

Surveillance for Traumatic Brain Injury in Tennessee

Surveillance Summary, January-June 2014

Introduction

An estimated 8,000 people each year sustain a traumatic brain injury in Tennessee. A **Traumatic Brain Injury (TBI)** is defined as an acquired injury to the brain caused by an external physical force that may result in impairment, partial or total disability, or death.

Data collected by the State's TBI Registry is used to:

- Identify TBI survivors every quarter and notify the survivors about the availability of services to support their recovery.
- Perform statistical analyses that identify those most at-risk for a TBI, leading causes of TBI, and any additional information that is relative. This information is then made available to the public through reports and surveillance summaries.
- Support planning efforts related to the implementation of initiatives aimed to reduce the number of traumatic brain injuries in Tennessee.

Overview

The information presented in this surveillance summary is based upon provisional data collected by Tennessee's TBI Registry from January to June of 2014. The following list provides a quick highlight of the information collected:

- There were a reported number of 3,388 TBI cases for the first six months of 2014.
- Nearly 53% ($n = 1,778$) of the cases resulted in the patient being discharged and requiring only home self-care. Over 18% ($n = 623$) of the cases resulted in the patient being discharged to an inpatient or outpatient rehabilitation facility.

TBI by External Causes

The two leading external causes of TBIs since 2008 were accidental falls and motor vehicle traffic accidents. Below is a summary of these cases from January-June 2014.

- Accidental falls accounted for over 49% ($n = 1,647$) of external cause of injury-related TBI. Those aged 65 years and older were the most at risk (see Figure 1).
- Motor vehicle traffic accidents accounted for nearly 28% ($n = 931$) of external cause of injury-related TBI.

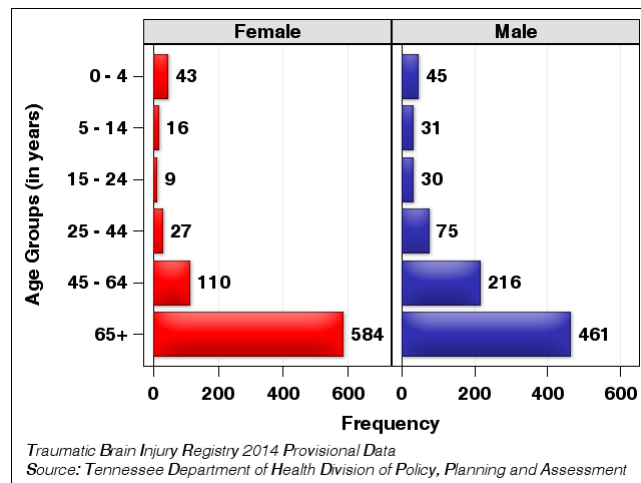


FIGURE 1: Number of Accidental Falls-Related TBI by Age Group and Sex

TBI by Injury Type

Every type of TBI was assigned a specific ICD-9-CM diagnostic code. These codes were then categorized into three types of TBI using the Barell Matrix¹.

- Over 74% ($n = 2,485$) of the cases had a TBI diagnostic code labeled as a Type 1 TBI. A Type 1 TBI denotes recorded evidence of intracranial injury or a moderate or a prolonged loss of consciousness, shaken infant syndrome, or injuries to the optic nerve pathways.
- About 22% ($n = 738$) of the cases had a TBI diagnostic code labeled as a Type 2 TBI. A Type 2 TBI includes injuries with no recorded evidence of intracranial injury, and LOC of less than one hour, or LOC of unknown duration, or unspecified level of consciousness.
- Nearly 4% ($n = 127$) of the cases had a TBI diagnostic code labeled as a Type 3 TBI. A Type 3 TBI is reported when a patient had no evidence of intracranial injury and no loss of consciousness.

