

All injury indicators

The Center for Injury Prevention and Control, Centers for Disease Control and Prevention (CDC), in collaboration with the State and Territorial Injury Prevention Directors Association (STIPDA), have identified 10 areas of primary concern related to tracking the burden of injury in a particular state. Injury indicators associated with each of these areas “describes a health outcome of an injury, such as hospitalization or death, or a factor known to be associated with an injury¹.” This section provides information on each of these indicators and their relationships to other indicators.

It must be noted that the indicators are NOT mutually exclusive as some of the indicators are causes (fires), others intents (suicide or homicide) and types (traumatic brain injury) of injury. Therefore, the numbers of incidents, rates, and the charges for one injury case may also be included in the number, rates and charges of multiple indicators. Please also note that the values reported in the chart for hospital charges per indicator include only the charges submitted by the hospital to the payer. They are included only as a general means of comparing a portion of the costs of injuries related to each of the various indicators.

Note also that hospitalization or ED data cannot be compared directly to death data, as the populations they are drawn from are different. This data table is presented only to make general comparisons between and among the different indicators. Please also note that unless otherwise stated, all rates are reported as incidents per 100,000 Iowans and adjusted to the 2000 US population. **Reported values for frequencies of various events may not exactly match the values in other sections of the report due to missing data for the variable analyzed in that particular section.** More information on the calculation methods and injury coding scheme is available in the methods section in Annex 1.

Comparison of all indicators in Iowa

Table 1: All injury indicators – Total # and rates, 2002-2006

Indicator area	Deaths (2002-2006)		Hospitalizations (2002-2006)		Emergency department visits (2003-2006)	
	Average N [^]	Rate*	Average N [^]	Rate*	Average N [^]	Rate*
All injuries	1,558	48.3	17,272	520.5	267,073	8,953.8
Drowning ⁺	29	1.0	15	0.5	79	2.8
Falls ^u	314	8.5	7,121	197.3	61,891	1,984.0
Fire-related ^u	29	0.9	119	4.0	1,087	37.6
Firearm-related	197	6.5	69	2.4	185	6.4
Homicide/Assault	55	1.9	276	12.0	7,024	242.7
Motor vehicle traffic (MVT) ^u	420	13.2	1,648	54.8	18,911	638.9
Poisoning	165	5.6	2,008	68.9	3,423	113.2
Suicide	332	11.1	1,483	51.7	1,547	53.3
Traumatic brain injury (TBI)	554	17.3	1,821	56.8	15,456	504.9

[^]The Average N is calculated by adding the total number of incidents over the 4 or 5 year period and dividing by the appropriate number of years, for a yearly average.

*All rates are reported per 100,000 population and are age-adjusted to the 2000 US population.

