# Japan Trauma Data Bank Report 2004-2007

## Japan Trauma Care and Research

The Japanese Association for the Surgery of Trauma (Trauma Registry Committee)

The Japanese Association for Acute Medicine (Committee for Clinical Care Evaluation)

#### Japan Trauma Data Bank Report 2004-2007

Sapporo Medical University Hospital Ohme Municipal General Hospital

Nikko Memorial Hospital Tokyo Women's Medical University Hospital

Sapporo City General Hospital Surugadai Nihon University Hospital

Hachinohe City Hospital Kyorin University Hospital

Kuji Prefectural Hospital Nippon Medical School Tama Nagayama Hospital

Iwate Medical University Hospital Nippon Medical School Hospital

Aizu Central Hospital Organization National Disaster Medical Center

Ohta Nishinouchi Hospital Tokyo Women's Medical University Medical Center East

Tsukuba Medical Center Hospital Tokyo Medical University Hospital

Dokkyo Medical University Hospital International Medical Center of Japan

Gunma University Hospital

Critical Care Center, Saitama Medical University

National Defense Medical College Hospital

Teikyo University Hospital

Musashino Red Cross Hospital

Metropolitan Hiroo Hospital

Koshigaya Hospital, Dokkyo University School Medicine National Hospital Organization Tokyo Medical Center

Kawaguchi Municipal Medical Center Showa General Hospital

Saitama Red Cross Hospital

Yokohama City Minato Red Cross Hospital

Kimitsu Chuou Hospital

Yokosuka General Hospital Uwamachi

Kameda General Hospital Kitasato University Hospital

Chiba Emergency Medical Center Showa University Fujigaoka Hospital
Nippon Medical School Chiba Hokusoh Hospital Saiseikai Yokohama-city East Hospital

Asahi Central Hospital Tokai University Hospital

Funabashi Municipal Medical Center Yokohama City University Medical Center

Metropolitan Bokutoh Hospital Kanto Rosai Hospital

Tokyo Medical and Dental University Hospital
Nihon University Itabashi Hospital
St. Marianna University School of Medicine Hospital

Numazu City Hospital Wakayama Medical University Hospital

Aishinkai Ohsumi Kanoya Hospital Ehime Prefectural Central Hospital

## Figure 1A Names of All Hospitals Submitting Data to the JTDB (N=114, part 1)

#### Japan Trauma Data Bank Report 2004-2007

Toyooka Public Hospital

National Hospital organization Yokohama Medical Center Kansai Rosai Hospital Showa University Northern Yokohama Hospital Public Muraoka Hospital

Toyama University Hospital

Toyama Prefectural Central Hospital Hyogo Emergency Medical Center

Yamanashi Prefectural Central Hospital Kobe University Hospital

Shinshu University Hospital
Saku Central Hospital
Gifu University Hospital
Okayama University Hospital
Okayama University Hospital

JA Gifu Koseren Chunou Hospital

Kawasaki Medical School Hospital

Seirei Mikatahara General Hospital

Chugoku Rosai Hospital

Okazaki City Hospital

Okazaki City Hospital

Yamaguchi University Hospital

Social Insurance Chukyo Hospital

Tokushima Prefectural Miyoshi Hospital

Nagoya Ekiseikai Hospital

Kagawa University Hospital

Aichi Medical University Hospital

St. Maria's Hospital

Osaka City University Hospital

Fukuoka University Hospital

Kansai Medical University Hospital Saiseikai Fukuoka General Hospital

Osaka General Medical Center Kokura Memorial Hospital
Osaka University Hospital Kitakyushu General Hospital

Saiseikai Senri Hospital Saga Prefectural Hospital Koseikan

Kansai Medical University Takii Hospital Nagasaki Hospital Organization Nagasaki Medical Center

Kishiwada Tokushukai Hospital Keiaikai Nagasaki Hospital Kinki University Hospital Urasoe General Hospital

Osaka Mishima Emergency Medical Center Shizuoka Red Cross Hospital

Hanwa Memorial Hospital Toyohashi Municipal Hospital

Osaka Prefectural Senshu Critical Medical Care Center

Kochi Medical Center

Kenwakai-Ohtemachi Hospital

Kyushu University Hospital

Okinawa Prefectural Chubu Hospital

Kitakyushu City Yahata Hospital

Kurume University Hospital

Iizuka Hospital

Ohita University Hospital

Prefectural Miyazaki Hospital

Figure 1B Names of All Hospitals Submitting Data to the JTDB (N=114, part 2)

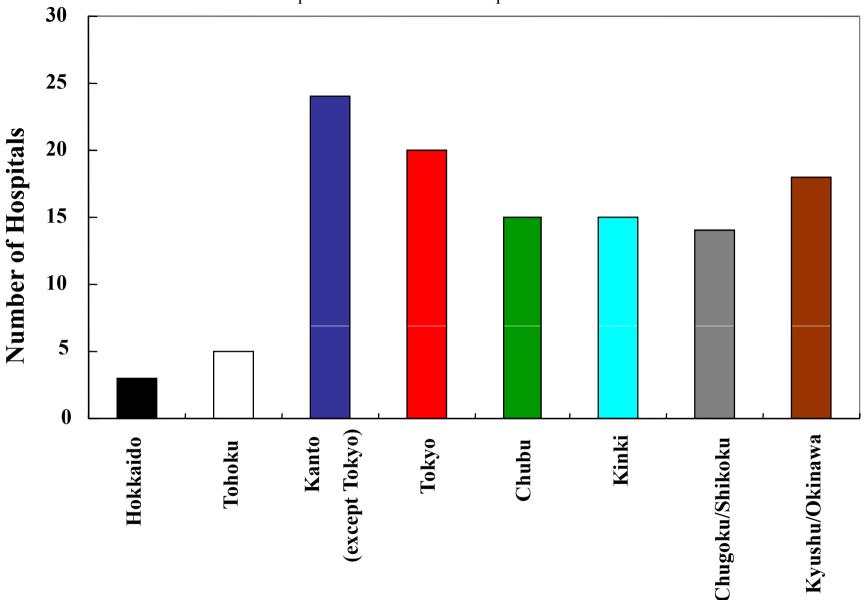


Figure 2 Number of Hospitals Submitting to the JTDB by Region

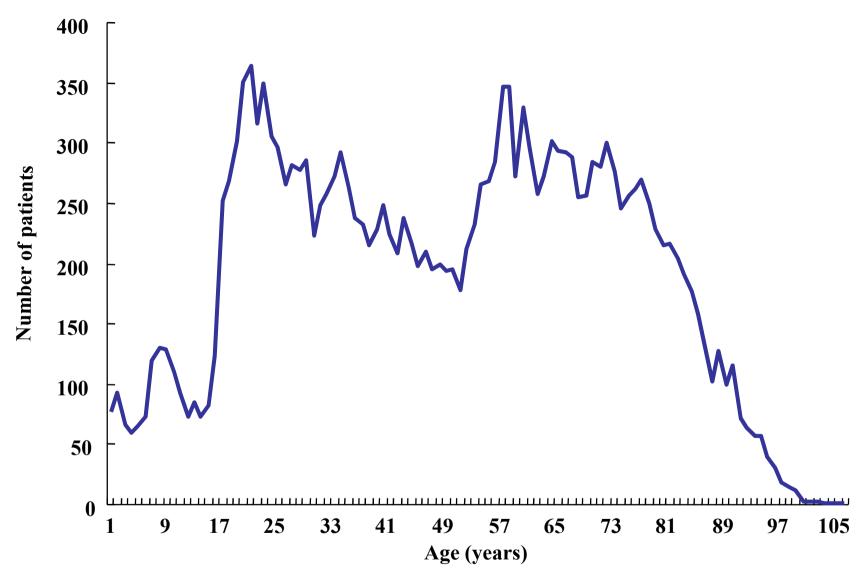


Figure 3 Number of tatients by Age

Two peaks were seen in the 20's and 50's.

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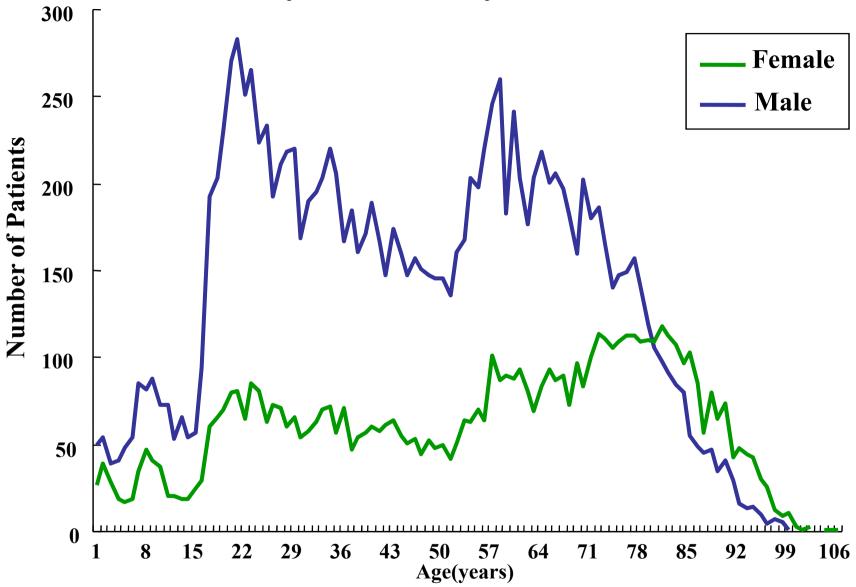


Figure 4 Patients by Age and gender

The peak pattern was the same as in Figure 3 in male patients

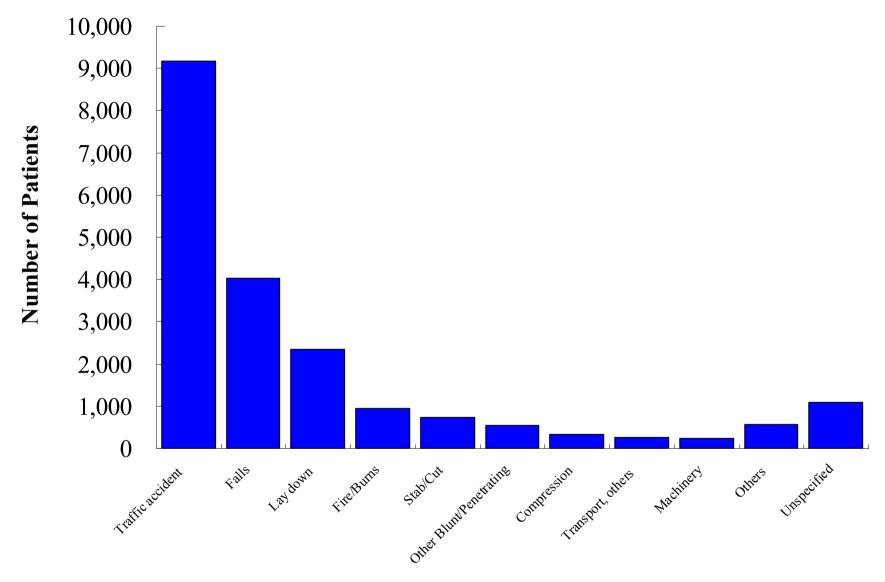


Figure 5 Patients by Mechanism of Injury Traffic accident includes pedestrian victims.

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| Mechanism of injury      | Patients (n) | Patients<br>by mechanism<br>of injury (n) |
|--------------------------|--------------|---|
| Traffic accident         | 9181         | 45.32                                     |
| Falls                    | 4029         | 19.89                                     |
| Lay down                 | 2350         | 11.60                                     |
| Fire/Burns               | 947          | 4.67                                      |
| Stab/Cut                 | 743          | 3.67                                      |
| Other Blunt/Penetrating  | 539          | 2.66                                      |
| Compression              | 328          | 1.62                                      |
| Related to sports        | 288          | 1.42                                      |
| Transport, others        | 261          | 1.29                                      |
| Machinery                | 234          | 1.16                                      |
| Falling object           | 205          | 1.01                                      |
| Impalement injury        | 27           | 0.13                                      |
| Gunshot                  | 18           | 0.09                                      |
| House collapse/Landslide | 12           | 0.06                                      |
| Explosion                | 10           | 0.05                                      |
| Unspecified              | 1085         | 5.36                                      |
| Total                    | 20257        | 100.00                                    |

## Table 5 Patients by Mechanism of Injury

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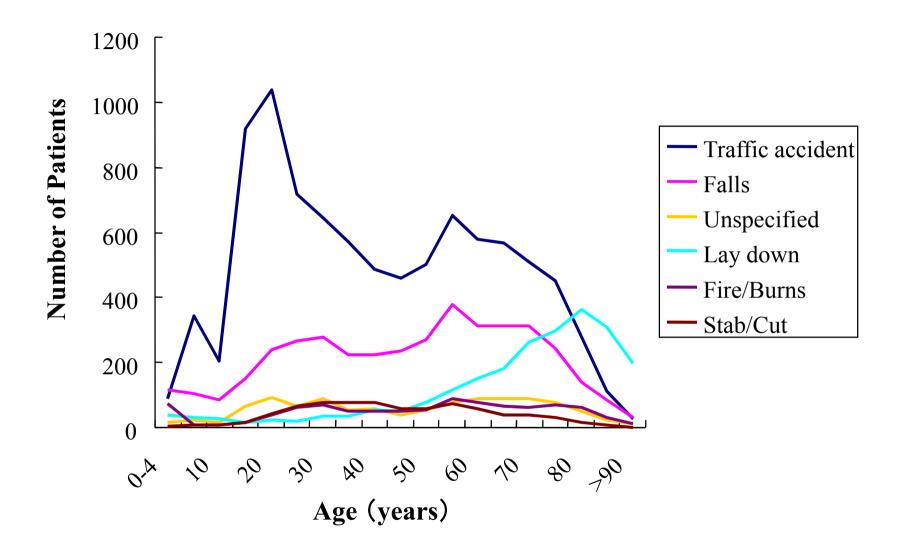


