

# Overview of the burden of injury in Iowa

The following pages present an overview of the burden of injury on all Iowans from 2002- 2006, unless otherwise noted. The data in the first table show that injury is an important public health concern for all age groups in Iowa. The leading causes of injury in Iowa in each age group are then presented to provide insight on prevention efforts that are needed in various portions of the life span of Iowans. Next, the trends of injury over the five-year period are presented to provide information on any major changes in the data over time, which can inform decisions on potential interventions, legislative or reporting method changes, and other similar efforts.

Data are then presented on the differing impact that injuries have on males and females, people of different races, age groups, and rural compared to urban residents. This information can assist with the design of injury prevention and care efforts to target specific segments of the population. Data show the proportion of all deaths, hospitalizations and ED visits that are due to injuries, which underlines the large burden of injuries on health care systems and on all society. Data are then presented on the intent of injuries, which emphasizes the need for continued and specific efforts to prevent both unintentional injuries (often called accidents), as well as homicides and suicides (intentional injuries). This section concludes with data on the years of potential life lost due to injuries and demonstrates the disproportionate impact of injuries on the young people of Iowa who are the future of the state.

When considering the data in the overview section, please note the following:

- The data for deaths and hospitalizations are the yearly averages from 2002-2006, and the data for ED visits is the yearly average from 2003-2006, unless otherwise noted.
- Data for hospitalizations and ED visits include *all* hospitalizations and ED visits, rather than only reporting the first hospitalization or ED visit for each injury.
- Note that the ED visit data are from 2003-2006 as the ED visit data from 2002 were recorded in a different manner than 2003-2006. Also, the data from CDC WISQARS in the first two tables are from 2002-2005 as the CDC data from 2006 were not available at the time this report was drafted.
- Rates are reported as average yearly rates per 100,000 population unless noted otherwise. These rates were determined by calculating the rate for each year per 100,000 people in the state or counties (as appropriate), adding the rates, and dividing by the total number of years of data (5 for deaths and hospitalizations and 4 for ED visits), for a yearly average.
- All rates reported in this section are age-adjusted to the 2000 US population, unless noted otherwise. More information on details of the age adjustment and rate calculation is available in Annex 1 of this report. It is known that the number of hospitalizations and ED visits for various injury causes is underreported, as 22% of hospitalizations and 16% of ED visit records are NOT coded with an electronic cause code.
- 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.
- All age groupings are presented using CDC life span ages, which is similar to the National Institute for Occupational Safety and Health (NIOSH) occupational age groupings.
- More detailed technical notes and methodology are included in Annex 1 of this report.

# Injury is a major cause of death in Iowa

Injuries are a major public health concern in Iowa due to the large number of Iowans affected by them. Like the entire U.S., unintentional injuries are the fifth leading cause of all death for Iowans of all ages and are also the leading cause of death for Iowans from 1 to 34 years of age.

**Table 1: Five leading causes of ALL deaths in Iowa by age groups and total # of deaths, 2002-2005**

Source: CDC Web-based Injury Statistics Query and Reporting System (WISQARS- [www.cdc.gov/ncipc/wisqars/](http://www.cdc.gov/ncipc/wisqars/))

Rank	<1	1 to 4	5 to 14	15 to 24	25 to 34	35 to 44	45 to 54	55 to 64	65 to 74	75 to 84	85 +	All Ages
1	Congenital Anomalies- 210	Unintentional Injury- 55	Unintentional Injury- 133	Unintentional Injury- 545	Unintentional Injury- 353	Malignant Neoplasms- 518	Malignant Neoplasms- 1,913	Malignant Neoplasms- 3,837	Malignant Neoplasms- 6,297	Heart Disease- 8,931	Heart Disease- 13,474	Heart Disease- 30,757
2	Short Gestation- 100	Congenital Anomalies- 15	Malignant Neoplasms- 47	Suicide- 219	Suicide- 214	Heart Disease- 475	Heart Disease- 1,348	Heart Disease- 2,331	Heart Disease- 4,044	Malignant Neoplasms- 8,168	Malignant Neoplasms- 4,728	Malignant Neoplasms- 25,735
3	SIDS- 99	Homicide- 13	Congenital Anomalies- 16	Malignant Neoplasms- 66	Malignant Neoplasms- 143	Unintentional Injury- 439	Unintentional Injury- 532	Chronic Low. Respiratory Disease- 529	Chronic Low. Respiratory Disease- 1,418	Chronic Low. Respiratory Disease- 2,584	Cerebrovascular- 4,191	Cerebrovascular- 8,169
4	Maternal Pregnancy Comp.- 65	Malignant Neoplasms- 12	Heart Disease- 15	Homicide- 46	Heart Disease- 89	Suicide- 269	Suicide- 295	Unintentional Injury- 353	Cerebrovascular- 836	Cerebrovascular- 2,562	Alzheimer's Disease- 2,511	Chronic Low. Respiratory Disease- 6,504
5	Placenta Cord Membranes- 41	Heart Disease- 5	Suicide- 9	Heart Disease- 36	Homicide- 39	Liver Disease- 70	Liver Disease- 195	Diabetes Mellitus- 320	Diabetes Mellitus- 519	Alzheimer's Disease- 1,122	Influenza & Pneumonia- 2,291	Unintentional Injury- 4,567

- Unintentional injuries are the 3<sup>rd</sup> leading cause of death for 35- to 54-year olds in Iowa, after cancer and heart disease.
- Suicide is the 10<sup>th</sup> leading cause of all deaths in Iowa (2005), while it ranked 11<sup>th</sup> in all the US (2005).
- Suicide is the 2<sup>nd</sup> leading cause of all deaths for 15- to 34-year olds in Iowa, the 4<sup>th</sup> leading cause for Iowans aged 35 to 54, and the 5<sup>th</sup> leading cause for Iowans aged 5 to 14. Suicide deaths rank slightly higher in Iowa than in the rest of the U.S. in most age categories.
- Homicide ranks lower among causes of death in Iowans, particularly among 5- to 34-year olds, than the US average<sup>1</sup>.
- Despite the large number of deaths due to injuries, most injuries are not fatal. However, they are still devastating as described later in this report.

<sup>1</sup> All comparisons to national data on this page are from CDC WISQARS (2002-2005)

# Motor vehicle crashes are the leading cause of injury death in Iowa

Motor vehicle traffic deaths are the leading cause of injury-related deaths for all ages of Iowans, followed by falls. These and other leading causes of injury death vary by age group.

