

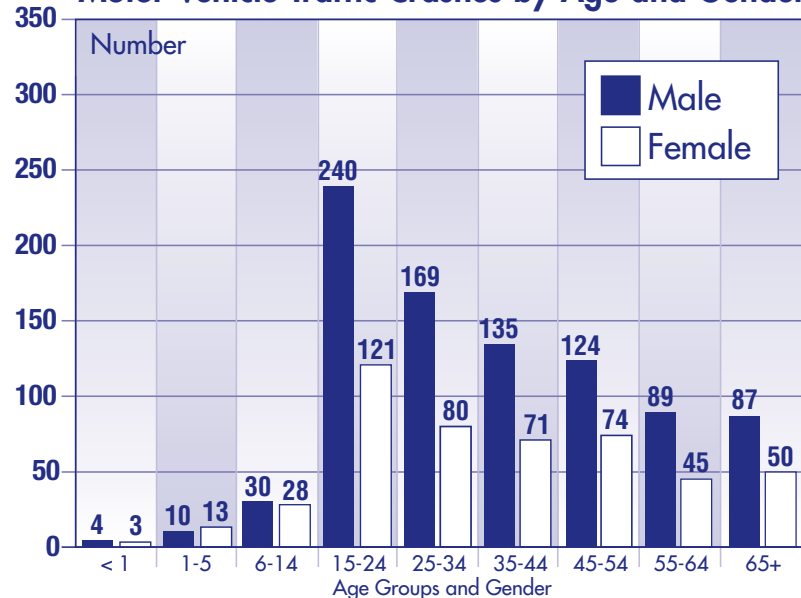
Females less than 1 year of age and females 65 years old or older suffered more fall related head injuries than males. Of the total traumatic brain injuries due to falls, 62.3 percent were from the age group 65 years and older. Of the 720 females who suffered a head injury due to a fall, 72.5 percent were 65 years and older, compared to 52.4 percent of the 740 males.

Approximately 2.4 percent of the accidental falls causing a head injury were work related.

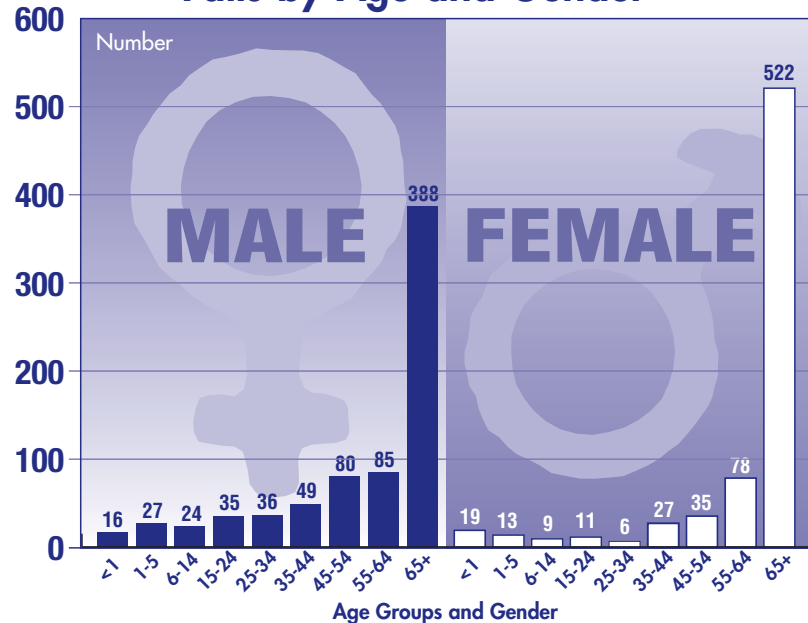
Of the 888 males who suffered a head injury due to a motor vehicle accident, 27.0 percent were ages 15 to 24 years compared to 19.0 percent in ages 25 to 34 years. These two age groups accounted for 46.1 percent of the total motor vehicle injuries for males. For both males (27.0 percent) and females (24.9 percent), there were more injuries in the 15 to 24 year age group than any other group.

From January – June 2008, 170 motorcycle drivers and 8 motorcycle passengers experienced a traumatic brain injury during a motor vehicle traffic accident. This was 13.0 percent of the total motor vehicle traffic accidents. Work-related accidents accounted for 1.0 percent of the total motor vehicle accidents. Of the total head injuries from motor vehicle traffic accidents, 6.2 percent resulted in a severe brain injury; 43.5 percent was classified as moderate; 45.2 percent was classified as mild; and the severity for 5.2 percent was undetermined.

Motor Vehicle Traffic Crashes by Age and Gender



Falls by Age and Gender



When all cases were included, 21.8 percent of the individuals with severe brain injuries were hospitalized more than seven days, compared to 32.3 percent of the individuals with injuries considered to be moderate, and 17.5 percent for those with mild injuries. For cases where severity was undetermined, 15.9 percent were hospitalized more than seven days.

When individuals who died are excluded from the analysis, 76.6 percent of people with severe brain injuries were hospitalized more than seven days, while the percent of individuals with lesser injuries showed little change.

