|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Supplemental Table 1: Number and Rate\* of Traumatic Brain Injury-Related Emergency Department Visits\*\* by Sex, Age Group, and Region, 2005-2014** | | | | | | | | | | | |  |
|  | **2005** | | | **2006** | | | **2007** | | | **2008** | | |
|  | **Number** | **Rate** | **95% CI** | **Number** | **Rate** | **95% CI** | **Number** | **Rate** | **95% CI** | **Number** | **Rate** | **95% CI** |
| **Sex** |  |  |  |  |  |  |  |  |  |  |  |  |
| Female | 1597 | 243.6 | (230.9, 256.2) | 1460 | 219.6 | (207.8, 231.5) | 1497 | 218.7 | (207.2, 230.3) | 1393 | 206.1 | (194.8, 217.4) |
| Male | 2640 | 422.6 | (405.3, 439.9) | 2558 | 402.6 | (385.8, 419.3) | 2572 | 408.2 | (391.3, 425.1) | 2359 | 369.6 | (353.6, 385.5) |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Age Group** |  |  |  |  |  |  |  |  |  |  |  |  |
| 0-17 years | 1557 | 349.8 | (332.8, 367.7) | 1507 | 340.4 | (323.6, 358.1) | 1493 | 339.9 | (323.0, 357.7) | 1291 | 292.4 | (276.8, 308.9) |
| 18-34 years | 1443 | 416.9 | (395.8, 439.1) | 1360 | 387.0 | (366.9, 408.2) | 1385 | 388.8 | (368.8, 409.9) | 1289 | 353.5 | (334.6, 373.5) |
| 35-54 years | 847 | 292.9 | (273.7, 313.5) | 782 | 266.0 | (247.8, 285.4) | 820 | 276.8 | (258.3, 296.5) | 779 | 259.0 | (241.3, 278.0) |
| 55-74 years | 258 | 202.2 | (178.7, 228.9) | 248 | 185.8 | (163.8, 210.8) | 259 | 186.8 | (165.1, 211.3) | 264 | 181.7 | (160.8, 205.4) |
| 75+ years | 132 | 410.6 | (344.9, 488.3) | 121 | 368.1 | (306.8, 441.3) | 112 | 329.5 | (272.6, 398.0) | 129 | 365.9 | (306.7, 436.1) |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Region#** |  |  |  |  |  |  |  |  |  |  |  |  |
| Alaska | 139 | 100.4 | (82.8, 118.1) | 146 | 101.5 | (84.3, 118.7) | 139 | 93.6 | (77.3, 109.9) | 140 | 96.0 | (79.2, 112.9) |
| East | 67 | 146.1 | (111.9, 187.5)^ | 95 | 213.6 | (170.9, 263.8)^ | 130 | 288.3 | (236.6, 339.9) | 109 | 229.6 | (184.8, 274.5) |
| Northern Plains | 1240 | 408.3 | (384.2, 432.4) | 1206 | 395.5 | (371.9, 419.2) | 1072 | 362.0 | (338.9, 385.1) | 844 | 279.1 | (259.2, 299.1) |
| Southern Plains | 596 | 183.9 | (168.5, 199.2) | 533 | 162.7 | (148.3, 177.0) | 501 | 150.0 | (136.4, 163.5) | 549 | 166.5 | (152.1, 180.8) |
| Southwest | 2195 | 451.9 | (431.5, 472.3) | 2038 | 409.8 | (390.8, 428.9) | 2227 | 440.8 | (421.3, 460.3) | 2110 | 418.2 | (399.3, 437.2) |
| \*Rate per 100,000 population. Age-Adjusted rates are presented for sex and region. Age-adjusted to the 2000 U.S. standard population. Adjustments made by 5 age groups: 0-17, 18-34, 35-54, 55-74, 75+. | | | | | | | | | | | | |
| \*\*Based on ICD-9-CM TBI-related diagnosis codes used in the TBI morbidity surveillance case definition (Centers for Disease Control and Prevention, 2019) | | | | | | | | | | | | |
| #States in the Indian Health Service (IHS) regions are: East (Alabama, Arkansas, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Mississippi, Missouri, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Vermont, Virginia, West Virginia); Northern Plains (Iowa, Michigan, Minnesota, Montana, Nebraska, North Dakota, South Dakota, Wisconsin, Wyoming); Southern Plains (Kansas, Oklahoma); Southwest (Arizona, Colorado, Nevada, New Mexico, Utah). | | | | | | | | | | | | |
| ^ Gamma intervals used due to small cell size | | | | | | | | | | | | |

