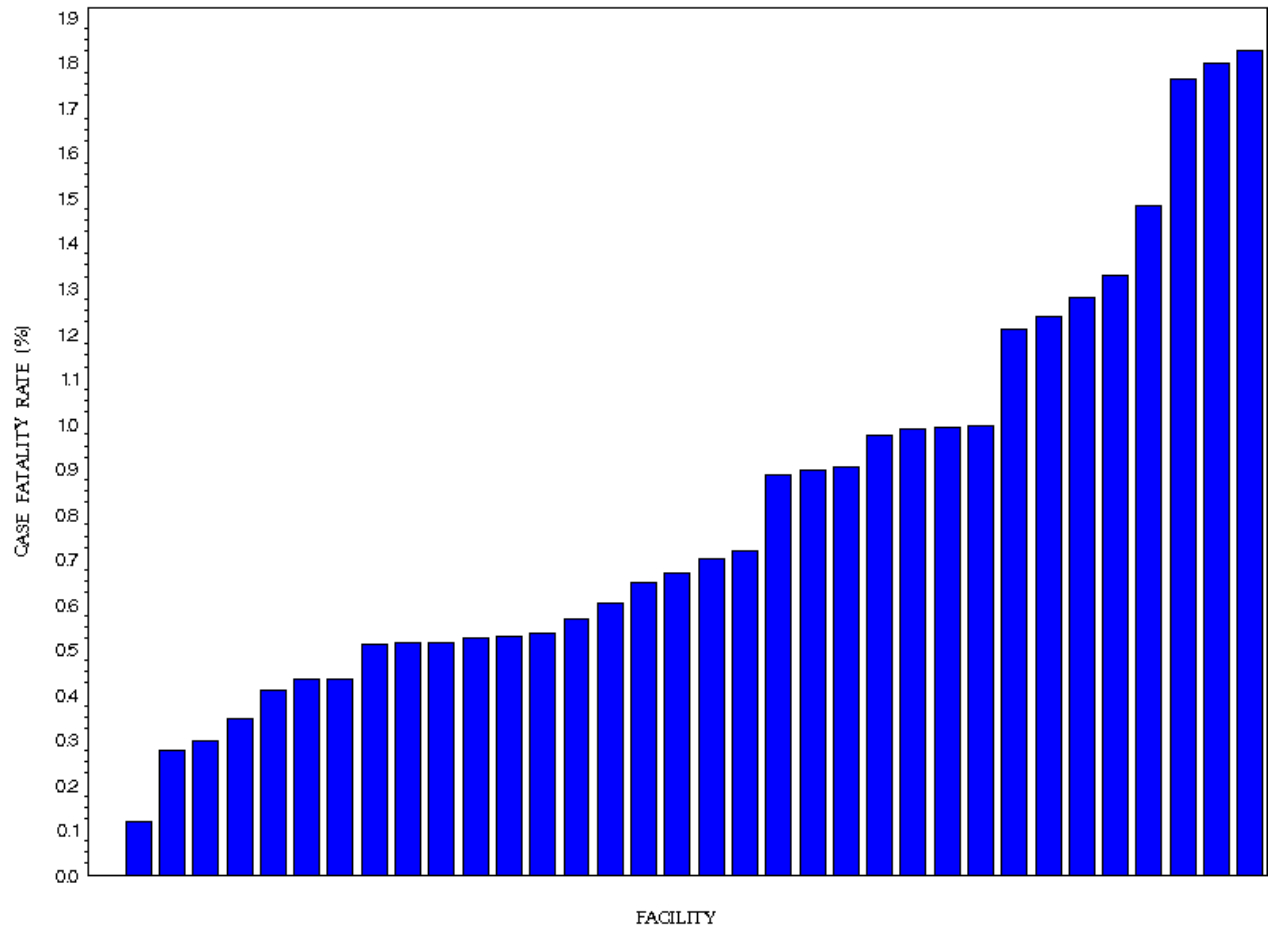
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Figure 61

Case Fatality Rate per Facility for Pediatric-Only Facilities (N=35)



One out of 35 hospitals did not have any pediatric patients who died and are not visible in this graph.

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.

APPENDICES



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APPENDIX A

Definition of a Trauma Patient

Definition of a Trauma Patient Adopted by the 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)



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.



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 ³	E890.0-E899, E924.0-.9	E958.1,.2,.7	E961, E968.0,.3, E979.3	E988.1,.2,.7	
Fire/flame ³	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 ³	E922.0-.3,.8,.9	E955.0-.4	E965.0-4, E979.4	E985.0-.4	E970
Machinery	E919 (.0-.9)				
Motor vehicle traffic ^{2,3}	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)				



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
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 ³	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 ^{3,4}	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 ³	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

¹Includes legal intervention (E970-E978) and operations of war (E990-E999).

²Three 4th-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.

³Codes in bold are for morbidity coding only. For details see Table 2.

⁴E849 (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-CM 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.



Resources

- www.ntdb.org for more information about NTDB
- www.ntdbdatacenter.com to submit data to NTDB
- www.ntdsdictionary.org for information on the data standard



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