**Table 2: Five leading causes of INJURY deaths in Iowa by age groups and total # of deaths, 2002-2005**

Rank	<1	1 to 4	5 to 14	15 to 24	25 to 34	35 to 44	45 to 54	55 to 64	65 to 74	75 to 84	>85	All Ages
1	Suffocation - 12	MV Traffic - 20	MV Traffic - 73	MV Traffic - 422	MV Traffic - 203	Suicide - 244	Suicide - 271	MV Traffic - 153	Falls - 122	Falls - 342	Falls - 618	MV Traffic - 1,688
2	Homicide - 7	Homicide - 12	Fire/burn - 10	Suicide - 212	Suicide - 202	MV Traffic - 209	MV Traffic - 246	Suicide - 132	MV Traffic - 169	MV Traffic - 169	Unspecified - 183	Falls - 1,255
3	Drowning - 5	Drowning - 10	Drowning - 9	Homicide - 41	Unintentional Poisoning - 53	Unintentional Poisoning - 53	Unintentional Poisoning - 83	Falls - 63	Suicide - 64	Unspecified - 69	MV Traffic - 85	Suicide - 1,252
4	MV Traffic - 4	Fire/burn - 8	Suicide - 9	Unintentional Poisoning - 36	Homicide - 24	Homicide - 25	Falls - 54	Unintentional Poisoning - 21	Suffocation - 30	Suffocation - 66	Suffocation - 67	Unintentional Poisoning - 322
5	Unspecified - 2	Pedestrian, Non-MVT - 4	Pedestrian, Non-MVT - 7	Drowning - 31	Falls - 14	Falls - 25	Suffocation - 25	Suffocation - 18	Adverse Effects - 26	Suicide - 61	Adverse Effects - 32	Suffocation - 249

Source: CDC Web-based Injury Statistics Query and Reporting System (WISQARS- [www.cdc.gov/ncipc/wisqars/](http://www.cdc.gov/ncipc/wisqars/))

- Motor vehicle traffic trauma is the leading cause of injury death for Iowans from the age of 1-34 and 55-64, while falls are the leading cause for injury death for Iowans ages 65 and over, the same as in the entire U.S.<sup>2</sup>.
- Suicide is the leading cause of injury death among 35- to 54-year olds, which accounts for 41% of the total suicides in Iowa.
- Homicides are in the top five causes of injury death in Iowa only in children under 5 and in young adults (15-44 years), while homicides are in the top five causes of injury deaths in the entire U.S. for all age groups under the age of 45.

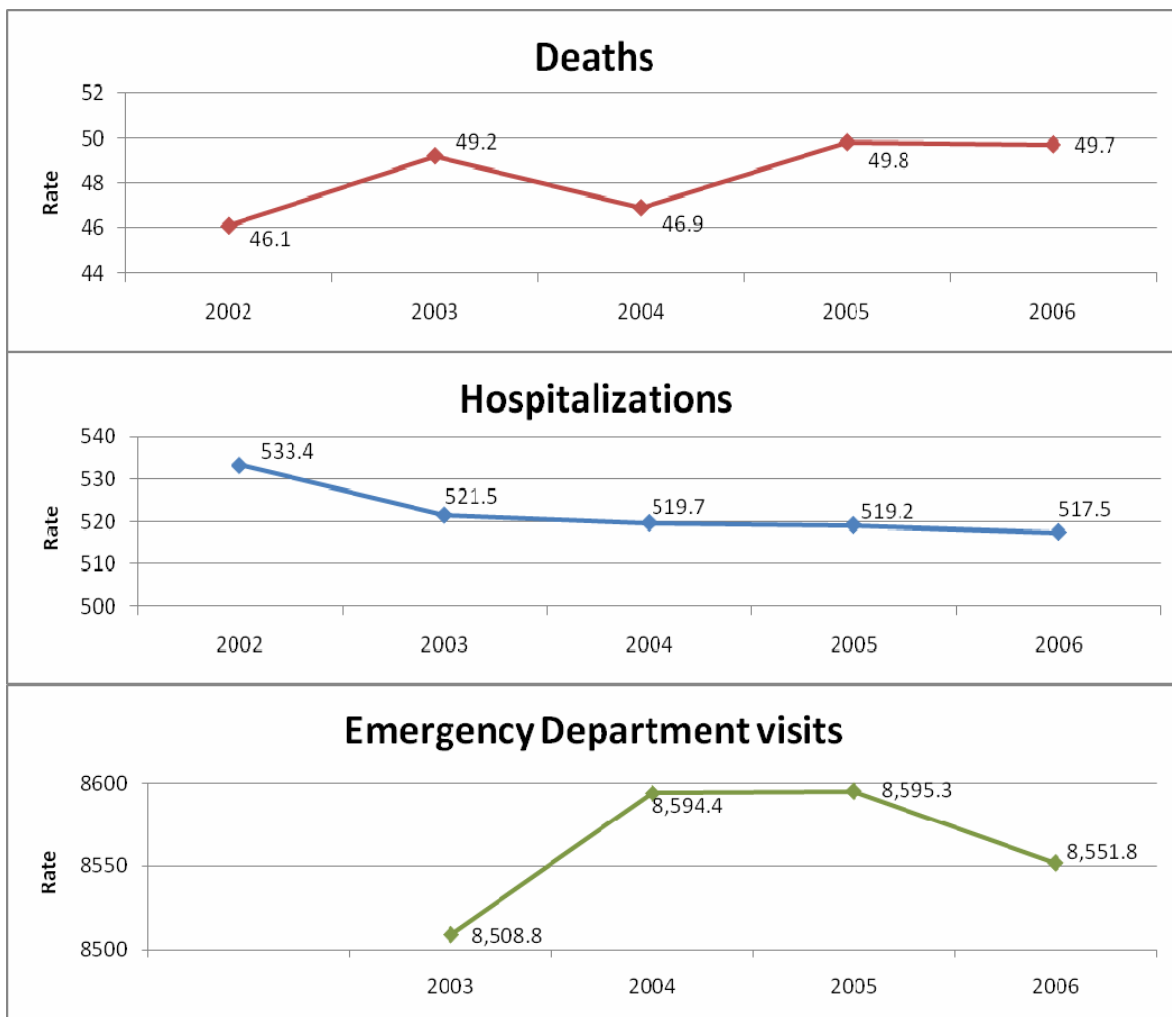
Note that the numbers listed in this table were calculated slightly differently than those in the previous table, so some small differences may exist.

<sup>2</sup> All comparisons to national data on this page are from CDC WISQARS (2002-2005).

