



# MARYLAND

## Special Emphasis Report: Traumatic Brain Injury 2012

### Understanding TBI

Traumatic brain injury (TBI) is a serious public health problem and in the United States. A 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

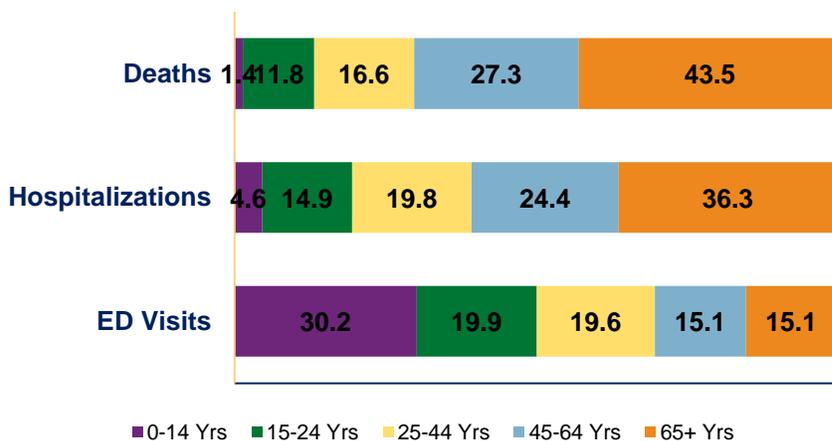
During 2012, a TBI was sustained by 34,065 of people in Maryland. Among those injured, 706 (11.5 per 100,000) died where TBI was reported as a cause of death on the death certificate alone or in combination with other injuries or conditions, another 5,231 (86.5 per 100,000), were hospitalized with a TBI alone or in combination with other injuries or conditions, and an additional 38,128 (667.8 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

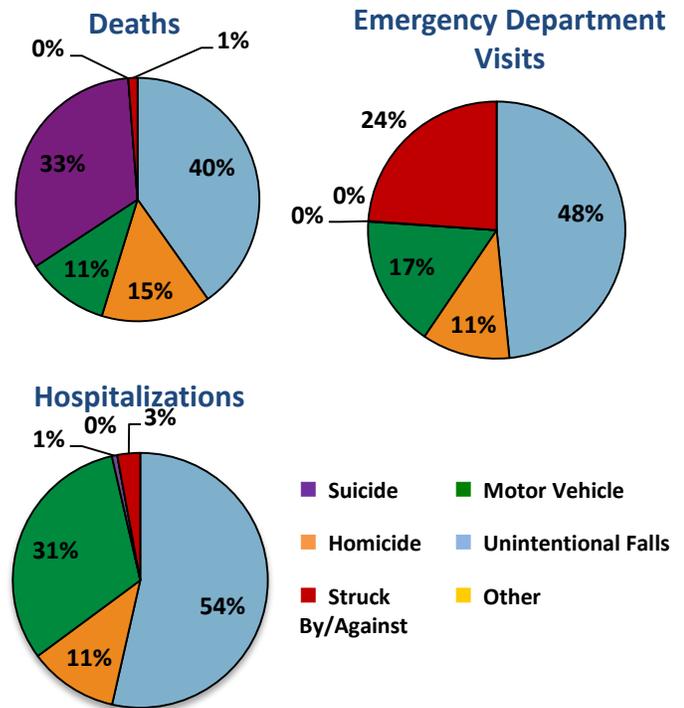
Cause of injury varies across the three levels of severity. *Firearm-related injuries* was the leading cause of injury among those who died where TBI was reported as a cause of death on the death certificate alone or in combination with other injuries or conditions. *Unintentional falls* was the leading cause of injury among those who were hospitalized with a TBI alone or in combination with other injuries or conditions. And, unintentional falls was 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 related with 41.6% of deaths, 1.4% of hospitalizations, and 0.08% of emergency department visits. Completeness of external-cause coding for TBI-related cases can impact the accuracy of the cause classifications for hospitalizations and emergency department visits.

**Figure 2: Percentage of Annual TBI-Related Deaths,\* Hospitalizations,\*\* and Emergency Department Visits,\*\* by Age, in Maryland, 2012**



**Figure 1: Percentage of Annual TBI-Related Deaths, Hospitalizations, and Emergency Department Visits, by External Cause, in Maryland, 2012**



### TBI by Age

The highest number of TBI-related deaths\* were among persons ages 85 years and older. Among those with TBI-related hospitalizations,\*\* persons ages 15-24 years were most affected. Persons ages 15-24 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





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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*, adjusted rate of 18.6 vs 5.3 per 100,000 for men and women respectively a 3.5 fold increase. Men accounted for 73.2% (18.6 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, 62.19% (116.7 per 100,000), of hospitalizations for TBI alone or in combination with other injuries or conditions and 53.3% (735.9 per 100,000) of emergency department visits for TBI alone or in combination with other injuries or conditions.



### 116.7 TBI Prevention Strategies

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

- **State Injury Prevention Programs** - The Injury Center's Core Violence and Injury Prevention Program (Core VIPP) funds state health departments to estimate the impact of TBIs and define the groups most affected. [www.cdc.gov/injury](http://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](http://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](http://www.thecommunityguide.org/mvoi) [www.cdc.gov/motorvehiclesafety](http://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. The program has also worked with the Regional Network Leader in sponsoring one webinar on older adults fall for injury prevention professionals in the Health and Human Services Regions 3 and 5; and worked with the state Injury Community Planning Group (ICPG), the Partnership for a Safer Maryland in conducting one workshop on concussion in 2014.

**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:** The MAC, Inc., the Wicomico County area agency on Aging, received the Distinguished Service award from the American Trauma Society Maryland Division for their collaborative efforts in implementing the Stepping On program to prevention falls in seniors on the Eastern Shore. The MAC, Inc. also implements the Tai Chi for Better Balance fall prevention program for the older adults in the community.

*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.*