

Alabama Head and Spinal Cord Injury Report

January 1, 2016 – December 31, 2016

State of Alabama Department of Public Health

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Background

Traumatic Brain Injury (TBI)

Definition. Traumatic brain injury occurs when an external mechanical force causes brain dysfunction. Traumatic brain injury usually results from a violent blow or jolt to the head or body. An object penetrating the skull, such as a bullet or shattered piece of skull, can also cause traumatic brain injury. Mild traumatic brain injury may cause temporary dysfunction of brain cells. More serious traumatic brain injury can result in bruising, torn tissues, bleeding, and other physical damage to the brain that can result in long-term complications or death (Mayo Clinic, 2016).

Alabama Act 98-611 (Alabama Head and Spinal Cord Injury Registry/Alabama Trauma Registry)

The Alabama Department of Rehabilitation Services (ADRS) is charged with offering rehabilitation services to patients with moderate to severe brain, spinal cord, or other debilitating injuries. At times, patients are unaware of, or have difficulty understanding, state supported rehabilitation services – the result of which leads to inadequate rehabilitation, disability management, and work force re-entry assistance. Patients who have sustained debilitating injuries are identified and linked with ADRS via the Alabama Head and Spinal Cord Injury Registry (AHSCIR), a registry mandated by Alabama Act 98-611. This law, which requires all hospitals in Alabama to submit data related to head and/or spinal cord injury cases to the Alabama Department of Public Health (ADPH), was passed in May of 1998. The Alabama Trauma Registry (ATR), established shortly after AHSCIR data collection began in 1999, strives to broaden collection efforts to include data related to all types of trauma. Those requesting services have been provided appropriate need-based referral information. More specifically, development of the ATR component pertains to an expansion of the head and spinal cord injury registry into a larger, more comprehensive program. Trauma registry personnel in the Office of Emergency Medical Services (OEMS) of the ADPH collect statewide data by working with hospitals at all levels of trauma care (acute and ancillary). Ultimately, registry data analysis and injury pattern evaluations will permit researchers and policy makers to identify better ways of reducing injury mortality and morbidity in Alabama.

It is important to provide the public with mortality and morbidity statistics associated with motor vehicle crashes in order to accurately illustrate the impact injuries have on individuals, families, and society. Additionally, the information assists with the design of prevention programs to mitigate the long term effects of injuries in Alabama. Trauma registry data are used by a variety of organizations. Emergency management agencies and emergency medical services providers use the registry information for community trauma prevention education. As previously described, ADRS uses the AHSCIR data to locate patients suffering from head and/or spinal cord injuries in an effort to make them aware of state supported services and perform follow-up treatment.

Methods. The case definition for inclusion in the ATR program denotes any patient with at least one injury ICD-10-CM diagnosis code listed in Appendix A or B. The patient must also have been admitted to the hospital for at least 24 hours, transferred into and/or out of the hospital, or died after receiving any evaluation or treatment at the hospital or was dead upon arrival. Effective October 1, 2016, reportable diagnoses for the AHSCIR included all confirmed cases of head and spinal cord injury with at least one of the following ICD-10-CM diagnoses range:

ICD-10 Spinal Cord Injuries (SCI)

Begin with	End with	Description
S12.000 - S12.9XX	A or B	Fracture of cervical vertebra and other parts of neck
S13.0XX	A	Traumatic rupture of cervical intervertebral disc
S14.0XX - S14.9XX	A	Injury of nerves and spinal cord at neck level
S17.0XX - S17.9XX	A	Crushing injury of neck
S24.0XX - S24.9XX	A	Injury of nerves and spinal cord at thorax level
S32.000 - S32.059	A or B	Fracture of lumbar spine and pelvis
S34.01X - S34.9XX	A	Injury lumbar/sacral spinal cord and nerves

ICD-10 Traumatic Brain Injuries (TBI)

Begin with	End with	Description
S01.00X - S01.05X	A	Open Wound
S01.80X - S01.95X	A	Open Wound
S02.3XX	A or B	Fracture of Skull and Facial Bones
S04.02X - S04.049	A	Injury to Optic Chiasm and Optic Tract
S06.0X0 - S06.9X	A	Intracranial Injury
S07.0XX - S07.9XX	A	Crushing Injury of Head
S08.89X	A	Avulsion and Traumatic Amputation of Part of Head
S09.8XXA - S09.90X	A	Other and NOS Injury of Head
T74.4XX	A	Shaken Infant Syndrome

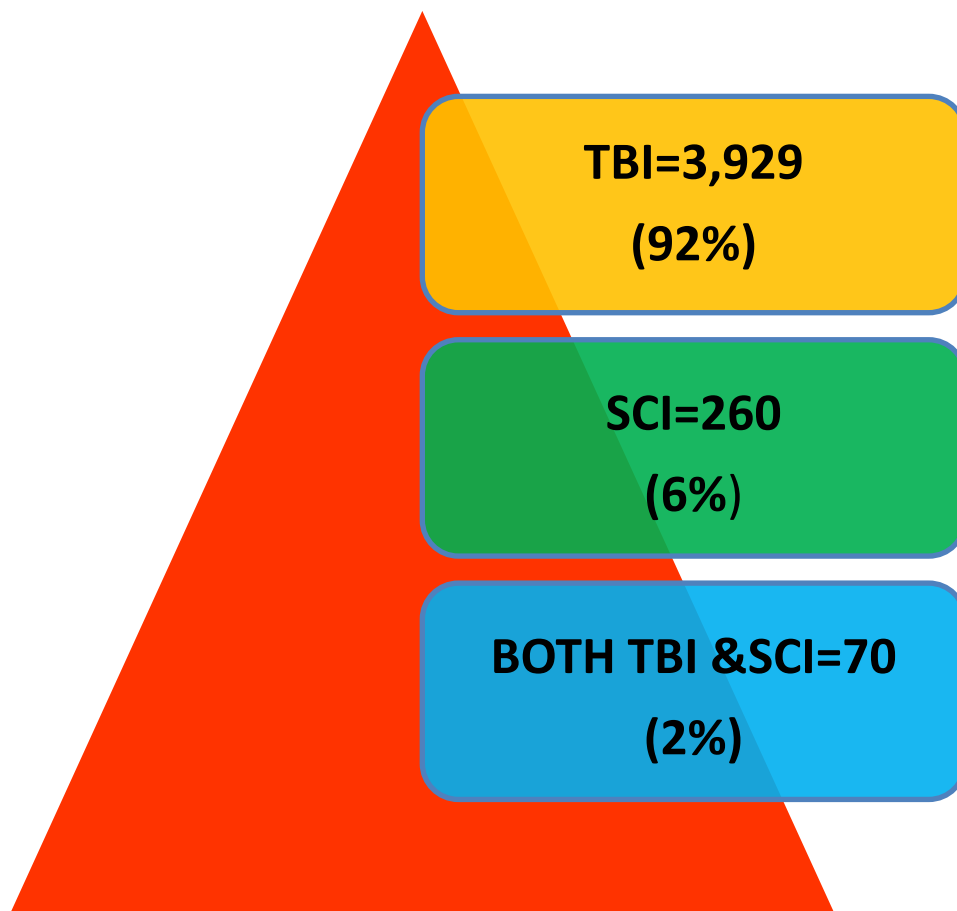
Data Use and Comparability

All data contained in this report must be interpreted with careful judgment. It is important to note that the information presented in this report is based on data from the ATR which were submitted as of September 30, 2017. The data in this report is not comparable to state or federal data from other sources due to variations in collection and analytical techniques. Less severe head and spinal cord injuries are under-represented in this analysis by design. Consequently, some less severe injuries are not included in the AHSCIR case definition thereby permitting registrars to omit reporting them. Additionally, mortality may be under-estimated because of cases in which persons expired at the scene and bypassed hospitals. The statistical significance of the summary data for the SCI and combined TBI/SCI cases is also limited by the small population size regarding some respective data subgroups. Cases admitted to a given hospital and then transferred to another hospital during the course of their treatment are counted twice in this report.

RESULTS

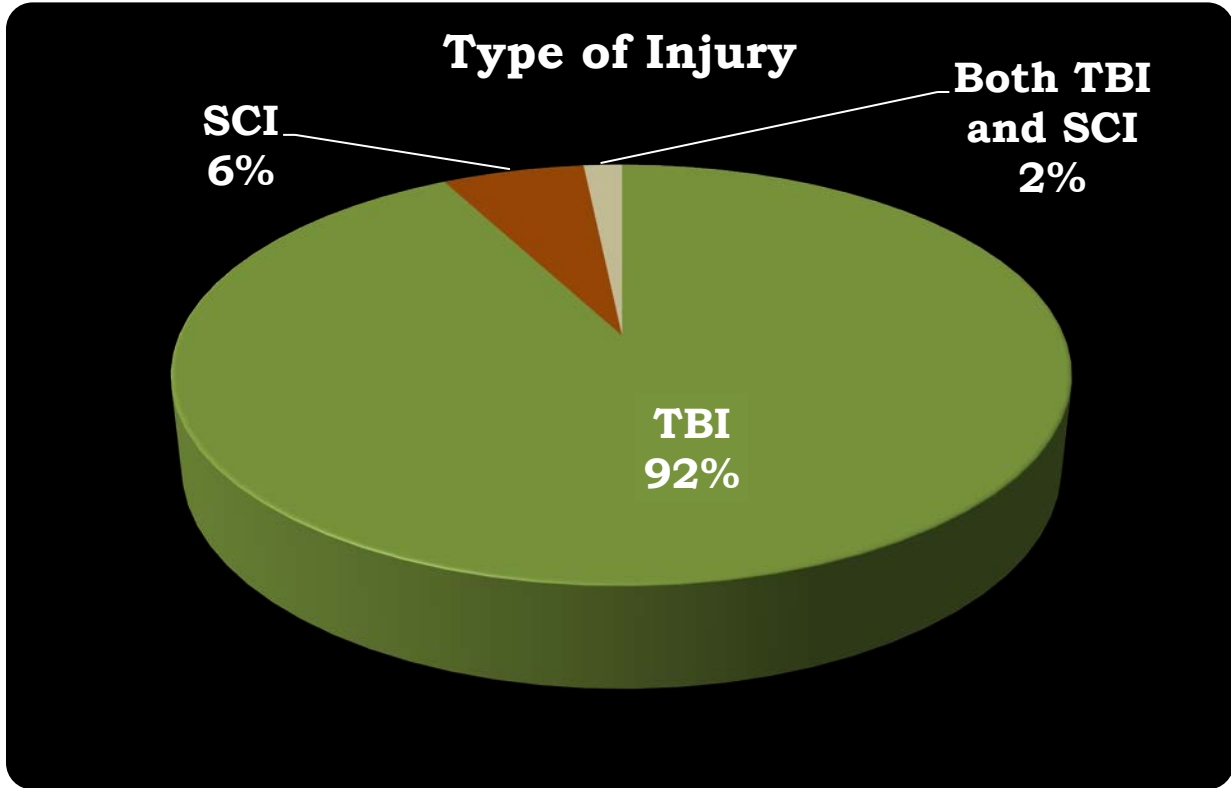
The ATR received reports of 4,259 head and spinal cord injury cases that were admitted to Alabama hospitals during calendar year 2016. Head injuries (TBI), exclusively, constituted 92 percent (n=3,929) of the reported cases and spinal cord injuries, exclusively (SCI) constituted 6 percent (n=260). There were 70 cases, 2 percent, in the registry that had both head and spinal cord injuries together. This document will use the term traumatic brain injury (TBI) when referring to head injuries. Separate analyses are presented for each of the three categories.

Figure 1(a)
Type of Injury
Alabama Head and Spinal Cord Injury Registry (AHSCIR)
January 1, 2016 – December 31, 2016
(n=4,259)



Note: Calculations in graphs and tables in this report were done using excel 2007.

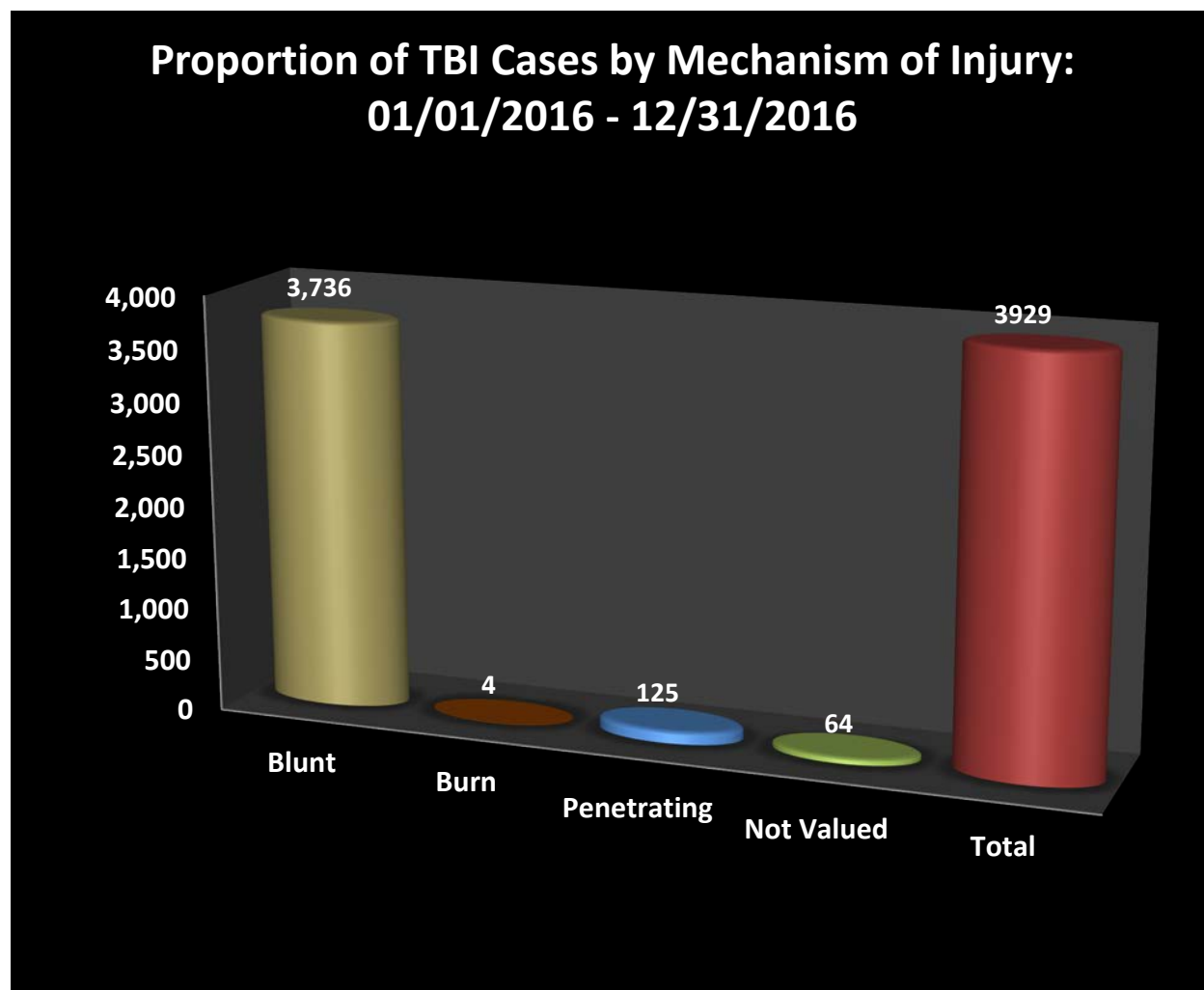
Figure 1(b)
Type of Injury
 Alabama Head and Spinal Cord Injury Registry (AHSCIR)
 January 1, 2016 – December 31, 2016
 (n=4,259)



2016 AHSCR Injury Type	Number of Cases	Percentages of Cases
TBI	3,929	92%
SCI	260	6%
Both TBI & SCI	70	2%
Total	4,259	100%

Traumatic Brain Injury

Figure 2
Proportion of TBI Cases by Mechanism of Injury
 Alabama Head and Spinal Cord Injury Registry (AHSCIR)
 January 1, 2016 – December 31, 2016
 (n=3,929)

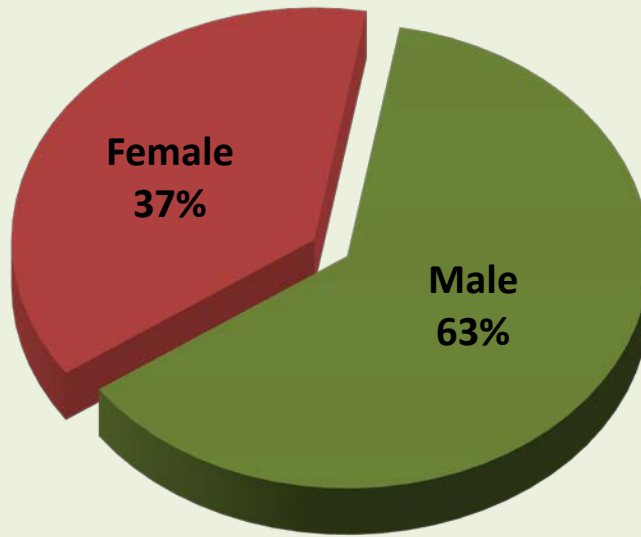


Ninety-five percent (n=3,736) of the TBI cases were injuries due to blunt trauma. Penetrating injuries accounted for 3 percent (n=125) of the TBI cases for 2016.