## Injury-related death, hospitalization and emergency department visit rate trends, Iowa, 2002-2006

Over the five-year period (2002-2006) of this report, age-adjusted injury death rates (# of events/ 100,000 population) were basically constant with a slight upward trend, ranging from 46.1 to 49.7 deaths/ 100,000 lowans. In addition:

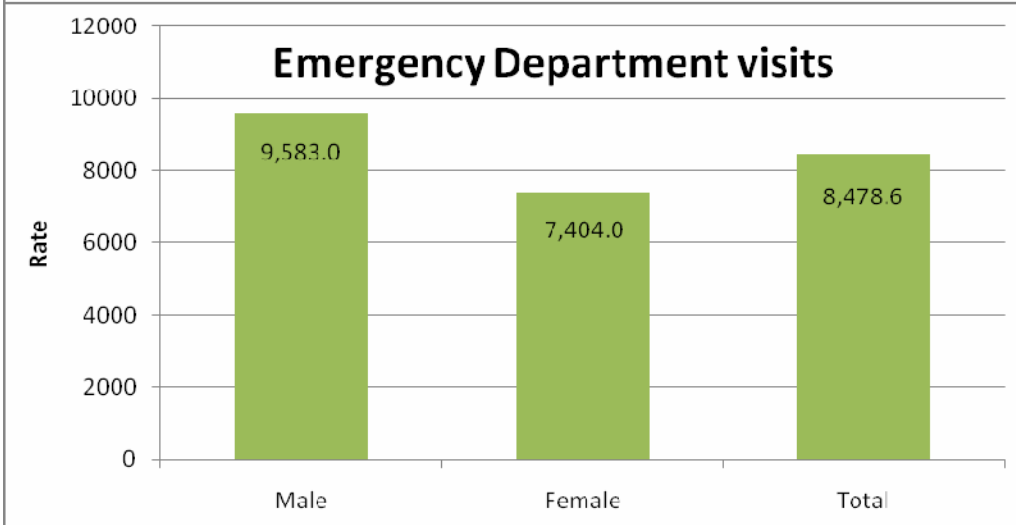
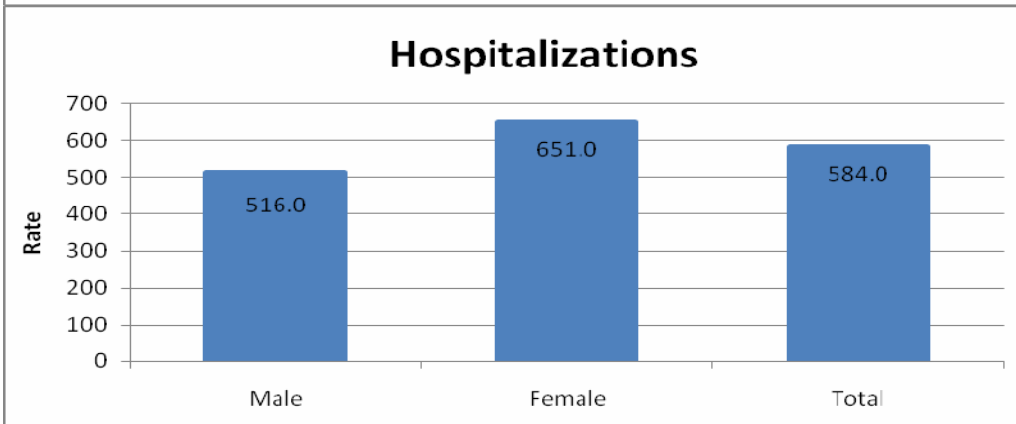
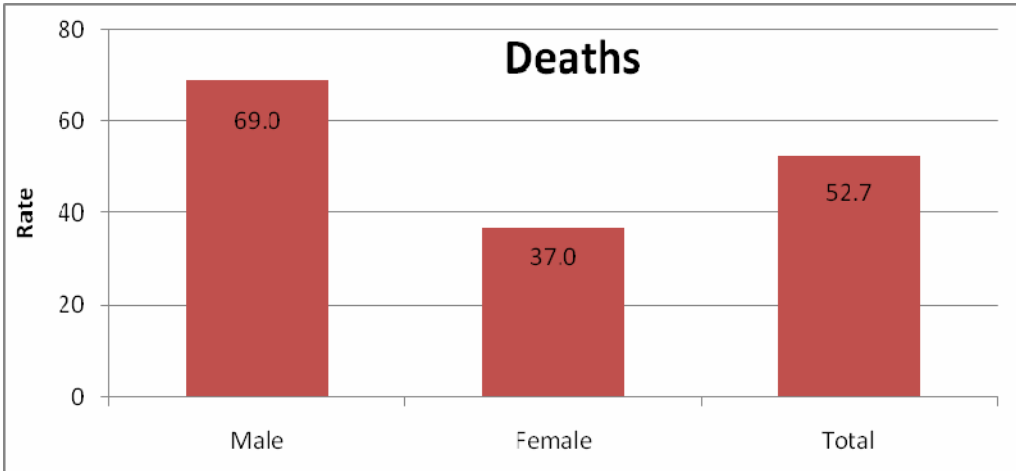
- Injury death rates in Iowa are lower than the national average injury death rate, which increased slightly from 55.7 to 57.6/ 100,000 US population from 2002 to 2005<sup>3</sup>.
- The age-adjusted injury hospitalization rate was also basically constant, with a slight decrease over time (from 533 to 518 injury hospitalizations/ 100,000 lowans). This is lower than the 2004 national median rate for all injury hospitalizations across the NCIPC reporting states (555/100,000 US population<sup>4</sup>).
- The injury ED visit age-adjusted rates have increased over their four-year reporting period (2003-2006), although declining from 2005 to 2006. The data show that after adjusting for age, for every 100 lowans, there are, on average, eight injury-related ED visits.



<sup>3</sup> CDC WISQARS (2002-2005)

