

UNDERSTANDING TBI

Traumatic brain injury (TBI), a form of acquired brain injury, occurs when a sudden trauma causes damage to the brain. TBI can result when the head suddenly and violently hits an object, or when an object pierces the skull and enters brain tissue. Each year, traumatic brain injuries contribute to a substantial number of deaths and cases of permanent disability.

## Impact and Magnitude of TBI

During 2020, there were 3,176 TBI-related deaths (28.4 per 100,000 population), 7,320 TBI-related hospitalizations (32.5 per 100,000), and 13,953 TBI-related emergency department (ED) visits (58.5 per 100,000). In all instances, the TBI could be either the only injury or one of several injuries and/or medical conditions listed.

Average cost of TBI-related hospitalizations in 2020 was \$103,067, and Medicare was the most commonly used insurance (26.2%).

## Causes of TBI

Cause of injury, as measured by rate per 100,000 people, varies across deaths, hospitalizations and ED visits. Firearms were the leading cause of TBI-related deaths (9.6 per 100,000). Falls were the leading cause of both TBI-related hospitalizations (31.5 per 100,000) and TBI-related ED visits (58.5 per 100,000).

## TBI by Age and Sex

The highest number of TBI-related deaths\* were among male ages 35-44, as shown in Figure 3. Among those with TBI-related hospitalizations,\*\* people ages 75-84 were most affected. People ages 25-34 made the most TBI-related emergency department visits.\*\*

MVT=Motor Vehicle Traffic

\* 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 Cause in 2020

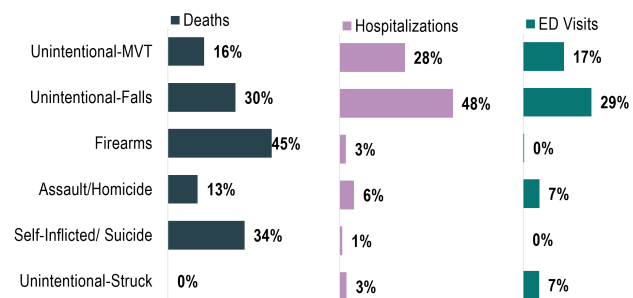
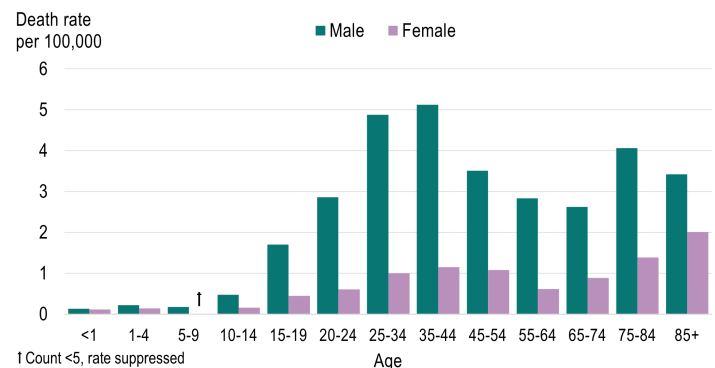


FIGURE 2: Causes of TBI-Related Deaths by Rate per 100,000 in 2020

Cause	Count	Rate per 100K People
1. Firearms	1,045	9.6
2. Suicide	773	7.0
3. Unintentional-Falls	681	5.3
4. Unintentional-MVT	367	3.5
5. Homicide	301	2.9
6. Unintentional-Struck	6	0.1

FIGURE 3: TBI-Related Deaths by Age and Sex in 2020



## Special Emphasis Report: Traumatic Brain Injury

### 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.

**To Help Older Adults:** *Make CDC's STEADI Part of Every Medical Practice.*

STEADI (Stopping Elderly Accidents, Deaths, and Injuries) is a toolkit to help health care providers incorporate fall risk assessment and individualized fall interventions (e.g., exercise, medication management, and Vitamin D supplementation) into their practice. Learn more at [www.cdc.gov/STEADI](http://www.cdc.gov/STEADI).

**To Help Young Athletes:** *Get a HEADS UP on Creating a Culture of Concussion Safety in Sports.*

HEADS UP educational materials are designed to support individuals (such as coaches and health care providers) and organizations (such as schools and sports programs) with their concussion safety efforts. Learn more at [www.cdc.gov/HEADSUP](http://www.cdc.gov/HEADSUP).

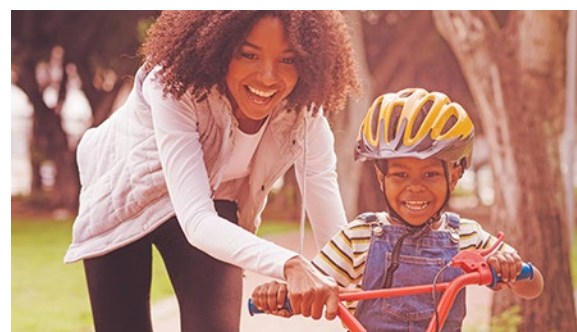
**To Help Parents and Teen Drivers:** *"Parents Are the Key" to Teen Driver Safety.*

Parents Are the Key materials help parents, pediatricians, and communities keep teen drivers safe on the road. Parents Are the Key includes evidence-based strategies and can be customized with an organization's logo. Learn more at [www.cdc.gov/ParentsAretheKey](http://www.cdc.gov/ParentsAretheKey).

### TBI by Race/Ethnicity in 2020

Certain populations experience higher rates of TBI and may benefit from special prevention measures. The highest rate of TBI-related deaths per 100,000 residents were among non-Hispanic (NH) American Indians.

Race/Ethnicity	Count	Rate
1. NH American Indians	27	22.4
2. White NH	1,652	20.9
3. Black NH	475	20.4
4. Asian NH	37	13.0
5. Hispanic	99	12.5



### TBI Activities

<b>PREVENTION</b>	Evidence-based falls prevention programs; comprehensive suicide prevention action plan.
<b>SURVEILLANCE</b>	Routine TBI surveillance (see note); implementing CDC Firearm Surveillance through Emergency Rooms (FASTER).
<b>PARTNERSHIPS</b>	NC TBI Program, Brain Injury Assoc. of NC (BIANC) & Family Svcs. of Davidson Co. domestic violence pilot for TBI screening, education resource facilitation; NC Vision Zero (VZ) Task Force & local VZ teams; BikeWalk NC, NC DHHS, NC State Univ. Institute for Transportation Research & Education, & BIANC training & education.
<b>ACCOMPLISHMENTS/SUCCESSES</b>	TBI Medicaid Waiver expands to Orange & Mecklenburg Cos.; Medicaid Waiver: Clinically Managed Population Specific High Intensity Residential Svcs. for TBI & substance use disorder (1st in US); TBI State funds increased by \$1 million for education, awareness & services; awarded CDC 5-year Core State Injury Prevention Program to address older adult falls as a strategy to prevent TBIs.

**Assoc. = Association ; Svcs. = Services; Co./Cos. = County/Countries; Univ. = University**

Note: TBI-related cases were identified by first limiting the datasets to injury cases based on external cause of injury (deaths), primary diagnosis (hospitalizations), or both (emergency department visits). All fields were then searched for TBI diagnostic codes. For confidentiality and data stability purposes, small counts are suppressed. Suppression rules vary by state and territory, and across datasets. Reference to any commercial entity or product or service on this page should not be construed as an endorsement by the Government of the company or its products or services.