

# Traumatic Brain Injury in the United States

Emergency Department Visits,  
Hospitalizations, and Deaths

1995–2001

National Center for Injury Prevention and Control  
Division of Injury and Disability Outcomes  
and Programs



January 2005



# Traumatic Brain Injury (TBI) in the United States

Findings from—

Langlois JA, Rutland-Brown W, Thomas KE.

*Traumatic Brain Injury in the United States:  
Emergency Department Visits, Hospitalizations,  
and Deaths.* Atlanta (GA): Centers for Disease  
Control and Prevention, National Center for  
Injury Prevention and Control; 2004.

# TBI in the United States

## Background

- TBI is an important public health problem in the United States
- Population-based TBI data are needed to understand the impact of TBI in the United States.

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## Methods

This presentation summarizes national data for the years 1995-2001, and includes:

- Emergency department (ED) visits
- Hospitalizations
- Deaths

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## Methods – Data Sources

Data were obtained from the National Center for Health Statistics (NCHS):

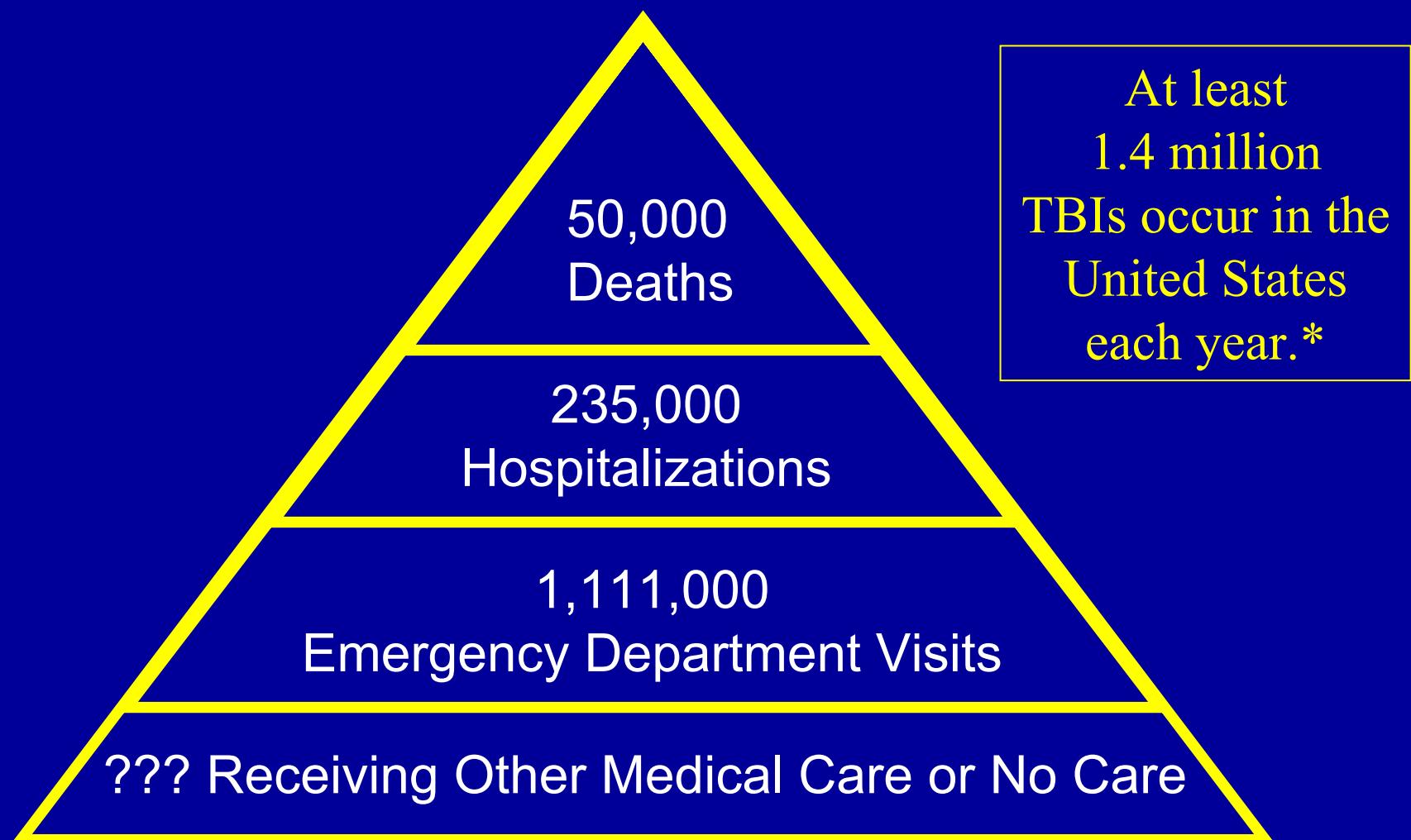
- Emergency Department Data
  - National Hospital Ambulatory Medical Care Survey (NHAMCS)
- Hospitalization Data
  - National Hospital Discharge Survey (NHDS)
- Death Data
  - Multiple cause-of-death data