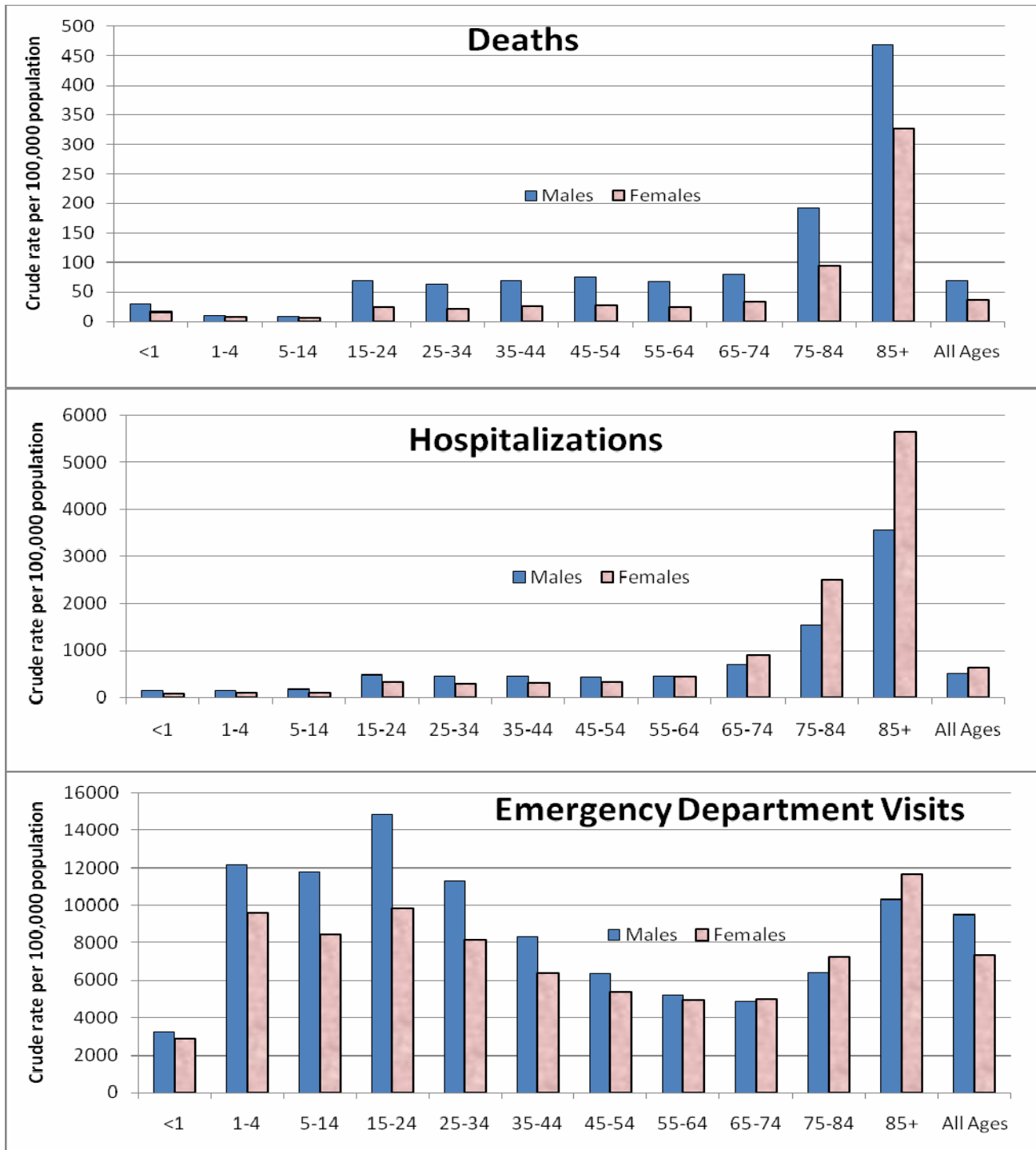
⁺The drowning indicator includes not only unintentional deaths, but all hospitalizations and ED visits.

^u Data for these indicators include only unintentional injuries.