TBI Injury Mechanism	Number of Cases	Percentages of Cases
Blunt	3,736	95%
Penetrating	125	3%
Not Valued	64	2%
Burn	4	0%
Total	3,929	100%

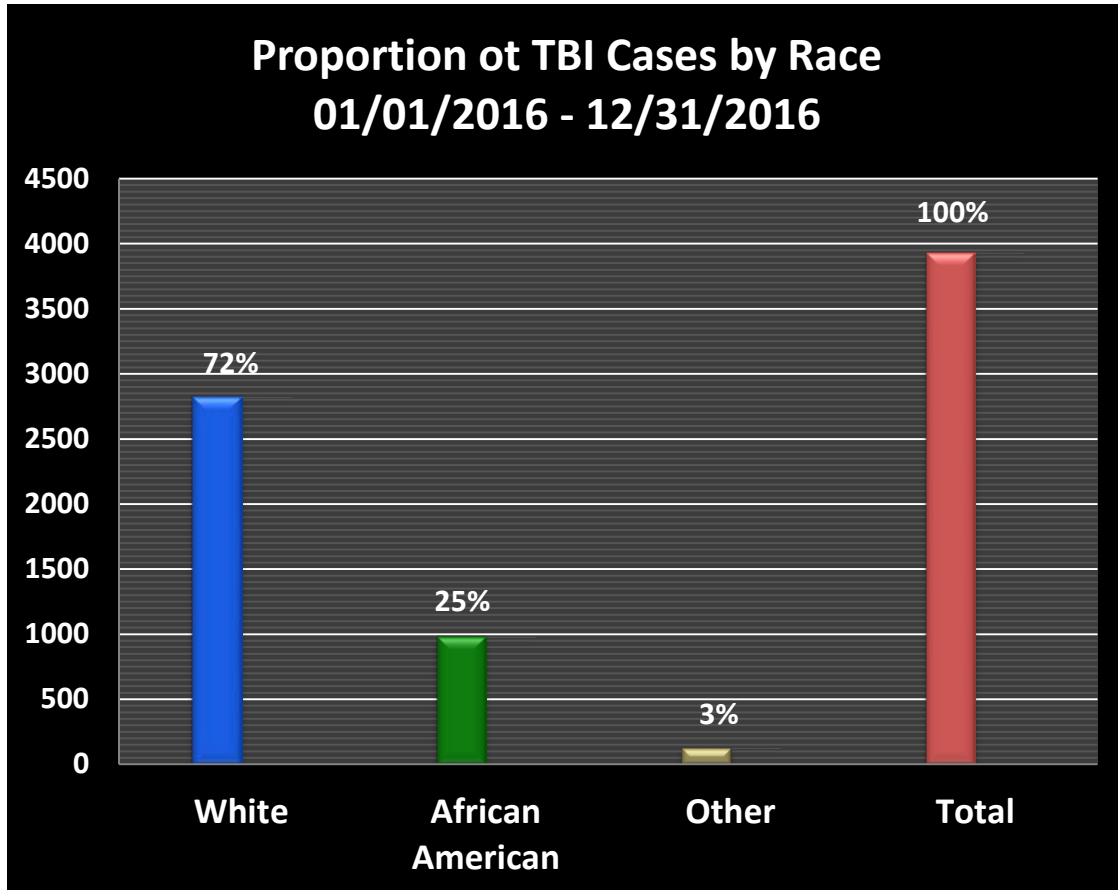
Figure 3
Proportion of TBI Cases by Gender
 Alabama Head and Spinal Cord Injury Registry (AHSCIR)
 January 1, 2016 – December 31, 2016
 (n=3,929)

**Proportion of TBI Cases by Gender:
 01/01/2016 - 12/31/2016**



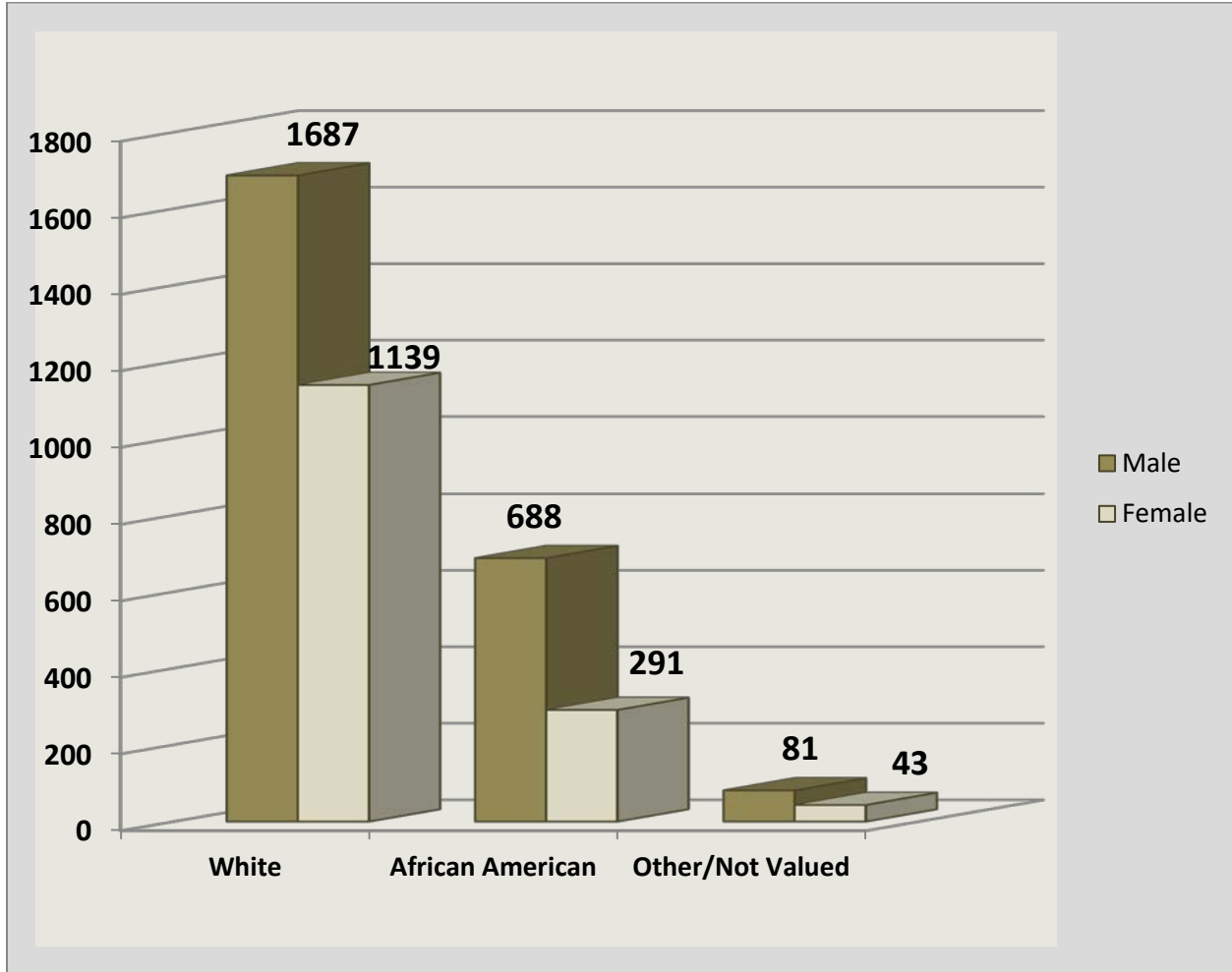
TBI Gender Distribution	Number of Cases	Percentage of Cases
Male	2,456	63%
Female	1,473	37%
Total	3,929	100%

Figure 4
Proportion of TBI Cases by Race
 Alabama Head and Spinal Cord Registry (AHSCIR)
 January 1, 2016 – December 31, 2016
 (n=3,929)



TBI Race Distribution	Number of Cases	Percentage of Cases
White	2,826	72%
African American	979	25%
Other	124	3%
Total	3,929	100%

Figure 5
Number of TBI Cases by Gender & Race
 Alabama Head and Spinal Cord Injury Registry (AHSCIR)
 January 1, 2016 – December 31, 2016
 (n=3,929)



Race	Male	Female	Total	% Male	% Female
White	1687	1139	2826	69%	77.3%
African American	688	291	979	28%	19.8%
Other/Not Valued	81	43	124	3%	2.9%
Total	2456	1473	3929	100%	100.0%

Table 1
2016 TBI Cases by Age, Gender, and Race
Alabama Head and Spinal Cord Injury Registry (AHSCIR)
January 1, 2016 – December 31, 2016
(n=3,929)

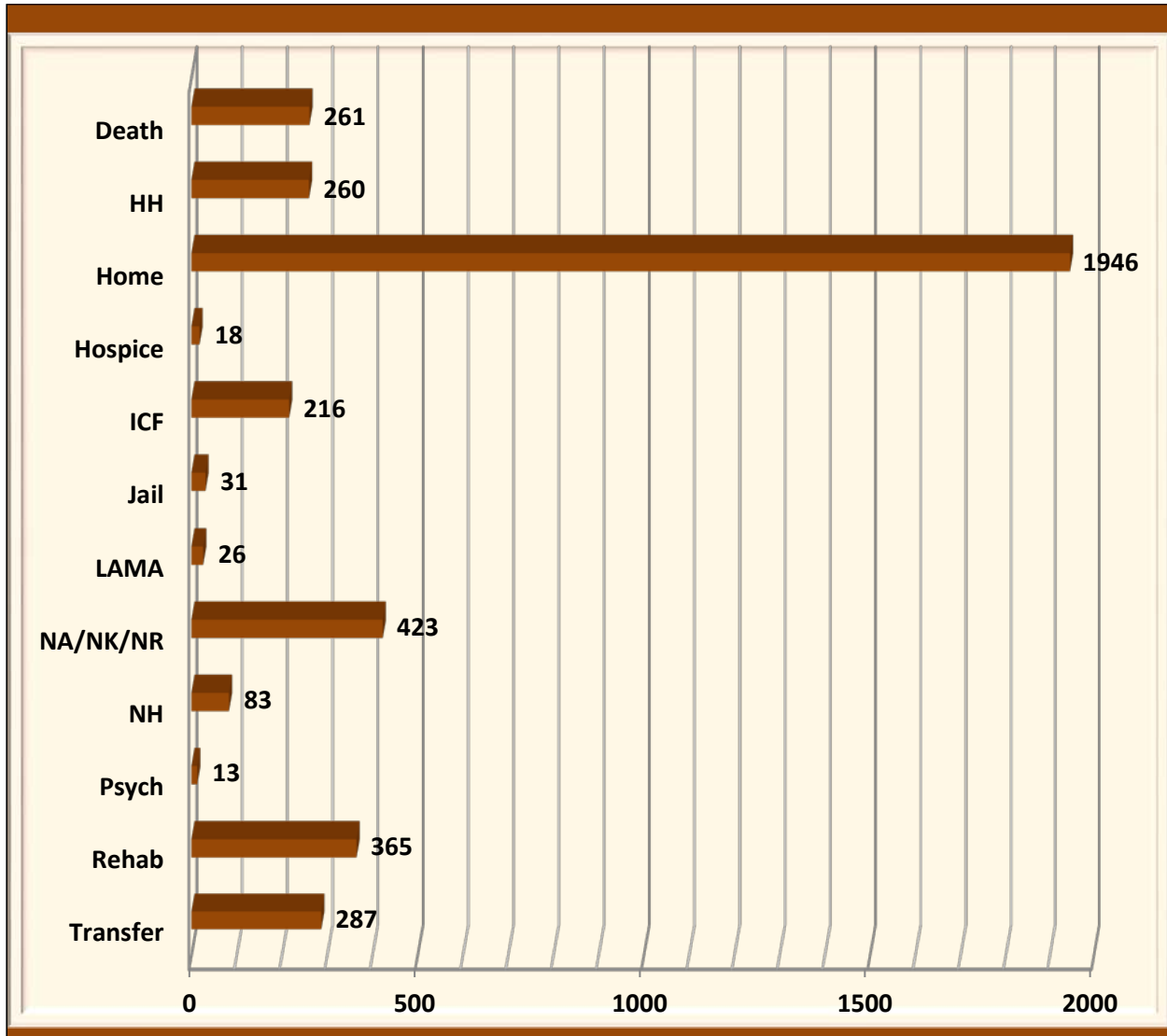
Age	White Male	White Female	Black Male	Black Female	Other Female	Other Male	Total	% Total
<5	36	41	28	23	3	5	136	3.5%
5-14	101	67	65	22	1	5	261	6.6%
15-24	307	159	148	78	7	23	722	18.4%
25-34	241	106	139	42	5	16	549	14.0%
35-44	198	102	93	25	4	9	431	11.0%
45-54	185	113	66	32	6	7	409	10.4%
55-64	212	116	83	35	2	4	452	11.5%
65-74	190	135	39	16	8	8	396	10.1%
75-84	137	171	24	7	4	2	345	8.8%
>84	78	129	2	11	2	2	224	5.7%
No Data/Blank	2	1	1	0	0	0	4	0.1%
Total	1687	1139	688	291	43	81	3929	100.0%
% Total	42.9%	29.0%	17.5%	7.4%	1.1%	2.1%	100%	

Table 2
2015 TBI Cases by Age, Gender, and Race
Alabama Head and Spinal Cord Injury Registry (AHSCIR)
January 1, 2015 – December 31, 2015
(n=3,761)

Age	White Male	White Female	Black Male	Black Female	Other Male	Other Female	No Data/BLNK	Total	% Total
<5	41	33	13	17	7	3	3	117	3.1%
5-14	62	35	27	19	3	1	2	149	4.0%
15-24	251	121	115	53	20	10	6	576	15.3%
25-34	222	113	98	55	31	6	6	531	14.1%
35-44	163	99	74	42	24	1	4	407	10.8%
45-54	223	104	73	33	4	1	1	439	11.7%
55-64	194	115	49	23	11	2	1	395	10.5%
65-74	199	160	28	16	0	1	5	409	10.9%
75-84	157	226	17	18	0	2	0	420	11.2%
>84	92	173	7	11	1	1	2	287	7.6%
No Data/Blank	1	1	0	1	0	0	24	31	0.8%
Total	1605	1180	501	288	103	29	55	3761	100%
% Total	42.5%	31.4%	13.3%	7.5%	3.0%	0.8%	1.5%	100%	

The 15-24 year old age group sustained the largest percentage of TBI cases both in 2016 with 18.4 percent (n=722) and 2015 with 15.3 percent (n=576).

Figure 6
Discharge Disposition Following TBI Cases
Alabama Head and Spinal Cord Injury Registry (AHSCIR)
January 1, 2016 – December 31, 2016
(n=3,929)



The greatest portion, 50 percent (n=1,946), were discharged home. From the data, it cannot be determined how many of these were referred to outpatient rehabilitation facilities, as the data is not linked with hospital discharge reports at this time.

Key:

Home=Home With No Service

HH=Home Health Agency

Hospice=Discharged/Transferred to Hospice Care

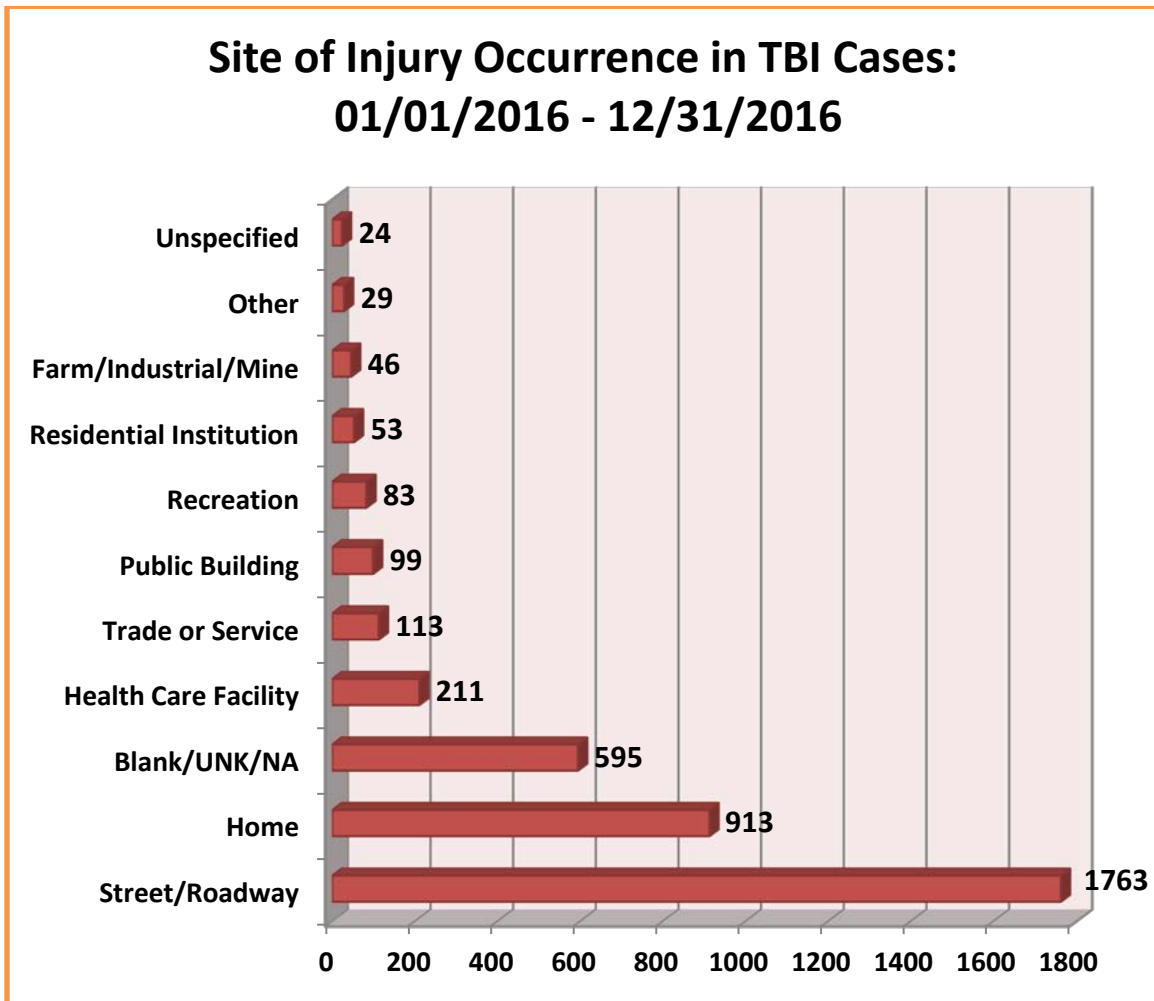
NH=Nursing Home

Rehab=Rehabilitation

ICF=Intermediate Care Facility

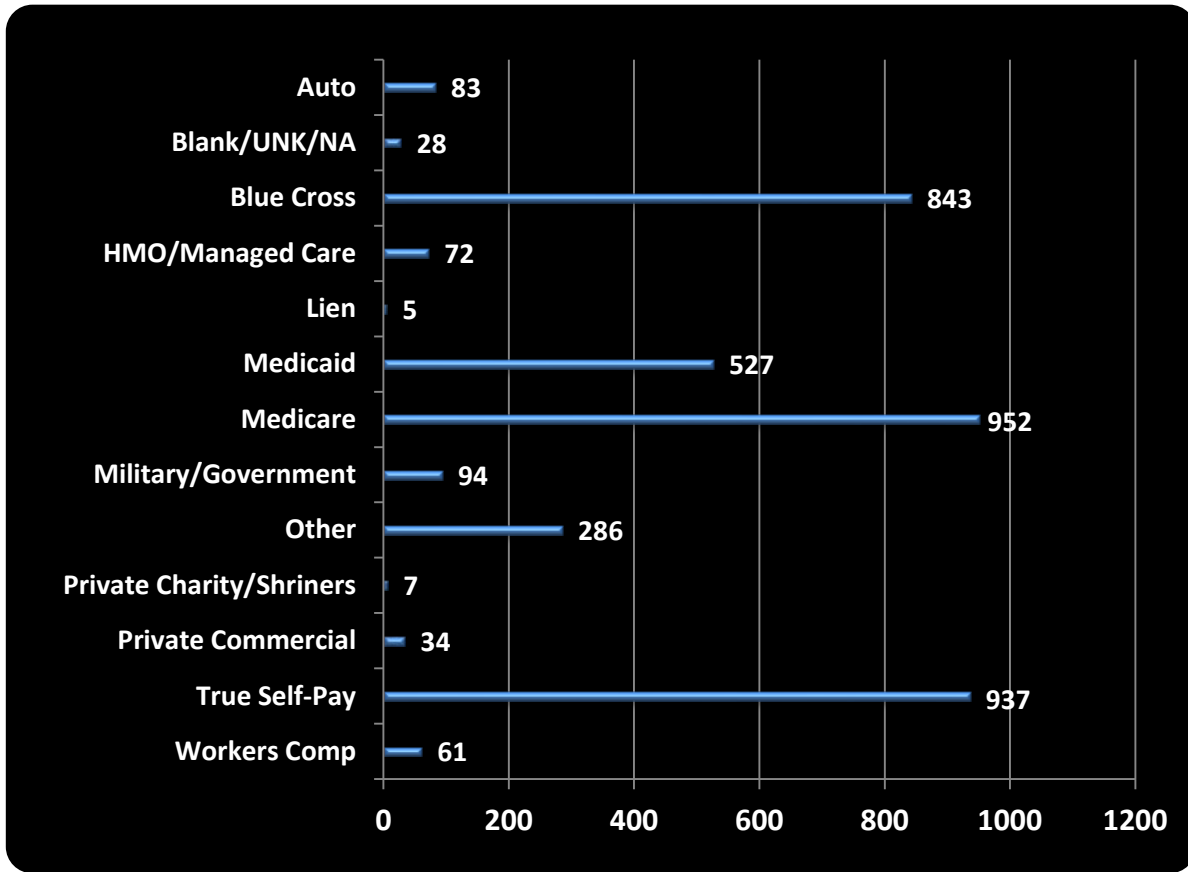
LAMA=Left Against Medical Advice

Figure 7
Site of Injury Occurrence in TBI Cases
 Alabama Head and Spinal Cord Injury Registry (AHSCIR)
 January 1, 2016 – December 31, 2016
 (n=3,929)



From the reports received, 45 percent (n=1,763) of TBI cases occurred on roads, streets, and highways, 23 percent (n=913) occurred in the home, 5 percent (n=211) occurred in health care facilities while 3 percent of cases (n=113) occurred in areas designated as trade and service. Fifteen percent (n=595) of data was unreported or unknown for TBI site of injury occurrence.