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## Methods – Case Definition

- CDC uses International Classification of Diseases (ICD) codes to identify TBI cases.
- The definition of TBI can be found on pages 41-43 of the report.

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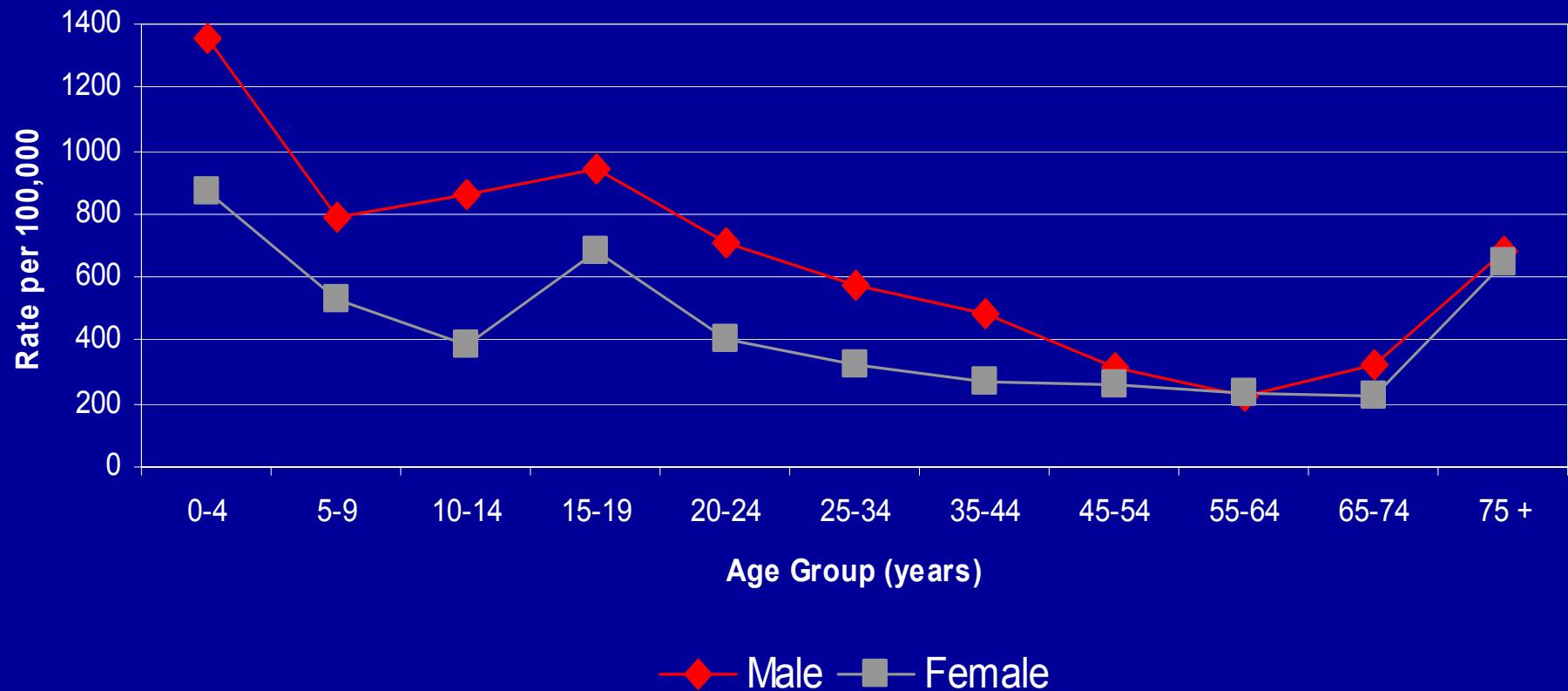