¹ From CDC NCIPC, available at: <http://www.cdc.gov/ncipc/>

Indicators for all injuries, Iowa, 2002-2006

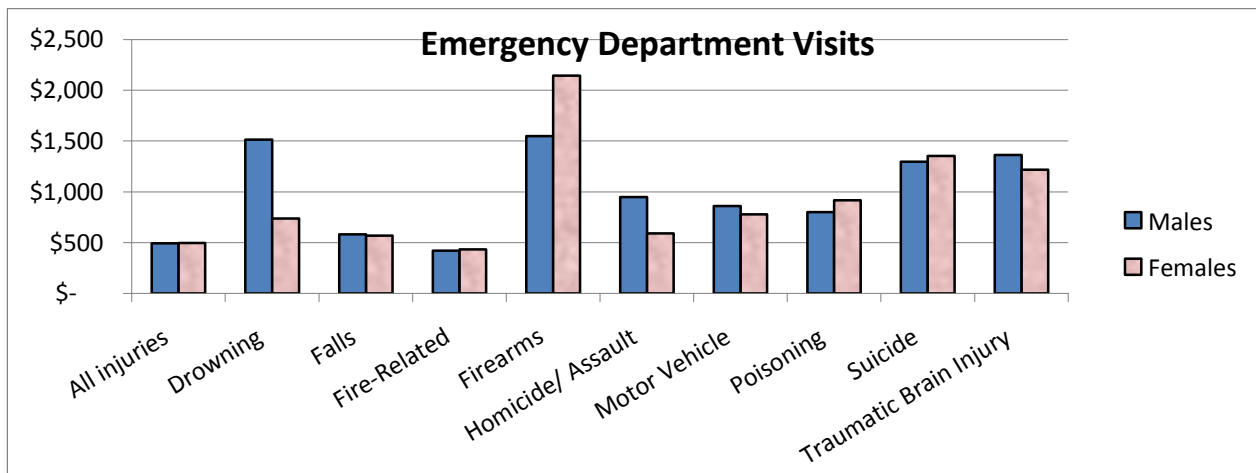
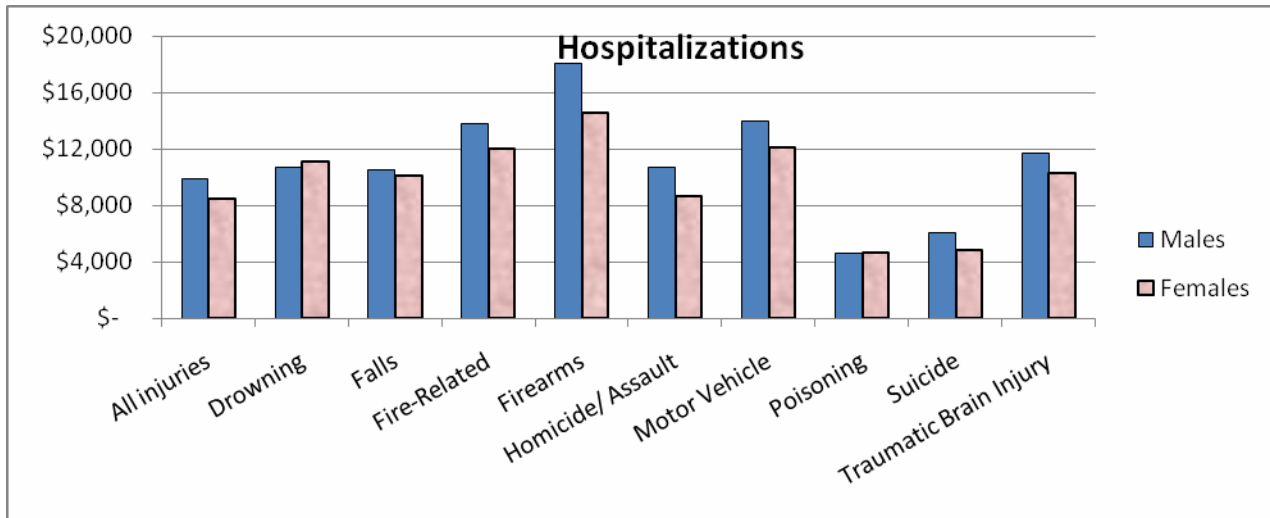
The first of these 10 indicator areas outlines the burden of all injuries in Iowa by age group and gender, including deaths, hospitalizations, and ED visits. More information on the demographic distribution of the overall injury burden in Iowa is available in the previous section of this report, the Overview of Injuries in Iowa. The subsequent specific indicators address specific causes, intents or type of injury, as appropriate. For each indicator, the rates per 100,000 population are charted, followed by a discussion of the issues reflected in the data.