**Supplement Table 1, Continued**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **2009** | | | **2010** | | | **2011** | | | **2012** | | |
| **Number** | **Rate** | **95% CI** | **Number** | **Rate** | **95% CI** | **Number** | **Rate** | **95% CI** | **Number** | **Rate** | **95% CI** |
|  |  |  |  |  |  |  |  |  |  |  |  |
| 1554 | 220.4 | (209.1, 231.8) | 1737 | 249 | (236.9, 261.2) | 1861 | 264.5 | (252.0, 276.9) | 1977 | 278 | (265.3, 290.7) |
| 2579 | 390.2 | (374.2, 406.2) | 2879 | 433.7 | (417.0, 450.5) | 2990 | 449.6 | (432.6, 466.6) | 3069 | 456.8 | (439.8, 473.8) |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| 1390 | 313.8 | (297.6, 330.8) | 1387 | 314.3 | (298.1, 331.4) | 1422 | 323.3 | (306.9, 340.7) | 1566 | 358.1 | (340.7, 376.4) |
| 1527 | 407.8 | (487.7, 428.8) | 1730 | 451.2 | (430.4, 473.1) | 1780 | 454.8 | (434.1, 476.5) | 1782 | 452.5 | (431.9, 474.1) |
| 845 | 276.5 | (258.3, 295.9) | 1029 | 331.2 | (311.4, 352.2) | 1047 | 332.4 | (312.8, 353.3) | 1076 | 339.5 | (319.7, 360.5) |
| 269 | 176.8 | (156.6, 199.5) | 330 | 206.3 | (185.0, 230.1) | 415 | 247.0 | (224.1, 272.2) | 427 | 243.5 | (221.2, 268.0) |
| 102 | 279.3 | (228.9, 340.4) | 139 | 364.7 | (307.8, 431.9) | 187 | 468.8 | (405.2, 542.1) | 195 | 473.8 | (410.8, 546.2) |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| 137 | 93.1 | (76.7, 109.4) | 160 | 109.3 | (91.3, 127.2) | 166 | 106.4 | (89.6, 123.3) | 174 | 114.7 | (96.9, 132.6) |
| 85 | 175.1 | (137.9, 219.2)^ | 92 | 175.3 | (140.1, 216.6)^ | 98 | 173.1 | (139.6, 212.2)^ | 154 | 274.8 | (229.6, 320.1) |
| 916 | 294.8 | (274.8, 314.8) | 1219 | 387.4 | (364.6, 410.2) | 1250 | 401.0 | (377.7, 424.2) | 1274 | 404.8 | (381.6, 428.1) |
| 632 | 186.4 | (171.5, 201.3) | 689 | 203.7 | (188.1, 219.4) | 827 | 237.8 | (221.1, 254.5) | 943 | 267.8 | (250.2, 285.3) |
| 2363 | 445.4 | (426.4, 464.3) | 2456 | 469.4 | (449.9, 488.9) | 2510 | 486.3 | (466.3, 506.3) | 2501 | 480.0 | (460.3, 499.6) |