\* Average annual numbers, 1995-2001

From the 2004 CDC Report: TBI in the United States: ED Visits, Hospitalizations, and Deaths

# TBI in the United States

## TBIs by Sex\*



\* Average annual rates, 1995-2001; ED visits, hospitalizations, and deaths combined

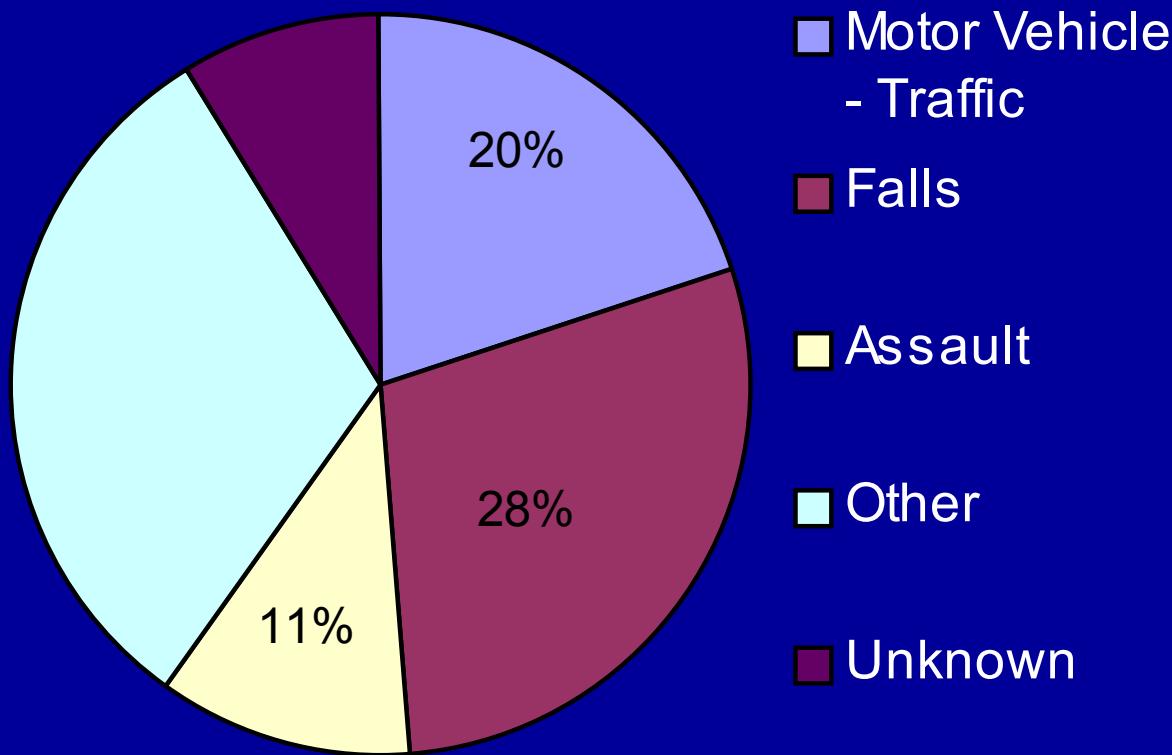
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## TBIs by Sex

- On average each year, 835,000 TBIs occurred among males compared with 561,000 among females.
- Overall, TBIs occurred about 1.5 times as often among males than females.