Figure 6 Mechanism of Injury by Age

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| Range of Age (yr) | Traffic accident (n) | % of total range of age (%) | Falls (n) | % of total<br>range of age<br>(%) | Unspecified (n) | % of total<br>range of age<br>(%) | Lay down (n) | % of total<br>range of age<br>(%) | Fire/Burns (n) | % of total range of age (%) | Stab/Cut (n) | % of total<br>range of age<br>(%) |
|-------------------|----------------------|-----------------------------|-----------|-----------------------------------|-----------------|-----------------------------------|--------------|-----------------------------------|----------------|-----------------------------|--------------|-----------------------------------|
| <1                | 89                   | 0.97                        | 114       | 2.83                              | 15              | 1.38                              | 40           | 1.70                              | 72             | 10.64                       | 4            | 0.54                              |
| 1-4               | 343                  | 3.74                        | 103       | 2.56                              | 22              | 2.03                              | 29           | 1.23                              | 6              | 0.89                        | 6            | 0.81                              |
| 5-9               | 205                  | 2.23                        | 84        | 2.08                              | 15              | 1.38                              | 26           | 1.11                              | 6              | 0.89                        | 6            | 0.81                              |
| 10-14             | 917                  | 9.99                        | 150       | 3.72                              | 64              | 5.90                              | 16           | 0.68                              | 17             | 2.51                        | 17           | 2.29                              |
| 15-19             | 1039                 | 11.32                       | 238       | 5.91                              | 93              | 8.57                              | 22           | 0.94                              | 38             | 5.61                        | 44           | 5.92                              |
| 20-24             | 718                  | 7.82                        | 266       | 6.60                              | 64              | 5.90                              | 20           | 0.85                              | 60             | 8.86                        | 64           | 8.61                              |
| 25-34             | 646                  | 7.04                        | 277       | 6.88                              | 88              | 8.11                              | 33           | 1.40                              | 68             | 10.04                       | 79           | 10.63                             |
| 35-39             | 572                  | 6.23                        | 225       | 5.58                              | 53              | 4.88                              | 33           | 1.40                              | 52             | 7.68                        | 77           | 10.36                             |
| 40-44             | 487                  | 5.30                        | 223       | 5.53                              | 56              | 5.16                              | 55           | 2.34                              | 52             | 7.68                        | 76           | 10.23                             |
| 45-49             | 458                  | 4.99                        | 235       | 5.83                              | 39              | 3.59                              | 52           | 2.21                              | 49             | 7.24                        | 56           | 7.54                              |
| 50-54             | 503                  | 5.48                        | 269       | 6.68                              | 53              | 4.88                              | 77           | 3.28                              | 55             | 8.12                        | 56           | 7.54                              |
| 55-59             | 654                  | 7.12                        | 379       | 9.41                              | 79              | 7.28                              | 114          | 4.85                              | 90             | 13.29                       | 72           | 9.69                              |
| 60-64             | 577                  | 6.28                        | 314       | 7.79                              | 89              | 8.20                              | 151          | 6.43                              | 77             | 11.37                       | 56           | 7.54                              |
| 65-69             | 568                  | 6.19                        | 314       | 7.79                              | 90              | 8.29                              | 182          | 7.74                              | 66             | 9.75                        | 39           | 5.25                              |
| 70-74             | 511                  | 5.57                        | 312       | 7.74                              | 88              | 8.11                              | 264          | 11.23                             | 61             | 9.01                        | 37           | 4.98                              |
| 75-79             | 450                  | 4.90                        | 244       | 6.06                              | 76              | 7.00                              | 299          | 12.72                             | 71             | 10.49                       | 29           | 3.90                              |
| 80-84             | 276                  | 3.01                        | 140       | 3.47                              | 49              | 4.52                              | 362          | 15.40                             | 60             | 8.86                        | 17           | 2.29                              |
| 85-89             | 112                  | 1.22                        | 85        | 2.11                              | 25              | 2.30                              | 309          | 13.15                             | 30             | 4.43                        | 6            | 0.81                              |
| 90-94             | 28                   | 0.30                        | 30        | 0.74                              | 13              | 1.20                              | 195          | 8.30                              | 13             | 1.92                        | 1            | 0.13                              |
| 95-99             | 7                    | 0.08                        | 7         | 0.17                              | 1               | 0.09                              | 59           | 2.51                              | 2              | 0.30                        | 1            | 0.13                              |
| Unspecified       | 21                   | 0.23                        | 20        | 0.50                              | 13              | 1.20                              | 12           | 0.51                              | 2              | 0.30                        | 0            | 0.00                              |
| Total             | 9181                 |                             | 4029      |                                   | 1085            |                                   | 2350         |                                   | 947            |                             | 743          | <del> </del>                      |

Table 6 Mechanism of Injury by Range of Age

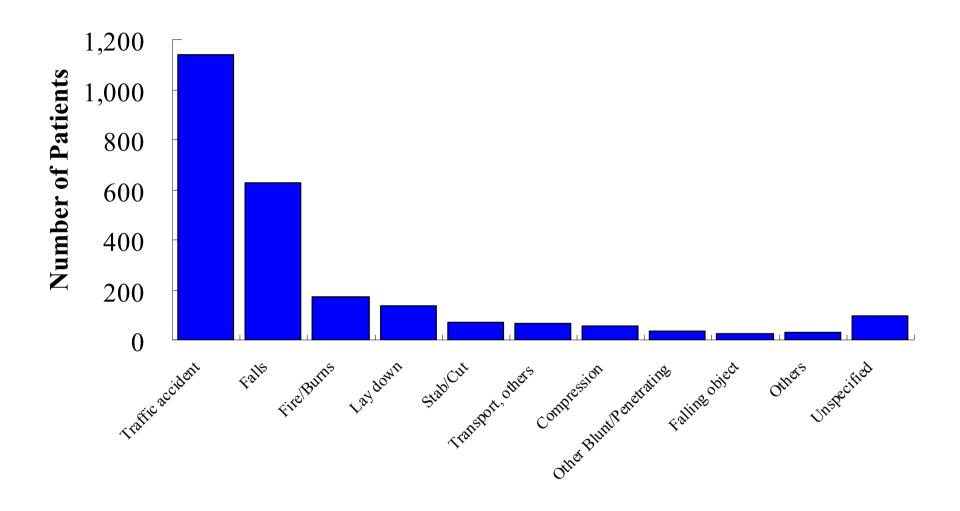


Figure 7 Deaths by Mechanism of Injury

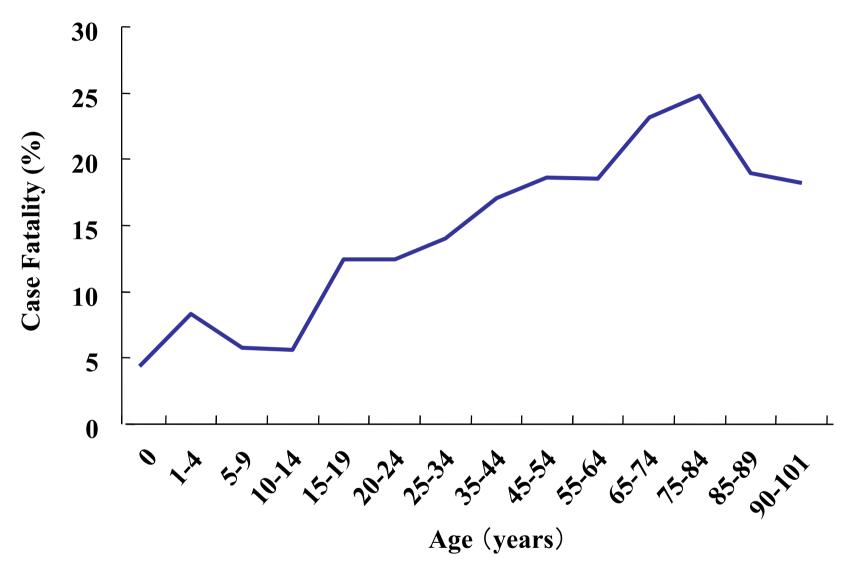


Figure 8 Case Fatality by Age

| Age    | Number of Patients | Number of Deaths | Case Fatality (%) |
|--------|--------------------|------------------|-------------------|
| 0      | 46                 | 2                | 4.35              |
| 1-4    | 180                | 15               | 8.33              |
| 5-9    | 327                | 19               | 5.81              |
| 10-14  | 232                | 13               | 5.60              |
| 15-19  | 885                | 110              | 12.43             |
| 20-24  | 1162               | 145              | 12.48             |
| 25-34  | 1892               | 265              | 14.01             |
| 35-44  | 1540               | 263              | 17.08             |
| 45-54  | 1493               | 278              | 18.62             |
| 55-64  | 2073               | 385              | 18.57             |
| 65-74  | 1828               | 424              | 23.19             |
| 75-84  | 1539               | 382              | 24.82             |
| 85-89  | 433                | 82               | 18.94             |
| 90-101 | 269                | 49               | 18.22             |

**Table 8 Case Fatality by Age** 

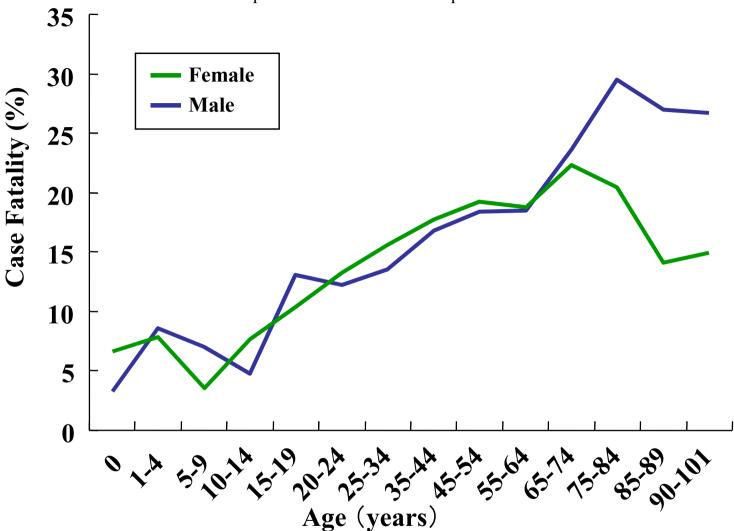


Figure 9 Case Fatality by Age

Case fatality at each age category (Case Fatality = number of deaths divided by the number of patients at each category  $\times$  100 by age).

| Age    | Number of<br>Patients<br>(Male) | Number of<br>Deaths | Case<br>Fatality<br>(%) | Number of<br>Patients<br>(Female) | Number of<br>Deaths | Case<br>Fatality<br>(%) |
|--------|---------------------------------|---------------------|-------------------------|-----------------------------------|---------------------|-------------------------|
| 0      | 31                              | 1                   | 3.23                    | 15                                | 1                   | 6.67                    |
| 1-4    | 116                             | 10                  | 8.62                    | 64                                | 5                   | 7.81                    |
| 5-9    | 213                             | 15                  | 7.04                    | 114                               | 4                   | 3.51                    |
| 10-14  | 167                             | 8                   | 4.79                    | 65                                | 5                   | 7.69                    |
| 15-19  | 673                             | 88                  | 13.08                   | 212                               | 22                  | 10.38                   |
| 20-24  | 905                             | 111                 | 12.27                   | 257                               | 34                  | 13.23                   |
| 25-34  | 1444                            | 195                 | 13.50                   | 448                               | 70                  | 15.63                   |
| 35-44  | 1134                            | 191                 | 16.84                   | 406                               | 72                  | 17.73                   |
| 45-54  | 1123                            | 207                 | 18.43                   | 370                               | 71                  | 19.19                   |
| 55-64  | 1476                            | 273                 | 18.50                   | 597                               | 112                 | 18.76                   |
| 65-74  | 1188                            | 281                 | 23.65                   | 640                               | 143                 | 22.34                   |
| 75-84  | 750                             | 221                 | 29.47                   | 789                               | 161                 | 20.41                   |
| 85-89  | 163                             | 44                  | 26.99                   | 270                               | 38                  | 14.07                   |
| 90-101 | 75                              | 20                  | 26.67                   | 194                               | 29                  | 14.95                   |

Table 9 Case Fatality of Age

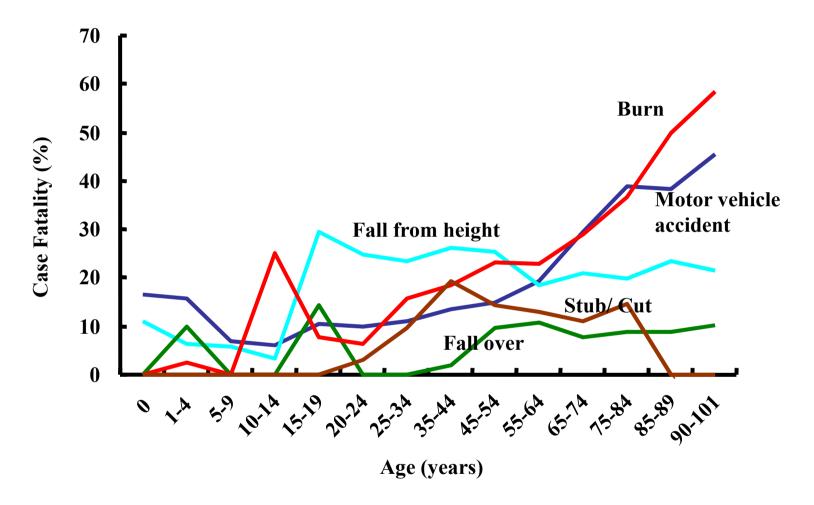


Figure 10 Case Fatality by Injury Mechanism and Age Case fatality due to motor vehicle accidents and burns increased with age.