Figure 8
Payer Source for TBI Cases
 Alabama Head and Spinal Cord Injury Registry (AHSCIR)
 January 1, 2016 – December 31, 2016
 (n=3,929)



Payer Type	Count	Percent
Auto	83	2%
Blank/UNK/NA	28	1%
Blue Cross	843	21%
HMO/Managed Care	72	2%
Lien	5	0%
Medicaid	527	13%
Medicare	952	24%
Military/Government	94	2%
Other	286	7%
Private Charity/Shriners	7	0%
Private Commercial	34	1%
True Self-Pay	937	24%
Workers Comp	61	2%
Total	3929	100%

From the data, Medicare and True Self-Pay paid 24 percent of claims for TBI patients in Year 2016. Other payers are shown with their respective reimbursement and percentages.

SPINAL CORD INJURY (SCI)

The Mayo Clinic (2017) defines a spinal cord injury as damage to any part of the spinal cord or nerves at the end of the spinal canal. Spinal cord injuries in many instances often cause permanent changes in strength, sensation, and other body functions below the site of the injury. Spinal cord injuries result from damage to the vertebrae, ligaments, or disks of the spinal column, or to the spinal cord itself.

A traumatic spinal cord injury may stem from a sudden, traumatic blow to the spine that fractures, dislocates, crushes, or compresses one or more of the vertebrae. It also may result from a gunshot or knife wound that penetrates and cuts the spinal cord. Additional damage usually occurs over days or weeks because of bleeding, swelling, inflammation, and fluid accumulation in and around the spinal cord. A non-traumatic spinal cord injury may be caused by arthritis, cancer, inflammation, infections, or disk degeneration of the spine.

The most common causes of spinal cord injuries are:

Motor Vehicle Accidents. Auto and motorcycle accidents are the leading cause of spinal cord injuries, accounting for more than 35 percent of new spinal cord injuries each year.

Falls. Spinal cord injury after age 65 is most often caused by a fall. Overall, falls cause more than 24 percent of spinal cord injuries.

Acts of Violence. According to the National Spinal Cord Injury Statistical Center, around 15 percent of spinal cord injuries result from violent encounters, often involving gunshot and knife wounds.

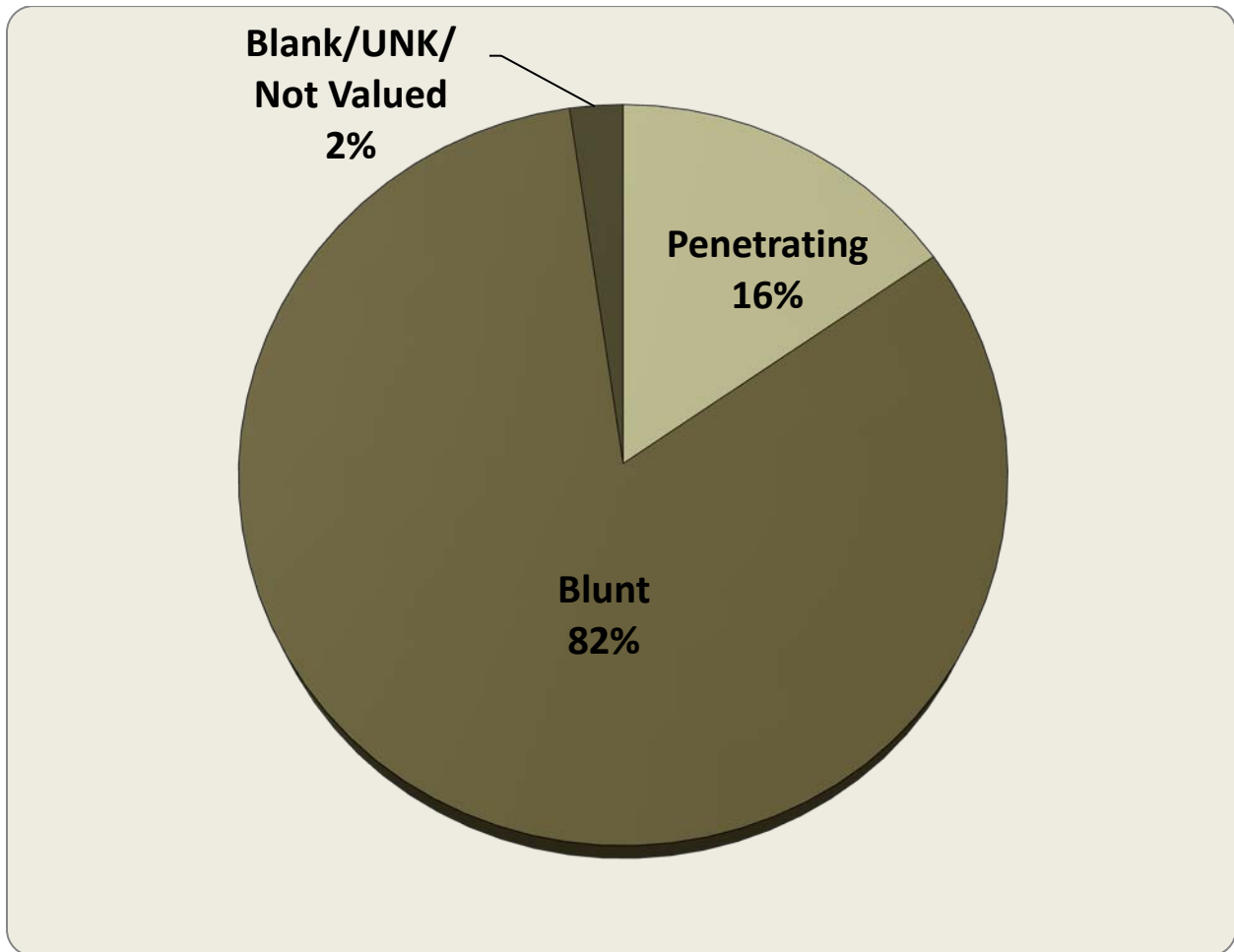
Sports and Recreation Injuries. Athletic activities, such as impact sports and diving in shallow water, cause about 9 percent of spinal cord injuries.

Alcohol. Alcohol use is a factor in about 1 out of every 4 spinal cord injuries.

Diseases. Cancer, arthritis, osteoporosis, and inflammation of the spinal cord also can cause spinal cord injuries.

Spinal Cord Injury

Figure 9
Proportion of SCI Cases by Mechanism of Injury
 Alabama Head and Spinal Cord Injury Registry (AHSCIR)
 January 1, 2016 – December 31, 2016
 (n=260)

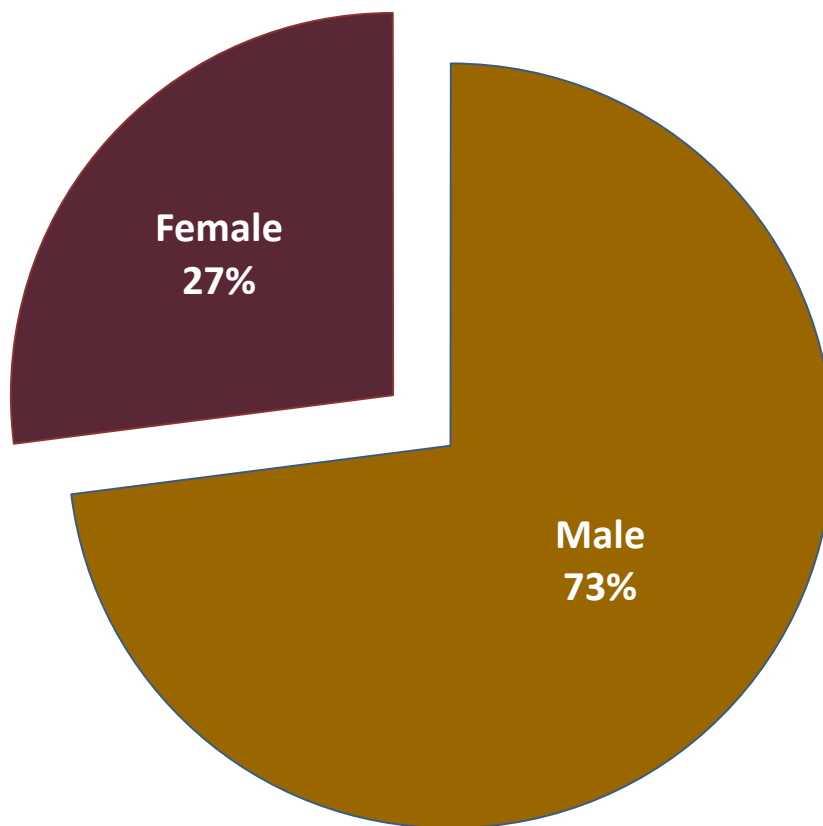


Eighty-two percent (n=214) of the SCI cases were injuries due to blunt trauma. Penetrating injuries accounted for 16 percent (n=40) of the SCI cases for 2016. Blank/UNK/Not Valued accounted for 2 percent (n=6) of the reported SCI cases.

SCI Injury Mechanism	Number of Cases	Percentage of Cases
Blunt	214	82%
Penetrating	40	16%
Blank/Unknown/Not	6	2%

Valued		
Total	260	100%

Figure 10
Proportion of SCI Cases by Gender
Alabama Head and Spinal Cord Injury Registry (AHSCIR)
January 1, 2016 – December 31, 2016
(n=260)

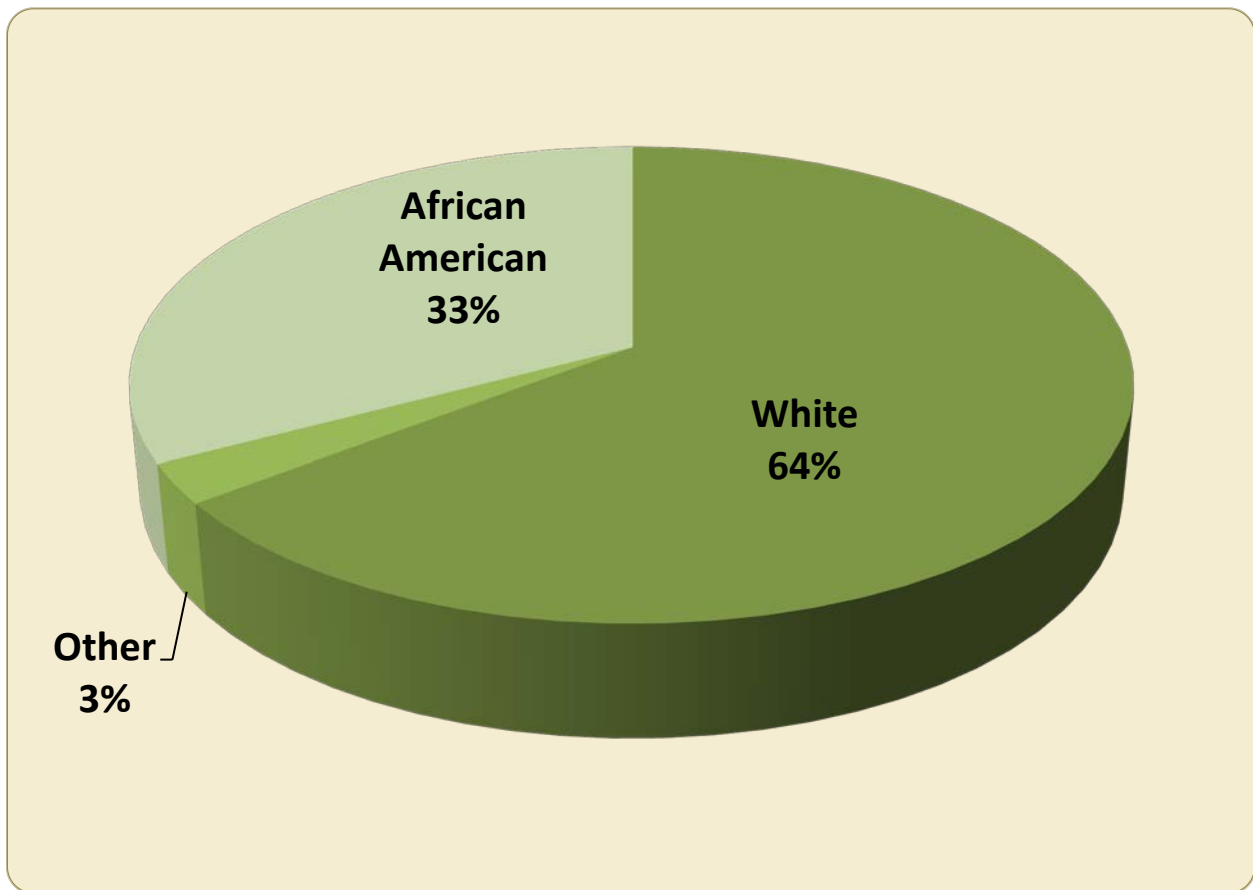


Males made up 73 percent (n=189) of the SCI cases reported in the year 2016, while females constituted 27 percent (n=71) of the cases reported to the AHSCIR.

SCI Gender Distribution	Number of Cases	Percentage of Cases
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Male	189	73%
Female	71	27%
Total	260	100%

Figure 11
Proportion of SCI Cases by Race
Alabama Head and Spinal Cord Injury Registry (AHSCIR)
January 1, 2016 – December 31, 2016
(n=260)

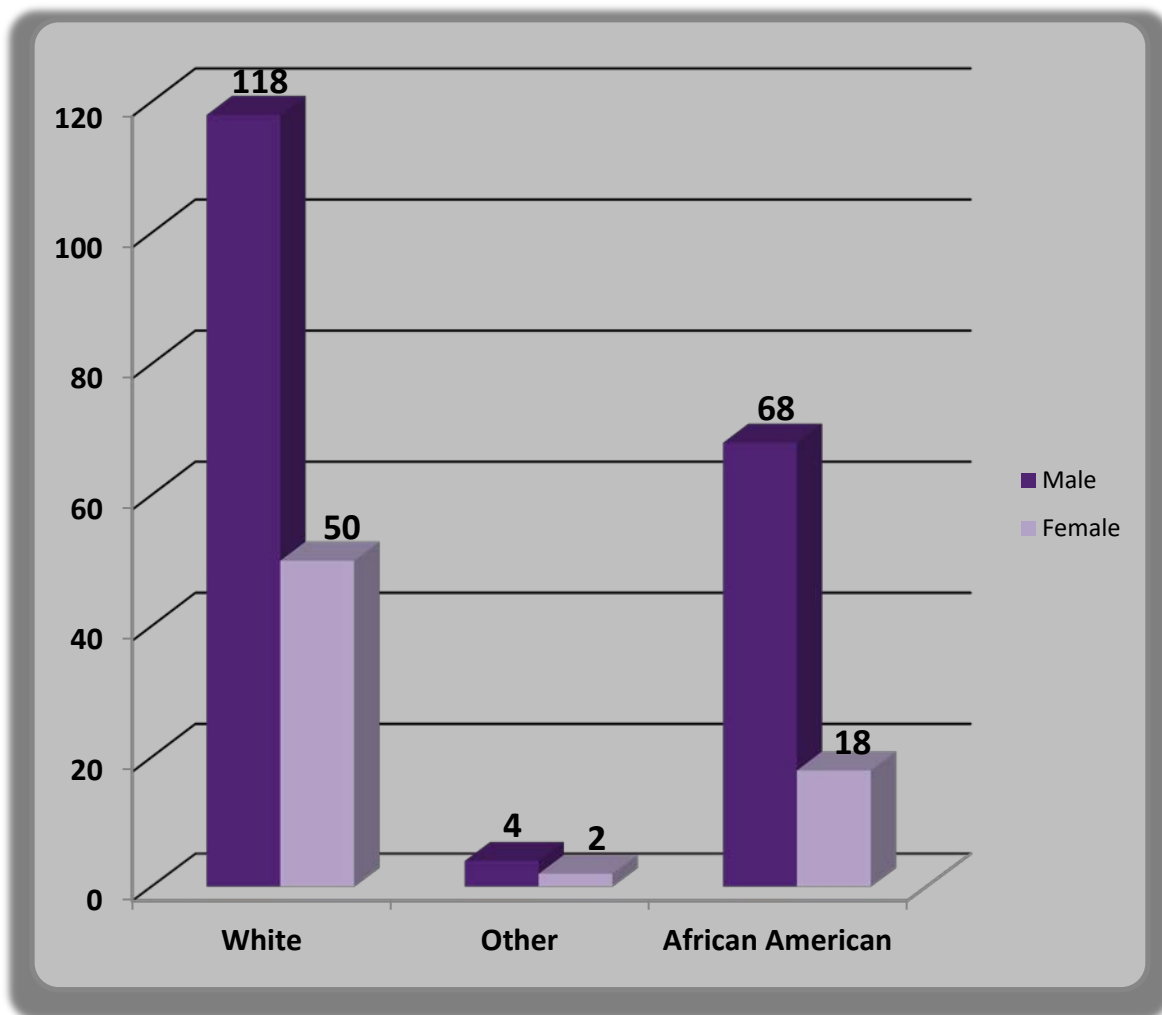


Whites constituted 64 percent (n=168) of the SCI cases, African-Americans constituted 33 percent (n=85), and other represented 3 percent (n=7) in calendar year 2016.

SCI - Race Distribution	Number of Cases	Percentage of Cases
White	168	64%
Other	7	3%

African American	85	33%
Total	260	100%

Figure 12
Number of SCI Cases by Race and Gender
Alabama Head and Spinal Cord Injury Registry (AHSCIR)
January 1, 2016 – December 31, 2016
(n=260)



Overall 45 percent (n=118) of SCI cases were white males, 26 percent (n=68) African American males, 19 percent white females (n=50), and 7 percent (n=18) African American females for calendar year 2016.

