**Title: A multi-decade joinpoint analysis of firearm injury severity**

Contents

[**Supplementary Table 1: Firearm injury hospitalizations by comorbidity, NIS 1993-2014** 2](#_Toc487110702)

[**Supplementary Table 2: Firearm injury severity across the years, NIS 1993-2014** 3](#_Toc487110703)

[**Supplementary Table 3: Computed new injury severity score, NIS 1993-2014** 4](#_Toc487110704)

[**Supplementary Figure 1. Firearm injury severity population inclusion criteria flow chart** 6](#_Toc487110705)

[**Supplementary Figure 2. Weighted stacked percentage of firearm injury hospitalization from 1993 to 2014 by sex** 7](#_Toc487110706)

[**Supplementary Figure 3. Weighted stacked percentage of firearm injury hospitalization from 1993 to 2014 by age group** 8](#_Toc487110707)

[**Supplementary Figure 4. Weighted stacked percentage of firearm injury hospitalization from 1993 to 2014 by intent** 9](#_Toc487110708)

# **Supplementary Table 1: Firearm injury hospitalizations by comorbidity, NIS 1993-2014**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | 1993-1996 | 1997-2002 | 2003-2007 | 2008-2014 |  | Total |
|  | *152,442* | *166,741* | *142,298* | *183,378* |  | *644,858* |
| Comorbidity |  |  |  |  |  |  |
|  AIDS | 243 (0.2) | 258 (0.2) | 165 (0.1) | 158 (0.1) |  | 824 (0.1) |
| Alcohol abuse | 13,023 (8.5) | 14,696 (8.8) | 14,075 (9.9) | 18,641 (10.2) |  | 60,434 (9.4) |
| Chronic blood loss anemia | 895 (0.6) | 769 (0.5) | 1,159 (0.8) | 1,405 (0.8) |  | 4,228 (0.7) |
| Chronic pulmonary disease | 3,825 (2.5) | 5,085 (3.0) | 7,026 (4.9) | 11,820 (6.4) |  | 27,755 (4.3) |
| Coagulopathy | 2,065 (1.4) | 2,945 (1.8) | 3,713 (2.6) | 8,038 (4.4) |  | 16,761 (2.6) |
| Congestive heart failure | 486 (0.3) | 410 (0.2) | 560 (0.4) | 984 (0.5) |  | 2,441 (0.4) |
| Deficiency anemias | 1,872 (1.2) | 2,774 (1.7) | 4,238 (3.0) | 8,504 (4.6) |  | 17,387 (2.7) |
| Depression | 2,399 (1.6) | 3,901 (2.3) | 4,633 (3.3) | 8,648 (4.7) |  | 19,581 (3.0) |
| Diabetes, uncomplicated | 1,693 (1.1) | 2,762 (1.7) | 3,266 (2.3) | 6,263 (3.4) |  | 13,984 (2.2) |
| Diabetes with chronic complications | 209 (0.1) | 213 (0.1) | 241 (0.2) | 430 (0.2) |  | 1,092 (0.2) |
| Drug abuse | 15,073 (9.9) | 14,669 (8.8) | 16,496 (11.6) | 25,019 (13.6) |  | 71,257 (11.0) |
| Fluid and electrolyte disorder | 7,251 (4.8) | 7,545 (4.5) | 10,298 (7.2) | 27,066 (14.8) |  | 52,160 (8.1) |
| Hypertension | 4,642 (3.0) | 6,200 (3.7) | 9,698 (6.8) | 20,400 (11.1) |  | 40,940 (6.3) |
| Hypothyroidism | 286 (0.2) | 481 (0.3) | 528 (0.4) | 1,254 (0.7) |  | 2,548 (0.4) |
| Liver disease | 174 (0.1) | 485 (0.3) | 743 (0.5) | 1,121 (0.6) |  | 2,523 (0.4) |
| Lymphoma | 44 (0.0) | 53 (0.0) | 39 (0.0) | 127 (0.1) |  | 263 (0.0) |
| Metastatic cancer | 186 (0.1) | 154 (0.1) | 99 (0.1) | 205 (0.1) |  | 644 (0.1) |
| Obesity | 717 (0.5) | 1,159 (0.7) | 2,367 (1.7) | 5,766 (3.1) |  | 10,008 (1.6) |
| Other neurological disorders | 1,755 (1.2) | 2,236 (1.3) | 2,027 (1.4) | 3,542 (1.9) |  | 9,560 (1.5) |
| Paralysis | 2,360 (1.5) | 2,965 (1.8) | 2,724 (1.9) | 4,509 (2.6) |  | 12,559 (1.9) |
| Peptic ulcer disease excluding bleeding | 17 (0.0) | 46 (0.0) | 8 (0.0) | 9 (0.0) |  | 79 (0.0) |
| Peripheral vascular disorders | 807 (0.5) | 941 (0.6) | 875 (0.6) | 2,557 (1.4) |  | 5,179 (0.8) |
| Psychoses | 2,557 (1.7) | 4,244 (2.5) | 4,726 (3.3) | 9,399 (5.1) |  | 2,0926 (3.2) |
| Pulmonary circulation disorder | 94 (0.1) | 234 (0.1) | 217 (0.2) | 1,286 (0.7) |  | 1,831 (0.3) |
| Renal failure | 96 (0.1) | 252 (0.2) | 369 (0.3) | 1,152 (0.6) |  | 1,869 (0.3) |
| Solid tumor without metastasis | 190 (0.1) | 328 (0.2) | 247 (0.2) | 365 (0.2) |  | 1,129 (0.2) |
| Rheumatoid arthritis | 75 (0.0) | 132 (0.1) | 180 (0.1) | 374 (0.2) |  | 761 (0.1) |
| Valvular disease | 341 (0.2) | 343 (0.2) | 364 (0.3) | 497 (0.3) |  | 1,545 (0.2) |
| Weight loss | 558 (0.4) | 749 (0.4) | 1,952 (1.4) | 6,214 (3.4) |  | 9,472 (1.5) |