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| Age    | Mofor vehicle<br>accident;<br>Number of<br>Patients | Motor vehicle<br>accident ;<br>Number of<br>Deaths | Motor vehicle<br>accident ; Case<br>Fatality (%) | Fall from<br>height;<br>Number of<br>Patients | Fall from<br>height;<br>Number of<br>Deaths | Fall from<br>height ; Case<br>Fatality (%) | Fall over ;<br>Number of<br>Patients | Fall over ;<br>Number of<br>Deaths | Fall over ;<br>Case<br>Fatality (%) |
|--------|---|--|--|---|---|--|--------------------------------------|------------------------------------|-------------------------------------|
| 0      | 6   | 1  | 16.7   | 9   | 1   | 11.1                                       | 10                                   | 0                                  | 0.0                                 |
| 1-4    | 51  | 8  | 15.7   | 64  | 4   | 6.3  | 10                                   | 1                                  | 10.0                                |
| 5-9    | 231   | 16   | 6.9  | 70  | 4   | 5.7  | 11                                   | 0                                  | 0.0                                 |
| 10-14  | 133   | 8  | 6.0  | 60  | 2   | 3.3  | 15                                   | 0                                  | 0.0                                 |
| 15-19  | 666   | 70   | 10.5   | 95  | 28  | 29.5                                       | 7                                    | 1                                  | 14.3                                |
| 20-24  | 772   | 76   | 9.8  | 177   | 44  | 24.9                                       | 13                                   | 0                                  | 0.0                                 |
| 25-34  | 999   | 111  | 11.1   | 419   | 98  | 23.4                                       | 29                                   | 0                                  | 0.0                                 |
| 35-44  | 763   | 102  | 13.4   | 309   | 81  | 26.2                                       | 55                                   | 1                                  | 1.8                                 |
| 45-54  | 687   | 102  | 14.8   | 373   | 95  | 25.5                                       | 84                                   | 8                                  | 9.5                                 |
| 55-64  | 903   | 175  | 19.4   | 472   | 87  | 18.4                                       | 175                                  | 19                                 | 10.9                                |
| 65-74  | 774   | 228  | 29.5   | 442   | 93  | 21.0                                       | 307                                  | 24                                 | 7.8                                 |
| 75-84  | 536   | 208  | 38.8   | 271   | 54  | 19.9                                       | 483                                  | 43                                 | 8.9                                 |
| 85-89  | 81  | 31   | 38.3   | 64  | 15  | 23.4                                       | 240                                  | 21                                 | 8.8                                 |
| 90-101 | 33  | 15   | 45.5   | 28  | 6   | 21.4                                       | 194                                  | 20                                 | 10.3                                |

| Age    | Burn ;<br>Number of<br>Patients | Burn ;<br>Number of<br>Deaths | Burn ; Case<br>Fatality (%) | Stab / Cut ;<br>Number of<br>Patients | Stab / Cut;<br>Number of<br>Deaths | Stab / Cut ;<br>Case Fatality<br>(%) |
|--------|---------------------------------|-------------------------------|-----------------------------|---------------------------------------|------------------------------------|--------------------------------------|
| 0      | 15                              | 0                             | 0.0                         | 0                                     | 0                                  | 0.0                                  |
| 1-4    | 39                              | 1                             | 2.6                         | 3                                     | 0                                  | 0.0                                  |
| 5-9    | 4                               | 0                             | 0.0                         | 3                                     | 0                                  | 0.0                                  |
| 10-14  | 4                               | 1                             | 25.0                        | 2                                     | 0                                  | 0.0                                  |
| 15-19  | 13                              | 1                             | 7.7                         | 13                                    | 0                                  | 0.0                                  |
| 20-24  | 31                              | 2                             | 6.5                         | 33                                    | 1                                  | 3.0                                  |
| 25-34  | 108                             | 17                            | 15.7                        | 104                                   | 10                                 | 9.6                                  |
| 35-44  | 81                              | 15                            | 18.5                        | 109                                   | 21                                 | 19.3                                 |
| 45-54  | 86                              | 20                            | 23.3                        | 84                                    | 12                                 | 14.3                                 |
| 55-64  | 135                             | 31                            | 23.0                        | 100                                   | 13                                 | 13.0                                 |
| 65-74  | 100                             | 29                            | 29.0                        | 54                                    | 6                                  | 11.1                                 |
| 75-84  | 98                              | 36                            | 36.7                        | 41                                    | 6                                  | 14.6                                 |
| 85-89  | 26                              | 13                            | 50.0                        | 6                                     | 0                                  | 0.0                                  |
| 90-101 | 12                              | 7                             | 58.3                        | 2                                     | 0                                  | 0.0                                  |

Table 10 Case Fatality by Injury Mechanism and Age

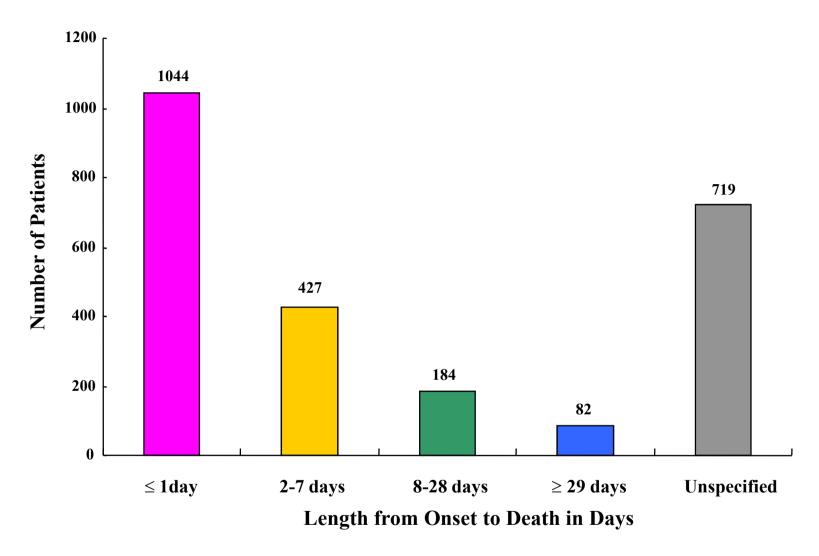


Figure 11A Proportional Distribution of Length from Onset to Fatality The category within 1 day after onset includes CPAOA patients. Total N=2,456

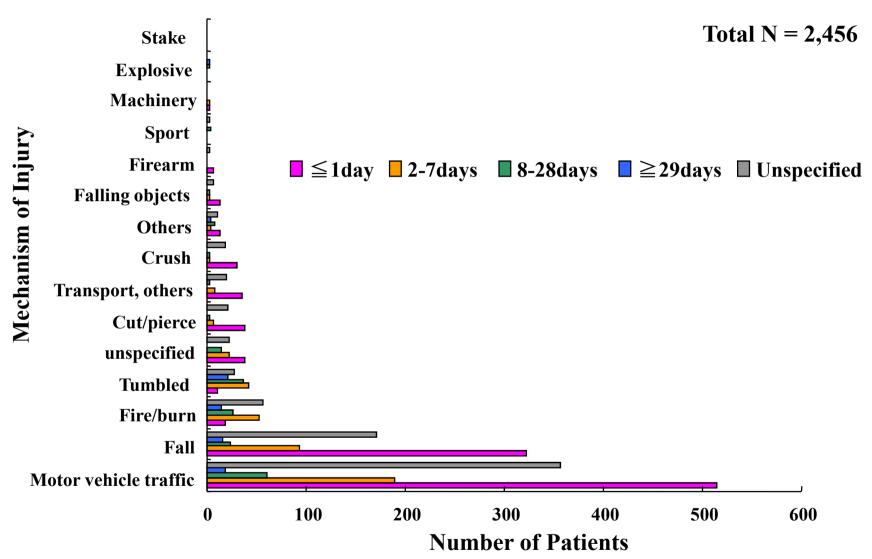


Figure 11B Proportional Distribution of Length from Onset to Fatality, Grouped by Mechanism of Injury

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|                  | Motor vehicle traffic | Fall | Fire / burn | Tumbled | unspecified ( | Cut / pierce | Transport, others | Crush |
|------------------|-----------------------|------|-------------|---------|---------------|--------------|-------------------|-------|
| within 1 day     | 514                   | 322  | 18          | 11      | 38            | 38           | 35                | 30    |
| <b>2-7 days</b>  | 190                   | 94   | 53          | 42      | 22            | 6            | 8                 | 2     |
| 8-28 days        | 61                    | 24   | 26          | 37      | 14            | 3            | 0                 | 2     |
| 29 days <b>≦</b> | 18                    | 16   | 14          | 21      | 1             | 1            | 2                 | 1     |
| unspecified      | 357                   | 171  | 57          | 28      | 23            | 21           | 20                | 19    |

|                  | others | Falling objects | Firearm | Sport | Machinery | Explosive | Stake | total |
|------------------|--------|-----------------|---------|-------|-----------|-----------|-------|-------|
| Within 1 day     | 13     | 13              | 7       | 1     | 3         | 1         | 0     | 1,044 |
| <b>2-7 days</b>  | 4      | 2               | 1       | 1     | 2         | 0         | 0     | 427   |
| 8-28 days        | 8      | 3               | 0       | 4     | 0         | 2         | 0     | 184   |
| 29 days <b>≦</b> | 4      | 1               | 0       | 1     | 0         | 2         | 0     | 82    |
| unspecified      | 10     | 7               | 2       | 2     | 1         | 1         | 0     | 719   |

**Table 11B Proportional Distribution of Length from Onset to Fatality, Grouped by Mechanism of Injury** 

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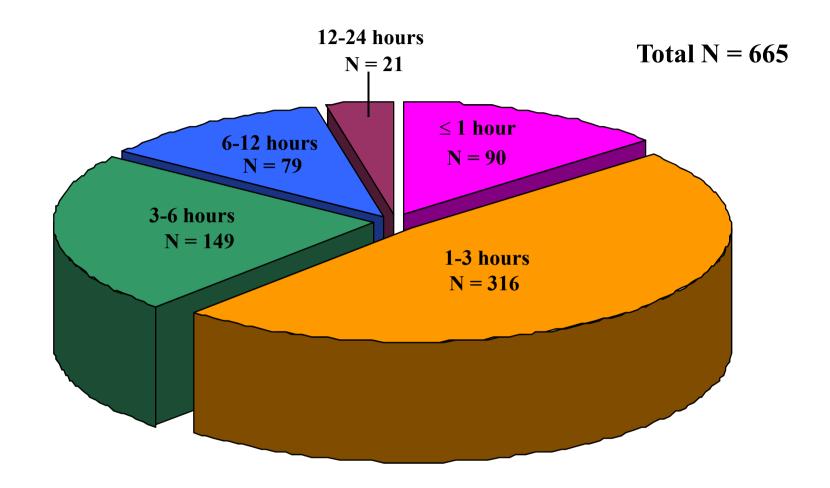


Figure 11C Proportional Distribution of Length from Onset to Fatality within 24 hours

Total N = 665 (Of the 1,044 cases in Figure 11A, 665 cases were valid.)

Total N = 548

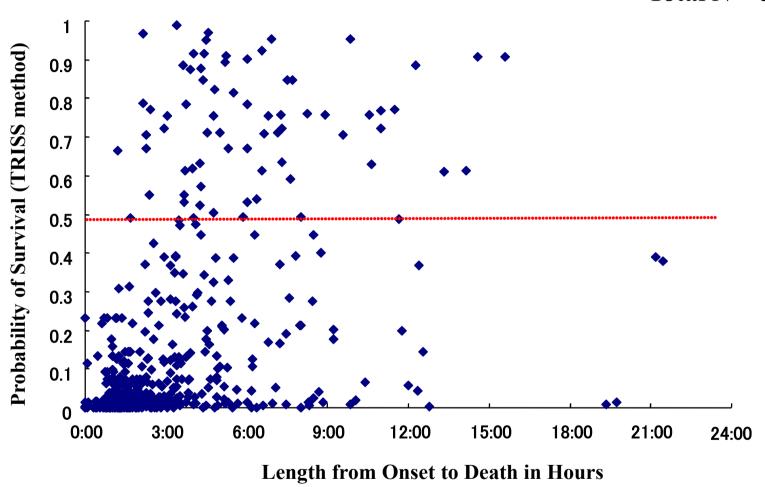


Figure 11D Probability of Survival and Length from Onset to Death in Hours This figure includes trauma-induced CPAOA cases.

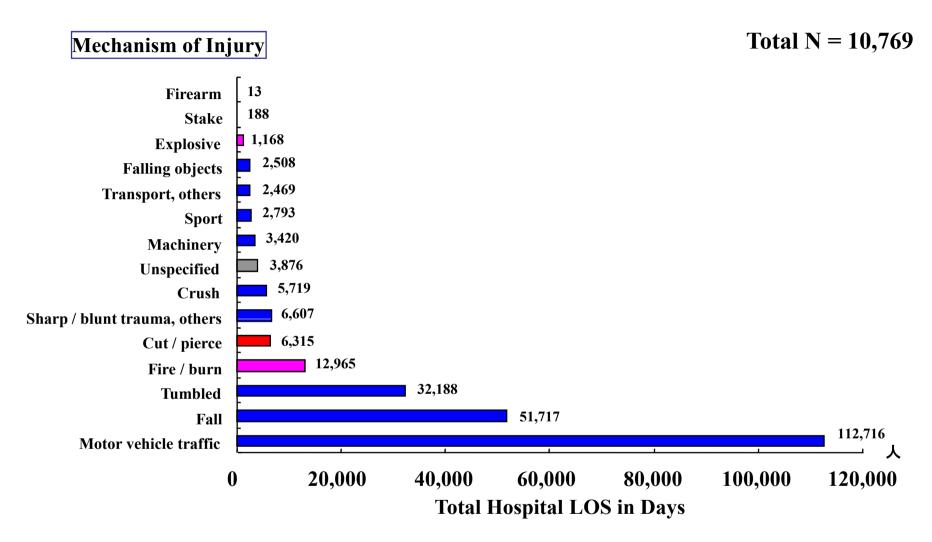


Figure 12 Total hospital LOS by Mechanism of Injury Proportional distribution of total hospital length of stay, grouped by mechanism. Total number of patients are 10,769. Total hospital length of stay of all patients are 244,662 days.

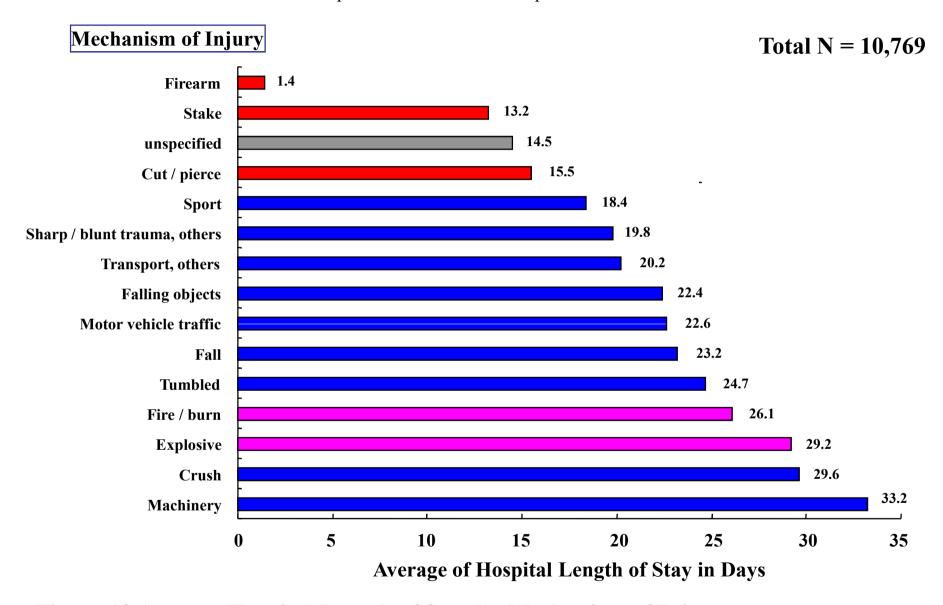


Figure 13 Average Hospital Length of Stay by Mechanism of Injury

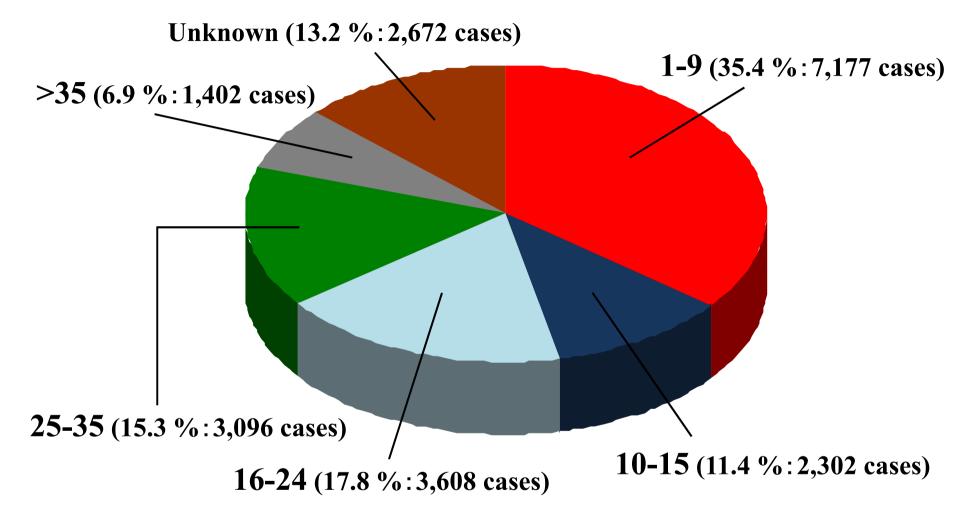


Figure 14 Patients and Injury Severity Score (ISS)

Proportional distribution of patients grouped by categories of the ISS range. Total N=20,257. The number of patients of ISS 1-9 category was the most of all categories.