¹“The Barell Injury Diagnosis Matrix, Classification by Body Region and Nature of Injury.” *Centers for Disease Control and Prevention*, 24 June 2010. Web, 24, Oct, 2014.
http://www.cdc.gov/nchs/injury/ice/barell_matrix.htm

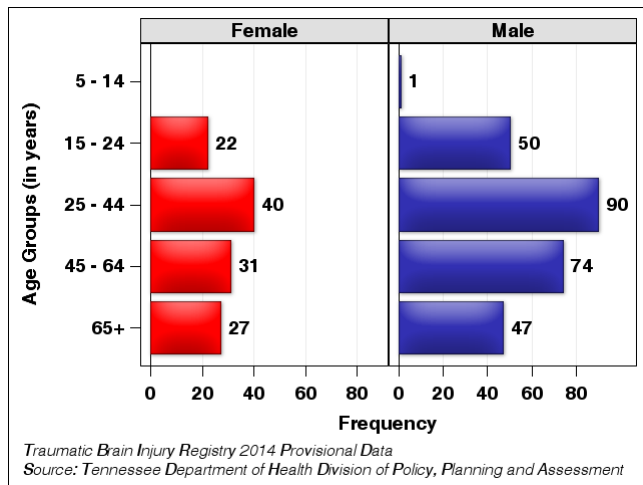


FIGURE 2: Number of Motor Vehicle Traffic Accidents-Related TBI by Driver's Age Group and Sex

TBI by Age Group

- About 40% ($n = 1,348$) of the cases reported were aged 65 years or older.
- Across all age groups, except those aged 75 years or older, males were more likely to sustain a TBI than were females.

TBI by Sex

- Males made up about 60% ($n = 2,028$) of TBI cases reported from January-June 2014.
- Male drivers were more likely than female drivers, across all age groups, to be involved in a motor vehicle traffic accident-related TBI (see Figure 2).

TBI by Race

- Nearly 73% of TBI cases involving non-Hispanic blacks were male. Non-Hispanic blacks aged 4 years or less and those between the ages of 25 to 34 years old were the most at risk for sustaining a TBI.
- Over 58% of TBI cases involving non-Hispanic whites were male. Non-Hispanic whites aged 65 years or older were the most at risk for sustaining a TBI.

TBI by Concussions

There were 590 cases involving a concussion and of these:

- Nearly 20% resulted in a loss of consciousness (LOC) of less than one hour, over 46% suffered from LOC of an unspecified duration, and nearly 21% had no LOC.
- Nearly 36% of all females who were diagnosed with a concussion were those aged 65 years and older (see Table 1).

Additionally, during the first six months of 2014, nearly 29% of all sports-related TBI resulted in a concussion.

Additional Notes

This summarization of TBIs may differ from reports done in previous years because of the following:

- Patients who were only diagnosed as having a “brain injury, unspecified” were excluded from this summary because of the lack of specificity in the diagnosis.
- Cases where the length of stay at the hospital was calculated to be less than 24 hours were excluded.

The methodology used in preparing this summary can be found on the Tennessee Department of Health Traumatic Brain Injury website, <http://health.state.tn.us/tbi>.

Contact Information

Additional TBI reports and fact sheets may be found at <http://health.state.tn.us/tbi>. For any additional information on the Traumatic Brain Injury Program, please call **1.800.882.0611**.

TABLE 1: Number of Concussions by Age Group and Sex. *Source: Tennessee Department of Health, January-June 2014 TBI Registry Provisional Data*

Age (in years)	Sex			Total
	Female	Male		
0 - 4	n	7	8	15
	%	2.7%	2.4%	2.5%
5 - 14	n	17	38	55
	%	6.6%	11.4%	9.3%
15 - 24	n	36	63	99
	%	14.1%	18.9%	16.8%
25 - 44	n	50	89	139
	%	19.5%	26.6%	23.6%
45 - 64	n	55	89	144
	%	21.5%	26.6%	24.4%
65+	n	91	47	138
	%	35.5%	14.1%	23.4%
Total		256	334	590
	%	43.4%	56.6%	



Department of Health Authorization No. 343317.
Number of copies, 2,000. This public document
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