- In Iowa, over the five-year period of this report there were, on average, 1,558 injury deaths; 17,267 injury hospitalizations; and 234,542 ED visits per year.
- Injury death rates vary greatly by age; however, across all ages, crude injury death rates were twice as high in Iowa males (69/100,000) as in Iowa females (36/100,000).
 - The rate of injury deaths is by far the highest in Iowans over 84 years old (males: 468/100,000; females: 327/100,000).
 - The rate of injury deaths was nearly three times higher in infants (males: 30/100,000; females: 16/100,000) than in children aged 1-4 (males: 10/100,000; females: 7/100,000).
 - As shown by the data in the previous point, the injury death rate of male infants is double that of female infants. However, gender differences in injury death rates are small for children between the ages of 1 and 14.
 - Gender differences in death rates were greater after 14 years of age, with the death rate three times higher for males (70/100,000) than females (23/100,000) in the 15-to 24-year-old age group. Iowa males who are 25-64 years old are more than 2.5 times as likely to die from injuries as females in that age group.
 - Female death rates (368/100,000) increased substantially in those over 84 years old, but still did not reach the male death rate (468/100,000).
- The age and gender distribution for injury hospitalizations is similar to that of injury deaths, except that older females are hospitalized for injuries more often than older males.
 - Across all age groups, females had a 26 percent greater injury hospitalization rate than males, with a yearly average hospitalization rate of 643/100,000 vs. 509/100,000, respectively. However, each age group has different characteristics.
 - Among Iowans under the age of 65, males had higher injury hospitalization rates than females. Among Iowans less than one year of age, males are twice as likely as females to be hospitalized due to injuries.
 - The female injury hospitalization rate steadily increased with age to surpass that of males. In Iowans aged 55-64, males and females had nearly the same hospitalization rates of 464/100,000 and 448/100,000, respectively.
 - After the 65-74 age groups, the trend reversed. Hospitalization rates for females increased significantly, exceeding that of males (900/100,000 vs. 706/100,000, respectively), and continued to increase in the older age groups.
- The rate of injury ED visits is greatest in the 15-24 age groups, with another peak in seniors (85+).
 - Even though males of all ages had a higher rate of injury ED visits than females (8,813 vs. 6,881 per 100,000 Iowans, respectively), female ED visit rates were on average 13 percent higher after the age of 65.
 - Iowa males aged 15 to 24 are more likely than females (13,759 vs. 9,180/100,000 Iowans, respectively) to go to the ED for an injury. This gender difference becomes less pronounced after age 34.

Hospital charges per indicator, Iowa, 2002-2006

Cost is another significant aspect to consider when assessing the burden of a particular type of injury. The graphs below present only the median charges that hospitals submit to their payers. As such, the data include only a fraction of the costs, but they provide information on the general trends of the charges for each of the various indicators.



- The values presented are the average of the median charges over the five-year period (2002-2006).
- On average, all Iowa hospitals charged \$158 million per year for all injury hospitalizations.
- Even though falls have a moderate, average median cost of hospitalization care (\$10,000 charge/visit), the large average number of hospitalizations in Iowa due to falls (8,900) causes the total charges to be \$92 million per year, the largest of any indicator.
- Males (\$9,900 charged) tend to have more costly injury-related hospital stays than women (\$8,500 charged).
- Firearm-related hospital stays tend to be the most expensive of any indicator (\$16,000 charge/visit), followed by MVT (\$13,000 charge/visit) and fire-related injuries (\$13,000 charge/visit).
- On average, the hospital charge for all injury ED visits was \$124 million/year in Iowa.
- Even though falls have a low average median cost of ED visit care (\$576 charge/ visit), the large average number of ED visits in Iowa each year due to falls (61,000) causes the total charges for ED visits due to falls to be \$35 million charged per year, the largest of any ED visit indicator.
- Males and females had nearly identical average hospital charges for an ED visit (average of \$494/visit).
- ED visits due to firearm-related injuries tend to be the most expensive of any indicator (\$1,850/visit), followed by TBI (\$1,330/visit) and suicide (\$1,290/visit).
- See table in appendix for numbers of occurrences and charges for each indicator and information on the calculation of these figures.
- In addition to medical costs, loss of work productivity, decreased ability to perform household tasks, reduced quality of life, and many other factors add to the total burden of injury in Iowa.