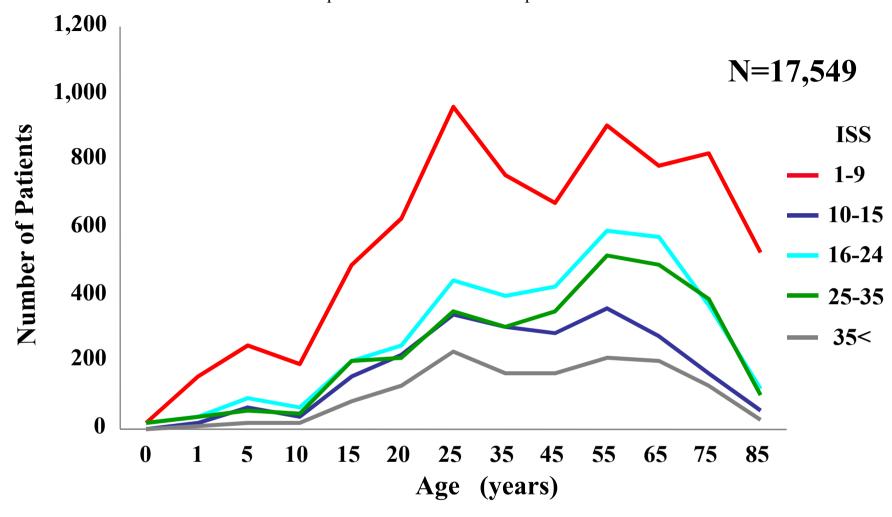


Figure 15 Patients by ISS and Age

Number of injured patients grouped by ISS range, at each age from 0 to 105. Two peaks of the number of patients based on age distribution were seen at 25-34 and 55-64 ages of any ISS categories.

| Age     | 0  | 1   | 5   | 10  | 15   | 20   | 25   | 35   | 45   | 55   | 65   | 75   | 85  | Unknown | Total |
|---------|----|-----|-----|-----|------|------|------|------|------|------|------|------|-----|---------|-------|
| 1-9     | 23 | 156 | 247 | 196 | 493  | 629  | 958  | 756  | 672  | 907  | 786  | 825  | 526 | 3       | 7177  |
| 10-15   | 3  | 15  | 65  | 37  | 159  | 224  | 346  | 306  | 286  | 359  | 274  | 169  | 57  | 2       | 2302  |
| 16-24   | 23 | 37  | 94  | 62  | 204  | 246  | 444  | 401  | 425  | 595  | 571  | 373  | 123 | 10      | 3608  |
| 25-35   | 15 | 34  | 60  | 47  | 200  | 214  | 353  | 309  | 352  | 520  | 491  | 389  | 98  | 14      | 3096  |
| 35<     | 1  | 12  | 16  | 14  | 85   | 126  | 234  | 164  | 162  | 213  | 204  | 132  | 32  | 7       | 1402  |
| Unknown | 12 | 31  | 80  | 50  | 156  | 192  | 334  | 312  | 253  | 408  | 412  | 284  | 119 | 29      | 2672  |
| Total   | 77 | 285 | 562 | 406 | 1297 | 1631 | 2669 | 2248 | 2150 | 3002 | 2738 | 2172 | 955 | 65      | 20257 |

**Table 15 Patients by ISS and Age** 

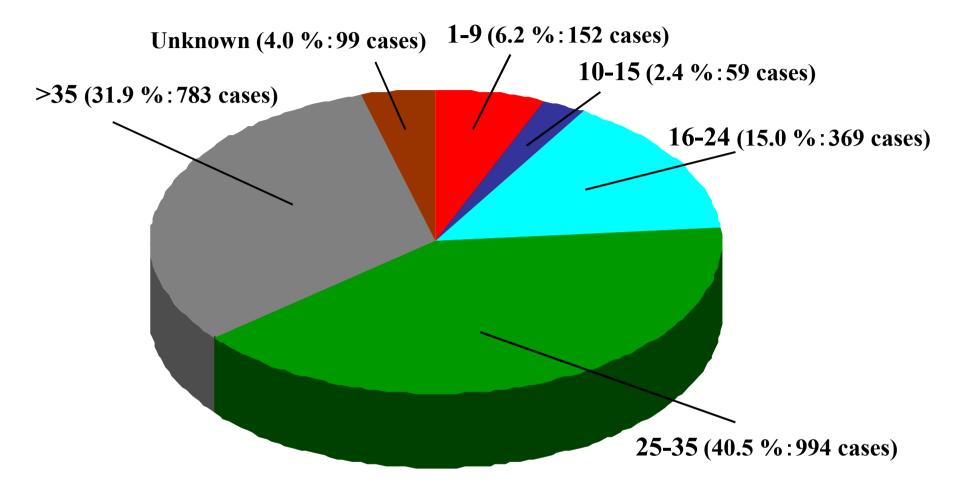


Figure 16A Deaths and Injury Severity Score (ISS)

Proportional distribution of deaths grouped by categories of ISS range. Total N=2,456. Deaths in ISS 25-35 category were the highest (994 cases: 40.5% of all deaths).

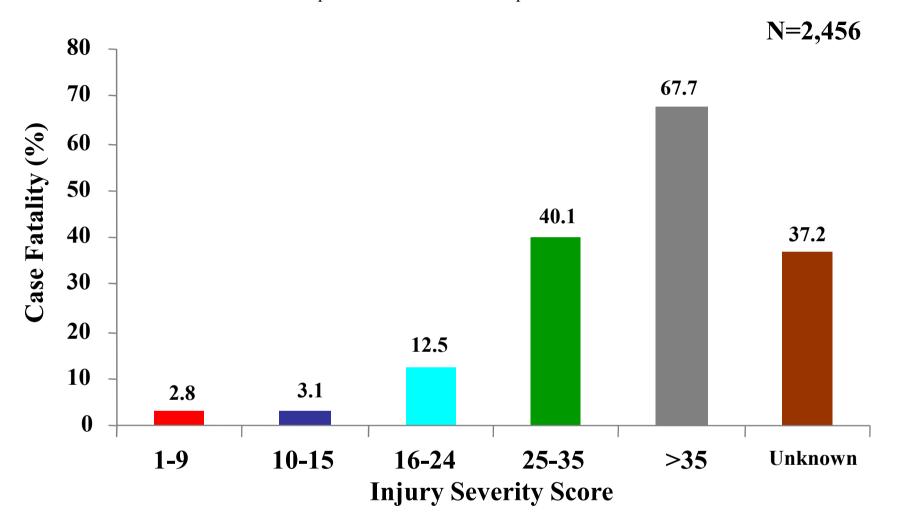


Figure 16B Case Fatality by Injury Severity Score (ISS) Range

Case fatality grouped by ISS range. (Case fatality = number of deaths divided by the number of patients  $\times$  100 by ISS range). Case fatality was higher in severe trauma category.

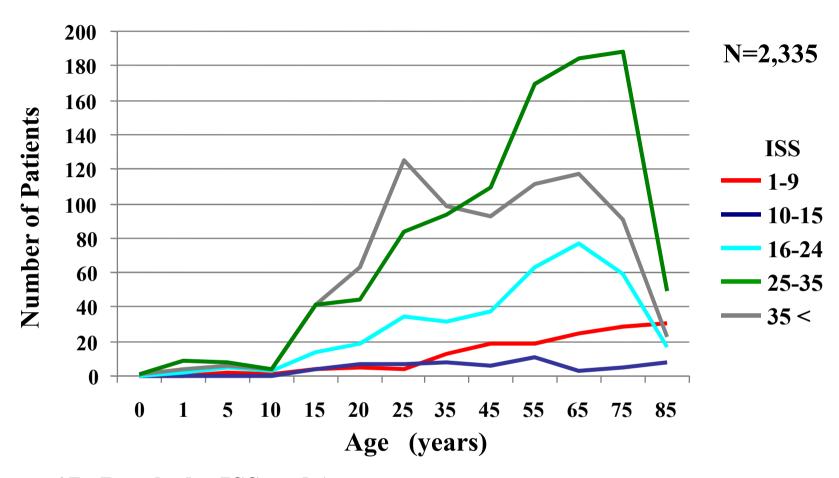


Figure 17 Deaths by ISS and Age

The peak was seen at elderly ages in each ISS 16-24 and ISS 25-35, and the category beyond ISS 35 has two peaks at young and elderly ages.

| Age     | 0 | 1  | 5  | 10 | 15  | 20  | 25  | 35  | 45  | 55  | 65  | 75  | 85  | Unknown | Total |
|---------|---|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------|-------|
| 1-9     | 0 | 0  | 2  | 1  | 4   | 5   | 4   | 13  | 19  | 19  | 25  | 29  | 31  | 0       | 152   |
| 10-15   | 0 | 0  | 0  | 0  | 4   | 7   | 7   | 8   | 6   | 11  | 3   | 5   | 8   | 0       | 59    |
| 16-24   | 0 | 2  | 5  | 3  | 14  | 19  | 34  | 32  | 37  | 63  | 77  | 59  | 17  | 7       | 369   |
| 25-35   | 1 | 9  | 8  | 4  | 41  | 44  | 84  | 94  | 109 | 169 | 184 | 188 | 49  | 10      | 994   |
| 35<     | 1 | 4  | 6  | 4  | 41  | 63  | 125 | 99  | 93  | 111 | 117 | 91  | 23  | 5       | 783   |
| Unknown | 0 | 0  | 0  | 1  | 6   | 7   | 11  | 18  | 8   | 12  | 19  | 10  | 2   | 5       | 99    |
| Total   | 2 | 15 | 21 | 13 | 110 | 145 | 265 | 264 | 272 | 385 | 425 | 382 | 130 | 27      | 2456  |

Table 17 Deaths by ISS and Age

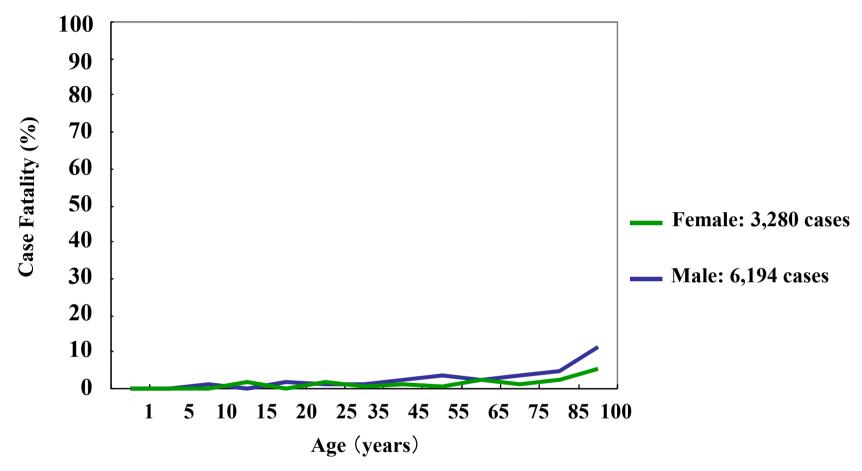


Figure 18 Case Fatality by Age and Gender (ISS $\leq$ 15) Case fatality for patients with ISS $\leq$ 15 for males and females at each age category. (Case fatality = number of deaths divided by the number of patients  $\times$  100 by age and gender). Total N = 9,474.

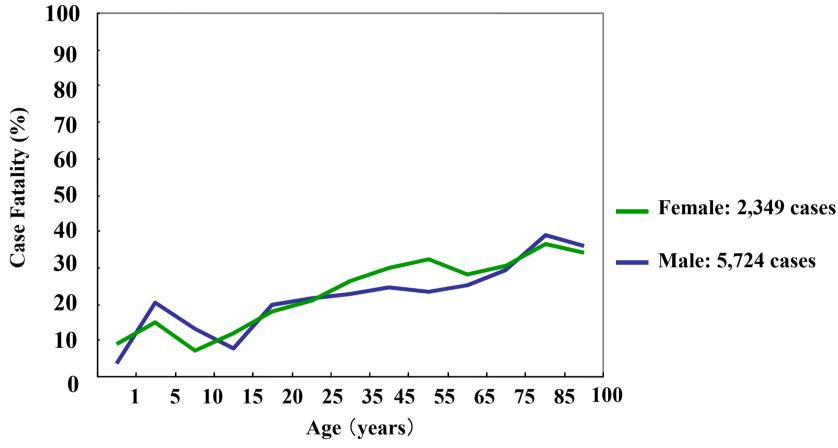


Figure 19 Case Fatality by Age and Gender (ISS>15)
Case fatality for patients with ISS>15 for males and females at each age category. (Case fatality = number of deaths divided by the number of patients  $\times$  100 by age and gender). Total N = 8,073.

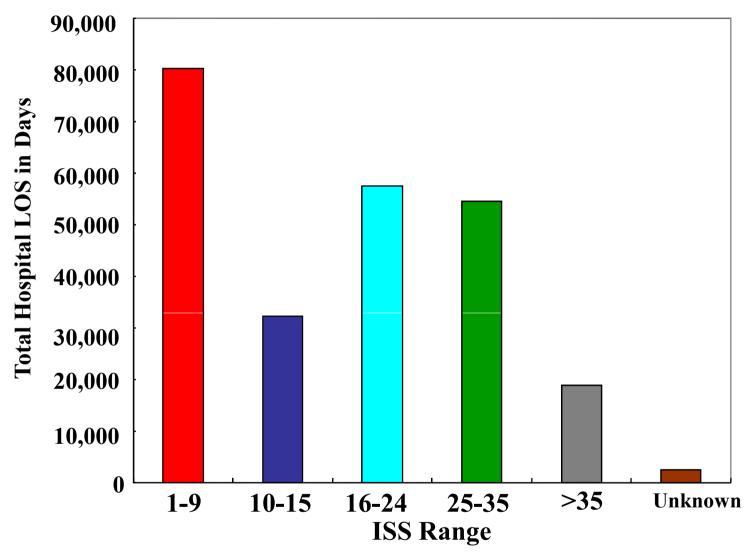


Figure 20A Total Hospital LOS and Injury Severity Score (ISS) Proportional distribution of total hospital length of stay for patients, grouped by ISS range. Total  $N=10,\!835$ .