Race and Gender Distribution	Male	Female	Total
African American	68	18	86
White	118	50	168
Other	4	2	6
Total	190	70	260

Table 3
2016 SCI Cases by Age, Gender, and Race
Alabama Head and Spinal Cord Injury Registry (AHSCIR)
January 1, 2016 – December 31, 2016
(n=260)

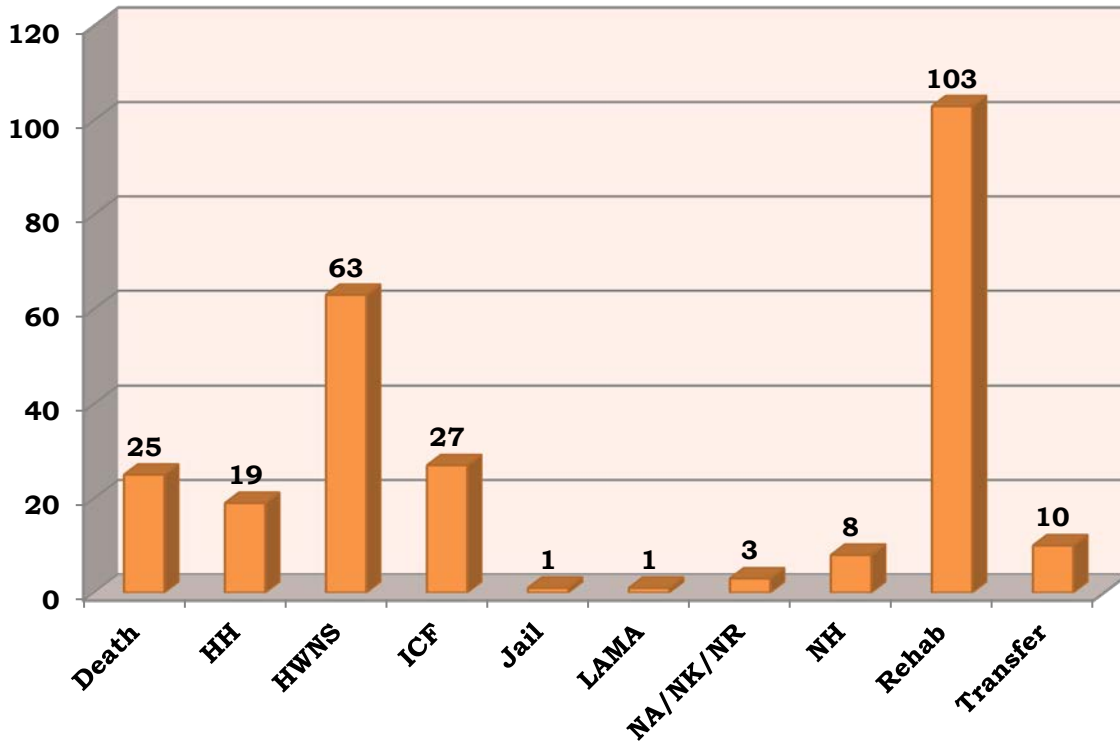
Age	White Males	White Females	Black Males	Black Females	Other Females	Other Males	No Data	Total	% Total
<5	1	1	0	0	0	0	0	2	0.8%
5-4	2	1	1	0	0	0	0	4	1.5%
15-24	18	11	13	6	1	0	0	49	18.8%
25-34	21	6	14	5	0	1	0	47	18.1%
35-44	12	2	15	1	0	2	0	32	12.3%
45-54	13	3	10	2	0	0	0	28	10.8%
55-64	23	11	9	2	0	1	0	46	17.7%
65-74	19	5	3	1	0	0	0	28	10.8%
75-84	6	4	2	1	0	0	0	13	5.0%
>84	3	6	0	0	1	0	0	10	3.8%
No Data	0	0	0	0	0	0	1	1	0.4%
Total	118	50	67	18	2	4	1	260	100%
% Total	45.4%	19.2%	25.8%	6.9%	0.8%	1.5%	0.4%	100%	

Table 4
2015 SCI Cases by Age, Gender, and Race
Alabama Head and Spinal Cord Injury Registry (AHSCIR)
January 1, 2015 – December 31, 2015
(n=271)

Age	White Male	White Female	Black Male	Black Female	Other Male	Other Female	No Data	Total	% Total
<5	0	0	0	0	0	0	0	0	0.0%
5-14	1	0	1	3	0	0	0	5	1.8%
15-24	13	8	15	5	0	0	0	41	15.1%
25-34	18	8	18	3	1	0	0	48	17.7%

35-44	15	10	11	2	0	0	4	42	15.5%
45-54	23	5	14	0	0	1	0	43	15.9%
55-64	27	5	3	2	0	0	0	37	13.7%
65-74	21	7	1	0	0	0	0	29	10.7%
75-84	7	9	0	0	0	0	0	16	0.0%
>84	4	5	0	0	0	0	1	10	3.7%
No Data	0	0	0	0	0	0	0	0	0.0%
Total	129	57	63	15	1	1	5	271	100%
% Total	47.6%	21.0%	23.2%	5.5%	0.4%	0.4%	1.8%	100%	

Figure 13
Discharge Disposition Following SCI Cases
Alabama Head and Spinal Cord Injury Registry (AHSCIR)
January 1, 2016 – December 31, 2016
(n=260)



Discharge Disposition	Count	Percentage
Death	25	10%
HH	19	7%
HWNS	63	24%
ICF	27	10%
Jail	1	0%
LAMA	1	0%
NA/NK/NR	3	1%
NH	8	3%

Rehab	103	40%
Transfer	10	4%
Total	260	100%

Key:

HWNS=Home With No Known Service

HH=Home With Health Service

NH=Nursing Home

Rehab=Rehabilitation

ICF=Intermediate Care Facility

LAMA=Left Against Medical Advice

NA/NK/NR=Not Available/Not Known/Not Valued

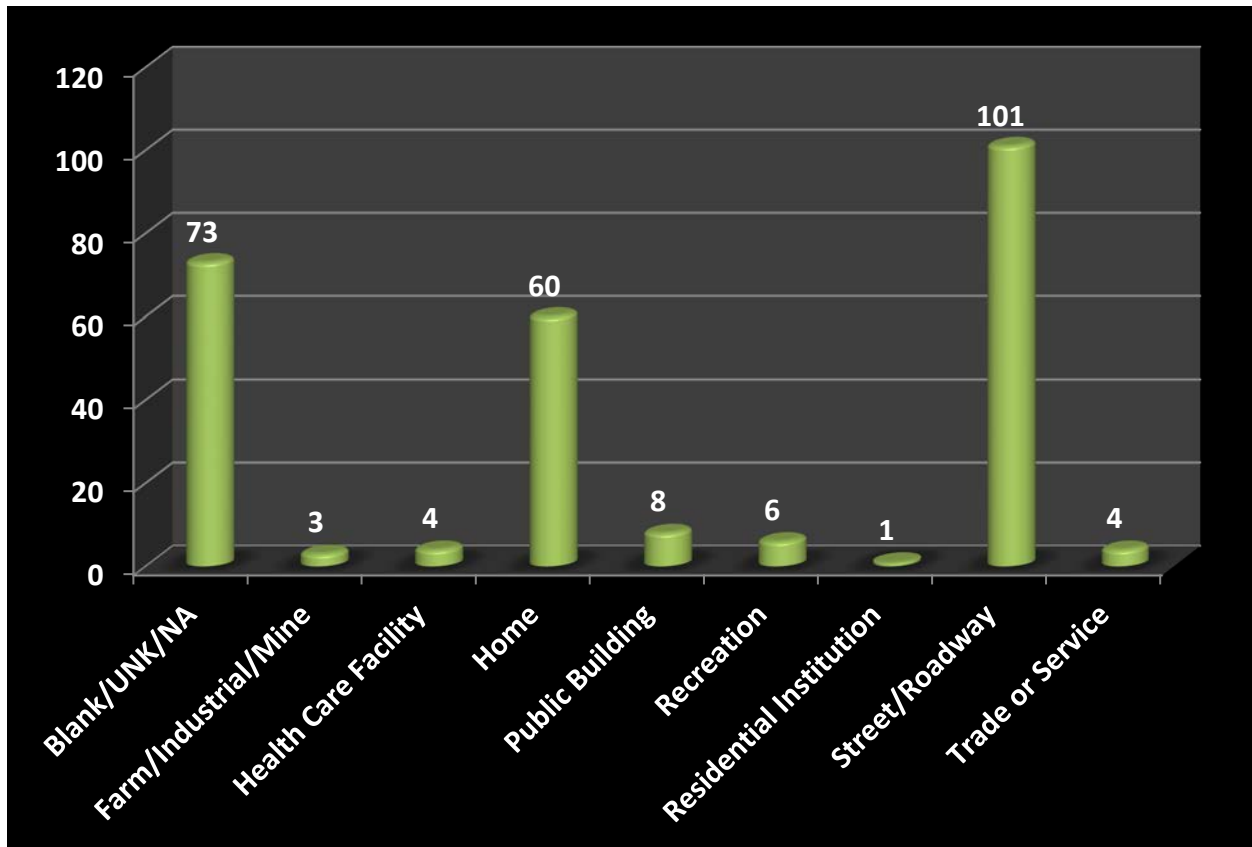
Figure 14

Site of Injury Occurrence in SCI Cases

Alabama Head and Spinal Cord Injury Registry (AHSCIR)

January 1, 2016 – December 31, 2016

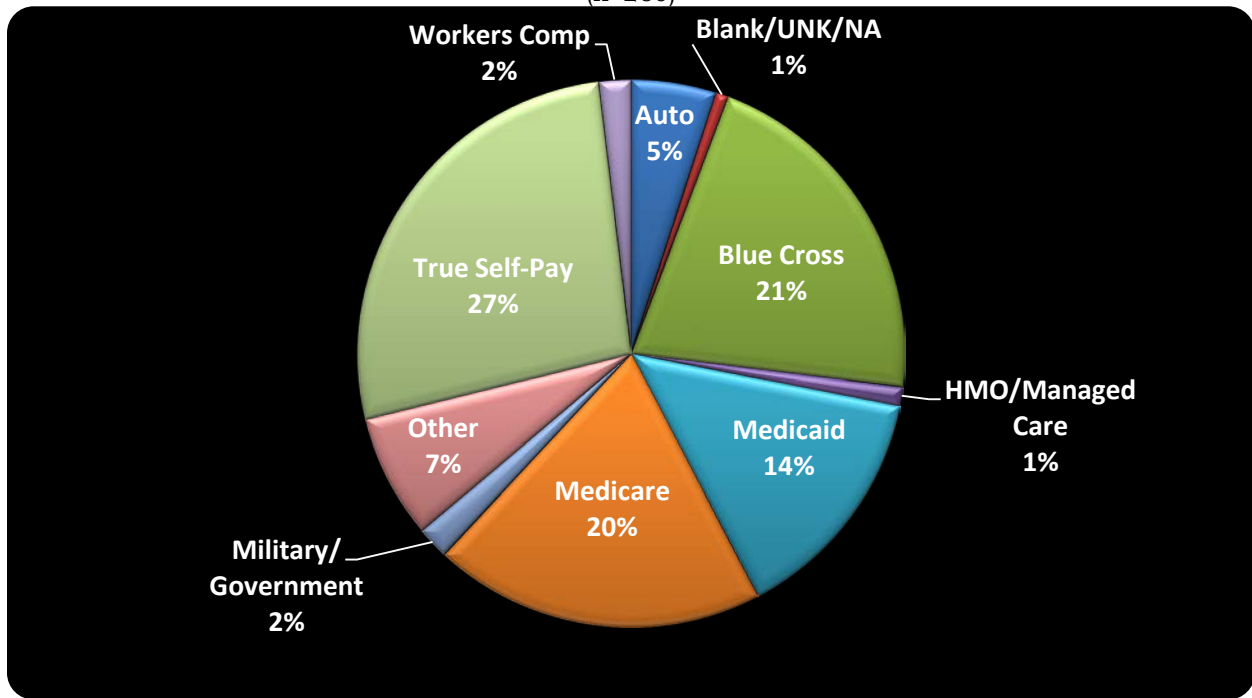
(n=260)



Site of Injury Occurrence	Count	Percentage
Blank/UNK/NA	73	28%
Farm/Industrial/Mine	3	1%
Health Care Facility	4	2%

Home	60	23%
Public Building	8	3%
Recreation	6	2%
Residential Institution	1	0%
Street/Roadway	101	39%
Trade or Service	4	2%
Total	260	100%

Figure 15
Payer Source for SCI Cases
Alabama Head and Spinal Cord Injury Registry (AHSCIR)
January 1, 2016 – December 31, 2016
(n=260)



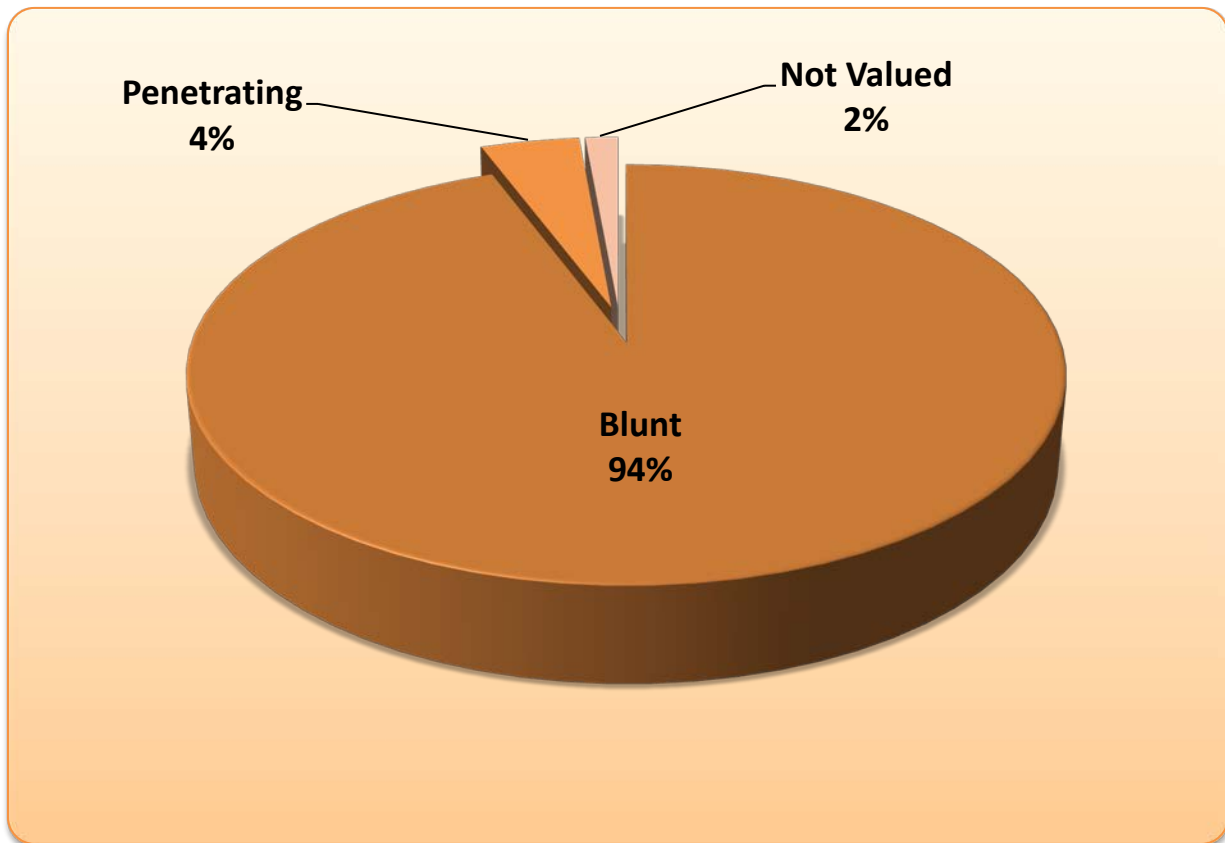
For those who presented to Alabama hospitals with SCI in the calendar year 2016, True Self-Pay insurance was 27 percent (n=70), Blue Cross Blue Shield 21 percent (n=55), Medicare paid 20 percent (n=51), and Medicaid 14 percent (n=37). Health Maintenance Organizations (HMO)/Managed Care paid 1 percent (n=3), Military and other Government insurance plans 2 percent (n =5), and Workman’s Compensation was the primary payer in 2 percent (n =5). Payment source was indicated as “Other” in 7 percent (n=19) of cases. The source of payment data sent to the AHSCIR is subject to misclassification for various reasons, e.g., the Self-Pay group might include liens in some cases or the primary payment source may not be properly submitted when there are multiple sources of payment.

Payer	Count	Percentage of cases
Auto	13	5%
Blank/UNK/NA	2	1%

Blue Cross	55	21%
HMO/Managed Care	3	1%
Medicaid	37	14%
Medicare	51	20%
Military/Government	5	2%
Other	19	7%
True Self-Pay	70	27%
Workers Comp	5	2%
Total	260	100%

Cases with Both Head and Spinal Cord Injuries

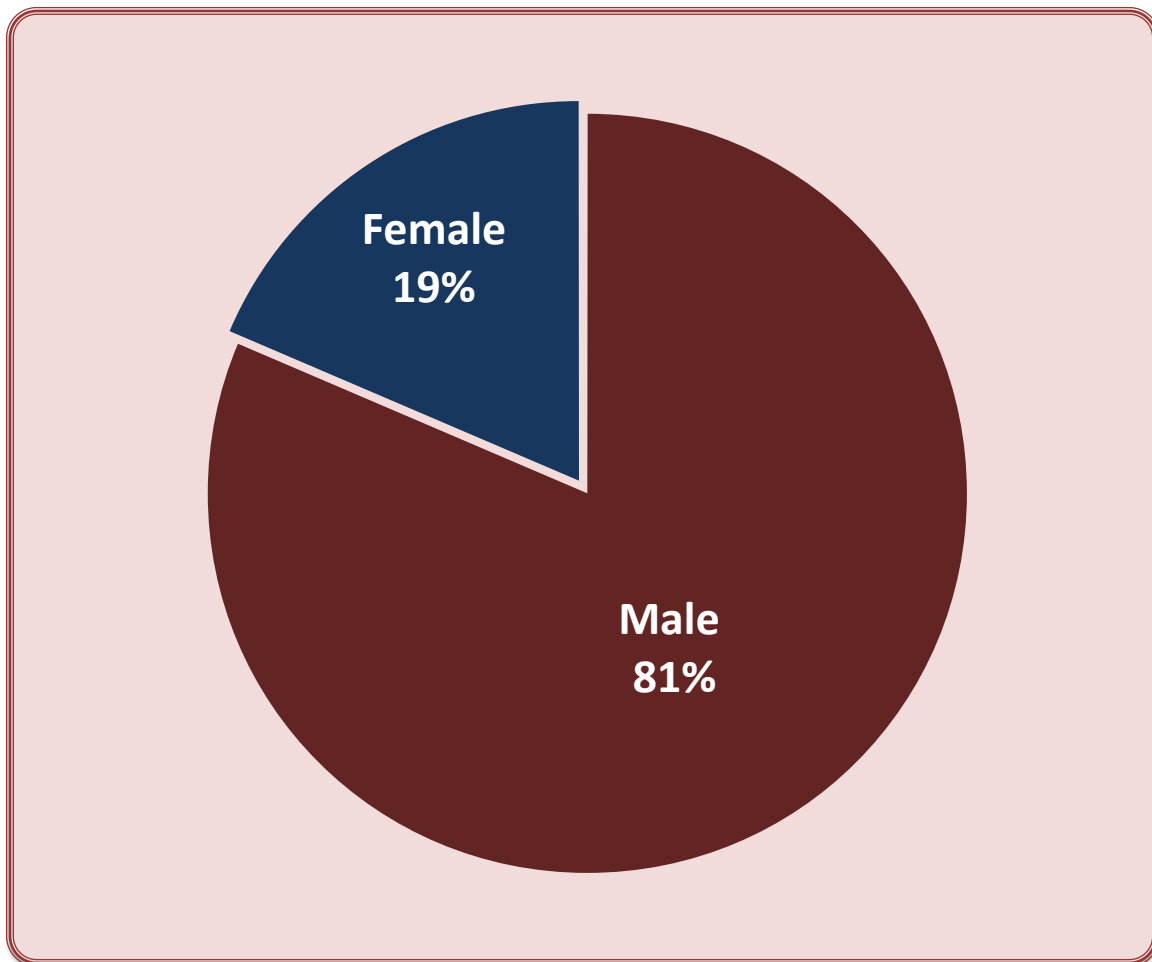
Figure 16
Proportion of Cases with Both Head and Spinal Cord Injuries by Mechanism of Injury
Alabama Head and Spinal Cord Injury Registry (AHSCIR)
January 1, 2016 – December 31, 2016
(n=70)



From the data reported to the AHSCIR for 2016, 94 percent (n=66) of both TBI and SCI cases were injuries due to blunt trauma. Penetrating injuries accounted for 4 percent (n=3) of both TBI and SCI cases for 2016.