**Supplemental Table 1, Continued**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **2013** | | | **2014** | | | **Total** | |  |
| **Number** | **Rate** | **95% CI** | **Number** | **Rate** | **95% CI** | **Number** | **Rate** | **95% CI** |
|  |  |  |  |  |  |  |  |  |
| 2024 | 283.2 | (270.5, 295.9) | 2103 | 292.5 | (279.7, 305.4) | 17203 | 249.2 | (245.3, 253.0) |
| 3042 | 456.8 | (439.7, 473.9) | 3027 | 447.6 | (430.9, 464.3) | 27715 | 425.3 | (420.0, 430.6) |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| 1529 | 350.6 | (333.4, 368.7) | 1600 | 364.8 | (347.3, 383.2) | 14742 | 334.7 | (334.7, 340.2) |
| 1721 | 435.5 | (415.3, 456.6) | 1658 | 417.6 | (397.8, 438.2) | 15675 | 417.6 | (411.1, 424.2) |
| 1110 | 346.7 | (326.8, 367.8) | 1109 | 343.5 | (323.7, 364.4) | 9444 | 307.5 | (301.3, 313.7) |
| 476 | 259.2 | (236.7, 283.8) | 513 | 266.0 | (243.7, 290.2) | 3459 | 219.4 | (212.1, 226.8) |
| 230 | 535.4 | (469.6, 610.3) | 250 | 561.9 | (495.6, 637.0) | 1597 | 423.2 | (402.8, 444.5) |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| 119 | 78.2 | (63.6, 92.8) | 101 | 62.3 | (50.3, 76.4)^ | 1421 | 95.5 | (90.3, 100.7) |
| 169 | 291.6 | (246.1, 337.2) | 166 | 280.2 | (236.5, 323.8) | 1165 | 227.3 | (213.7, 240.9) |
| 1181 | 376.7 | (354.3, 399.2) | 1114 | 354.3 | (332.5, 376.1) | 11316 | 366.8 | (359.7, 373.9) |
| 900 | 252.0 | (235.2, 268.9) | 897 | 250.6 | (233.9, 267.4) | 7067 | 207.9 | (202.9, 212.9) |
| 2697 | 520.7 | (500.2, 541.2) | 2852 | 544.7 | (523.9, 565.5) | 23949 | 469.2 | (463.0, 475.5) |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Supplemental Table 2: Number and Percentage\* of Traumatic Brain Injury-Related Emergency Department Visits by Mechanism of Injury and Disposition, 2005-2014** | | | | | | | | |
|  | **2005** | | **2006** | | **2007** | | **2008** | |
|  | **Number** | **Percent** | **Number** | **Percent** | **Number** | **Percent** | **Number** | **Percent** |
| **Mechanism of Injury‡** |  |  |  |  |  |  |  |  |
| Motor vehicle/Traffic | 540 | 12.7 | 517 | 12.9 | 432 | 10.6 | 382 | 10.2 |
| Fall | 1215 | 28.7 | 1181 | 29.4 | 1248 | 30.7 | 1131 | 30.1 |
| Assault | 1059 | 25.0 | 986 | 24.5 | 1058 | 26.0 | 995 | 26.5 |
| Struck by or against object | 530 | 12.5 | 483 | 12.0 | 518 | 12.7 | 488 | 13.0 |
| Self-harm | 8 | 0.2 | 5 | 0.1 | Ɫ |  | Ɫ |  |
| Other unintentional injury, mechanism unspecified‡‡ | 159 | 3.8 | 118 | 2.9 | 92 | 2.3 | 83 | 2.2 |
| Other or no mechanism specified§§ | 6 | 0.1 | Ɫ |  | 7 | 0.2 | Ɫ |  |
|  |  | 83.0 |  | 81.9 |  | 82.5 |  | 82.1 |
| **Disposition** |  |  |  |  |  |  |  |  |
| Admitted | 168 | 4.0 | 136 | 3.4 | 169 | 4.2 | 137 | 3.7 |
| Discharged | 2860 | 67.5 | 2696 | 67.1 | 2837 | 69.7 | 2543 | 67.8 |
| Transferred | 969 | 22.9 | 929 | 23.1 | 802 | 19.7 | 845 | 22.5 |
| Other◦ | 240 | 5.7 | 257 | 6.4 | 261 | 6.4 | 227 | 6.1 |
| \* Percentage out of TBI emergency department visits | | | | | | | | |
| ‡Percentages for mechanism of injury do not add up to 100 as not all mechanisms of injury were classified into categories and some records did not list a mechanism of injury | | | | | | | | |
| \*\*Based on ICD-9-CM TBI-related diagnosis codes used in the TBI morbidity surveillance case definition (Centers for Disease Control and Prevention, 2019) | | | | | | | | |
| ‡‡ E-codes specify that the injury was unintentional but do not specify the actual mechanism of injury. | | | | | | | | |
| §§ Includes TBIs in which the intent was not determined as well as those due to legal intervention or war. Includes TBIs in which no mechanism was specified in the record. Does not include falls of undetermined intent. | | | | | | | | |
| Ɫ Cell suppressed due to small size | | | | | | | | |
| ◦Other category includes Other, Left Against Medical Advice, Medivax, and Died/Expired | | | | | | | | |