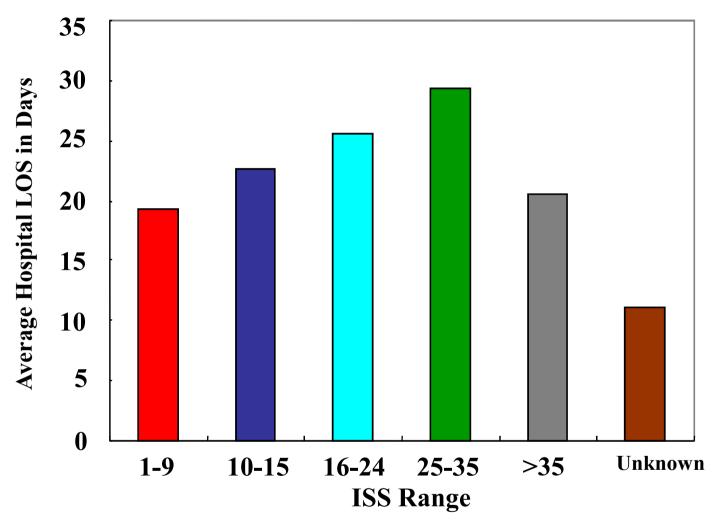


Figure 20B Average Hospital LOS and Injury Severity Score Average hospital length of stay for each category of ISS range. (Average hospital length of stay = total hospital length of stay for each ISS range divided by the total number of patients). Total N = 10.835.

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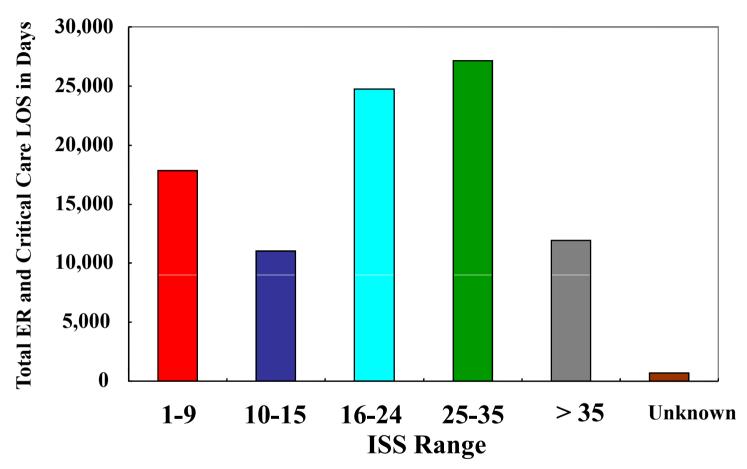


Figure 20C Total ER and Critical Care LOS and Injury Severity Score (ISS) Proportional distribution of total ER and critical care length of stay in patients, grouped by ISS range.

Total N = 9,437

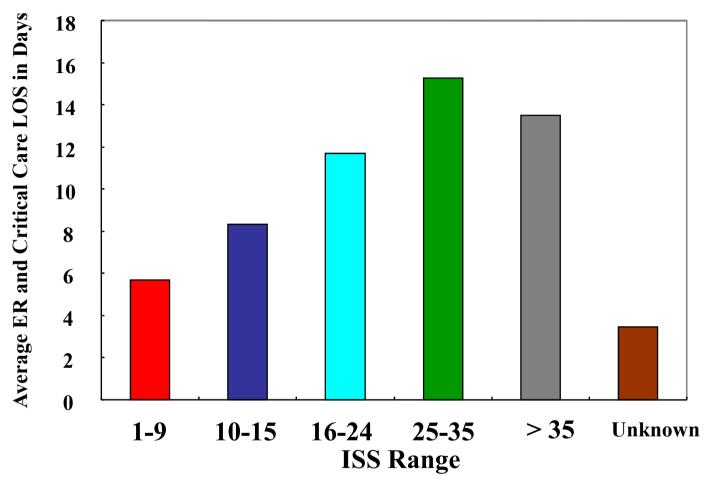


Figure 20D Average ER and Critical Care LOS and Injury Severity Score Average ER and critical care length of stay for each ISS range. (Average ER and critical care LOS = total ER and critical care LOS for each ISS range divided by the total number of patients).

Total N = 9,437

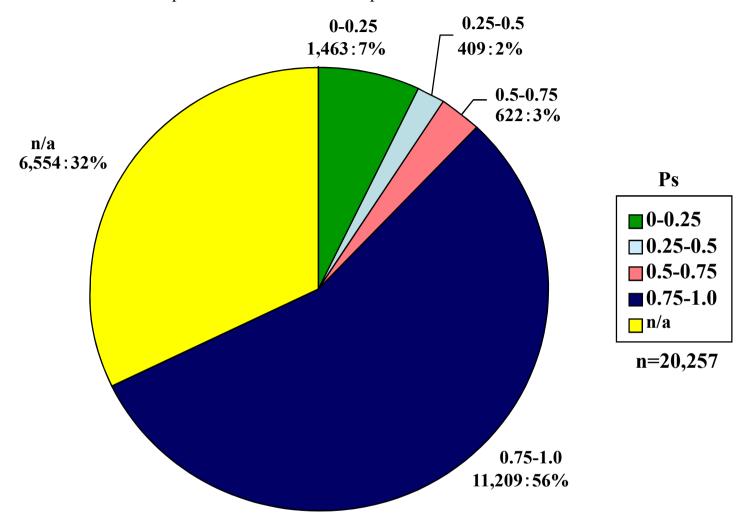


Figure 21 Patients by Probability of Survival (Ps)

Proportional distribution of patients, grouped by each category of Ps. The Ps category(0.75-1.0) accounted for 56% of all cases. Thirty-two percent of cases were missing at least one variable required to calculate Ps. n/a: not assessed due to missing values

| Ps                                     | 0-0.25 | 0.25-0.5 | 0.5-0.75 | 0.75-1.0 | n/a   |
|--|--------|----------|----------|----------|-------|
| Cases                                  | 1,463  | 409      | 622      | 11,209   | 6,554 |
| Proportion to total number of patients | 7.2%   | 2.0%     | 3.1%     | 55.3%    | 32.4% |

## **Table 21 Patients by Probability of Survival (Ps)**

Proportional distribution of patients, grouped by each category of Ps. The Ps category(0.75-1.0) accounted for 56% of all cases. Thirty-two percent of cases were missing at least one variable required to calculate Ps. n/a: not assessed due to missing values

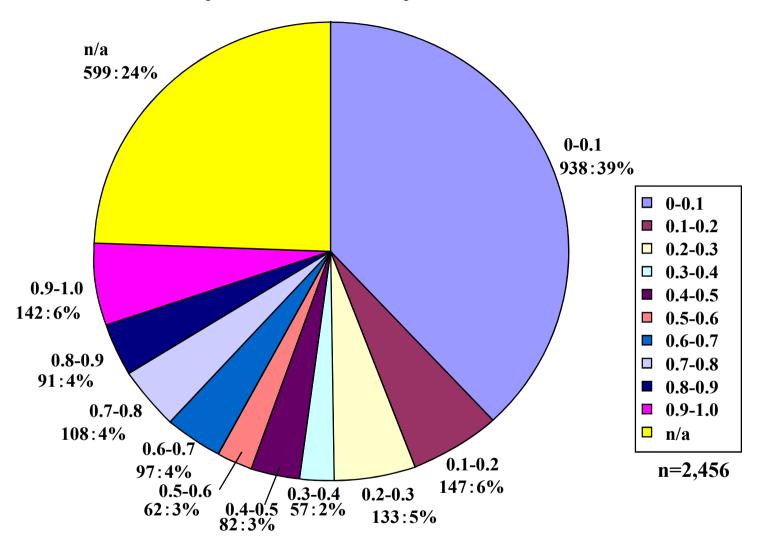


Figure 22A Deaths by Probability of survival (Ps)

Proportional distribution of deaths, grouped by each category of Ps. The lowest Ps category (0-0.1) accounted for 38.2% of all death cases. n/a: not assessed due to missing values

| Ps                                       | 0-0.1         | 0.1-0.2 | 0.2-0.3 | 0.3-0.4 | 0.4-0.5    | 0.5-0.6     |  |
|--|---------------|---------|---------|---------|------------|-------------|--|
| Deaths                                   | 938           | 147     | 133     | 57      | 82         | 62          |  |
| Proportion to the total number of deaths | 38.2%         | 6.0%    | 5.4%    | 2.3%    | 3.3%       | 2.5%        |  |
|  |               |         |         |         |            |             |  |
| Ps                                       | 0.6-0.7       | 0.7-0.8 | 0.8-0.9 | 0.9-1.0 | n/a        | Total       |  |
| Ps Deaths                                | 0.6-0.7<br>97 | 0.7-0.8 | 0.8-0.9 | 0.9-1.0 | n/a<br>599 | Total 2,456 |  |

**Table 22A** Deaths by Probability of survival (Ps)

Proportional distribution of deaths, grouped by each category of Ps. The lowest Ps category (0-0.1) accounted for 38.2% of all death cases. n/a: not assessed due to missing values

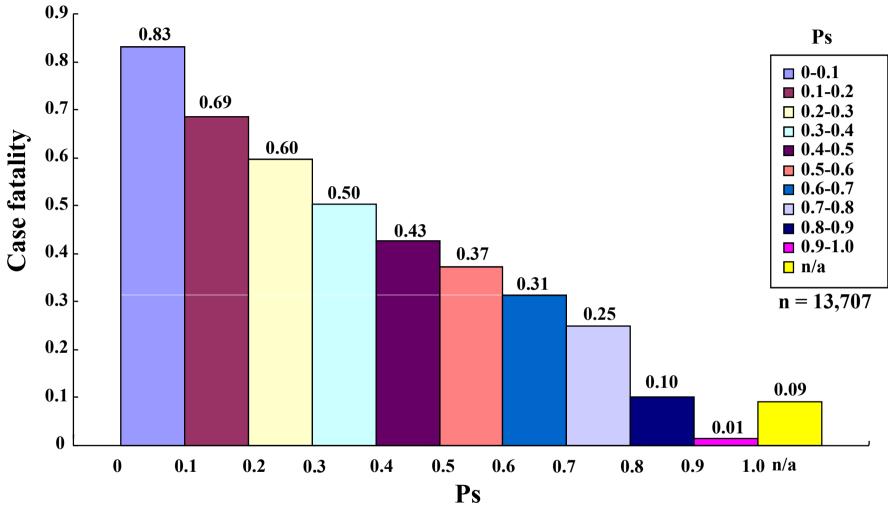


Figure 22B Case Fatality by Probability of Survival (Ps)

Case fatality for each Ps category (Case fatality = number of deaths divided by the number of patients × 100 for each Ps category). The lowest Ps category (0-0.1) and highest Ps category (0.9-1.0) had the highest fatality 85% and the lowest fatality 1.6%, respectively. The trend that fatality would decrease as Ps increased was observed. n/a: not assessed due to missing values

| Ps                                       | 0-0.1   | 0.1-0.2 | 0.2-0.3 | 0.3-0.4 | 0.4-0.5 | 0.5-0.6 |  |
|--|---------|---------|---------|---------|---------|---------|--|
| Cases                                    | 1,130   | 214     | 223     | 113     | 192     | 166     |  |
| Deaths                                   | 938     | 147     | 133     | 57      | 82      | 62      |  |
| Proportion to the total number of deaths | 0.83    | 0.69    | 0.60    | 0.50    | 0.43    | 0.37    |  |
| Ps                                       | 0.6-0.7 | 0.7-0.8 | 0.8-0.9 | 0.9-1.0 | n/a     | Total   |  |
| Cases                                    | 310     | 432     | 899     | 10,024  | 6,554   | 20,257  |  |
| Deaths                                   | 97      | 108     | 91      | 142     | 599     | 2,456   |  |
| Proportion to the total number of deaths | 0.31    | 0.25    | 0.10    | 0.01    | 0.09    | 0.12    |  |

## Table 22B Case Fatality by Probability of Survival (Ps)

The lowest Ps category (0-0.1) and highest Ps category (0.9-1.0) had the highest fatality 83% and the lowest fatality 1.6%, respectively. The trend that fatality would decrease as Ps increased was observed.