Both TBI and SCI Injury Mechanism	Number of Cases	Percentage of Cases
Blunt	66	94%
Penetrating	3	4%
Not Valued	1	2%
Total	70	100%

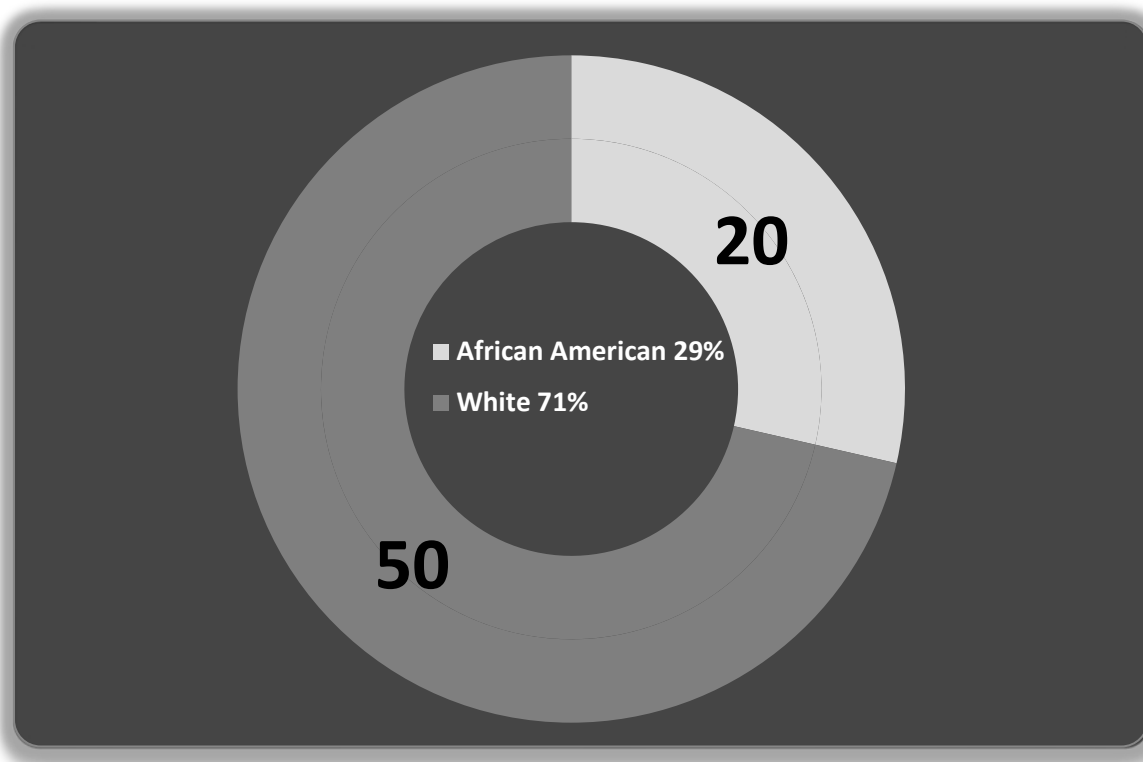
Figure 17
Proportion of Cases with Both TBI and SCI by Gender
 Alabama Head and Spinal Cord Injury Registry (AHSCIR)
 January 1, 2016 – December 31, 2016
 (n=70)



For both TBI and SCI cases reported to the AHSCIR, 81 percent (n=57) were males and 19 percent (n=13) females.

TBI and SCI Cases by Gender	Number of Cases	Percentage of Cases
Male	57	81%
Female	13	19%
Total	70	100%

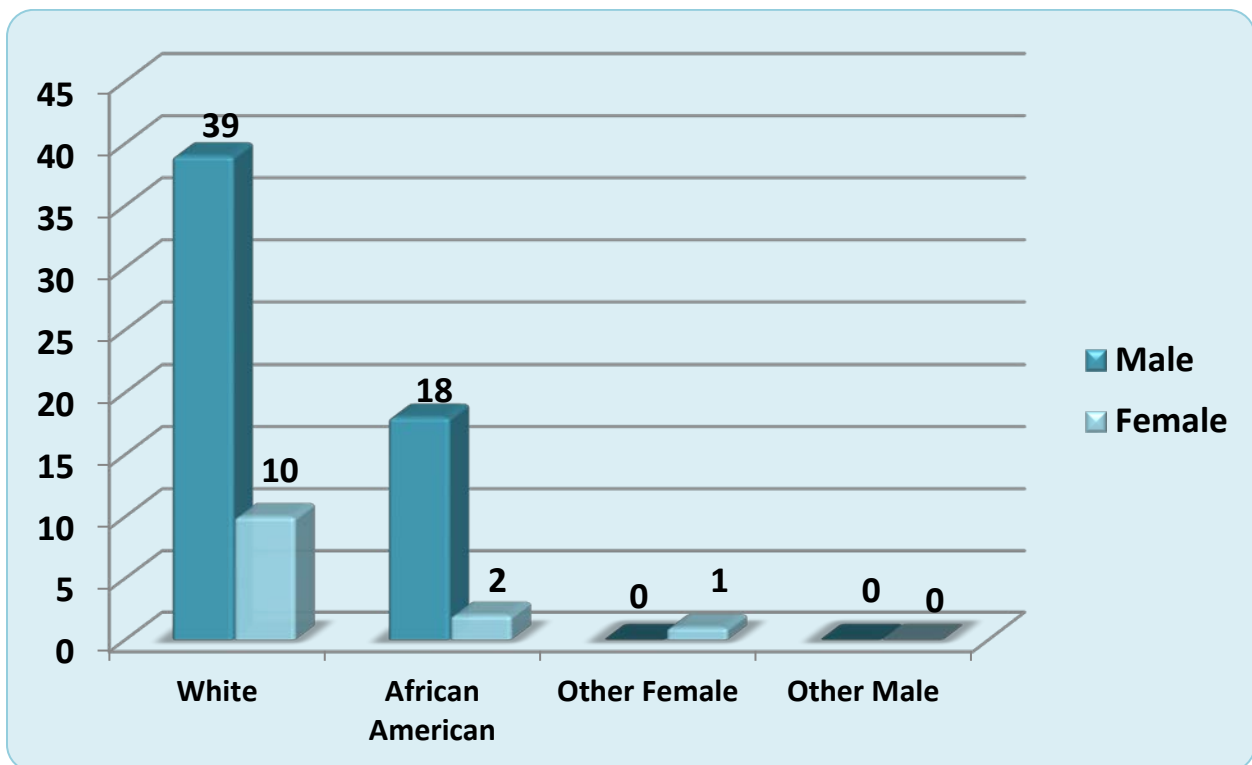
Figure 18
Proportion of Cases with Both TBI and SCI by Race
Alabama Head and Spinal Cord Injury Registry (AHSCIR)
January 1, 2016 – December 31, 2016
(n=70)



Whites constituted 71 percent (n=50) of both TBI and SCI cases, African Americans made up 29 percent (n=20) for 2016.

Both TBI and SCI by Race	Number of Cases	Percentage of Cases
African American	20	29%
White	50	71%
Total	70	100%

Figure 19
Number of Cases with Both TBI and SCI by Gender and Race
 Alabama Head and Spinal Cord Injury Registry (AHSCIR)
 January 1, 2016 – December 31, 2016
 (n=70)



Gender and Race	White	African American	Other Female	Other Male	Total
	39	18	0	0	57
	10	2	1	0	13
	50	20	1	0	71

Male	39	18	0	0	57
Female	10	2	1	0	13
Total	49	20	1	0	70

Table 5
2016 Both TBI and SCI Cases by Age, Gender, and Race
Alabama Head and Spinal Cord Injury Registry (AHSCIR)
January 1, 2016 – December 31, 2016
(n=70)

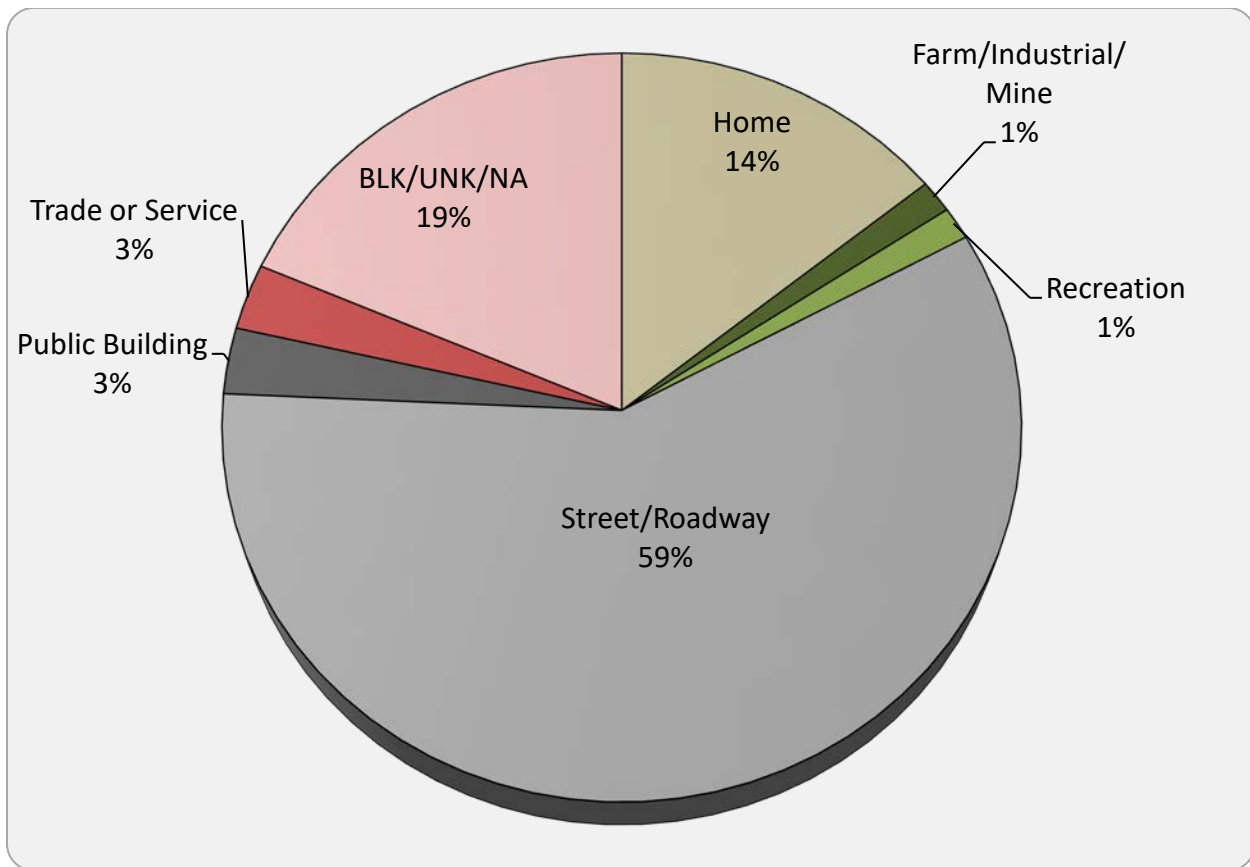
Age	White Male	White Female	Black Male	Black Female	Other Male	Other Female	Not Valued	Total	% Total
<5	0	1	0	0	0	0	0	1	1.4%
5-14	1	1	0	0	0	0	0	2	2.9%
15-24	5	4	4	1	0	0	0	14	20.0%
25-34	6	1	4	1	0	0	0	12	17.1%
35-44	6	0	5	0	0	0	0	11	15.7%
45-54	4	0	2	0	0	0	0	6	8.6%
55-64	12	1	3	0	0	0	0	16	22.9%
65-74	4	1	0	0	0	0	0	5	7.1%
75-84	0	1	0	0	0	0	0	1	1.4%
>84	1	0	0	0	0	1	0	2	2.9%
Total	39	10	18	2	0	1	0	70	100%
% Total	55.7%	14.3%	25.7%	2.9%	0.0%	1.4%	0.0%	100%	

Table 6
2015 Both TBI and SCI Cases by Age, Gender, and Race
Alabama Head and Spinal Cord Injury Registry (AHSCIR)
January 1, 2015 – December 31, 2015
(n=65)

Age	White Male	White Female	Black Male	Black Female	Other Male	Other Female	Not Valued	Total	% Total
<5	0	0	0	0	0	0	0	0	0.0%
5-14	0	0	0	0	0	0	0	0	0.0%

15-24	3	1	0	0	0	0	0	4	6.2%
25-34	3	3	1	2	0	2	0	11	16.9%
35-44	6	3	4	0	0	0	0	13	20.0%
45-54	10	1	3	0	0	0	0	14	21.5%
55-64	7	1	1	0	0	0	0	9	13.8%
65-74	8	1	0	0	0	0	0	9	13.8%
75-84	2	2	0	0	0	0	0	4	6.2%
>84	1	0	0	0	0	0	0	1	1.5%
Total	40	12	9	2	0	2	0	65	100%
% Total	61.5%	18.5%	13.8%	3.1%	0.0%	3.1%	0.0%	100%	

Figure 20
Site of Injury Occurrence in Both TBI and SCI Cases
 Alabama Head and Spinal Cord Injury Registry (AHSCIR)
 January 1, 2016 – December 31, 2016
 (n=70)

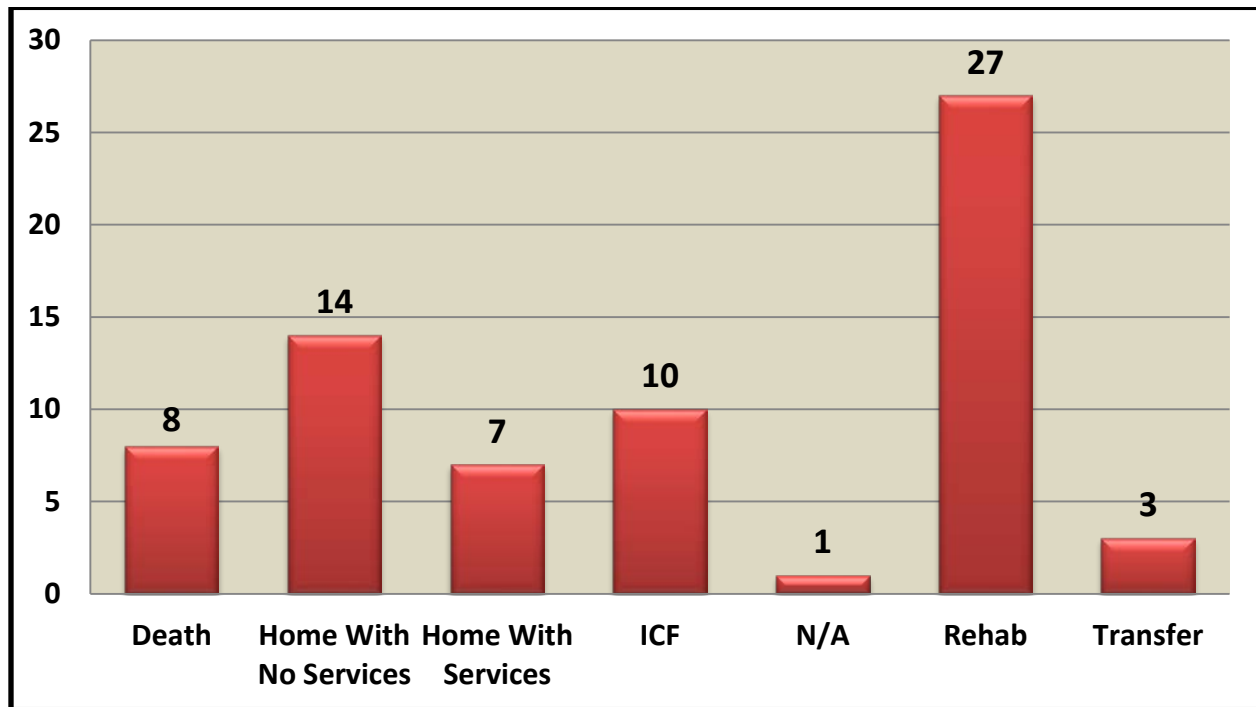


Fifty-nine percent (n=41) of AHSCIR cases with both TBI and SCI occurred on Streets and Roadways. Fourteen percent (n=10) occurred in the Home.

