

Background

- Injury-related death rates for persons aged 45–64 years have increased from 50 per 100,000 in 1999 to 56 per 100,000 in 2002, an 11% increase.
- In 2000, annual expenditures for injuries among persons aged 45–64 years totaled \$37.9 billion in the United States.

Purpose

To describe trends in hospital emergency department (ED) visits for injuries by middle-aged persons in the United States from 1993 through 2002.

Methods

Secondary analysis from the National Hospital Ambulatory Medical Care Surveys (NHAMCS)

- NHAMCS is a national probability sample survey of hospital ED and outpatient department visits conducted annually by the Centers for Disease Control and Prevention's National Center for Health Statistics.
- NHAMCS uses a four-stage sample design that includes visits to approximately 400 U.S. general and short-stay hospitals with EDs each year.
- ED visits were randomly selected for abstraction from medical records during a randomly assigned 4-week reporting period.
- Information was obtained on patient demographics, payment source, diagnosis, cause of injury, and disposition.
- Diagnoses and causes of injury were coded using *International Classification of Diseases, 9th Revision, Clinical Modification*.

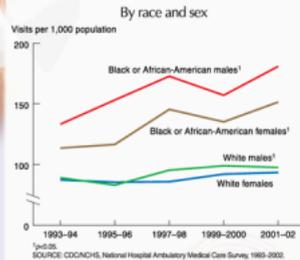
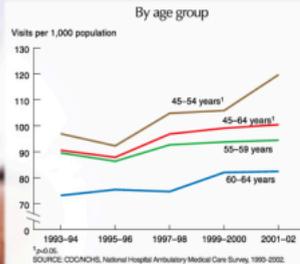
Analysis

- The study population was defined as persons aged 45–64 years who made an ED visit for injury.
- Approximately 2,500 ED records were selected annually for this study.
- Sample weights were applied to provide national estimates.
- Two years of data were combined to provide more reliable estimates. The data presented reflect average annual estimates for 1993 and 1994, 1995 and 1996, 1997 and 1998, 1999 and 2000, and 2001 and 2002.
- Standard errors were computed using SUDAAN, which takes into account the complex sample design.
- A weighted least-squares regression analysis was used to determine the significance of trends at the 0.05 level.

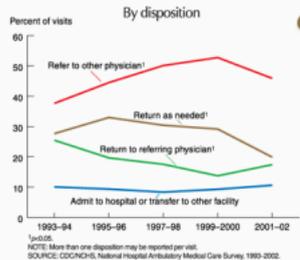
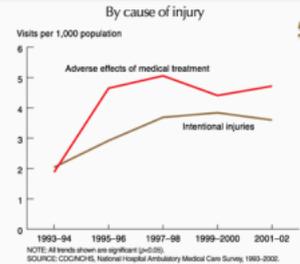
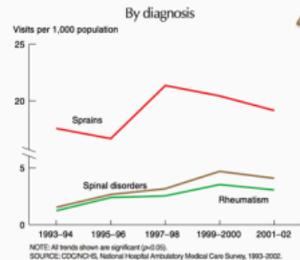
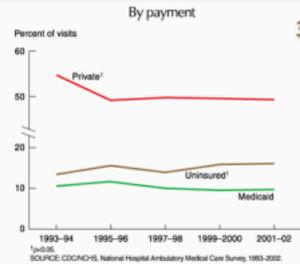
Results

- The number of injury-related ED visits made by patients aged 45–64 years has increased significantly from 4.5 million in 1993–94 to 6.5 million in 2001–02.
- In 2001 and 2002, 11.3 percent of injury-related ED visits were work-related, and 8.2 percent were alcohol-related.
- Chart 1 - A positive linear trend was found in the overall injury-related ED visit rate for patients aged 45–64 years (up 11%). This increase was driven by the visit rate for patients aged 45–54 years (up 23%). No significant trend in the rate was found for patients aged 55–59 years or 60–64 years.

Emergency department visits for injuries by middle-aged persons in the United States



- Chart 2 - A significant linear trend was found in the injury-related ED visit rate for black or African-American males (up 36%), black or African-American females (up 34%), and white males (up 10%).
- Chart 3 - Private insurance was the most frequently recorded type of payment. There were significant linear trends for private insurance (down 10%) and uninsured (up 22%).
- Chart 4 - Increases were observed in ED injury-related visit rates for persons aged 45–64 years for the following diagnoses: spinal disorders (up 170%), rheumatism (up 155%), and sprains (up 9%). Top diagnoses include sprains and strains of back, open wound of finger, contusion of lower limb, and nondescript abuse of drug.



- Chart 5 - Injury-related visit rates for persons aged 45–64 years for intentional injuries rose by 77%. This increase was driven primarily by white persons. Visit rates for adverse effects increased by 151%. The majority were related to surgical and medical procedures (e.g., complication of catheter site), and the remainder were associated with medications (e.g., allergic reaction to diuretics). The top five causes of injury were unintentional: falls, motor vehicle traffic crash, cutting or piercing instruments or objects, struck against or stuck by objects or persons, and adverse effects of medical treatment.
- Chart 6 - For visit disposition, increasing trends were found for refer to other physician (up 22%); decreasing trends were observed for return to ED as needed (down 26%) and return to referring physician (down 32%). About 9.5 percent of visits resulted in hospital admission or transfer to another facility (an indicator of severity) each year (data not shown).

Conclusions

- NHAMCS is an effective tool for monitoring trends in injury-related ED visits.
- Data limitations include the lack of sufficient sample cases to provide estimates for specific diagnoses and detailed causes of injury. Additionally, cause-of-injury data were missing from 13–21 percent of records during the study period.
- New intervention strategies may be needed for injuries among black or African-American persons as well as for injuries caused by adverse effects of medical treatment.
- It is of concern that the rate of injury-related ED visits made by patients aged 45–64 years has increased significantly (up 44%) over the time period studied when the overall injury rate for all age groups had declined.