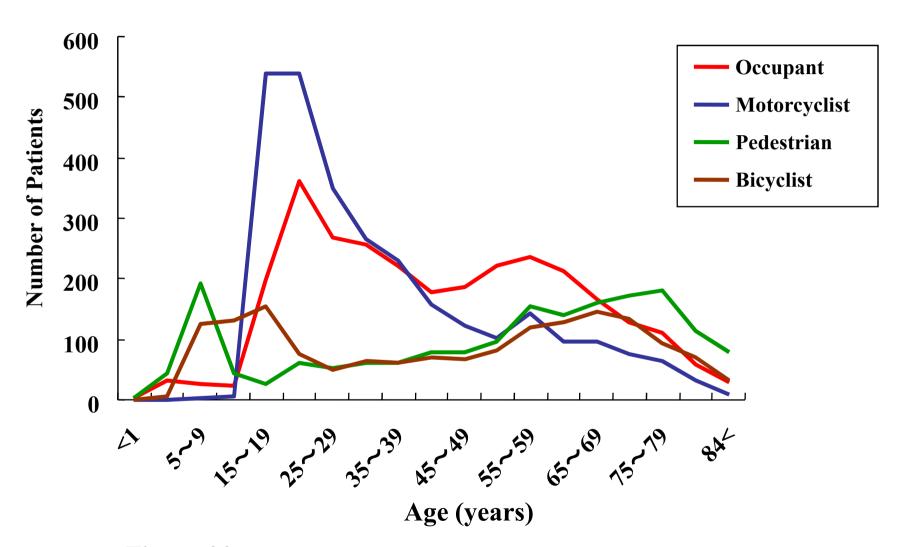


Figure 23 Motor Vehicle Traffic Related Injuries

Japan Trauma Data Bank Report 2004-2007

| Age (years)  | Occupant | Motorcyclist | Pedestrian | Bicyclist |
|--------------|----------|--------------|------------|-----------|
| <1           | 2        | 0            | 2          | 0         |
| 1~4          | 32       | 0            | 45         | 7         |
| <b>5~9</b>   | 25       | 2            | 192        | 124       |
| 10~14        | 24       | 6            | 43         | 132       |
| 15~19        | 197      | 538          | 27         | 155       |
| 20~24        | 361      | 540          | 62         | 76        |
| 25~29        | 268      | 349          | 52         | 49        |
| 30~34        | 256      | 264          | 61         | 65        |
| 35~39        | 221      | 230          | 61         | 60        |
| 40~44        | 179      | 158          | 80         | 70        |
| 45~49        | 187      | 123          | 80         | 68        |
| 50~54        | 222      | 103          | 96         | 82        |
| 55~59        | 237      | 143          | 154        | 120       |
| 60~64        | 213      | 96           | 139        | 129       |
| 65~69        | 166      | 95           | 160        | 146       |
| 70~74        | 129      | 76           | 173        | 133       |
| <b>75~79</b> | 111      | 64           | 182        | 93        |
| 80~84        | 59       | 33           | 114        | 70        |
| 84<          | 28       | 8            | 78         | 33        |
| Total        | 2,917    | 2,828        | 1,801      | 1,612     |

 Table 23
 Motor Vehicle Traffic Related Injuries

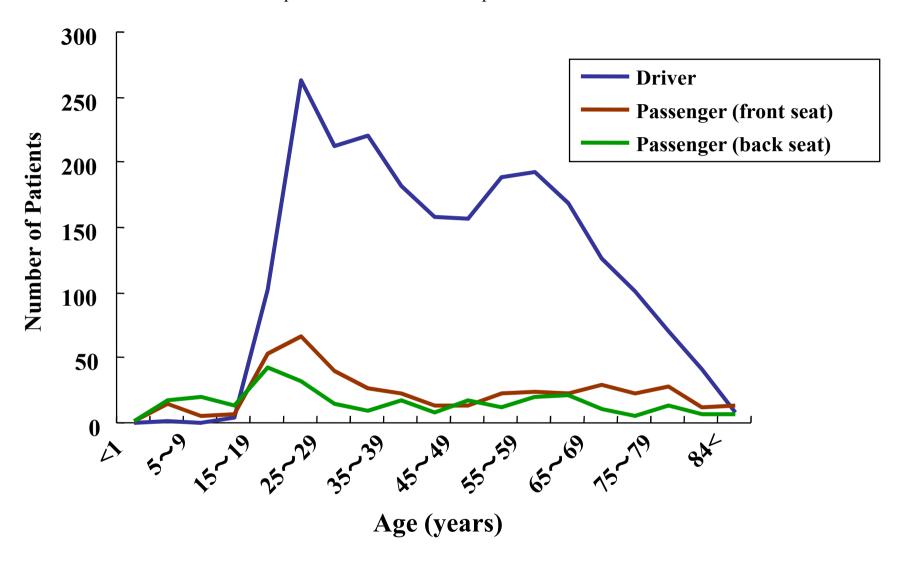


Figure 24 Motor Vehicle Related Injuries – Driver and Passenger by Age

| Age (years)  | Driver | Passenger (front seat) | Passenger (back seat) | Total |
|--------------|--------|------------------------|-----------------------|-------|
| <1           | 0      | 1                      | 1                     | 2     |
| 1~4          | 1      | 14                     | 17                    | 32    |
| 5 <b>~</b> 9 | 0      | 5                      | 20                    | 25    |
| 10~14        | 4      | 7                      | 13                    | 24    |
| 15~19        | 102    | 53                     | 42                    | 197   |
| 20~24        | 263    | 66                     | 32                    | 361   |
| 25~29        | 213    | 40                     | 15                    | 268   |
| 30~34        | 220    | 27                     | 9                     | 256   |
| 35~39        | 182    | 22                     | 17                    | 221   |
| 40~44        | 158    | 13                     | 8                     | 179   |
| 45~49        | 157    | 13                     | 17                    | 187   |
| 50~54        | 188    | 22                     | 12                    | 222   |
| 55~59        | 193    | 24                     | 20                    | 237   |
| 60~64        | 169    | 23                     | 21                    | 213   |
| 65~69        | 126    | 29                     | 11                    | 166   |
| <b>70~74</b> | 101    | 23                     | 5                     | 129   |
| <b>75~79</b> | 70     | 28                     | 13                    | 111   |
| 80~84        | 41     | 12                     | 6                     | 59    |
| 84<          | 8      | 13                     | 7                     | 28    |
| Total        | 2,196  | 435                    | 286                   | 2,917 |

 Table 24
 Motor Vehicle Related Injuries, Driver and Passenger by Age

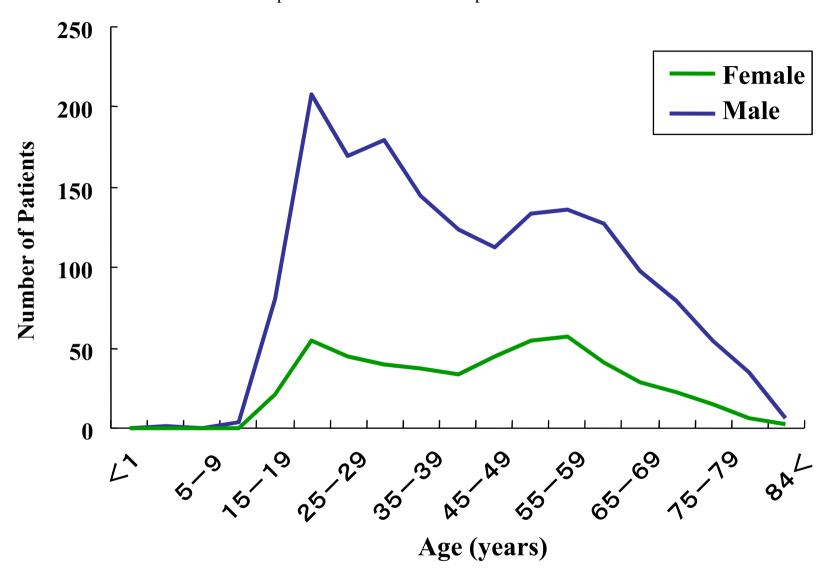


Figure 25 Motor Vehicle Related Injuries – Driver by Gender and Age

Japan Trauma Data Bank Report 2004-2007

| Age (years) | Male  | Female | Total |  |  |  |
|-------------|-------|--------|-------|--|--|--|
| <1          | 0     | 0      | 0     |  |  |  |
| 1~4         | 1     | 0      | 1     |  |  |  |
| 5~9         | 0     | 0      | 0     |  |  |  |
| 10~14       | 4     | 0      | 4     |  |  |  |
| 15~19       | 81    | 21     | 102   |  |  |  |
| 20~24       | 208   | 55     | 263   |  |  |  |
| 25~29       | 169   | 44     | 213   |  |  |  |
| 30~34       | 180   | 40     | 220   |  |  |  |
| 35~39       | 145   | 37     | 182   |  |  |  |
| 40~44       | 124   | 34     | 158   |  |  |  |
| 45~49       | 113   | 44     | 157   |  |  |  |
| 50~54       | 134   | 54     | 188   |  |  |  |
| 55~59       | 136   | 57     | 193   |  |  |  |
| 60~64       | 128   | 41     | 169   |  |  |  |
| 65~69       | 98    | 28     | 126   |  |  |  |
| 70~74       | 79    | 22     | 101   |  |  |  |
| 75~79       | 55    | 15     | 70    |  |  |  |
| 80~84       | 35    | 6      | 41    |  |  |  |
| 84<         | 6     | 2      | 8     |  |  |  |
| Total       | 1,696 | 500    | 2,196 |  |  |  |

 Table 25
 Motor Vehicle Related Injuries – Driver by Gender and Age

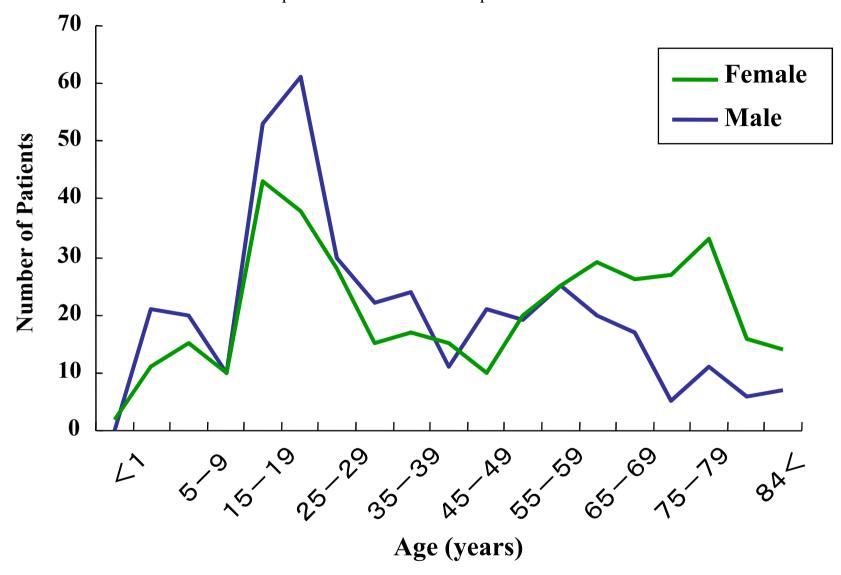


Figure 26 Motor Vehicle Related Injuries – Passenger by Gender and Age

| Age            | Male | Female | Total     |
|----------------|------|--------|-----------|
| (years)        |      |        |           |
| <1             | 0    | 2      | 2         |
| <b>1~4</b>     | 21   | 11     | 32        |
| <b>5~9</b>     | 20   | 15     | 35        |
| 10~14          | 10   | 10     | 20        |
| 15~19          | 53   | 43     | 96        |
| 20~24          | 61   | 38     | 99        |
| 25~29          | 30   | 28     | <b>58</b> |
| 30~34          | 22   | 15     | 37        |
| 35~39          | 24   | 17     | 41        |
| 40~44          | 11   | 15     | 26        |
| 45~49          | 21   | 10     | 31        |
| 50~54          | 19   | 20     | <b>39</b> |
| 55~59          | 25   | 25     | <b>50</b> |
| 60~64          | 20   | 29     | 49        |
| 65~69          | 17   | 26     | 43        |
| 70 <b>~</b> 74 | 5    | 27     | 32        |
| <b>75~79</b>   | 11   | 33     | 44        |
| 80~84          | 6    | 16     | 22        |
| 84<            | 7    | 14     | 21        |
| Total          | 383  | 394    | 777       |

Table 26 Motor Vehicle Related Injuries – Passenger by Gender and Age

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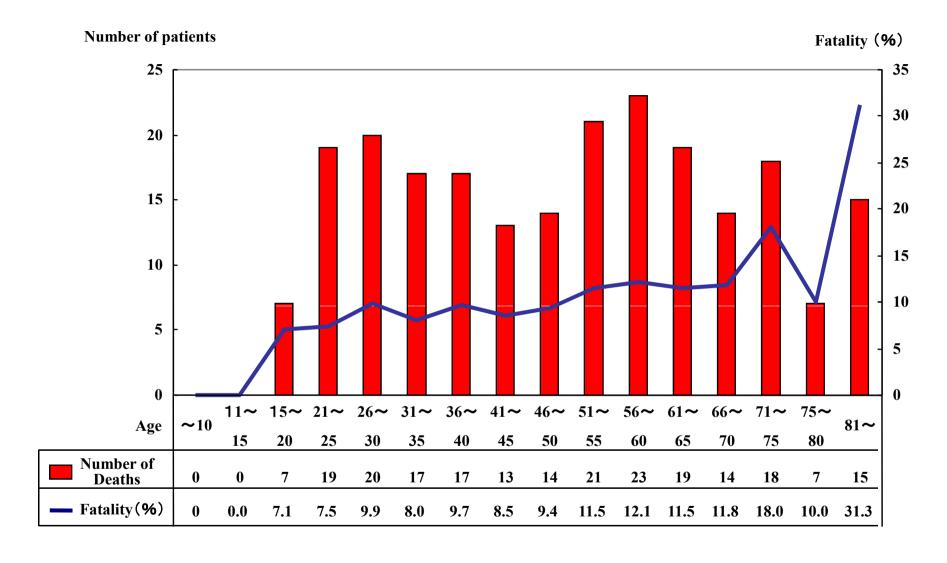


Figure 27 Number of Deaths and Fatalities of Motor Vehicular Drivers by Age

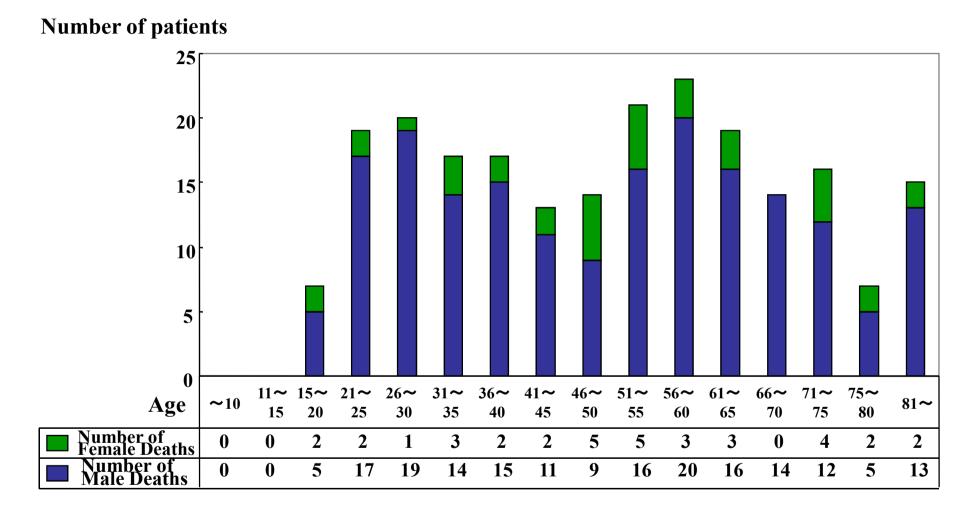


Figure 28 Deaths of Motor Vehicular Drivers by Age and Genders

Japan Trauma Data Bank Report 2004-2007 Other 143: 0.7% **Assault 479: 2.4%** Undetermined 338: 1.7% Industrial accident 1,417: 7.2% **Self-inflicted 1,683: 8.6%** Unintentional 15,613: 79.4%