Site	Count	Percentage
Home	10	14%
Farm/Industrial/Mine	1	1%
Recreation	1	1%
Street/Roadway	41	59%
Public Building	2	3%
Trade or Service	2	3%
BLK/UKN/NA	13	19%
Total	70	100%

Key:
BLK/UKN/NA=Blank/Unknown/Not Applicable

Figure 21
**Discharge Disposition Following Cases
 With Both TBI and SCI**
 Alabama Head and Spinal Cord Injury Registry (AHSCIR)
 January 1, 2016 – December 31, 2016
 (n=70)



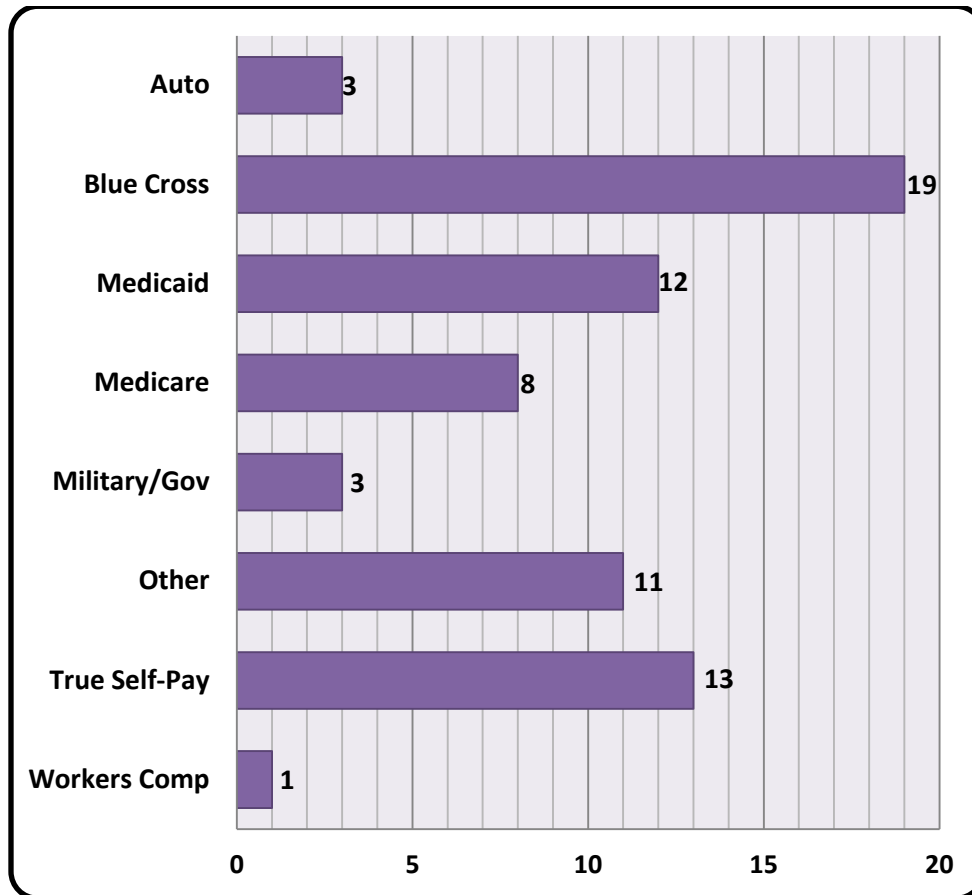
Twenty percent (n=14) were discharged home with no home services. Ten percent were discharged home with services. Thirty-nine percent (n=27) of cases with both TBI and SCI were discharged to Rehabilitation Centers. Eleven percent of the patients (n=8) expired.

Discharge Disposition for Both	Count	Percentage
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TBI and SCI		
Death	8	11%
Home With No Services	14	20%
Home With Services	7	10%
ICF	10	14%
N/A	1	1%
Rehab	27	39%
Transfer	3	4%
Total	70	100%

Key:
 ICF=Intermediate Care Facility
 Rehab=Rehabilitation

Figure 22
**Payer Sources for Cases
 With Both TBI and SCI**
 Alabama Head and Spinal Cord Injury Registry (AHSCIR)
 January 1, 2016 – December 31, 2016
 (n=70)



Blue Cross Blue Shield paid 27 percent (n=19) of all cases with both TBI and SCI reported to the AHSCIR for 2016. Medicaid paid 17 percent (n=12), Medicare 11 percent (n=8), True Self-Pay 19 percent (n=13), Automobile insurance 4 percent (n=3), and Workers Compensation paid 1 percent (n=1) of claims.

Payer	Count	Percent
Auto	3	4%
Blue Cross	19	27%
Medicaid	12	17%
Medicare	8	11%
Military/Government	3	4%
Other	11	16%
True Self-Pay	13	19%
Workers Comp	1	1%
Total	70	100%

Future Directions

Prevention of Traumatic Brain Injury and Spinal Cord Injury in Alabama

Common events causing traumatic brain injury include the following:

Falls. Falling out of bed, slipping in the bath, falling down steps, falling from ladders, and related falls are the most common cause of traumatic brain injury overall, particularly in older adults and young children.

Vehicle-related collisions. Collisions involving cars, motorcycles or bicycles - and pedestrians involved in such accidents - are a common cause of traumatic brain injury.

The people most at risk of traumatic brain injury include:

1. Children, especially newborns to 4-year olds.
2. Young adults, especially those between ages 15 and 24.
3. Adults age 75 and older.

Prevention

1. Obey manufacturer guidelines on the use of all safety equipment while operating any motorized equipment.
2. Children should always sit in the back seat of a car and be secured in child safety seats or booster seats that are appropriate for his or her size and weight.
3. Avoid alcohol and drug use.
4. The use of safety helmets while riding a bicycle, skateboard, motorcycle, snowmobile, or all-terrain vehicle are recommended.

Preventing falls

1. Install handrails in bathrooms.
2. Put a nonslip mat in the bathtub or shower.
3. Remove area rugs.
4. Install handrails on both sides of staircases.
5. Improve lighting in the home.
6. Keep stairs and floors clear of clutter.
7. Vision checks are recommended.

Preventing head injuries in children

1. Install safety gates at the top of a stairway.
2. Keep stairs clear of clutter.
3. Install window guards to prevent falls.
4. Use playgrounds that have shock-absorbing materials on the ground.
5. Make sure area rugs are secured.
6. Do not let children play on fire escapes or balconies.
7. Supervise and watch children at play; do not let children play alone.

Spinal Cord injury

Auto and motorcycle accidents are the leading cause of spinal cord injuries, accounting for more than 35 percent of new spinal cord injuries each year. Spinal cord injury after age 65 is most often caused by a fall. Overall, falls cause more than one-quarter of spinal cord injuries (National Spinal Cord Injury Statistical Center 2016). Acts of violence account for about 15 percent of all spinal cord injuries. These result from violent encounters, often involving gunshot and knife wounds, according to the National Spinal Cord Injury Statistical Center 2016. Sports and recreation injuries are also associated with spinal cord injuries. Alcohol use is a factor in about 1 out of every 4 spinal cord injury. Cancer, arthritis, osteoporosis, and inflammation of the spinal cord also can cause spinal cord injuries.

Prevention

To reduce the risk of spinal cord injuries the following are recommended:

Since car crashes are the most common cause of spinal cord injuries, seat belt use is strongly recommended. Furthermore, to protect from air bag injuries, children under age 12 should always ride in the back seat.

Take steps to prevent falls such as the use of a step stool with a grab bar to reach objects in high places. The use of handrails along stairways, non-slip bathroom tubs, and appropriate floor carpets are recommended.

Always use recommended safety gear protections when playing contact sports. Avoid driving while intoxicated, distracted driving such as texting while driving, or driving under the influence of drugs.

References

1. Injury Prevention & Control: Traumatic Brain Injury & Concussion. (2017). Retrieved 10/05/2016 from http://www.cdc.gov/traumaticbraininjury/data/dist_death.html
2. Mayo Clinic. (2016). Diseases and Conditions. Retrieved 10/11/2017 from <http://www.mayoclinic.org/diseases-conditions/spinal-cord-injury/basics/definition/con-20023837>
3. ICD-10-CM (2017). <https://www.cms.gov/medicare/Coding/ICD10/index.html>

Appendix
ICD-10 Diagnostic Codes

Appendix A – Head Injuries

Appendix B – Spinal Cord Injuries

Alabama Head Injuries

Category	Full code	Description
Open Wound of Head		
S01		Open wound of head
	S01.00XA	Unspecified open wound of scalp, initial encounter
	S01.01XA	Laceration without foreign body of scalp, initial encounter
	S01.02XA	Laceration with foreign body of scalp, initial encounter
	S01.03XA	Puncture wound without foreign body of scalp, initial encounter
	S01.04XA	Puncture wound with foreign body of scalp, initial encounter
	S01.05XA	Open bite of scalp, initial encounter
	S01.80XA	Unspecified wound of other part of head, initial encounter
	S01.81XA	Laceration without foreign body of other part of head, initial encounter
	S01.82XA	Laceration with foreign body of other part of head, initial encounter
	S01.83XA	Puncture wound without foreign body of other part of head, initial encounter
	S01.84XA	Puncture wound with foreign body of other part of head, initial encounter
	S01.85XA	Open bite of other part of head, initial encounter
	S01.90XA	Unspecified open wound of NOS part of head, initial encounter
	S01.91XA	Laceration without foreign body of NOS part of head, initial encounter
	S01.92XA	Laceration with foreign body of NOS part of head, initial encounter
	S01.93XA	Puncture wound without foreign body of NOS part of head, initial encounter
	S01.94XA	Puncture wound with foreign body of NOS part of head, initial encounter

Category	Full code	Description
Open Wound of Head		
	S01.95XA	Open bite of NOS part of head, initial encounter
Fracture of Skull and Facial Bones		
S02.3		Fracture of orbital floor
	S02.3XXA	Fracture of orbital floor, initial encounter for closed fracture
	S02.3XXB	Fracture of orbital floor, initial encounter for open fracture
Injury to optic chiasm and optic tract		
S04.02		Injury of optic chiasm
	S04.02XA	Injury of optic chiasm, initial encounter
	S04.031A	Injury of optic tract and pathways, right eye, initial encounter
	S04.032A	Injury of optic tract and pathways, left eye, initial encounter
	S04.039A	Injury of optic tract and pathways, NOS eye, initial encounter
	S04.041A	Injury of visual cortex, right eye, initial encounter
	S04.042A	Injury of visual cortex, left eye, initial encounter
	S04.049A	Injury of visual cortex, NOS eye, initial encounter
Intracranial injury		
S06.0		Concussion
	S06.0X	Concussion
	S06.0X0A	Concussion without loss of consciousness
	S06.0X1A	Concussion with loss of consciousness of 30 minutes or less
	S06.0X2A	Concussion with loss of consciousness of 31 minutes to 59 minutes
	S06.0X3A	Concussion with loss of consciousness of 1 hour to 5 hours 59 minutes
	S06.0X4A	Concussion with loss of consciousness of 6 hours to 24 hours
	S06.0X5A	Concussion with loss of consciousness greater than 24 hours with return to pre-existing conscious level
	S06.0X6A	Concussion with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving
	S06.0X7A	Concussion with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness

Category	Full code	Description
Intracranial injury		
	S06.0X8A	Concussion with loss of consciousness of any duration with death due to other cause prior to regaining consciousness
	S06.0X9A	Concussion with loss of consciousness of unspecified duration
S06.1		Traumatic cerebral edema
	S06.1X	Traumatic cerebral edema
	S06.1X0A	Traumatic cerebral edema without loss of consciousness
	S06.1X1A	Traumatic cerebral edema with loss of consciousness of 30 minutes or less
	S06.1X2A	Traumatic cerebral edema with loss of consciousness of 31 minutes to 59 minutes
	S06.1X3A	Traumatic cerebral edema with loss of consciousness of 1 hour to 5 hours 59 minutes
	S06.1X4A	Traumatic cerebral edema with loss of consciousness of 6 hours to 24 hours
	S06.1X5A	Traumatic cerebral edema with loss of consciousness greater than 24 hours with return to pre-existing conscious level
	S06.1X6A	Traumatic cerebral edema with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving
	S06.1X7A	Traumatic cerebral edema with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness
	S06.1X8A	Traumatic cerebral edema with loss of consciousness of any duration with death due to other cause prior to regaining consciousness
	S06.1X9A	Traumatic cerebral edema with loss of consciousness of unspecified duration
S06.2		Diffuse traumatic brain injury
	S06.2X	Diffuse traumatic brain injury
	S06.2X0A	Diffuse traumatic brain injury without loss of consciousness
	S06.2X1A	Diffuse traumatic brain injury with loss of consciousness of 30 minutes or less
	S06.2X2A	Diffuse traumatic brain injury with loss of consciousness of 31 minutes to 59 minutes
	S06.2X3A	Diffuse traumatic brain injury with loss of consciousness of 1 hour to 5 hours 59 minutes
	S06.2X4A	Diffuse traumatic brain injury with loss of consciousness of 6 hours to 24 hours

Category	Full code	Description
Intracranial injury		
	S06.2X5A	Diffuse traumatic brain injury with loss of consciousness greater than 24 hours with return to pre-existing conscious levels
	S06.2X6A	Diffuse traumatic brain injury with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving
	S06.2X7A	Diffuse traumatic brain injury with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness
	S06.2X8A	Diffuse traumatic brain injury with loss of consciousness of any duration with death due to other cause prior to regaining consciousness
	S06.2X9A	Diffuse traumatic brain injury with loss of consciousness of unspecified duration
S06.3		Focal traumatic brain injury
	S06.30	Unspecified focal traumatic brain injury
	S06.300A	Unspecified focal traumatic brain injury without loss of consciousness
	S06.301A	Unspecified focal traumatic brain injury with loss of consciousness of 30 minutes or less
	S06.302A	Unspecified focal traumatic brain injury with loss of consciousness of 31 minutes to 59 minutes
	S06.303A	Unspecified focal traumatic brain injury with loss of consciousness of 1 hour to 5 hours 59 minutes
	S06.304A	Unspecified focal traumatic brain injury with loss of consciousness of 6 hours to 24 hours
	S06.305A	Unspecified focal traumatic brain injury with loss of consciousness greater than 24 hours with return to pre-existing conscious level
	S06.306A	Unspecified focal traumatic brain injury with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving
	S06.307A	Unspecified focal traumatic brain injury with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness
	S06.308A	Unspecified focal traumatic brain injury with loss of consciousness of any duration with death due to other cause prior to regaining consciousness

Category	Full code	Description
Intracranial injury		
	S06.309A	Unspecified focal traumatic brain injury with loss of consciousness of unspecified duration
	S06.31	Contusion and laceration of right cerebrum
	S06.310A	Contusion and laceration of right cerebrum without loss of consciousness
	S06.311A	Contusion and laceration of right cerebrum with loss of consciousness of 30 minutes or less
	S06.312A	Contusion and laceration of right cerebrum with loss of consciousness of 31 minutes to 59 minutes
	S06.313A	Contusion and laceration of right cerebrum with loss of consciousness of 1 hour to 5 hours 59 minutes
	S06.314A	Contusion and laceration of right cerebrum with loss of consciousness of 6 hours to 24 hours
	S06.315A	Contusion and laceration of right cerebrum with loss of consciousness greater than 24 hours with return to pre-existing conscious level
	S06.316A	Contusion and laceration of right cerebrum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving
	S06.317A	Contusion and laceration of right cerebrum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness
	S06.318A	Contusion and laceration of right cerebrum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness
	S06.319A	Contusion and laceration of right cerebrum with loss of consciousness of unspecified duration
	S06.32	Contusion and laceration of left cerebrum
	S06.320A	Contusion and laceration of left cerebrum without loss of consciousness
	S06.321A	Contusion and laceration of left cerebrum with loss of consciousness of 30 minutes or less
	S06.322A	Contusion and laceration of left cerebrum with loss of consciousness of 31 minutes to 59 minutes

Category	Full code	Description
Intracranial injury		
	S06.323A	Contusion and laceration of left cerebrum with loss of consciousness of 1 hour to 5 hours 59 minutes
	S06.324A	Contusion and laceration of left cerebrum with loss of consciousness of 6 hours to 24 hours
	S06.325A	Contusion and laceration of left cerebrum with loss of consciousness greater than 24 hours with return to pre-existing conscious level
	S06.326A	Contusion and laceration of left cerebrum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving
	S06.327A	Contusion and laceration of left cerebrum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness
	S06.328A	Contusion and laceration of left cerebrum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness
	S06.329A	Contusion and laceration of left cerebrum with loss of consciousness of unspecified duration
	S06.33	Contusion and laceration of cerebrum, unspecified
	S06.330A	Contusion and laceration of cerebrum, unspecified, without loss of consciousness
	S06.331A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of 30 minutes or less
	S06.332A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of 31 minutes to 59 minutes
	S06.333A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of 1 hour to 5 hours 59 minutes
	S06.334A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of 6 hours to 24 hours
	S06.335A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness greater than 24 hours with return to pre-existing conscious level

Category	Full code	Description
Intracranial injury		
	S06.336A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving
	S06.337A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness
	S06.338A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of any duration with death due to other cause prior to regaining consciousness
	S06.339A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of unspecified duration
	S06.34	Traumatic hemorrhage of right cerebrum
	S06.340A	Traumatic hemorrhage of right cerebrum without loss of consciousness
	S06.341A	Traumatic hemorrhage of right cerebrum with loss of consciousness of 30 minutes or less
	S06.342A	Traumatic hemorrhage of right cerebrum with loss of consciousness of 31 minutes to 59 minutes
	S06.343A	Traumatic hemorrhage of right cerebrum with loss of consciousness of 1 hour to 5 hours 59 minutes
	S06.344A	Traumatic hemorrhage of right cerebrum with loss of consciousness of 6 hours to 24 hours
	S06.345A	Traumatic hemorrhage of right cerebrum with loss of consciousness greater than 24 hours with return to pre-existing conscious level
	S06.346A	Traumatic hemorrhage of right cerebrum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving
	S06.347A	Traumatic hemorrhage of right cerebrum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness
	S06.348A	Traumatic hemorrhage of right cerebrum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness

Category	Full code	Description
Intracranial injury		
	S06.349A	Traumatic hemorrhage of right cerebrum with loss of consciousness of unspecified duration
	S06.35	Traumatic hemorrhage of left cerebrum
	S06.350A	Traumatic hemorrhage of left cerebrum without loss of consciousness
	S06.351A	Traumatic hemorrhage of left cerebrum with loss of consciousness of 30 minutes or less
	S06.352A	Traumatic hemorrhage of left cerebrum with loss of consciousness of 31 minutes to 59 minutes
	S06.353A	Traumatic hemorrhage of left cerebrum with loss of consciousness of 1 hour to 5 hours 59 minutes
	S06.354A	Traumatic hemorrhage of left cerebrum with loss of consciousness of 6 hours to 24 hours
	S06.355A	Traumatic hemorrhage of left cerebrum with loss of consciousness greater than 24 hours with return to pre-existing conscious level
	S06.356A	Traumatic hemorrhage of left cerebrum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving
	S06.357A	Traumatic hemorrhage of left cerebrum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness
	S06.358A	Traumatic hemorrhage of left cerebrum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness
	S06.359A	Traumatic hemorrhage of left cerebrum with loss of consciousness of unspecified duration
	S06.36	Traumatic hemorrhage of cerebrum, unspecified
	S06.360A	Traumatic hemorrhage of cerebrum, unspecified, without loss of consciousness
	S06.361A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of 30 minutes or less
	S06.362A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of 31 minutes to 59 minutes
	S06.363A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of 1 hour to 5 hours 59 minutes

Category	Full code	Description
Intracranial injury		
	S06.364A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of 6 hours to 24 hours
	S06.365A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness greater than 24 hours with return to pre-existing conscious level
	S06.366A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving
	S06.367A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness
	S06.368A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of any duration with death due to other cause prior to regaining consciousness
	S06.369A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of unspecified duration
	S06.37	Contusion, laceration, and hemorrhage of cerebellum
	S06.370A	Contusion, laceration, and hemorrhage of cerebellum without loss of consciousness
	S06.371A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of 30 minutes or less
	S06.372A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of 31 minutes to 59 minutes
	S06.373A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of 1 hour to 5 hours 59 minutes
	S06.374A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of 6 hours to 24 hours
	S06.375A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness greater than 24 hours with return to pre-existing conscious level
	S06.376A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving