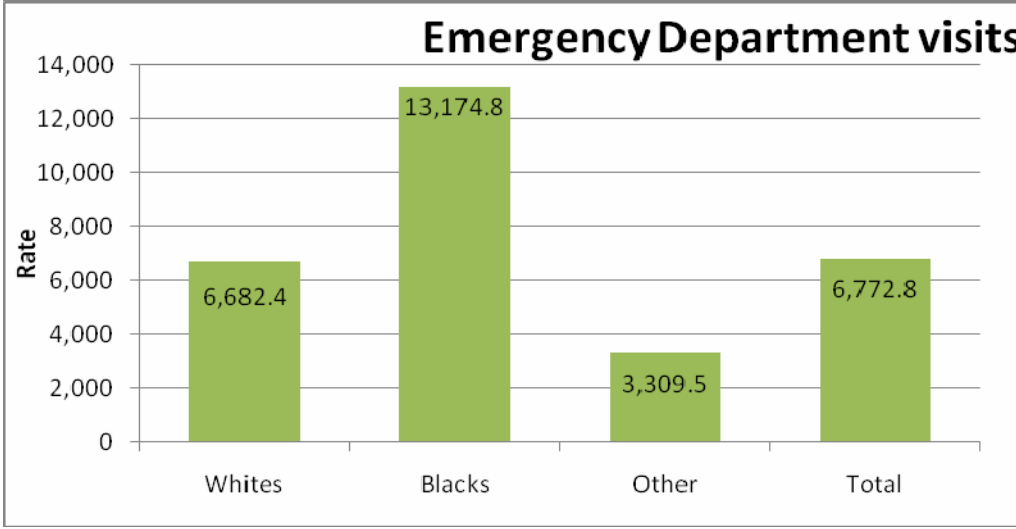
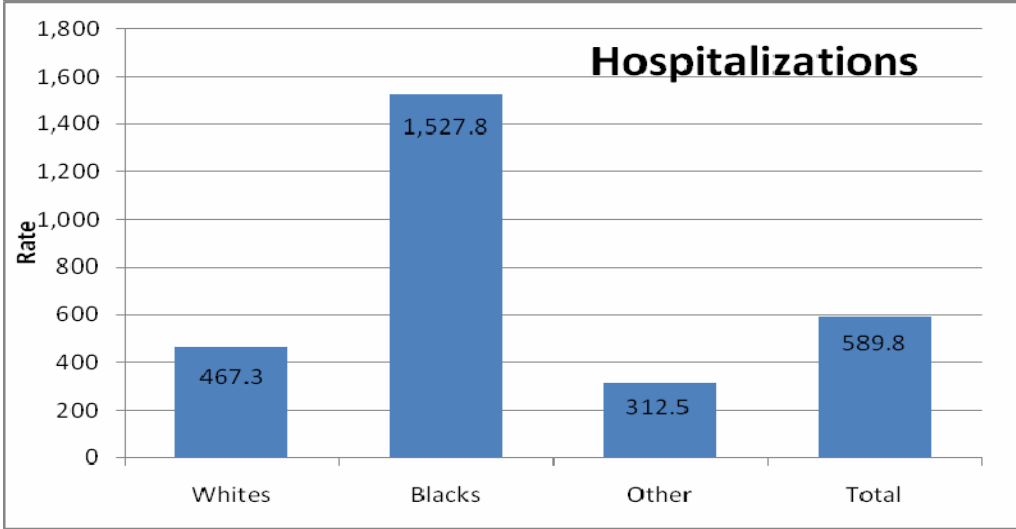
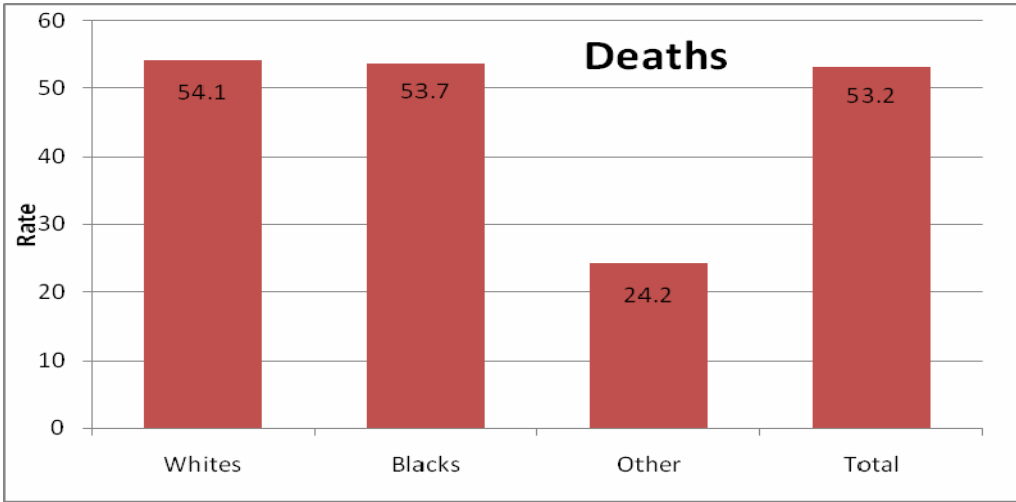
<sup>4</sup> CDC NCIPC State Indicators Report, 3<sup>rd</sup> Edition, 2004 data

# Injury affects genders, races, and age groups in Iowa differently: 2002-2006 average rates of injury (per 100,000 Iowans) by gender



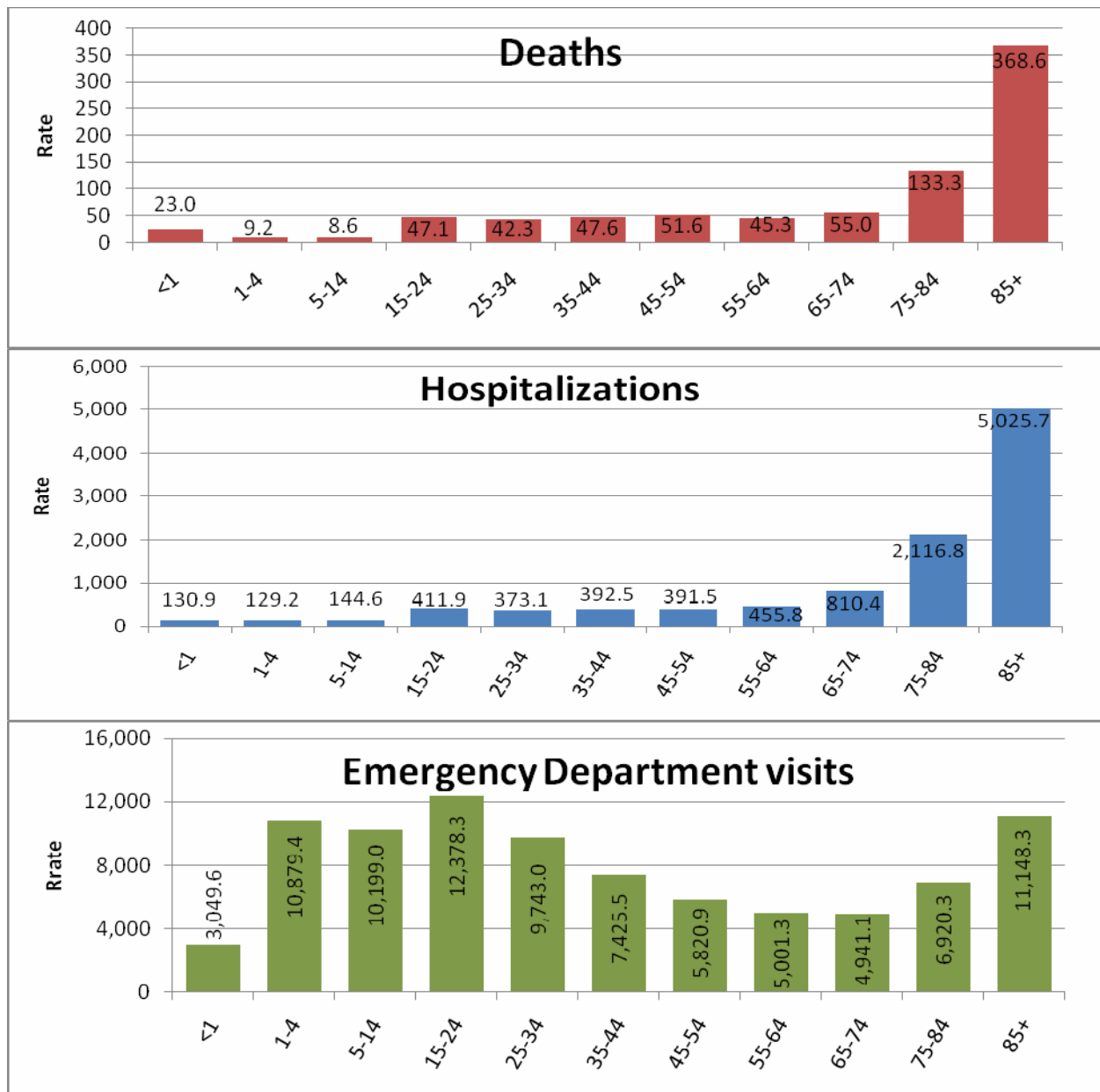
- The rate of males dying in Iowa due to injury (69) is nearly double that of females (37).
- The differences between genders vary greatly, depending on the specific indicator and age of the victim.
- Iowa females have a greater injury hospitalization rate, but a lower ED visit rate than males.
- Caution is needed when interpreting these differences since the rates are not age-adjusted.