Figure 29 Proportional Distribution of Registered Patients, Grouped by Intent

Japan Trauma Data Bank Report 2004-2007

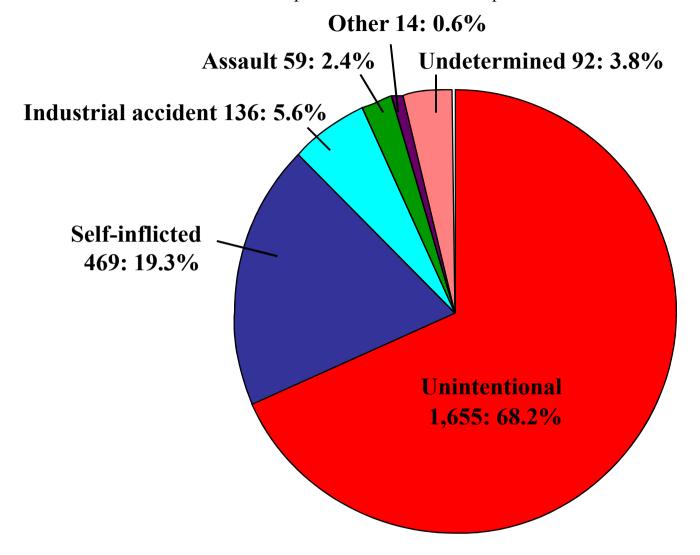


Figure 30 Proportional Distribution of Deaths, Grouped by Intent

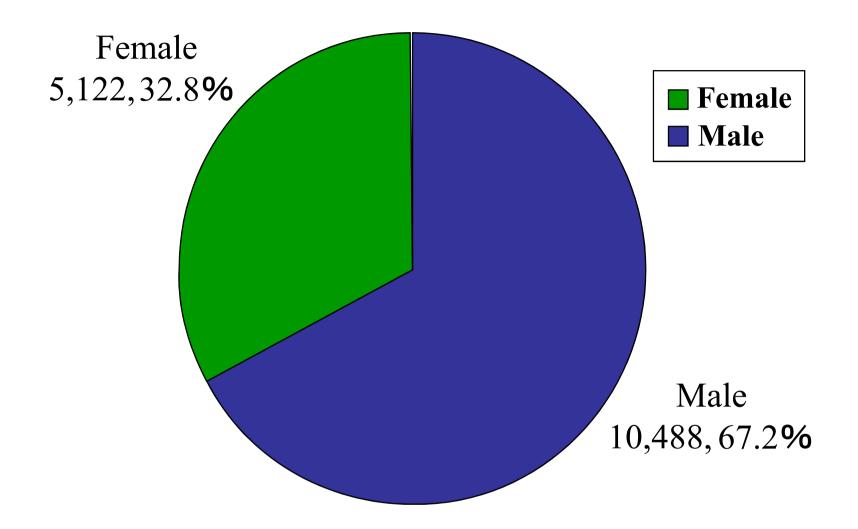


Figure 31 Unintentional Injury and Gender

Does not include cases where age is unknown. Includes cases of industrial accidents.

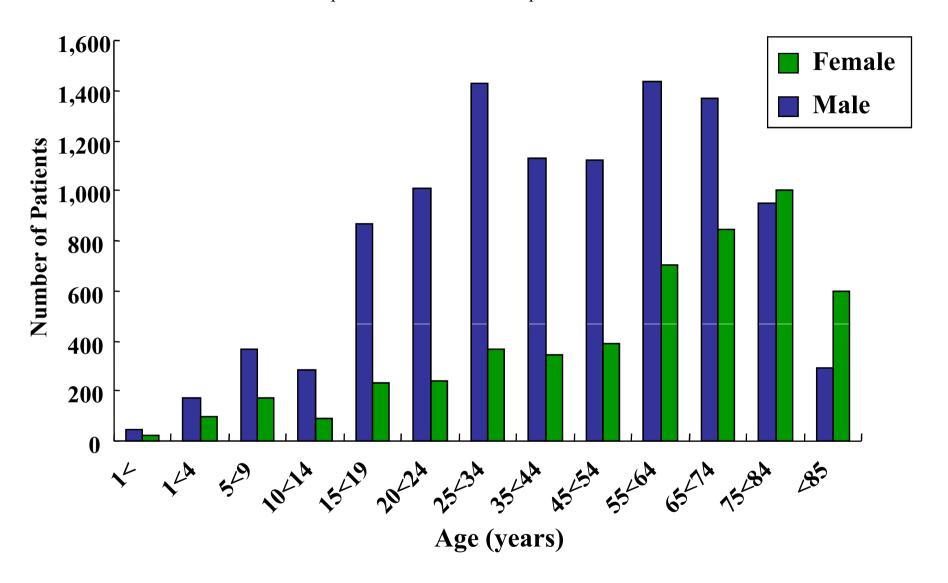


Figure 32 Unintentional Injury by Age and Gender

|       | Male       | Female     | Total  |
|-------|------------|------------|--------|
| 1<    | 44         | 25         | 69     |
| 1<4   | 175        | 94         | 269    |
| 5<9   | 363        | <b>174</b> | 537    |
| 10<14 | <b>281</b> | 93         | 374    |
| 15<19 | 866        | 230        | 1,096  |
| 20<24 | 1,008      | 241        | 1,249  |
| 25<34 | 1,430      | 363        | 1,793  |
| 35<44 | 1,126      | 347        | 1,473  |
| 45<54 | 1,123      | 392        | 1,515  |
| 55<64 | 1,434      | <b>701</b> | 2,135  |
| 65<74 | 1,371      | 847        | 2,218  |
| 75<84 | 953        | 1,005      | 1,958  |
| <85   | 292        | 600        | 892    |
| Total | 10,466     | 5,112      | 15,578 |

Table 32 Unintentional Injury by Age and Gender

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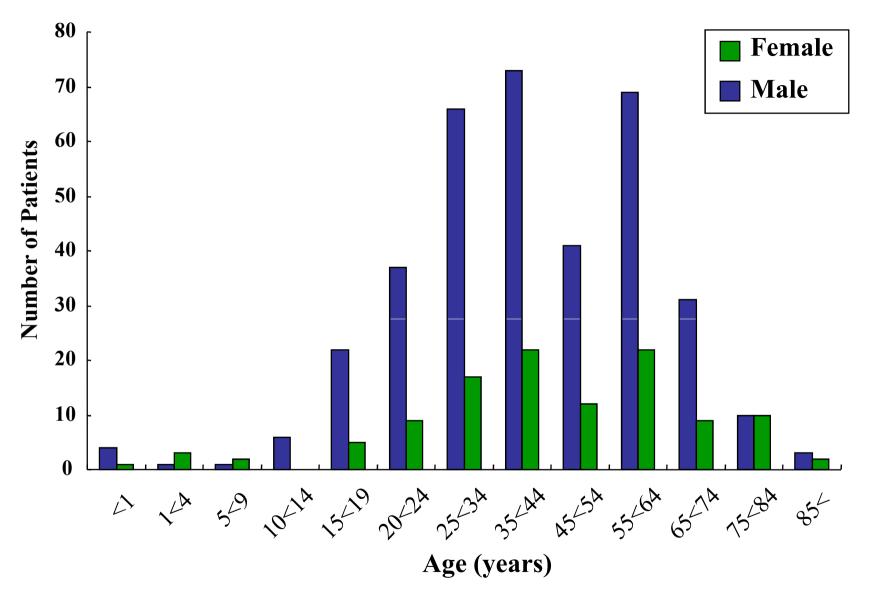


Figure 33 Intentional Injury by Age and Gender

|       | Male | Female | Total |
|-------|------|--------|-------|
| 1<    | 4    | 1      | 5     |
| 1<4   | 1    | 3      | 4     |
| 5<9   | 1    | 2      | 3     |
| 10<14 | 6    |        | 6     |
| 15<19 | 22   | 5      | 27    |
| 20<24 | 37   | 9      | 46    |
| 25<34 | 66   | 17     | 83    |
| 35<44 | 73   | 22     | 95    |
| 45<54 | 41   | 12     | 53    |
| 55<64 | 69   | 22     | 91    |
| 65<74 | 31   | 9      | 40    |
| 75<84 | 10   | 10     | 20    |
| <85   | 3    | 2      | 5     |
| Total | 364  | 114    | 478   |

Table 33 Intentional Injury by Age and Gender

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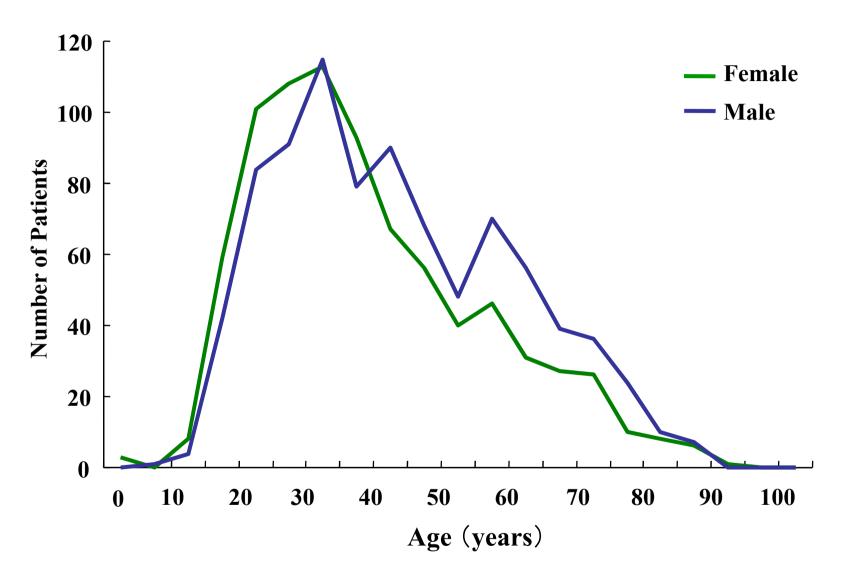


Figure 34 Self-inflicted by Age and Gender

## Japan Trauma Data Bank Report 2004-2007

|        | 0- | 5- | 10- | 15- | 20- | 25- | 30- | 35- | 40- | 45- | 50- | 55- | 60- | 65- | 70- | 75- | 80- | 85- | 90- | 95- | 100 | unknown | total |
|--------|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------|-------|
| female | 3  | 0  | 8   | 59  | 101 | 108 | 113 | 93  | 67  | 56  | 40  | 46  | 31  | 27  | 26  | 10  | 8   | 6   | 1   | 0   | 0   | 9       | 812   |
| male   | 0  | 1  | 4   | 42  | 84  | 91  | 115 | 79  | 90  | 68  | 48  | 70  | 56  | 39  | 36  | 24  | 10  | 7   | 0   | 0   | 0   | 5       | 869   |
| total  | 3  | 1  | 12  | 101 | 185 | 199 | 228 | 172 | 157 | 124 | 88  | 116 | 87  | 66  | 62  | 34  | 18  | 13  | 1   | 0   | 0   | 14      | 1,681 |

Table 34 Self-inflicted by Age and Gender

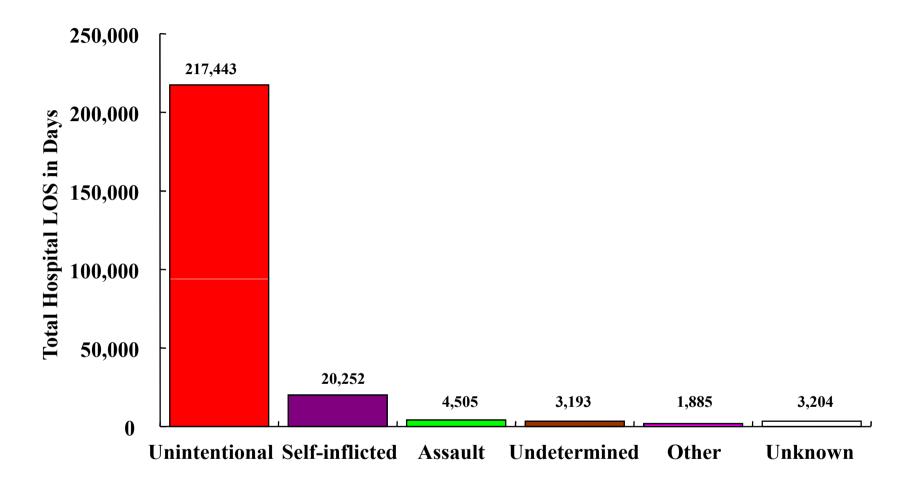


Figure 35A Total Hospital LOS by Intent Industrial accident was included in the category of "Unintentional".

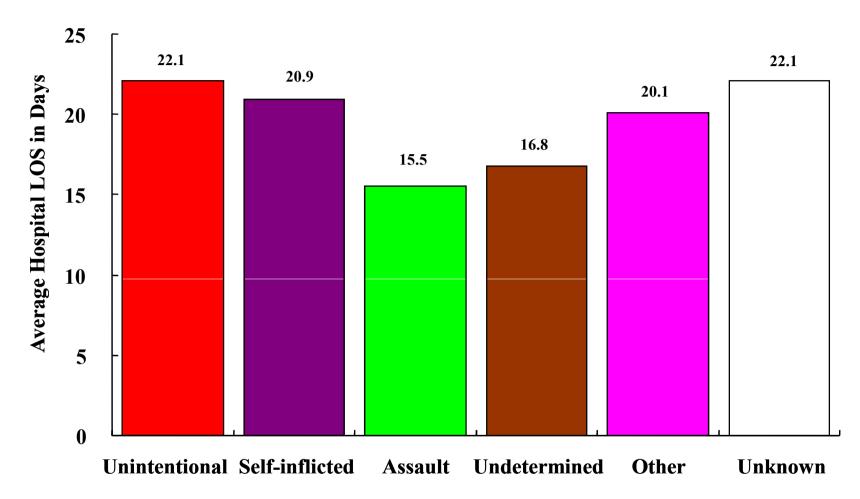


Figure 35B Average Hospital LOS by Intent Average hospital length of stay in days = total hospital length of stay divided by the number of patients by intent.