Category	Full code	Description
Intracranial injury		
	S06.377A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness
	S06.378A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of any duration with death due to other cases prior to regaining consciousness
	S06.379A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of unspecified duration
	S06.38	Contusion, laceration, and hemorrhage of brainstem
	S06.380A	Contusion, laceration, and hemorrhage of brainstem without loss of consciousness
	S06.381A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of 30 minutes or less
	S06.382A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of 31 minutes to 59 minutes
	S06.383A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of 1 hour to 5 hours 59 minutes
	S06.384A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of 6 hours to 24 hours
	S06.385A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness greater than 24 hours with return to pre-existing conscious level
	S06.386A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving
	S06.387A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness
	S06.388A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of any duration with death due to other cases prior to regaining consciousness

Category	Full code	Description
Intracranial injury		
	S06.389A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of unspecified duration
S06.4		Epidural hemorrhage
	S06.4X	Epidural hemorrhage
	S06.4X0A	Epidural hemorrhage without loss of consciousness
	S06.4X1A	Epidural hemorrhage with loss of consciousness of 30 minutes or less
	S06.4X2A	Epidural hemorrhage with loss of consciousness of 31 minutes to 59 minutes
	S06.4X3A	Epidural hemorrhage with loss of consciousness of 1 hour to 5 hours 59 minutes
	S06.4X4A	Epidural hemorrhage with loss of consciousness of 6 hours to 24 hours
	S06.4X5A	Epidural hemorrhage with loss of consciousness greater than 24 hours with return to pre-existing conscious level
	S06.4X6A	Epidural hemorrhage with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving
	S06.4X7A	Epidural hemorrhage with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness
	S06.4X8A	Epidural hemorrhage with loss of consciousness of any duration with death due to other causes prior to regaining consciousness
	S06.4X9A	Epidural hemorrhage with loss of consciousness of unspecified duration
S06.5		Traumatic subdural hemorrhage
	S06.5X	Traumatic subdural hemorrhage
	S06.5X0A	Traumatic subdural hemorrhage without loss of consciousness
	S06.5X1A	Traumatic subdural hemorrhage with loss of consciousness of 30 minutes or less
	S06.5X2A	Traumatic subdural hemorrhage with loss of consciousness of 31 minutes to 59 minutes
	S06.5X3A	Traumatic subdural hemorrhage with loss of consciousness of 1 hour to 5 hours 59 minutes
	S06.5X4A	Traumatic subdural hemorrhage with loss of consciousness of 6 hours to 24 hours
	S06.5X5A	Traumatic subdural hemorrhage with loss of consciousness greater than 24 hours with return to pre-existing conscious level

Category	Full code	Description
Intracranial injury		
	S06.5X6A	Traumatic subdural hemorrhage with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving
	S06.5X7A	Traumatic subdural hemorrhage with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness
	S06.5X8A	Traumatic subdural hemorrhage with loss of consciousness of any duration with death due to other causes prior to regaining consciousness
	S06.5X9A	Traumatic subdural hemorrhage with loss of consciousness of unspecified duration
S06.6		Traumatic subarachnoid hemorrhage
	S06.6X	Traumatic subarachnoid hemorrhage
	S06.6X0A	Traumatic subarachnoid hemorrhage without loss of consciousness
	S06.6X1A	Traumatic subarachnoid hemorrhage with loss of consciousness of 30 minutes or less
	S06.6X2A	Traumatic subarachnoid hemorrhage with loss of consciousness of 31 minutes to 59 minutes
	S06.6X3A	Traumatic subarachnoid hemorrhage with loss of consciousness of 1 hour to 5 hours 59 minutes
	S06.6X4A	Traumatic subarachnoid hemorrhage with loss of consciousness of 6 hours to 24 hours
	S06.6X5A	Traumatic subarachnoid hemorrhage with loss of consciousness greater than 24 hours with return to pre-existing conscious level
	S06.6X6A	Traumatic subarachnoid hemorrhage with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving
	S06.6X7A	Traumatic subarachnoid hemorrhage with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness
	S06.6X8A	Traumatic subarachnoid hemorrhage with loss of consciousness of any duration with death due to other causes prior to regaining consciousness
	S06.6X9A	Traumatic subarachnoid hemorrhage with loss of consciousness of unspecified duration

Category	Full code	Description
Intracranial injury		
S06.8		Other specified intracranial injuries
	S06.81	Injury of right internal carotid artery, intracranial portion NEC (not elsewhere classified)
	S06.810A	Injury of right internal carotid artery, intracranial portion, not elsewhere classified without loss of consciousness, initial encounter
	S06.811A	Injury of right internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of less than 30 minutes, initial encounter
	S06.812A	Injury of right internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of 31 minutes to 59 minutes, initial encounter
	S06.813A	Injury of right internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of 1 hour to 5 hours 59 minutes, initial encounter
	S06.814A	Injury of right internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of 6 hours to 24 hours, initial encounter
	S06.815A	Injury of right internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness greater than 24 hours with return to pre-existing conscious level
	S06.816A	Injury of right internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving
	S06.817A	Injury of right internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness
	S06.818A	Injury of right internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of any duration with death due to other cause prior to regaining consciousness

Category	Full code	Description
Intracranial injury		
	S06.819A	Injury of right internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of unspecified duration
	S06.82	Injury of left internal carotid artery, intracranial portion, not elsewhere classified
	S06.820A	Injury of left internal carotid artery, intracranial portion, not elsewhere classified without loss of consciousness
	S06.821A	Injury of left internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of 30 minutes or less
	S06.822A	Injury of left internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of 31 minutes to 59 minutes
	S06.823A	Injury of left internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of 1 hour to 5 hours 59 minutes
	S06.824A	Injury of left internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of 6 hours to 24 hours
	S06.825A	Injury of left internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness greater than 24 hours with return to pre-existing conscious level
	S06.826A	Injury of left internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving
	S06.827A	Injury of left internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness
	S06.828A	Injury of left internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of any duration with death due to other cause prior to regaining consciousness
	S06.829A	Injury of left internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of unspecified duration
	S06.89	Other specified intracranial injury
	S06.890A	Other specified intracranial injury without loss of consciousness

Category	Full code	Description
Intracranial injury		
	S06.891A	Other specified intracranial injury with loss of consciousness of 30 minutes or less
	S06.892A	Other specified intracranial injury with loss of consciousness of 31 minutes to 59 minutes
	S06.893A	Other specified intracranial injury with loss of consciousness of 1 hour to 5 hours 59 minutes
	S06.894A	Other specified intracranial injury with loss of consciousness of 6 hours to 24 hours
	S06.895A	Other specified intracranial injury with loss of consciousness greater than 24 hours with return to pre-existing conscious level
	S06.896A	Other specified intracranial injury with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving
	S06.897A	Other specified intracranial injury with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness
	S06.898A	Other specified intracranial injury with loss of consciousness of any duration with death due to other cause prior to regaining consciousness
	S06.899A	Other specified intracranial injury with loss of consciousness of unspecified duration
S06.9		Unspecified intracranial injury
	S06.9X	Unspecified intracranial injury
	S06.9X0A	Unspecified intracranial injury without loss of consciousness
	S06.9X1A	Unspecified intracranial injury with loss of consciousness of 30 minutes or less
	S06.9X2A	Unspecified intracranial injury with loss of consciousness of 31 minutes to 59 minutes
	S06.9X3A	Unspecified intracranial injury with loss of consciousness of 1 hour to 5 hours 59 minutes
	S06.9X4A	Unspecified intracranial injury with loss of consciousness of 6 hours to 24 hours
	S06.9X5A	Unspecified intracranial injury with loss of consciousness greater than 24 hours with return to pre-existing conscious level
	S06.9X6A	Unspecified intracranial injury with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving

Intracranial injury		
	S06.9X7A	Unspecified intracranial injury with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness
	S06.9X8A	Unspecified intracranial injury with loss of consciousness of any duration with death due to other cause prior to regaining consciousness
	S06.9X9A	Unspecified intracranial injury with loss of consciousness of unspecified duration
Crushing injury of Head		
	S07.0XXA	Crushing injury of face, initial encounter
	S07.1XXA	Crushing injury of skull, initial encounter
	S07.8XXA	Crushing injury of other parts of head, initial encounter
	S07.89XA	Traumatic amputation of other parts of head, initial encounter
	S07.9XXA	Crushing injury of head, part NOS, initial encounter
Other and NOS Injury of Head		
	S09.8XXA	Other unspecified injuries of head, initial encounter
	S09.90XA	Unspecified injury of head, initial encounter
Shaken infant syndrome		
T74.4		Shaken infant syndrome
	T74.4XXA	Shaken infant syndrome, initial encounter

Spinal Cord Injuries

Category	Full Code	Description
S12 Fracture of Cervical vertebra and Other Parts of Neck		
	S12.000A	Unspecified displaced fracture of first cervical vertebra, initial encounter for closed fracture
	S12.000B	Unspecified displaced fracture of first cervical vertebra, initial encounter for open fracture
	S12.001A	Unspecified nondisplaced fracture of first cervical vertebra, initial encounter for closed fracture
	S12.001B	Unspecified nondisplaced fracture of first cervical vertebra, initial encounter for open fracture
	S12.01XA	Stable burst fracture of first cervical vertebra, initial encounter for closed fracture
	S12.01XB	Stable burst fracture of first cervical vertebra, initial encounter for open fracture
	S12.02XA	Unstable burst fracture of first cervical vertebra, initial encounter for closed fracture
	S12.02XB	Unstable burst fracture of first cervical vertebra, initial encounter for open fracture
	S12.030A	Displaced posterior arch fracture of first cervical vertebra, initial encounter for closed fracture
	S12.030B	Displaced posterior arch fracture of first cervical vertebra, initial encounter for open fracture
	S12.031A	Nondisplaced posterior arch fracture of first cervical vertebra, initial encounter for closed fracture
	S12.031B	Nondisplaced posterior arch fracture of first cervical vertebra, initial encounter for open fracture
	S12.040A	Displaced lateral mass fracture of first cervical vertebra, initial encounter for closed fracture
	S12.040B	Displaced lateral mass fracture of first cervical vertebra, initial encounter for open fracture
	S12.041A	Nondisplaced lateral mass fracture of first cervical vertebra, initial encounter for closed fracture
	S12.041B	Nondisplaced lateral mass fracture of first cervical vertebra, initial encounter for open fracture
	S12.090A	Other displaced fracture of first cervical vertebra, initial encounter for closed fracture
	S12.090B	Other displaced fracture of first cervical vertebra, initial encounter for open fracture
	S12.091A	Other nondisplaced fracture of first cervical vertebra, initial encounter for closed fracture
	S12.091B	Other nondisplaced fracture of first cervical vertebra, initial encounter for open fracture
	S12.100A	Unspecified displaced fracture of second cervical vertebra, initial encounter for closed fracture
	S12.100B	Unspecified displaced fracture of second cervical vertebra, initial encounter for open fracture
	S12.101A	Unspecified nondisplaced fracture of second cervical vertebra, initial encounter for closed fracture
	S12.101B	Unspecified nondisplaced fracture of second cervical vertebra, initial encounter for open fracture
	S12.110A	Anterior displaced Type II dens fracture, initial encounter for closed fracture
	S12.110B	Anterior displaced Type II dens fracture, initial encounter for open fracture
	S12.111A	Posterior displaced Type II dens fracture, initial encounter for closed fracture

Category	Full Code	Description
S12 Fracture of Cervical vertebra and Other Parts of Neck		
	S12.111B	Posterior displaced Type II dens fracture, initial encounter for open fracture
	S12.112A	Nondisplaced Type II dens fracture, initial encounter for closed fracture
	S12.112B	Nondisplaced Type II dens fracture, initial encounter for open fracture
	S12.120A	Other displaced dens fracture, initial encounter for closed fracture
	S12.120B	Other displaced dens fracture, initial encounter for open fracture
	S12.121A	Other nondisplaced dens fracture, initial encounter for closed fracture
	S12.121B	Other nondisplaced dens fracture, initial encounter for open fracture
	S12.130A	Unspecified traumatic displaced spondylolisthesis of second cervical vertebra, initial encounter for closed fracture
	S12.130B	Unspecified traumatic displaced spondylolisthesis of second cervical vertebra, initial encounter for open fracture
	S12.131A	Unspecified traumatic nondisplaced spondylolisthesis of second cervical vertebra, initial encounter for closed fracture
	S12.131B	Unspecified traumatic nondisplaced spondylolisthesis of second cervical vertebra, initial encounter for open fracture
	S12.14XA	Type III traumatic spondylolisthesis of second cervical vertebra, initial encounter for closed fracture
	S12.14XB	Type III traumatic spondylolisthesis of second cervical vertebra, initial encounter for open fracture
	S12.150A	Other traumatic displaced spondylolisthesis of second cervical vertebra, initial encounter for closed fracture
	S12.150B	Other traumatic displaced spondylolisthesis of second cervical vertebra, initial encounter for open fracture
	S12.151A	Other traumatic nondisplaced spondylolisthesis of second cervical vertebra, initial encounter for closed fracture
	S12.151B	Other traumatic nondisplaced spondylolisthesis of second cervical vertebra, initial encounter for open fracture

Category	Full Code	Description
S12 Fracture of Cervical vertebra and Other Parts of Neck		
	S12.190A	Other displaced fracture of second cervical vertebra, initial encounter for closed fracture
	S12.190B	Other displaced fracture of second cervical vertebra, initial encounter for open fracture
	S12.191A	Other nondisplaced fracture of second cervical vertebra, initial encounter for closed fracture
	S12.191B	Other nondisplaced fracture of second cervical vertebra, initial encounter for open fracture
	S12.200A	Unspecified displaced fracture of third cervical vertebra, initial encounter for closed fracture
	S12.200B	Unspecified displaced fracture of third cervical vertebra, initial encounter for open fracture
	S12.201A	Unspecified nondisplaced fracture of third cervical vertebra, initial encounter for closed fracture
	S12.201B	Unspecified nondisplaced fracture of third cervical vertebra, initial encounter for open fracture
	S12.230A	Unspecified traumatic displaced spondylolisthesis of third cervical vertebra, initial encounter for closed fracture
	S12.230B	Unspecified traumatic displaced spondylolisthesis of third cervical vertebra, initial encounter for open fracture
	S12.231A	Unspecified traumatic nondisplaced spondylolisthesis of third cervical vertebra, initial encounter for closed fracture
	S12.231B	Unspecified traumatic nondisplaced spondylolisthesis of third cervical vertebra, initial encounter for open fracture
	S12.24XA	Type III traumatic spondylolisthesis of third cervical vertebra, initial encounter for closed fracture
	S12.24XB	Type III traumatic spondylolisthesis of third cervical vertebra, initial encounter for open fracture
	S12.250A	Other traumatic displaced spondylolisthesis of third cervical vertebra, initial encounter for closed fracture
	S12.250B	Other traumatic displaced spondylolisthesis of third cervical vertebra, initial encounter for open fracture
	S12.251A	Other traumatic nondisplaced spondylolisthesis of third cervical vertebra, initial encounter for closed fracture
	S12.290A	Other displaced fracture of third vertebra, initial encounter for closed fracture
	S12.290B	Other displaced fracture of third vertebra, initial encounter for open fracture

Category	Full Code	Description
S12 Fracture of Cervical vertebra and Other Parts of Neck		
	S12.291A	Other nondisplaced fracture of third vertebra, initial encounter for closed fracture
	S12.291B	Other nondisplaced fracture of third vertebra, initial encounter for open fracture
	S12.300A	Unspecified displaced fracture of fourth cervical vertebra, initial encounter for closed fracture
	S12.300B	Unspecified displaced fracture of fourth cervical vertebra, initial encounter for open fracture
	S12.301A	Unspecified nondisplaced fracture of fourth cervical vertebra, initial encounter for closed fracture
	S12.301B	Unspecified nondisplaced fracture of fourth cervical vertebra, initial encounter for open fracture
	S12.330A	Unspecified traumatic displaced spondylolisthesis for fourth cervical vertebra, initial encounter for closed fracture
	S12.330B	Unspecified traumatic displaced spondylolisthesis for fourth cervical vertebra, initial encounter for open fracture
	S12.331A	Unspecified traumatic nondisplaced spondylolisthesis for fourth cervical vertebra, initial encounter for closed fracture
	S12.331B	Unspecified traumatic nondisplaced spondylolisthesis for fourth cervical vertebra, initial encounter for open fracture
	S12.34XA	Type III traumatic spondylolisthesis of fourth cervical vertebra, initial encounter closed fracture
	S12.34XB	Type III traumatic spondylolisthesis of fourth cervical vertebra, initial encounter open fracture
	S12.350A	Other traumatic displaced spondylolisthesis for fourth cervical vertebra, initial encounter for closed fracture
	S12.350B	Other traumatic displaced spondylolisthesis for fourth cervical vertebra, initial encounter for open fracture
	S12.351A	Other traumatic nondisplaced spondylolisthesis for fourth cervical vertebra, initial encounter for closed fracture
	S12.351B	Other traumatic nondisplaced spondylolisthesis for fourth cervical vertebra, initial encounter for open fracture
	S12.390A	Other displaced fracture of fourth cervical vertebra, initial encounter for closed fracture
	S12.390B	Other displaced fracture of fourth cervical vertebra, initial encounter for open fracture
	S12.391A	Other nondisplaced fracture of fourth cervical vertebra, initial encounter for closed fracture
	S12.391B	Other nondisplaced fracture of fourth cervical vertebra, initial encounter for open fracture

Category	Full Code	Description
S12 Fracture of Cervical vertebra and Other Parts of Neck		
	S12.400A	Unspecified displaced fracture of fifth cervical vertebra, initial encounter for closed fracture
	S12.400B	Unspecified displaced fracture of fifth cervical vertebra, initial encounter for open fracture
	S12.401A	Unspecified nondisplaced fracture of fifth cervical vertebra, initial encounter for closed fracture
	S12.401B	Unspecified nondisplaced fracture of fifth cervical vertebra, initial encounter for open fracture
	S12.430A	Unspecified traumatic displaced spondylolisthesis of fifth cervical vertebra, initial encounter for closed fracture
	S12.430B	Unspecified traumatic displaced spondylolisthesis of fifth cervical vertebra, initial encounter for open fracture
	S12.431A	Unspecified traumatic nondisplaced spondylolisthesis of fifth cervical vertebra, initial encounter for closed fracture
	S12.431B	Unspecified traumatic nondisplaced spondylolisthesis of fifth cervical vertebra, initial encounter for open fracture
	S12.44XA	Type III traumatic spondylolisthesis of fifth cervical vertebra, initial encounter for closed
	S12.44XB	Type III traumatic spondylolisthesis of fifth cervical vertebra, initial encounter for open
	S12.450A	Other traumatic displaced spondylolisthesis of fifth cervical vertebra, initial encounter for closed fracture
	S12.450B	Other traumatic displaced spondylolisthesis of fifth cervical vertebra, initial encounter for open fracture
	S12.451A	Other traumatic nondisplaced spondylolisthesis of fifth cervical vertebra, initial encounter for closed fracture
	S12.451B	Other traumatic nondisplaced spondylolisthesis of fifth cervical vertebra, initial encounter for open fracture
	S12.490A	Other displaced fracture of fifth cervical vertebra, initial encounter for closed fracture
	S12.490B	Other displaced fracture of fifth cervical vertebra, initial encounter for open fracture
	S12.491A	Other nondisplaced fracture of fifth cervical vertebra, initial encounter for closed fracture
	S12.491B	Other nondisplaced fracture of fifth cervical vertebra, initial encounter for open fracture
	S12.500A	Unspecified displaced fracture of sixth cervical vertebra, initial encounter for closed fracture
	S12.500B	Unspecified displaced fracture of sixth cervical vertebra, initial encounter for open fracture
	S12.501A	Unspecified nondisplaced fracture of sixth cervical vertebra, initial encounter for closed fracture