## Injury rates (per 100,000 lowans) by race, 2002-2006



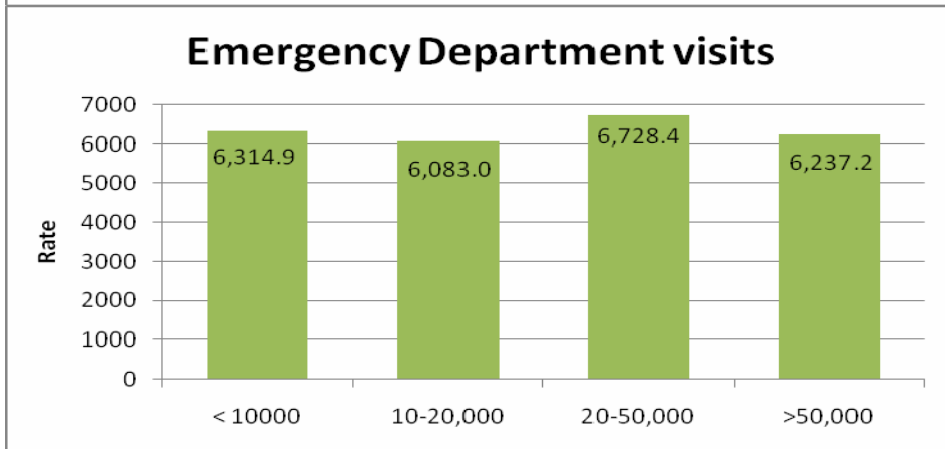
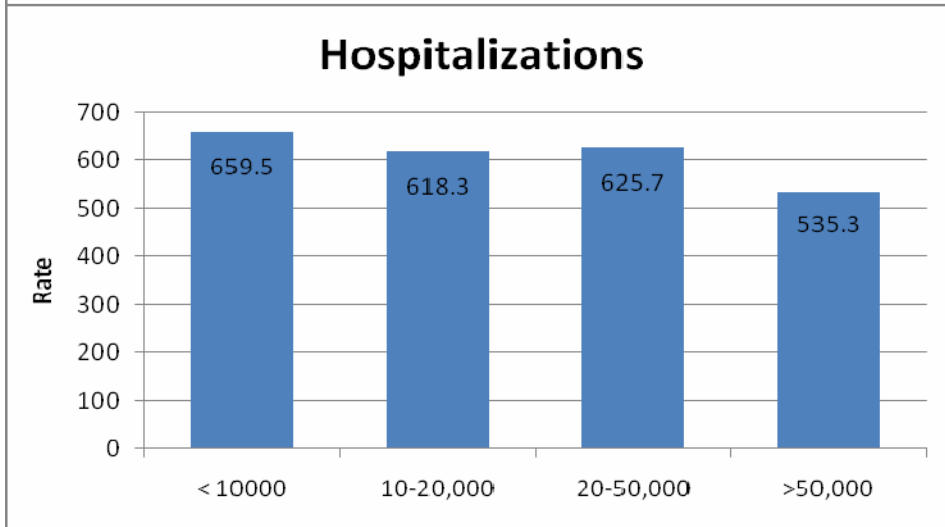
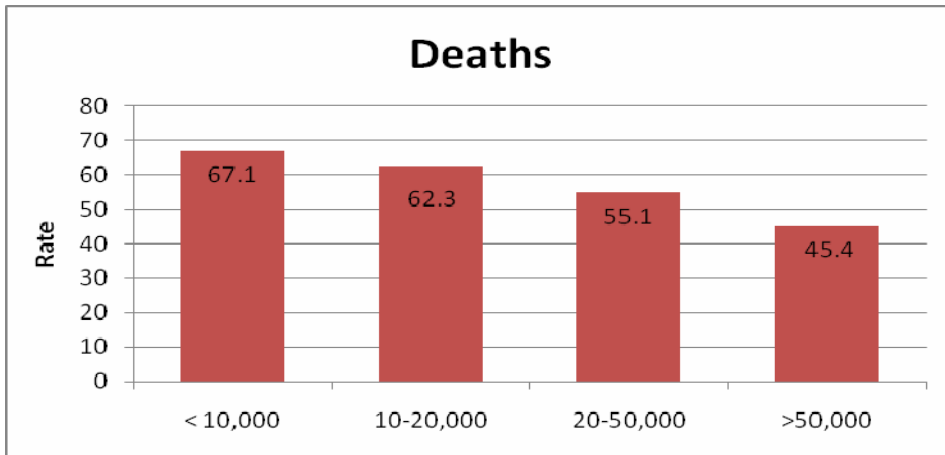
- The crude injury death rate for blacks in Iowa (54) is comparable to that of whites (54).
- Blacks (1,528) in Iowa are 3 times more likely to be hospitalized for an injury than whites (467).
- Blacks are more than 2 times more likely to go to the ED for an injury than whites.
- Other racial groups combined together (Hispanic, Asians, Natives, etc.) have lower crude rates for injury deaths, hospitalizations and ED visits than whites and blacks.
- A large amount of data on race (22% and 21%) is missing for hospitalizations and ED visits, respectively.
- Caution should be used when interpreting these results since the rates were not age-adjusted.

## Injury rates (per 100,000 lowans) by age group, 2002-2006



- ▶ Injury death and hospitalization rates in Iowa increased with age. Rates of injury deaths (369) and hospitalizations (5,026) are by far the highest in those aged 85 and over.
  - Hospitalization rates for seniors (85+) in other NCIPC reporting states (in 2004) range from 2,600 to 6,800/ 100,000 population; thus, Iowa is also within this range.
- ▶ Injury-related ED visit rates were greatest among youth and the elderly. Iowa adults between the ages of 45 and 74 had a low rate of 5 ED visits per 100 people, contrasted with youth aged 15 to 24 that had double the rate, of approximately 12 ED visits per 100 people.
- ▶ ED visit rates due to injuries were highest among 15- to 24-year olds, followed by those aged 85+.