Of the cases with hospital stays of more than seven days, 67.4 percent were considered to have moderate brain injuries.

The length of stay could be affected by other injuries that occurred during the accident. The severity index by itself should not be used as a predictor or indicator of length of stay.

Severity of Injury by Length of Stay										
Length of Stay	Total	Died	Severe		Moderate		Mild		Undetermined	
			Total	Died	Total	Died	Total	Died	Total	Died
Less than 24 hrs.	127	127	68	68	30	30	11	11	18	18
1 Day	690	95	60	59	277	30	294	6	59	0
2 Days	591	29	16	15	273	12	231	0	71	2
3 Days	471	27	7	5	240	20	174	1	50	1
4 Days	339	11	6	4	192	5	102	2	39	0
5 Days	242	15	10	6	141	8	72	1	19	0
6 Days	173	13	3	3	101	7	53	1	16	2
7 Days	144	7	2	1	87	6	42	0	13	0
8 to 14 Days	502	31	18	5	330	19	123	4	31	3
15 to 21 Days	176	17	10	5	118	9	35	2	13	1
22 to 28 Days	103	7	6	1	75	4	19	2	3	0
29 Days or more	168	12	14	1	117	10	30	1	7	0
TOTAL	3,726	391	220	173	1,981	160	1,186	31	339	27

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Teresa Hendricks, Acting Director
For additional information please contact:
Glenda Polk, telephone (615) 532-7890

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Tennessee Department of Health
Division of Health Statistics
Traumatic Brain Injury Registry
Cordell Hull Building, 4th Floor
425 5th Avenue North
Nashville, TN 37243

Tennessee Traumatic Brain Injury

2008

January - June

A traumatic brain injury is defined as an acquired injury to the brain caused by an external physical force that may result in total or partial disability or impairment.

Tennessee Department of Health
Policy, Planning and Assessment
Division of Health Statistics
January - June 2008
Provisional Data

Introduction

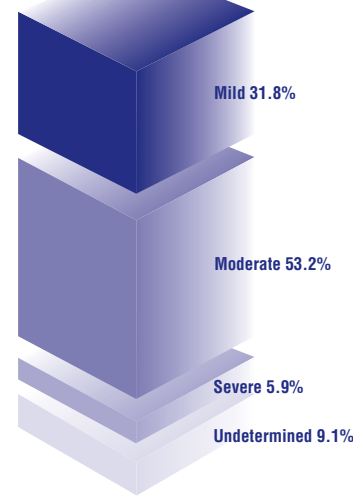
The enabling legislation establishing the traumatic brain injury registry was signed into law in May, 1993. As written, the initial legislation prohibited health care providers from reporting case information without written consent of the patient. An amendment was passed in May, 1996 resolving this issue. Data collection officially began with patients discharged during 1996. The hospitals report information on inpatients, with specific ICD-9 CM diagnosis codes, whose admission and discharge dates are different (where length of stay was 24 hours or more) and for those individuals who died. Patients seen in emergency rooms who were sent home the same day or length of stay was less than 24 hours are not included in the registry.

By statute, Tennessee hospitals are required to report to the Traumatic Brain Injury (TBI) Registry all inpatient confinements where the patient had a diagnosis of specific types of head injuries. Utilizing ICD-9-CM diagnosis codes, 3,726 new TBI cases were identified and added to the registry from January – June 2008.

The ICD-9-CM codes are used further to construct a severity index based on the clinical diagnosis of the injury. “Moderate” injuries made up 53.2 percent while 5.9 percent were considered “severe”. Another 31.8 percent of all TBI patients experienced a “mild” injury. Three hundred thirty-nine (339) cases, or 9.1 percent had an insufficient clinical description and the severity for these cases was “undetermined.”

Excluding the patients that died, 72.7 percent of the patients were discharged for home care, which includes those requiring non-skilled or some degree of skilled assistance. This indicates a tremendous burden on the families and communities of the

Injuries by Severity



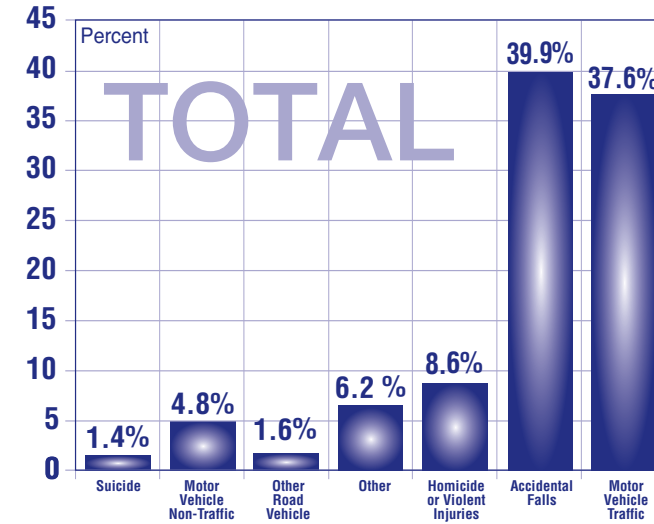
brain injured survivors. Of the patients with a “severe” traumatic brain injury 78.6 percent died. This category represents 44.2 percent of the total patients that died.

