



Maryland

Special Emphasis Report: Traumatic Brain Injury 2011

Understanding Traumatic Brain Injury (TBI)

Traumatic brain injury (TBI) is a serious public health problem in the United States. TBI is caused by a bump, blow, jolt, or penetration to the head that disrupts the normal function of the brain. Each year, traumatic brain injuries contribute to a substantial number of deaths and cases of permanent disability.

Impact and Magnitude of TBI

During 2011, a TBI was sustained by 47,589 of people in Maryland. Among those injured, 610 (age-adjusted rate of 10.2 per 100,000) *died* where TBI was reported as a cause of death on the death certificate alone or in combination with other injuries or conditions. Another 5402 (age-adjusted rate of 91.0 per 100,000), were *hospitalized* with a TBI alone or in combination with other injuries or conditions, and an additional 46,895 (age-adjusted rate of 824.9 per 100,000) were treated and released from *emergency departments* with a TBI alone or in combination with other injuries or conditions. An unknown number of individuals sustained injuries that were treated in other settings or went untreated.

Causes of TBI

Unintentional falls were the leading cause of injury among those who died where TBI was reported as a cause of death on the death certificate alone or in combination with other injuries or conditions. They were also the leading cause of injury among those who were *hospitalized* with a TBI alone or in combination with other injuries or conditions, and the leading cause of injury among those who were treated and released from *emergency departments* with a TBI alone or in combination with other injuries or conditions.

Notes: Firearm-related injuries were reported but excluded from the etiology graphic due to overlap with multiple categories (e.g., homicide/assault, suicide). Firearms were associated with 41.0% of deaths, 1.6% of hospitalizations, and 0.08% of emergency department visits. Completeness of external-cause coding for TBI-related cases can affect the accuracy of the cause classifications for hospitalizations and emergency department visits.

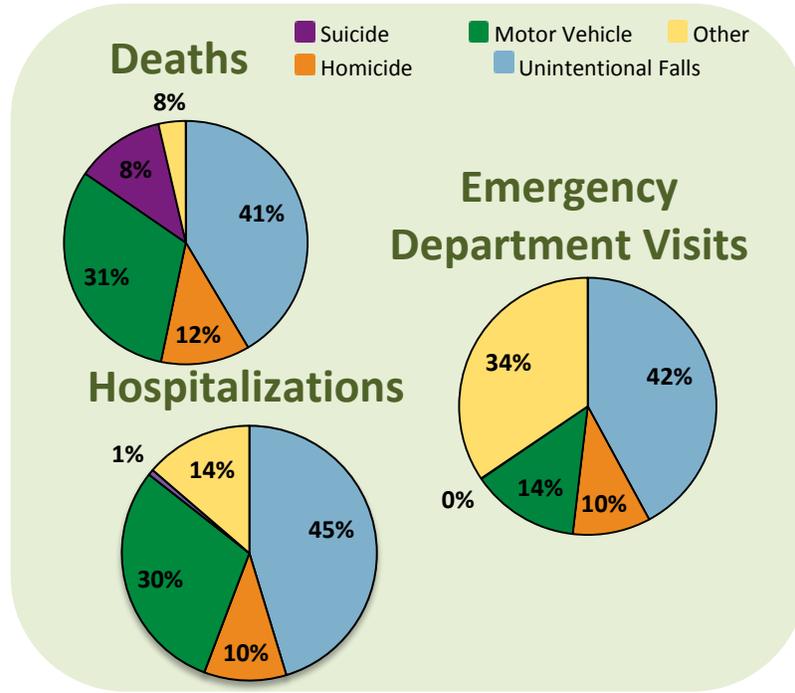


Figure 1: Percentage of Annual TBI-Related Deaths, Hospitalizations, and Emergency Department Visits, by External Cause, in Maryland, 2011

Note: ED visits included ambulatory care records. Excluding these records results in a total of 44,161 TBI ED visits, about 6% lower than the figure in the report.

TBI by Age

The highest number of TBI-related deaths* were among persons ages 65+ years. Among those with TBI-related hospitalizations,** persons ages 65+ years were most affected. Persons ages 0 to 14 years made the most TBI-related emergency department visits.