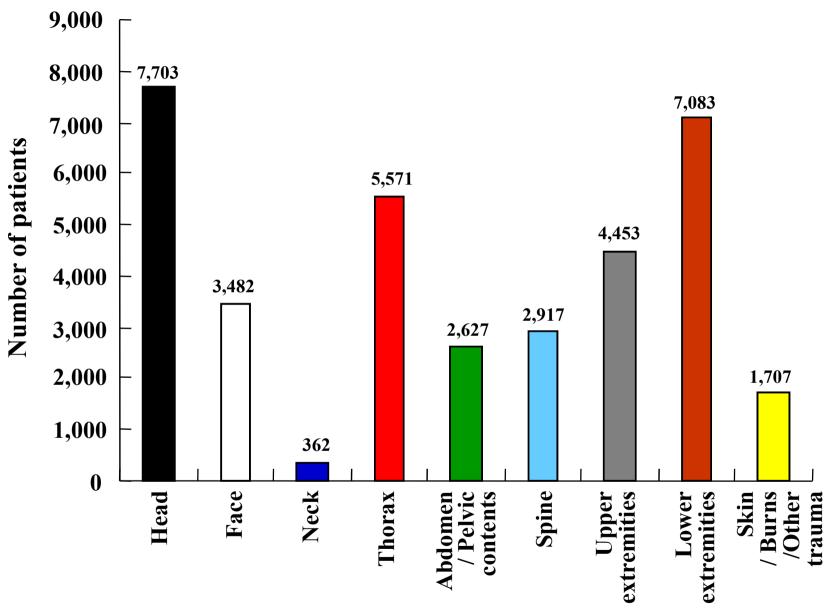


Figure 36 Number of Patients with Injured Body Parts based on AIS

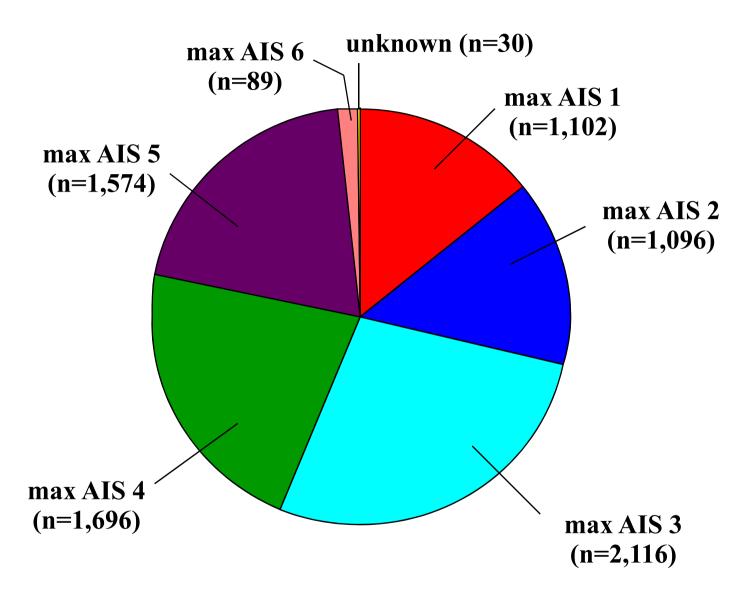


Figure 37A Head Injury and max AIS Score

Japan Trauma Data Bank Report 2004-2007 max AIS 4 (n=32)unknown (n=9) max AIS 3 (n=114)max AIS 2 (n=1,112)max AIS 1 (n=2,215)

Figure 37B Facial Injury and max AIS Score

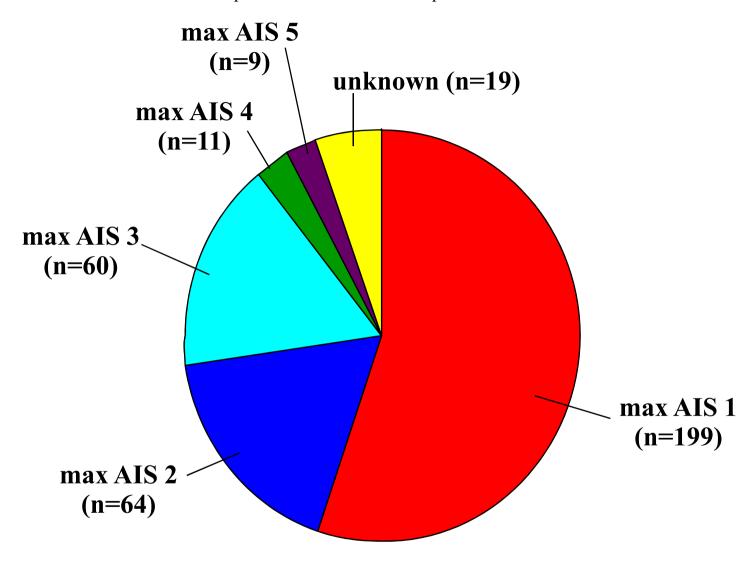


Figure 37C Neck Injury and max AIS Score

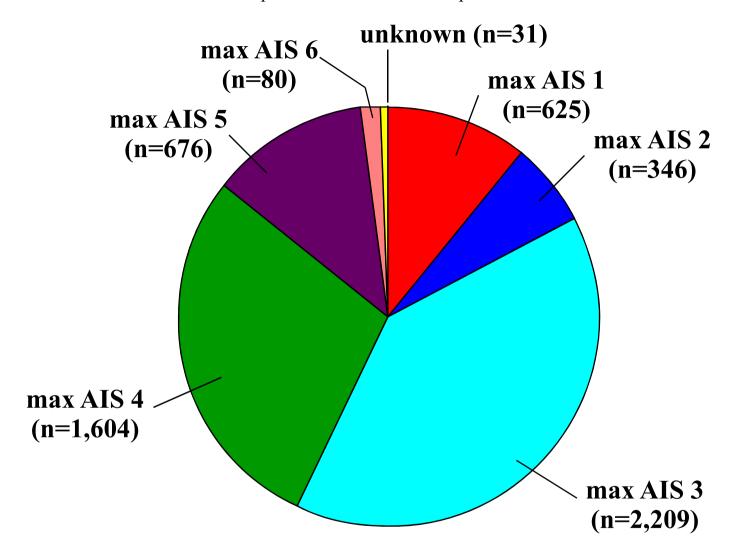


Figure 37D Thoracic Injury and max AIS Score

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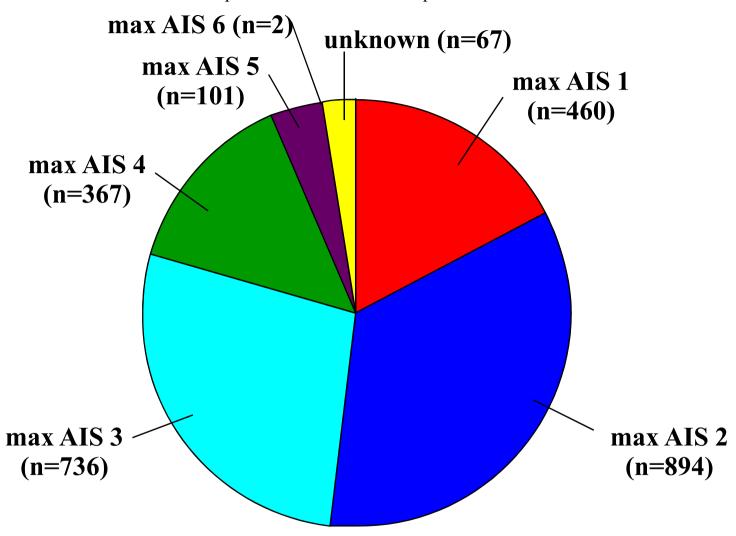


Figure 37E Injury of Abdomen/Pelvic Contents and max AIS Score

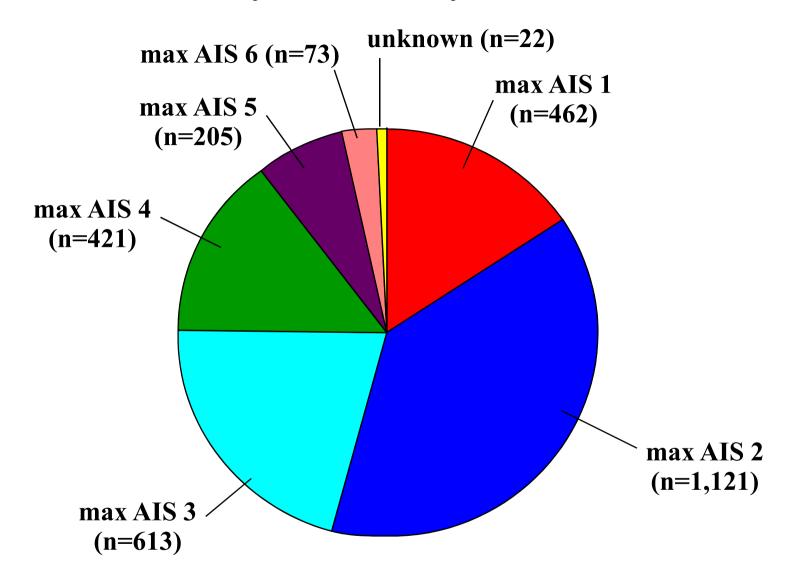


Figure 37F Spine Injury and max AIS Score

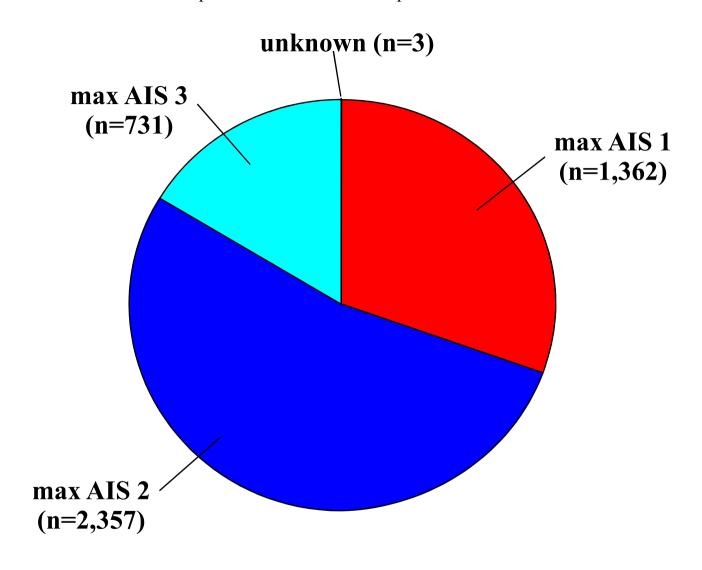


Figure 37G Injury of Upper Extremities and max AIS Score

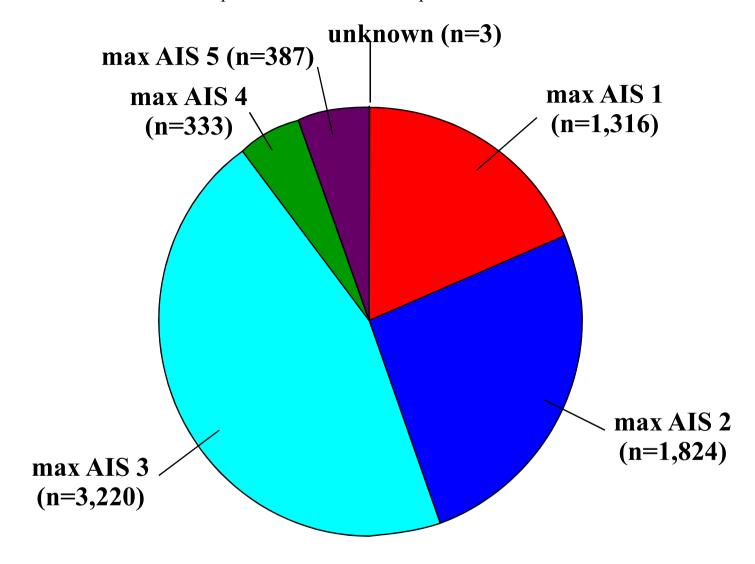


Figure 37H Injury of Lower Extremities and max AIS Score

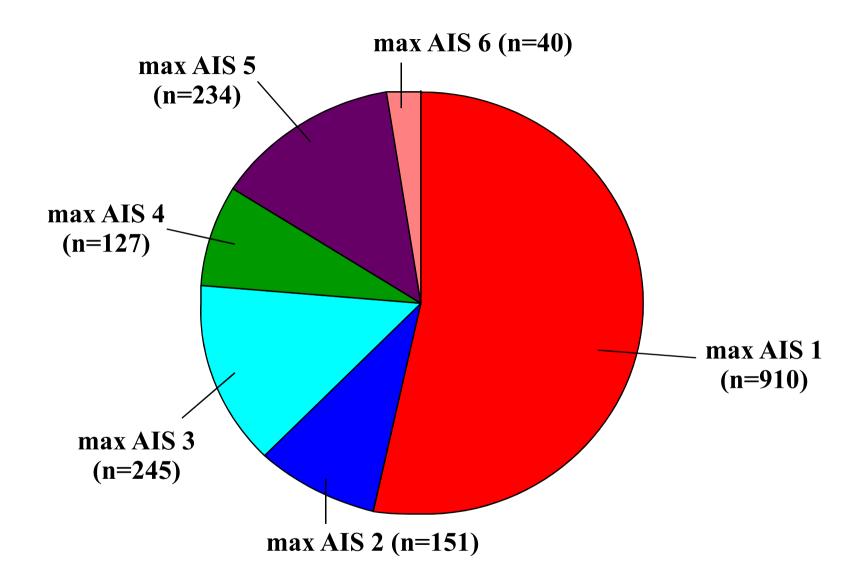


Figure 37I Skin/Burns/Other Trauma and max AIS Score

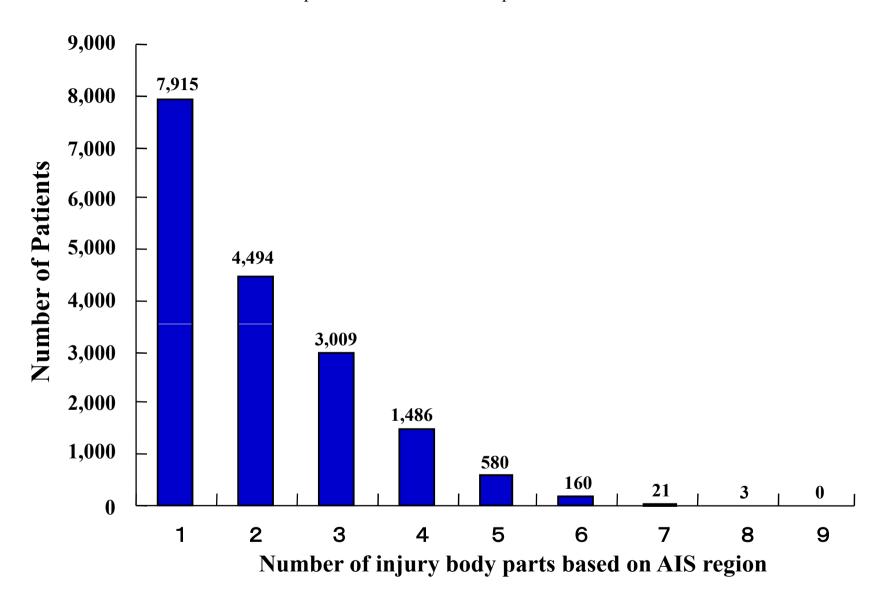


Figure 38 Number of Patients and Injured Body Parts based on AIS

## JAPAN TRAUMA DATA BANK REPORT 2004-2007

**February 8, 2009** 

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Chairman: Tetsuya Sakamoto, MD

The Japanese Association for the Surgery of Trauma

(Trauma Registry Committee)

Trustee: Kunihiro Mashiko, MD

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