## Injury death, hospitalization and emergency department visit rates differ by county size, 2002-2006

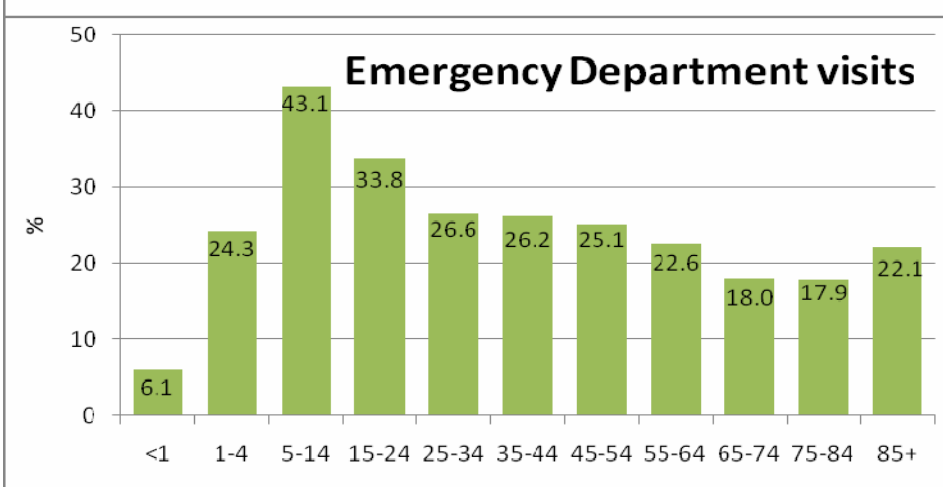
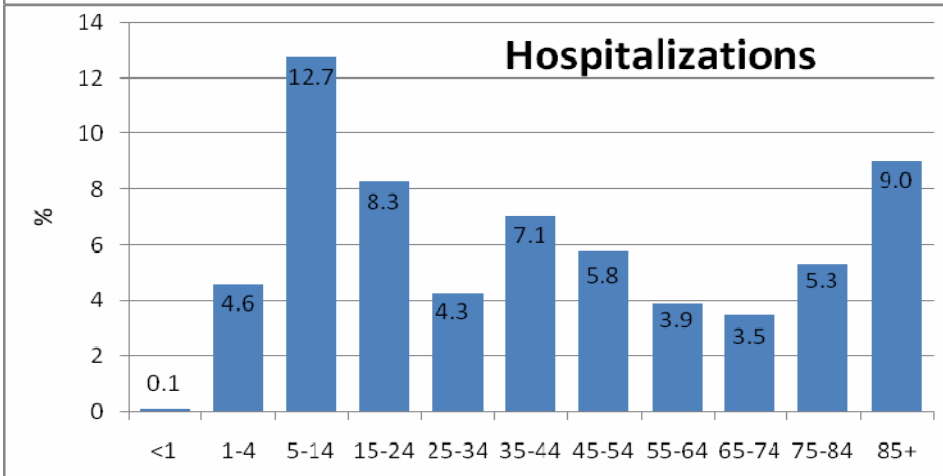
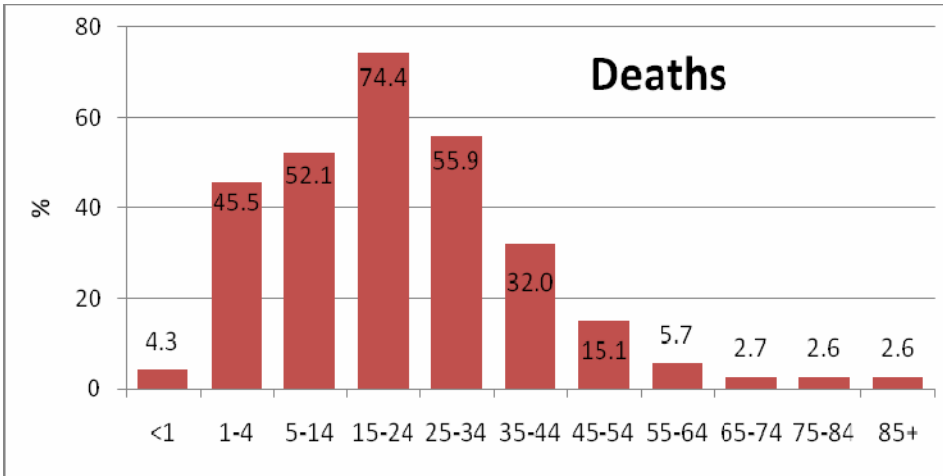


- ▶ The 5-year average crude injury death rate was greatest in less populated counties (rate of 67/100,000).
- ▶ Compared to counties with over 50,000 people (rate of 45), counties with <10,000, 10-20,000 and 20-50,000 report a 48%, 37% and 21% increase in injury death rates, respectively.
- ▶ Injury hospitalization rates are lowest in counties with less than 50,000 people (535), with the highest rates in counties with <10,000 population (659).
- ▶ ED visit rates did not demonstrate any trend by county size.
- ▶ The rate of injury ED visits was highest in counties with 20-50,000 people (6,728/100,000 people) and lowest in counties with 10-20,000 people (6,083).
- ▶ Caution should be used when interpreting these results since the rates were not age-adjusted.

*More detailed information on the burden of injury in each county in Iowa is available as an annex to this report.*



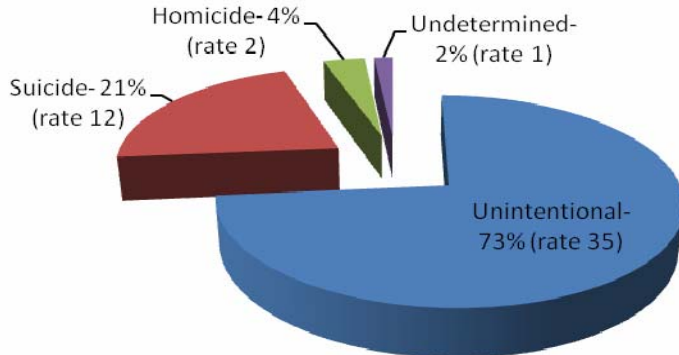
# Injuries are a large percentage of all deaths, hospitalizations, and emergency department visits, and varies by age group in Iowa, 2002-2006



- Injuries accounted for 6% of all deaths in Iowa. However, this percentage varies by age group.
- Youths aged 15-24 are the age group with by far the greatest proportion of deaths from injury (74%) compared to all deaths.
- Young adults (aged 25-34) have the second highest proportion (56%) of deaths due to injury.
- Therefore, injury prevention is a very important public health issue for all entities working with children and youth.
- On average, injury hospitalizations represented 5% of all hospitalizations.
- Among children between 5-14 years old, injury hospitalizations corresponded to 13% of all hospitalizations, the highest proportion of all age groups.
- The percent of injury ED visits as a proportion of all ED visits is highest among those age 5 to 14 (43%).
- Overall, one in four (27%) ED visits is due to injury.