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## TBIs by Cause\*



\* Average annual percents, 1995-2001; ED visits, hospitalizations, and deaths combined

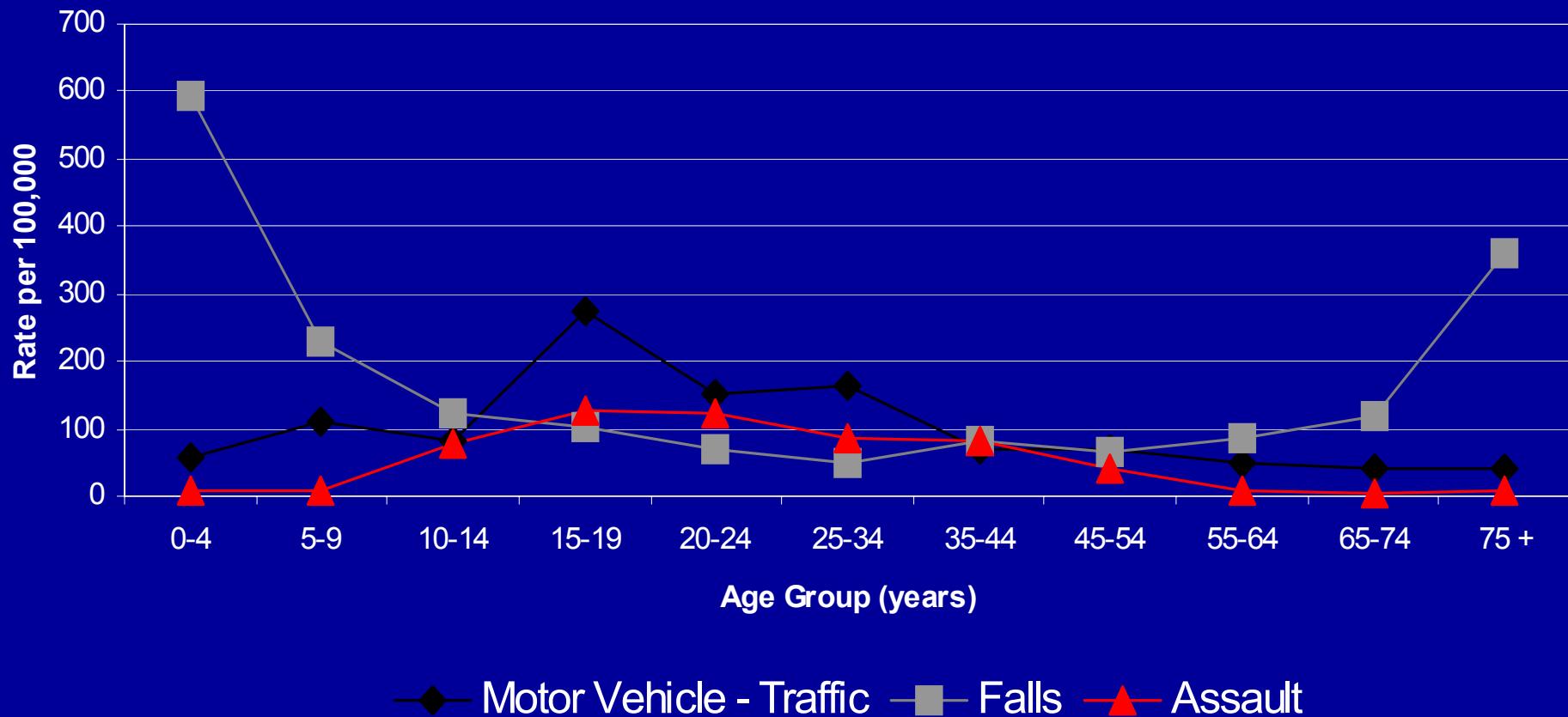
# TBI in the United States

## TBIs by Cause

- On average, each year in the United States there were:
  - **398,000** fall-related TBIs -- the greatest number of TBI-related ED visits
  - **280,000** motor vehicle-traffic TBIs -- the greatest number of TBI-related hospitalizations and deaths
  - **156,000** assault-related TBIs