For patients with a “moderate” brain injury (excluding deaths) 67.2 percent were discharged for home care, which includes those requiring non-skilled or some degree of skilled assistance. Those discharged to a residential facility with skilled nursing staff, intermediate care facility or nursing home accounted for 14.2 percent and 13.2 percent were discharged to an inpatient rehabilitation facility.

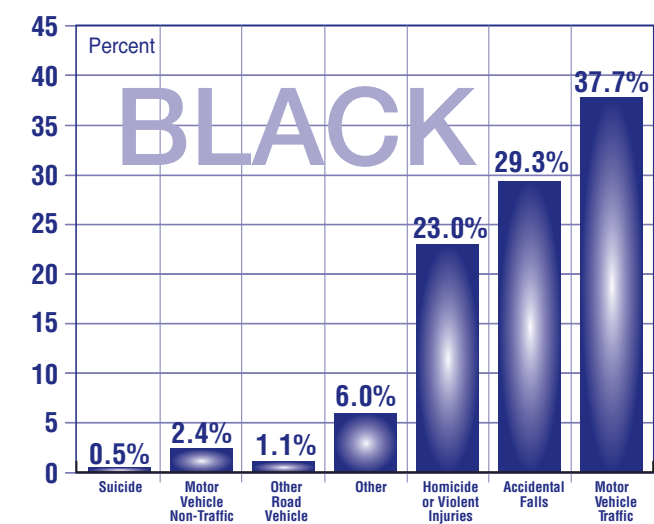
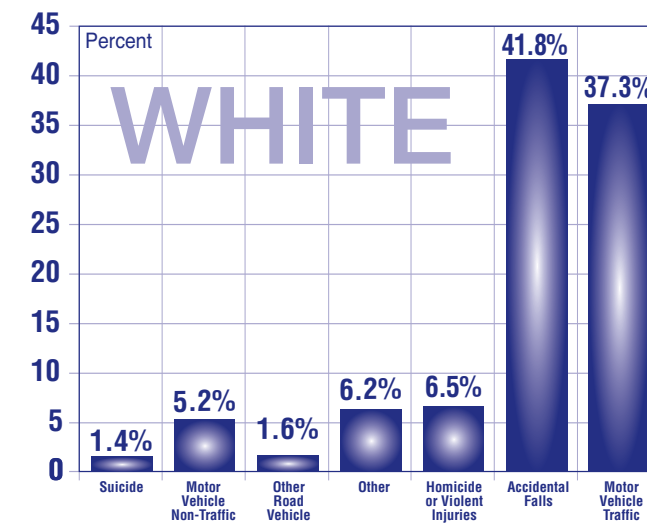
Excluding deaths, 82.9 percent of the patients with a “mild” brain injury were discharged to home care, which includes those requiring non-skilled or some degree of skilled assistance.

Hospital Discharge Status by Severity of Injury					
Discharge Status	Total	Severe	Moderate	Mild	Undetermined
Transferred to acute care hospital	45	3	25	12	5
Home - self care or non-skilled assistance	2,207	17	1,104	891	195
Home - health services or outpatient rehab	217	2	119	67	29
Residential facility with skilled nursing	395	10	259	69	57
Inpatient rehab facility	361	12	240	92	17
Against medical advise	18	0	8	6	4
Correctional Facility	2	0	0	2	0
Patient died	391	173	160	31	27
Other	90	3	66	16	5
Unknown	0	0	0	0	0
Total	3,726	220	1,981	1,186	339

An external cause of injury permits the classification of environmental events, circumstances, and the conditions as the cause of injury. An external cause of injury was reported for 98.1 percent (3,656) of the 3,726 persons treated in Tennessee. The data presented by race represents 3,157 white and 374 black cases.



Although motor vehicle traffic accidents are usually the number one cause of traumatic brain injuries, from January through June 2008, the leading cause was accidental falls at 39.9 percent. Motor vehicle traffic accidents accounted for 37.6 percent. Homicide or violent injuries, which includes injury undetermined whether accidentally or purposely inflicted, and legal intervention accounted for 8.6 percent of the total injuries. Other accidents



accounted for 6.2 percent. These figures include only cases with external cause of injury reported.

For whites, the leading cause of traumatic brain injury was accidental falls with 41.8 percent. The second leading cause of injury was motor vehicle traffic accidents with 37.3 percent. The third leading cause was homicide or violent injuries at 6.5 percent.

The leading cause of traumatic brain injury for blacks (37.7 percent) was motor vehicle traffic accidents. Accidental falls were the second leading cause of injury with 29.3 percent. The third leading cause of injury for blacks was homicide or violent injuries with 23.0 percent.

Injuries by Age and Gender

For all ages except 65 and older, males are more likely to suffer a head injury than females. This is primarily due to traffic accidents. At age 65 and older, females experience more injuries due to falls. Further analysis of the data revealed that 33.3 percent of the (78) patients less than one year of age suffered a brain injury due to homicide or an injury purposely inflicted by other persons.