**Supplemental Table 2, Continued**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **2009** | | **2010** | | **2011** | | **2012** | | **2013** | | **2014** | | **Total** | |
| **Number** | **Percent** | **Number** | **Percent** | **Number** | **Percent** | **Number** | **Percent** | **Number** | **Percent** | **Number** | **Percent** | **Number** | **Percent** |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 431 | 10.4 | 494 | 10.7 | 487 | 10.0 | 530 | 10.5 | 472 | 9.3 | 421 | 8.2 | 4706 | 10.5 |
| 1180 | 28.6 | 1363 | 29.5 | 1491 | 30.7 | 1450 | 28.7 | 1447 | 28.6 | 1448 | 28.2 | 13154 | 29.3 |
| 1045 | 25.3 | 1287 | 27.9 | 1315 | 27.1 | 1291 | 25.6 | 1179 | 23.3 | 996 | 19.4 | 11211 | 25.0 |
| 591 | 14.3 | 539 | 11.7 | 577 | 11.9 | 697 | 13.8 | 638 | 12.6 | 596 | 11.6 | 5657 | 12.6 |
| 7 | 0.2 | 6 | 0.1 | 8 | 0.2 | 5 | 0.1 | 11 | 0.2 | 10 | 0.2 | 68 | 0.2 |
| 120 | 2.9 | 138 | 3.0 | 123 | 2.5 | 185 | 3.7 | 153 | 3.0 | 142 | 2.8 | 1313 | 2.9 |
| 7 | 0.2 | Ɫ |  | 6 | 0.1 | 9 | 0.2 | Ɫ |  | Ɫ |  | 51 | 0.1 |
|  | 81.8 |  | 82.9 |  | 82.6 |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 99 | 2.4 | 127 | 2.8 | 129 | 2.7 | 121 | 2.4 | 157 | 3.1 | 126 | 2.5 | 1369 | 3.0 |
| 2867 | 69.4 | 3142 | 68.1 | 3435 | 70.8 | 3698 | 73.3 | 3761 | 74.2 | 3914 | 76.3 | 31753 | 70.7 |
| 880 | 21.3 | 926 | 20.1 | 911 | 18.8 | 864 | 17.1 | 756 | 14.9 | 721 | 14.1 | 8603 | 19.2 |
| 287 | 6.9 | 421 | 9.1 | 376 | 7.8 | 363 | 7.2 | 392 | 7.7 | 369 | 7.2 | 3193 | 7.1 |

Notes**:**

Asterisk denotes statistically significant annual percent change (APC). APCs were calculated using JoinPoint regression.

Due to small numbers and missing data, self-harm and other or no mechanism specified are not presented in the figure

Ɨ Based on ICD-9-CM diagnosis codes used in the TBI morbidity surveillance case definition (Centers for Disease Control and Prevention 2019)

^ Age-adjusted to the 2000 U.S. standard population. Adjustments made by 5 age groups: 0-17, 18-34, 35-54, 55-74, 75+.