# TBI in the United States

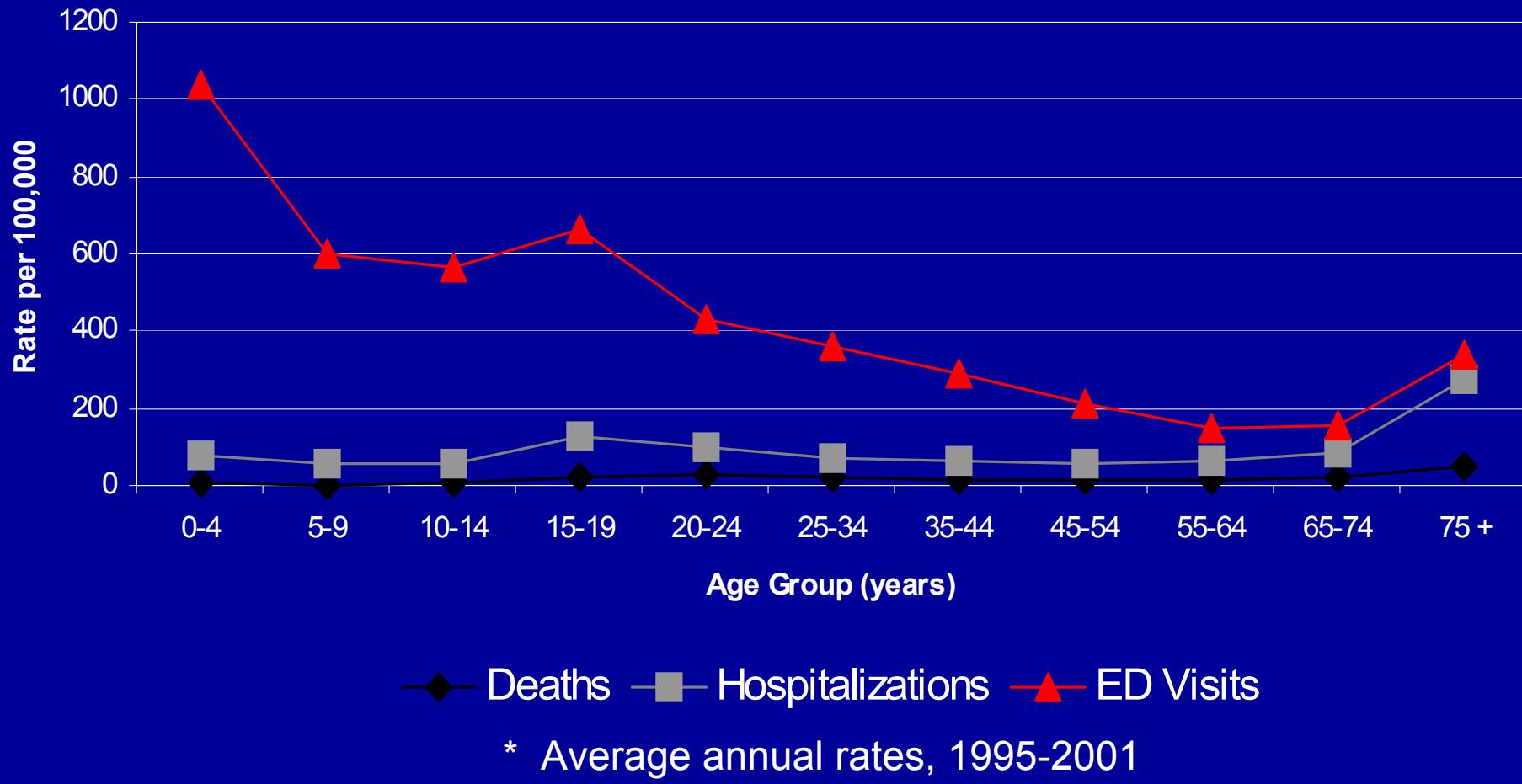
## TBIs by Cause\*



\* Average annual rates, 1995-2001; ED visits, hospitalizations, and deaths combined

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## TBIs by Age Group\*