All values are weighted frequencies (n) and weighted percentages (%) using survey analysis.

# **Supplementary Table 2: Firearm injury severity across the years, NIS 1993-2014**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **1993** | **1994** | **1995** | **1996** | **1997** | **1998** | **1999** |
| N | 38,036 | 39,179 | 38,838 | 32,721 | 27,966 | 31,970 | 26,967 |
| Computed New Injury Severity Score, mean (SE) | 10.3 (0.4) | 11.5 (0.3) | 12.2 (0.3) | 12.4 (0.3) | 11.8 (0.3) | 12.2 (0.2) | 12.3 (0.3) |
|  | **2000** | **2001** | **2002** | **2003** | **2004** | **2005** | **2006** |
|  | 26,329 | 21,930 | 29,999 | 26,743 | 30,870 | 27,895 | 28,408 |
|  | 12.6 (0.3) | 12.5 (0.3) | 13.1 (0.4) | 13.2 (0.4) | 13.8 (0.3) | 12.9 (0.3) | 13.6 (0.4) |
|  |  |  |  |  |  |  |  |
|  | **2007** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** |
|  | 29,204 | 24,305 | 24,445 | 33,729 | 25,004 | 24,940 | 23,840 |
|  | 14.4 (0.3) | 14.0 (0.3) | 14.4 (0.3) | 14.7 (0.3) | 15.0 (0.3) | 14.9 (0.2) | 15.0 (0.2) |
|  |  |  |  |  |  |  |  |
|  | **2014** |  |  |  |  |  |  |
|  | 24,445 |  |  |  |  |  |  |
|  | 15.4 (0.2) |  |  |  |  |  |  |

N denotes the survey weighted number of patients with non-missing Computed New Injury Severity Scores (NISS). NISS are presented as survey weighted means and standard errors.

# **Supplementary Table 3: Joinpoint Analysis of Computed new injury severity score, NIS 1993-2014**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **NISS** | **Method** |  | **Segment 1** |  | **Segment 2** |  | **Segment 3** |
|  |  |  | **Year** | **APC (95% CI)** |  | **Year** | **APC (95% CI)** |  | **Year** | **APC (95% CI)** |
| **Overall** |  |  | 1993-2014 | 1.4 (1.3-1.6) |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **By Age group** |  |  |  |  |  |  |  |  |  |  |
| 0-15 |  |  | 1993-1995 | 9.2 (3.5-15.3) |  | 1995-1998 | -0.9 (-6.0-4.5) |  | 1998-2014 | 1.5 (1.4-1.7) |
| 16-45 |  |  | 1993-2014 | 1.4 (1.3-1.5) |  |  |  |  |  |  |
| >45 |  |  | 1993-2014 | 1.5 (1.3-1.6) |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **By sex** |  |  |  |  |  |  |  |  |  |  |
| Female |  |  | 1993-2014 | 1.5 (1.3-1.6) |  |  |  |  |  |  |
| Male |  |  | 1993-2014 | 1.4 (1.3-1.6) |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **By Intent** |  |  |  |  |  |  |  |  |  |  |
| Assault/ Legal |  |  | 1993-2014 | 1.4 (1.3-1.5) |  |  |  |  |  |  |
| Unintentional |  |  | 1993-2014 | 1.4 (1.3-1.6) |  |  |  |  |  |  |
| Suicide |  |  | 1993-2014 | 1.5 (1.4-1.6) |  |  |  |  |  |  |
| Undetermined |  |  | 1993-2014 | 1.4 (1.3-1.6) |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |

# **Supplementary Figure 1. Firearm injury severity population inclusion criteria flow chart**



# **Supplementary Figure 2. Weighted stacked percentage of firearm injury hospitalization from 1993 to 2014 by age group**



# **Supplementary Figure 3. Weighted stacked percentage of firearm injury hospitalization from 1993 to 2014 by sex**



# **Supplementary Figure 4. Weighted stacked percentage of firearm injury hospitalization from 1993 to 2014 by intent**