** *TBI was reported as a cause of death on the death certificate alone or in combination with other injuries or conditions

** TBI alone or in combination with other injuries or conditions

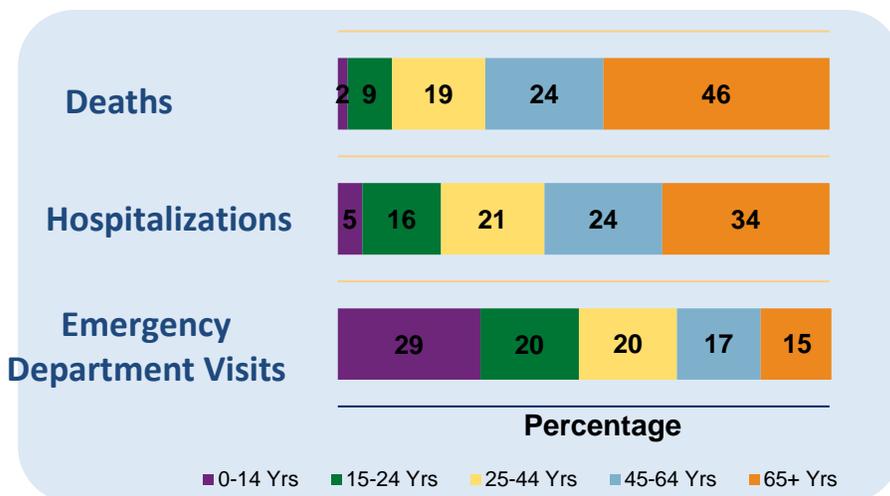


Figure 2: Percentage of Annual TBI-Related Deaths,* Hospitalizations, and Emergency Department Visits,** by Age, in Maryland, 2011**





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TBI by Gender

Men were more likely to sustain a traumatic brain injury than women. The magnitude of this difference was greatest among those who *died*. Men accounted for 70.3% (age-adjusted rate of 16.2 per 100,000) of *deaths* where TBI was reported as a cause of death on the death certificate alone or in combination with other injuries or conditions, 63.4% (age-adjusted rate of 124.6 per 100,000), of *hospitalizations* for TBI alone or in combination with other injuries or conditions and 52.9% (age-adjusted rate of 901.1 per 100,000) of emergency department visits for TBI alone or in combination with other injuries or conditions.



TBI Prevention Strategies

CDC's National Center for Injury Prevention and Control (Injury Center) is committed to protecting people against preventable TBI by putting science into action.

- **State Injury Prevention Programs** - The Injury Center's Core Violence and Injury Prevention Program (Core VIPP) provides funds to state health departments to estimate the impact of TBIs and define the groups most affected. www.cdc.gov/injury
- **Heads Up** – Injury Center campaigns with free tools for health care providers, school administrators, nurses, teachers, coaches, and parents to help them recognize and respond to a TBI. www.cdc.gov/traumaticbraininjury
- **Motor Vehicle Safety** – Motor vehicle crashes are a leading cause of death, injury and TBI in the US. CDC's primary prevention focuses on child passenger safety, seat belt use and reducing impaired driving. www.thecommunityguide.org/mvoi www.cdc.gov/motorvehiclesafety

Maryland TBI Activities

Prevention: Under the Core VIPP grant, the Department of Health and Mental Hygiene has implemented two evidence-based programs: Stepping On and Tai Chi for Better Balance to reduce falls in older adults. A Fall Prevention Protocol was developed as a result of a bill introduced in the 2012 Maryland General Assembly. Although, the bill was not passed, the DHMH moved forward with the development of the protocol. The protocol includes a home safety checklist that is to be used by home care professionals who are assessing the home environment of a senior who recently suffered from a fall and was seen at a health care facility. The purpose of the protocol is to promote a strategy that has the potential to reduce future falls.

Surveillance: Trend of TBI-related fatalities and non-fatalities among Maryland residents are monitored annually. TBI-related fatalities are calculated using the mortality data from the Maryland Vital Statistics Administration. Health Services Cost Review Commission Ambulatory Care and Hospital Discharge Databases are used to calculate TBI related non-fatal injuries.

Partnerships: Major partners include the Partnership for a Safer Maryland, Johns Hopkins Center for Injury Research and Policy, Department of Education, Department of Aging, Maryland TBI Advisory Board, Maryland Institute of Emergency Medical System Services, and health care providers.

Accomplishments/Successes: Under a new law (SB 632) passed in 2013, the Department of Health and Mental Hygiene will administer the State Brain Injury Trust Fund which supports certain services for eligible individuals with brain injuries.

Note: TBI-related cases were identified by first limiting the datasets to injury cases based on external cause of injury E-codes (for death data), primary diagnosis (for hospital data), or both E-codes and primary diagnosis (for emergency department visits). Then all diagnosis fields were searched for TBI ICD-9 diagnostic codes. Reference to any commercial entity, product or services on this page should not be construed as an endorsement by the Government of the company or its products or services.

Maryland Department of Health and Mental Hygiene

<http://phpa.dhmh.maryland.gov/ohpetup/SitePages/eip.aspx>

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