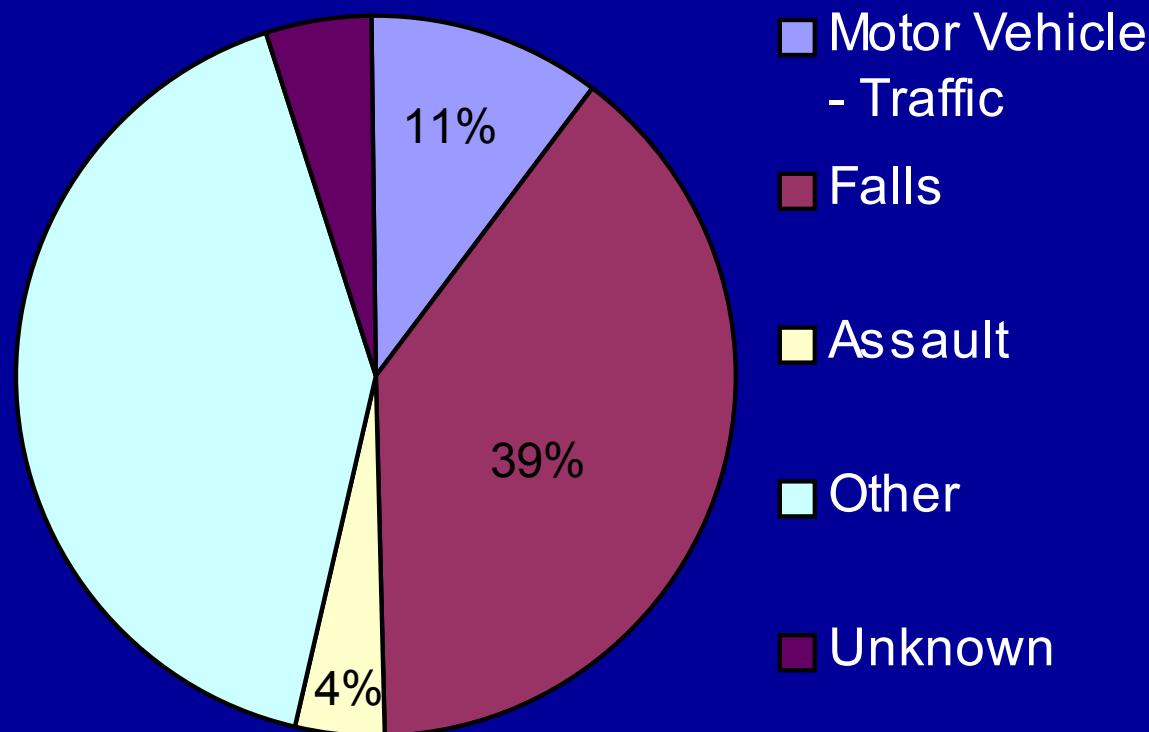
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## Children (0-14 years)

- Each year an average of 475,000 TBIs occurred among children.
- Most children who sustained a TBI (91.5%) were treated and released from the emergency department.