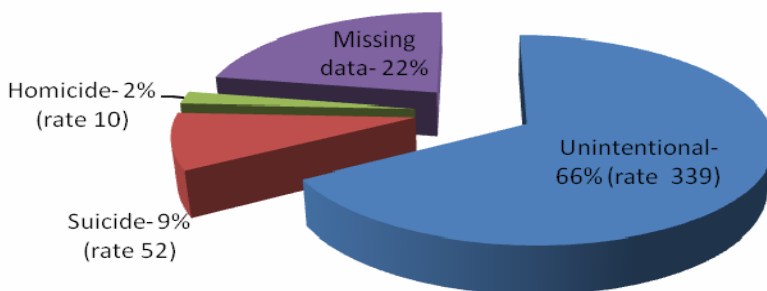
## Most injuries in Iowa are unintentional, 2002-2006

### Deaths



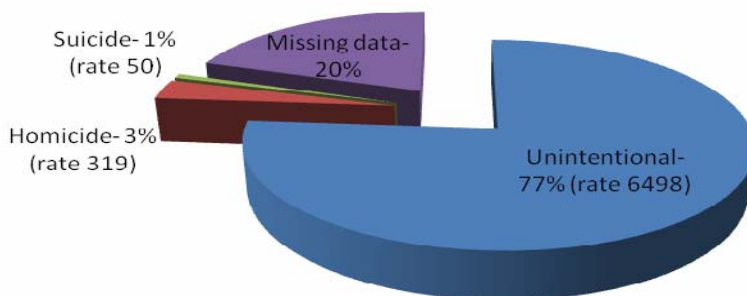
- 73% of injury deaths in Iowa (2002-2006) were classified as unintentional, with 21% as suicide and 4% as homicide.
- Iowa's unintentional injury (Iowa: 35 vs. US: 39) and homicide death rates (Iowa: 2 vs. US: 6) are lower than the national average, while the suicide rate is higher than the national average (Iowa: 12 vs. US: 11).

### Hospitalizations



- For every one death due to unintentional injury (rate=35), there are nearly 10 hospitalizations (rate=339). 22% of injury-related hospital visits did not have an intent coded.
- For every 100 Iowans, there were, on average, 6 to 7 ED visits due to unintentional injuries (from 2002-2006).

### Emergency Department visits

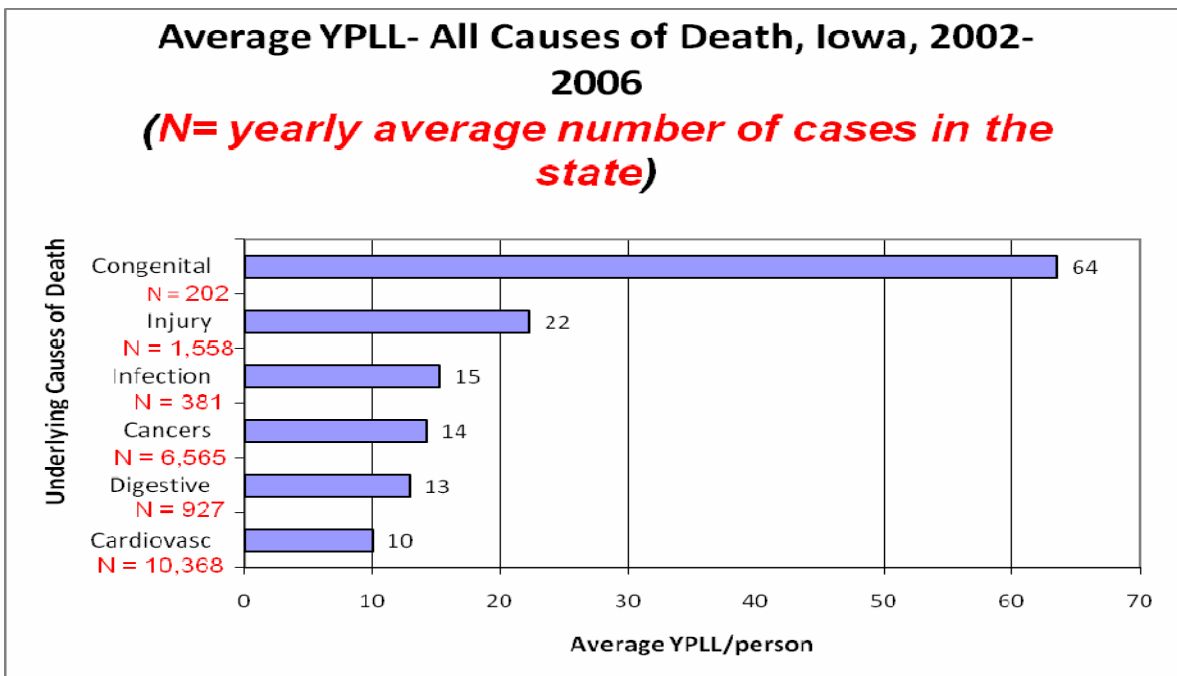
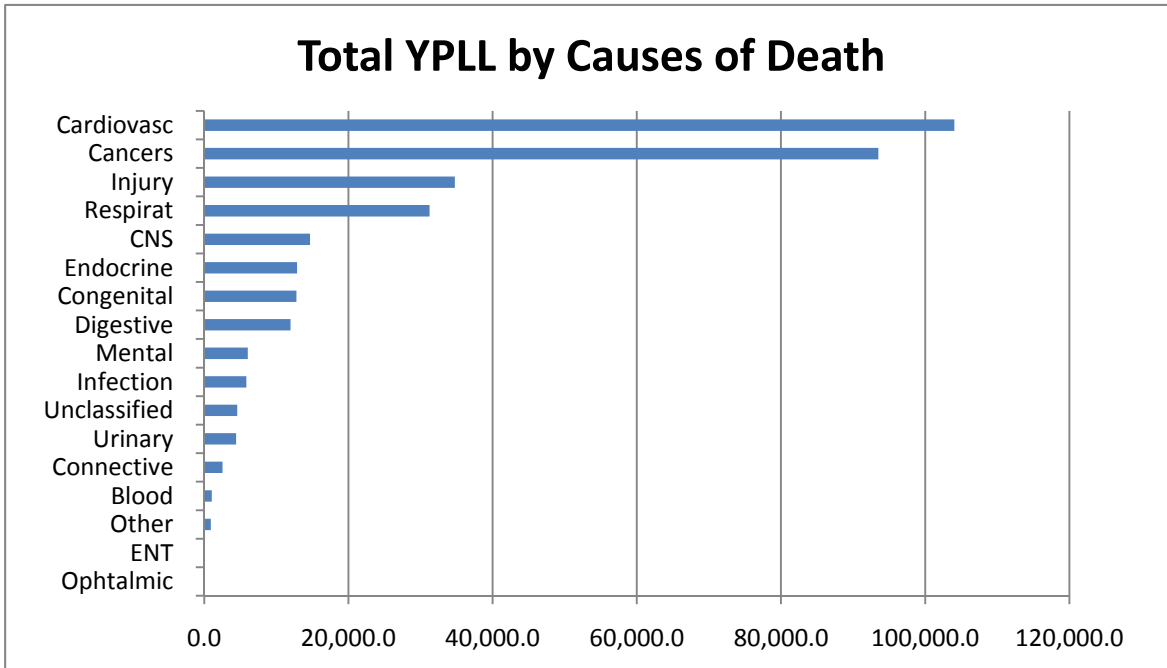


