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 59,168 people in Arizona. Among those injured, 1,395 (20.7 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 6,948 (104.4 per 100,000), were hospitalized with a TBI alone or in combination with other injuries or conditions, and an additional 50,825 (782.0 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. Firearms 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, another 6,948 (104.4 per 100,000), were hospitalized with a TBI alone or in combination with other injuries or conditions, and an additional 50,825 (782.0 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.

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 48% of deaths, 1.4% of hospitalizations, and .1% 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.

TBI by Age

The highest number of TBI-related deaths* were among persons ages 55-64. Among those with TBI-related hospitalizations,** persons ages 15-24 were most affected. Persons ages 15-24 made the most TBI-related emergency department visits.**

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

Figure 2: Percentage of Annual TBI-Related Deaths, Hospitalizations, and Emergency Department Visits, by Age, in Arizona, 2012
**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 74% (31.9 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, 64% (137.9 per 100,000), of hospitalizations for TBI alone or in combination with other injuries or conditions and 52% (819.5 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) 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)

**Arizona TBI Activities**

**Surveillance:**

- Since 2005, the Office of Injury Prevention has compiled data for an annual TBI report to monitor trends in head, neck and spinal cord injuries throughout the state.

**Partnerships:**

- Governor’s Council on Spinal and Head Injuries
- Brain Injury Alliance of Arizona
- Falls Prevention Coalition

**Accomplishments/Successes:**

- 2012 Booster Seat Law requiring children younger than 8 years old or less than 4 feet 9 inches tall to sit in a child safety seat when riding in a vehicle.

- 2011 Amendment to Sports Head Injuries Law, requiring school boards to develop and enforce concussion and head injury policies for all pupils participating in school district sponsored activities.


Released August, 2014