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## TBIs Among Children (0-14 years) by Cause



\* Average annual percents, 1995-2001; ED visits, hospitalizations, and deaths combined

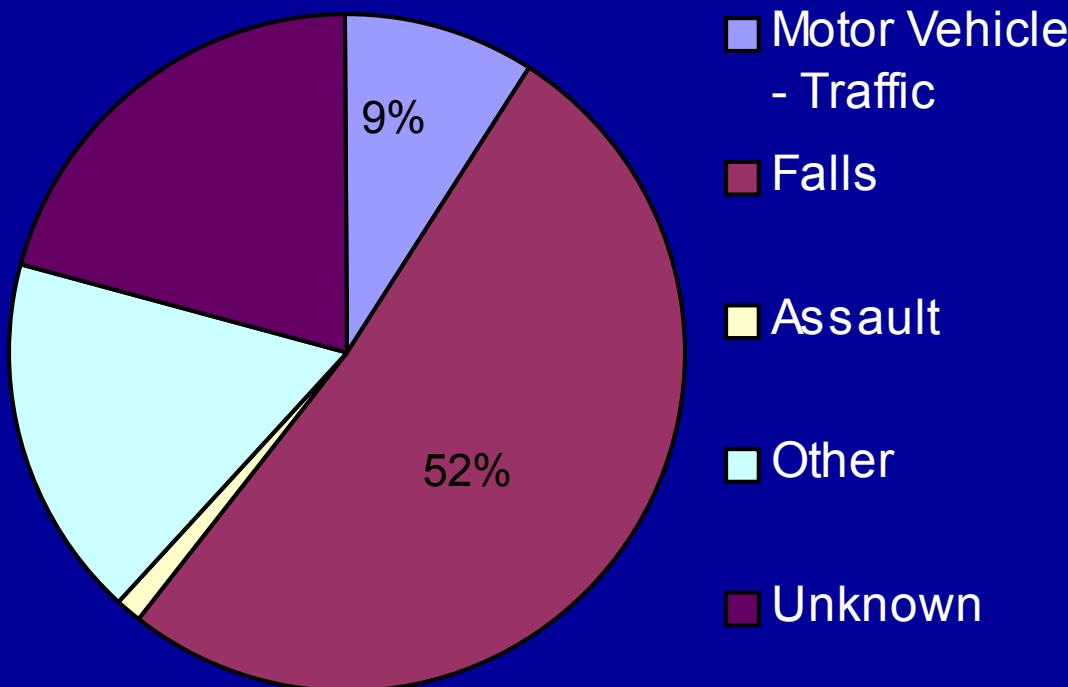
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## Older Adults ( $\geq 65$ years)

- Each year an average of 155,000 TBIs occurred among older adults.
- Only about half the older adults (53.6%) who sustained a TBI were treated and released from the emergency department.

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## TBIs Among Older Adults ( $\geq 65$ years) by Cause



\* Average annual percents, 1995-2001; ED visits, hospitalizations, and deaths combined

# TBI in the United States

## Conclusions

- An estimated 1.4 million people sustain a TBI annually; of these:
  - 50,000 die
  - 235,000 are hospitalized
  - 1.1 million are treated and released from an ED
- The number reported with TBI underestimates the magnitude of the problem because the following are not included:
  - TBIs treated by private physicians
  - Individuals who did not seek medical care

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## For More Information

- Visit the CDC website for this publication, Traumatic Brain Injury in the United States: Emergency Department Visits, Hospitalizations, and Deaths, at:  
[www.cdc.gov/ncipc/pub-res/TBI\\_in\\_US\\_04/TBI\\_ED.htm](http://www.cdc.gov/ncipc/pub-res/TBI_in_US_04/TBI_ED.htm)
- E-mail the CDC at [dardinfo@cdc.gov](mailto:dardinfo@cdc.gov)