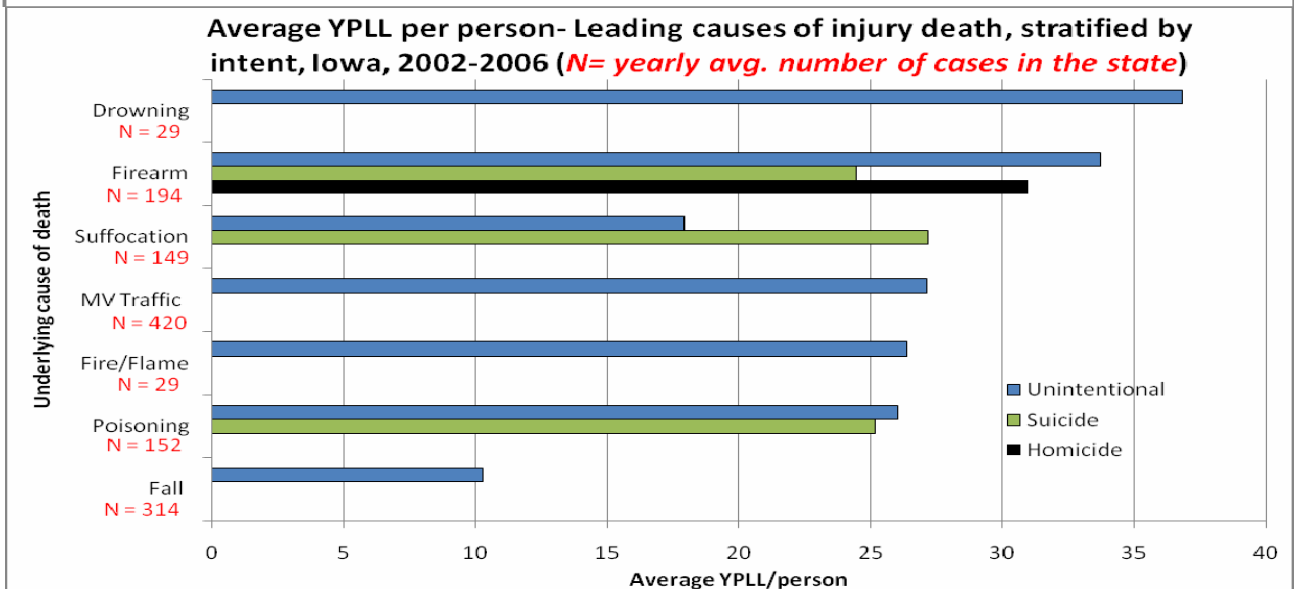
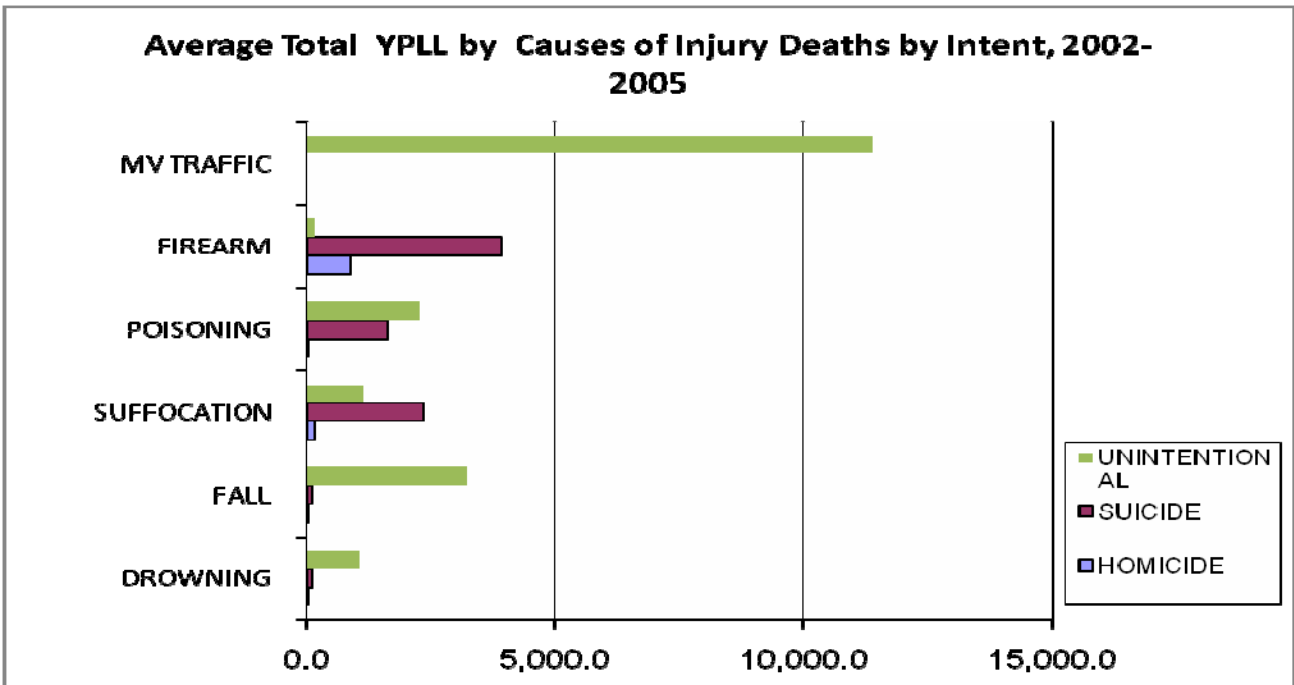
- The age-adjusted rate of homicide/assault-related ED visits (319) was greater than the suicide-related ED visit rates (50).
- The suicide rate is larger than the homicide rate for deaths and hospitalizations.

#### Mechanisms of intentional injuries (violence) in Iowa

- Firearms (50%), suffocation (27%), and poisonings (20%) are the leading mechanisms of suicide deaths in Iowa.
- Firearms (52%), cut/pierce (15%), and suffocation (7%) are the leading mechanisms of homicide deaths in Iowa.
- Although poisonings are only the 3<sup>rd</sup> leading mechanism of death by suicide, they are by far the leading mechanism of suicide attempt-related hospitalizations, with an average of 1,400 cases per year.
- Struck by/against (4.6/100,000), followed by cut/pierce (1.9/100,000) are the leading mechanisms of assault-related injury hospitalizations.

# Years of potential life lost by causes and intent





- ▶ In Iowa, (from 2002-2006), cardiovascular diseases are the leading cause of total YPLL followed by cancers and injury. Injuries contributed to over 34,000 YPLL.
- ▶ Looking at the average years of potential life lost, congenital diseases are the greatest contributors (64 YPLL), with all injuries (22 YPLL) being the third largest contributor.
- ▶ Unintentional injuries, particularly MVT by far, have the greatest impact on the total YPLL.
- ▶ On average, Iowans who died in 2002-2006 by unintentional drowning lost 37 years of potential life.
- ▶ Unintentional firearm (34 years) and homicide by firearm (31 years) were the 2<sup>nd</sup> and 3<sup>rd</sup> YPLL mechanisms.

Note: In the third and fourth graphs, the intent/cause combinations with an average of < 5 cases per year are not shown.  
 Note: The N listed for each cause is the yearly average number of cases for the intents listed for that cause.