Category	Full Code	Description
S12 Fracture of Cervical vertebra and Other Parts of Neck		
	S12.501B	Unspecified nondisplaced fracture of sixth cervical vertebra, initial encounter for open fracture
	S12.530A	Unspecified traumatic displaced spondylolisthesis of sixth cervical vertebra, initial encounter closed fracture
	S12.530B	Unspecified traumatic displaced spondylolisthesis of sixth cervical vertebra, initial encounter open fracture
	S12.531A	Unspecified traumatic nondisplaced spondylolisthesis of sixth cervical vertebra, initial encounter closed fracture
	S12.531B	Unspecified traumatic nondisplaced spondylolisthesis of sixth cervical vertebra, initial encounter open fracture
	S12.54XA	Type III traumatic spondylolisthesis of sixth cervical vertebra, initial encounter for closed fracture
	S12.54XB	Type III traumatic spondylolisthesis of sixth cervical vertebra, initial encounter for open fracture
	S12.550A	Other traumatic displaced spondylolisthesis of sixth cervical vertebra, initial encounter for closed fracture
	S12.550B	Other traumatic displaced spondylolisthesis of sixth cervical vertebra, initial encounter for open fracture
	S12.551A	Other traumatic nondisplaced spondylolisthesis of sixth cervical vertebra, initial encounter for closed fracture
	S12.551B	Other traumatic nondisplaced spondylolisthesis of sixth cervical vertebra, initial encounter for open fracture
	S12.590A	Other displaced fracture of sixth cervical vertebra, initial encounter for closed fracture
	S12.590B	Other displaced fracture of sixth cervical vertebra, initial encounter for open fracture
	S12.591A	Other nondisplaced fracture of sixth cervical vertebra, initial encounter for closed fracture
	S12.591B	Other nondisplaced fracture of sixth cervical vertebra, initial encounter for open fracture
	S12.600A	Unspecified displaced fracture of seventh cervical vertebra, initial encounter for closed fracture
	S12.600B	Unspecified displaced fracture of seventh cervical vertebra, initial encounter for open fracture
	S12.601A	Unspecified nondisplaced fracture of seventh cervical vertebra, initial encounter for closed fracture
	S12.601B	Unspecified nondisplaced fracture of seventh cervical vertebra, initial encounter for open fracture
	S12.630A	Unspecified traumatic displaced spondylolisthesis of seventh cervical vertebra, initial encounter for closed fracture

Category	Full Code	Description
S12 Fracture of Cervical vertebra and Other Parts of Neck		
	S12.630B	Unspecified traumatic displaced spondylolisthesis of seventh cervical vertebra, initial encounter for open fracture
	S12.631A	Unspecified traumatic nondisplaced spondylolisthesis of seventh cervical vertebra, initial encounter for closed fracture
	S12.631B	Unspecified traumatic nondisplaced spondylolisthesis of seventh cervical vertebra, initial encounter for open fracture
	S12.64XA	Type III traumatic spondylolisthesis of seventh cervical vertebra, initial encounter for closed fracture
	S12.64XB	Type III traumatic spondylolisthesis of seventh cervical vertebra, initial encounter for open fracture
	S12.650A	Other traumatic displaced spondylolisthesis of seventh cervical vertebra, initial encounter for closed fracture
	S12.650B	Other traumatic displaced spondylolisthesis of seventh cervical vertebra, initial encounter for open fracture
	S12.651A	Other traumatic nondisplaced spondylolisthesis of seventh cervical vertebra, initial encounter for closed fracture
	S12.651B	Other traumatic nondisplaced spondylolisthesis of seventh cervical vertebra, initial encounter for open fracture
	S12.690A	Other displaced fracture of seventh cervical vertebra, initial encounter for closed fracture
	S12.690B	Other displaced fracture of seventh cervical vertebra, initial encounter for open fracture
	S12.691A	Other nondisplaced fracture of seventh cervical vertebra, initial encounter for closed fracture
	S12.691B	Other nondisplaced fracture of seventh cervical vertebra, initial encounter for open fracture
	S12.8XXA	Fracture of other parts of neck, initial encounter
	S12.9XXa	Fracture of neck, NOS, initial encounter
	S13.0XXA	Traumatic rupture of cervical intervertebral disc, initial encounter
S14 Injury of nerves and spinal cord at neck level		
	S14.0XXA	Concussion and edema of cervical spinal cord, initial encounter
	S14.101A	Unspecified injury at C1 level of cervical spinal cord, initial encounter
	S14.102A	Unspecified injury at C2 level of cervical spinal cord, initial encounter
	S14.103A	Unspecified injury at C3 level of cervical spinal cord, initial encounter

Category	Full Code	Description
S14 Injury of nerves and spinal cord at neck level		
	S14.104A	Unspecified injury at C4 level of cervical spinal cord, initial encounter
S14 Injury of nerves and spinal cord at neck level		
	S14.105A	Unspecified injury at C5 level of cervical spinal cord, initial encounter
	S14.106A	Unspecified injury at C6 level of cervical spinal cord, initial encounter
	S14.107A	Unspecified injury at C7 level of cervical spinal cord, initial encounter
	S14.108A	Unspecified injury at C8 level of cervical spinal cord, initial encounter
	S14.109A	Unspecified injury at NOS level of cervical spinal cord, initial encounter
	S14.111A	Complete lesion at C1 level of cervical spinal cord, initial encounter
	S14.112A	Complete lesion at C2 level of cervical spinal cord, initial encounter
	S14.113A	Complete lesion at C3 level of cervical spinal cord, initial encounter
	S14.114A	Complete lesion at C4 level of cervical spinal cord, initial encounter
	S14.115A	Complete lesion at C5 level of cervical spinal cord, initial encounter
	S14.116A	Complete lesion at C6 level of cervical spinal cord, initial encounter
	S14.117A	Complete lesion at C7 level of cervical spinal cord, initial encounter
	S14.118A	Complete lesion at C8 level of cervical spinal cord, initial encounter
	S14.119A	Complete lesion at NOS level of cervical spinal cord, initial encounter
	S14.121A	Central cord syndrome at C1 level of cervical spinal cord, initial encounter
	S14.122A	Central cord syndrome at C2 level of cervical spinal cord, initial encounter
	S14.123A	Central cord syndrome at C3 level of cervical spinal cord, initial encounter
	S14.124A	Central cord syndrome at C4 level of cervical spinal cord, initial encounter
	S14.125A	Central cord syndrome at C5 level of cervical spinal cord, initial encounter
	S14.126A	Central cord syndrome at C6 level of cervical spinal cord, initial encounter
	S14.127A	Central cord syndrome at C7 level of cervical spinal cord, initial encounter
	S14.128A	Central cord syndrome at C8 level of cervical spinal cord, initial encounter
	S14.129A	Central cord syndrome at NOS level of cervical spinal cord, initial encounter
	S14.131A	Anterior cord syndrome at C1 level of cervical spinal cord, initial encounter

Category	Full Code	Description
S14 Injury of nerves and spinal cord at neck level		
	S14.132A	Anterior cord syndrome at C2 level of cervical spinal cord, initial encounter
	S14.133A	Anterior cord syndrome at C3 level of cervical spinal cord, initial encounter
	S14.134A	Anterior cord syndrome at C4 level of cervical spinal cord, initial encounter
	S14.135A	Anterior cord syndrome at C5 level of cervical spinal cord, initial encounter
	S14.136A	Anterior cord syndrome at C6 level of cervical spinal cord, initial encounter
	S14.137A	Anterior cord syndrome at C7 level of cervical spinal cord, initial encounter
	S14.138A	Anterior cord syndrome at C8 level of cervical spinal cord, initial encounter
	S14.139A	Anterior cord syndrome at NOS level of cervical spinal cord, initial encounter
	S14.141A	Brown-Sequard syndrome at C1 level of cervical spinal cord, initial encounter
	S14.142A	Brown-Sequard syndrome at C2 level of cervical spinal cord, initial encounter
	S14.143A	Brown-Sequard syndrome at C3 level of cervical spinal cord, initial encounter
	S14.144A	Brown-Sequard syndrome at C4 level of cervical spinal cord, initial encounter
	S14.145A	Brown-Sequard syndrome at C5 level of cervical spinal cord, initial encounter
	S14.146A	Brown-Sequard syndrome at C6 level of cervical spinal cord, initial encounter
	S14.147A	Brown-Sequard syndrome at C7 level of cervical spinal cord, initial encounter
	S14.148A	Brown-Sequard syndrome at C8 level of cervical spinal cord, initial encounter
	S14.149A	Brown-Sequard syndrome at NOS level of cervical spinal cord, initial encounter
	S14.151A	Other incomplete lesion at C1 level of cervical spinal cord, initial encounter
	S14.152A	Other incomplete lesion at C2 level of cervical spinal cord, initial encounter
	S14.153A	Other incomplete lesion at C3 level of cervical spinal cord, initial encounter
	S14.154A	Other incomplete lesion at C4 level of cervical spinal cord, initial encounter
	S14.155A	Other incomplete lesion at C5 level of cervical spinal cord, initial encounter
	S14.156A	Other incomplete lesion at C6 level of cervical spinal cord, initial encounter
	S14.157A	Other incomplete lesion at C7 level of cervical spinal cord, initial encounter
	S14.158A	Other incomplete lesion at C8 level of cervical spinal cord, initial encounter
	S14.159A	Other incomplete lesion at NOS level of cervical spinal cord, initial encounter
	S14.2XXA	Injury of nerve root of cervical spine, initial encounter
	S14.3XXA	Injury of brachial plexus, initial encounter
	S14.4XXA	Injury of peripheral nerves of neck, initial encounter

Category	Full Code	Description
	S14.5XXA	Injury of cervical sympathetic nerves, initial encounter
	S14.8XXA	Injury of other specified nerves of neck, initial encounter
	S14.9XXA	Injury of NOS nerves of neck, initial encounter
S17 Crushing Injury of neck		
	S17.0XXA	Crushing injury of larynx and trachea, initial encounter
	S17.8XXA	Crushing injury of other specified parts of neck, initial encounter
	S17.9XXA	Crushing injury of neck, part NOS, initial encounter
S24 Injury of nerves and spinal cord at thorax level		
	S24.0XXA	Concussion and edema of thoracic spinal cord, initial encounter
	S24.101A	Unspecified injury at T1 level of thoracic spinal cord, initial encounter
	S24.102A	Unspecified injury T2-T6 level of thoracic spinal cord, initial encounter
	S24.103A	Unspecified injury T7-T10 level of thoracic spinal cord, initial encounter
	S24.104A	Unspecified injury T11-T12 level of thoracic spinal cord, initial encounter
	S24.109A	Unspecified injury at NOS level of thoracic spinal cord, initial encounter
	S24.111A	Complete lesion at T1 level of thoracic spinal cord, initial encounter
	S24.112A	Complete lesion at T2-T6 level of thoracic spinal cord, initial encounter
	S24.113A	Complete lesion at T7-T10 level of thoracic spinal cord, initial encounter
	S24.114A	Complete lesion at T11-T12 level of thoracic spinal cord, initial encounter
	S24.119A	Complete lesion at NOS level of thoracic spinal cord, initial encounter
	S24.131A	Anterior cord syndrome at T1 level of thoracic spinal cord, initial encounter
	S24.132A	Anterior cord syndrome at T2-T6 level of thoracic spinal cord, initial encounter
	S24.133A	Anterior cord syndrome at T7-T10 level of thoracic spinal cord, initial encounter
	S24.134A	Anterior cord syndrome at T11-T12 level of thoracic spinal cord, initial encounter
	S24.139A	Anterior cord syndrome at NOS level of thoracic spinal cord, initial encounter
	S24.141A	Brown-Sequard syndrome at T1 level of thoracic spinal cord, initial encounter
	S24.142A	Brown-Sequard syndrome at T2-T6 level of thoracic spinal cord, initial encounter
	S24.143A	Brown-Sequard syndrome at T7-T10 level of thoracic spinal cord, initial encounter
	S24.144A	Brown-Sequard syndrome at T11-T12 level of thoracic spinal cord, initial encounter
	S24.149A	Brown-Sequard syndrome at NOS level of thoracic spinal cord, initial encounter

Category	Full Code	Description
S24 Injury of nerves and spinal cord at thorax level		
	S24.151A	Other incomplete lesion at T1 level of thoracic spinal cord, initial encounter
	S24.152A	Other incomplete lesion at T2-T6 level of thoracic spinal cord, initial encounter
	S24.153A	Other incomplete lesion at T7-T10 level of thoracic spinal cord, initial encounter
	S24.154A	Other incomplete lesion at T11-T12 level of thoracic spinal cord, initial encounter
	S24.159A	Other incomplete lesion at NOS level of thoracic spinal cord, initial encounter
	S24.2XXA	Injury of nerve root of thoracic spine, initial encounter
	S24.3XXA	Injury of peripheral nerves of thorax, initial encounter
	S24.4XXA	Injury of thoracic sympathetic nervous system, initial encounter
	S24.8XXA	Injury of other specified nerves of thorax, initial encounter
	S24.9XXA	Injury of NOS nerve of thorax, initial encounter
S32 Fracture of lumbar spine and pelvis		
	S32.000A	Wedge compression fracture of NOS lumbar vertebra, initial encounter for closed fracture
	S32.000B	Wedge compression fracture of NOS lumbar vertebra, initial encounter for open fracture
	S32.001A	Stable burst fracture of NOS lumbar vertebra, initial encounter for closed fracture
	S32.001B	Stable burst fracture of NOS lumbar vertebra, initial encounter for open fracture
	S32.002A	Unstable burst fracture of NOS lumbar vertebra, initial encounter for closed fracture
	S32.002B	Unstable burst fracture of NOS lumbar vertebra, initial encounter for open fracture
	S32.008A	Other fracture of NOS lumbar vertebra, initial encounter for closed fracture
	S32.008B	Other fracture of NOS lumbar vertebra, initial encounter for open fracture
	S32.009A	Unspecified fracture of NOS lumbar vertebra, initial encounter for closed fracture
	S32.009B	Unspecified fracture of NOS lumbar vertebra, initial encounter for open fracture
	S32.010A	Wedge compression fracture of first lumbar vertebra, initial encounter for closed fracture
	S32.010B	Wedge compression fracture of first lumbar vertebra, initial encounter for open fracture
	S32.011A	Stable burst fracture of first lumbar vertebra, initial encounter for closed fracture
	S32.011B	Stable burst fracture of first lumbar vertebra, initial encounter for open fracture
	S32.012A	Unstable burst fracture of first lumbar vertebra, initial encounter for closed fracture
	S32.012B	Unstable burst fracture of first lumbar vertebra, initial encounter for open fracture
	S32.018A	Other fracture of first lumbar vertebra, initial encounter for closed fracture
	S32.018B	Other fracture of first lumbar vertebra, initial encounter for open fracture

Category	Full Code	Description
S32 Fracture of lumbar spine and pelvis		
	S32.020A	Wedge compression fracture of second lumbar vertebra, initial encounter for closed fracture
	S32.020B	Wedge compression fracture of second lumbar vertebra, initial encounter for open fracture
	S32.021A	Stable burst fracture of second lumbar vertebra, initial encounter for closed fracture
	S32.021B	Stable burst fracture of second lumbar vertebra, initial encounter for open fracture
	S32.022A	Unstable burst fracture of second lumbar vertebra, initial encounter for closed fracture
	S32.028A	Other fracture of second lumbar vertebra, initial encounter for open fracture
	S32.028B	Other fracture of second lumbar vertebra, initial encounter for closed fracture
	S32.029A	Unspecified fracture of second lumbar vertebra, initial encounter for closed fracture
	S32.029B	Unspecified fracture of second lumbar vertebra, initial encounter for open fracture
	S32.030A	Wedge compression fracture of third lumbar vertebra, initial encounter for closed fracture
	S32.030B	Wedge compression fracture of third lumbar vertebra, initial encounter for open fracture
	S32.031A	Stable burst fracture of third lumbar vertebra, initial encounter for closed fracture
	S32.031B	Stable burst fracture of third lumbar vertebra, initial encounter for open fracture
	S32.032A	Unstable burst fracture of third lumbar vertebra, initial encounter for closed fracture
	S32.032B	Unstable burst fracture of third lumbar vertebra, initial encounter for open fracture
	S32.038A	Other fracture of third lumbar vertebra, initial encounter for closed fracture
	S32.038B	Other fracture of third lumbar vertebra, initial encounter for open fracture
	S32.039A	Unspecified fracture of third lumbar vertebra, initial encounter for closed fracture
	S32.039B	Unspecified fracture of third lumbar vertebra, initial encounter for open fracture
	S32.040A	Wedge compression fracture of fourth lumbar vertebra, initial encounter for closed fracture
	S32.040B	Wedge compression fracture of fourth lumbar vertebra, initial encounter for open fracture
	S32.041A	Stable burst fracture of fourth lumbar vertebra, initial encounter for closed fracture
	S32.041B	Stable burst fracture of fourth lumbar vertebra, initial encounter for open fracture
	S32.042A	Unstable burst fracture of fourth lumbar vertebra, initial encounter for closed fracture
	S32.042B	Unstable burst fracture of fourth lumbar vertebra, initial encounter for open fracture
	S32.048A	Other fracture of fourth lumbar vertebra, initial encounter for closed fracture
	S32.048B	Other fracture of fourth lumbar vertebra, initial encounter for open fracture
	S32.049A	Unspecified fracture of fourth lumbar vertebra, initial encounter for closed fracture
	S32.049B	Unspecified fracture of fourth lumbar vertebra, initial encounter for open fracture

Category	Full Code	Description
S32 Fracture of lumbar spine and pelvis		
	S32.050A	Wedge compression fracture of fifth lumbar vertebra, initial encounter for closed fracture
	S32.050B	Wedge compression fracture of fifth lumbar vertebra, initial encounter for open fracture
	S32.051A	Stable burst fracture of fifth lumbar vertebra, initial encounter for closed fracture
	S32.051B	Stable burst fracture of fifth lumbar vertebra, initial encounter for open fracture
	S32.052A	Unstable burst fracture of fifth lumbar vertebra, initial encounter for closed fracture
	S32.052B	Unstable burst fracture of fifth lumbar vertebra, initial encounter for open fracture
	S32.058A	Other fracture of fifth lumbar vertebra, initial encounter for closed fracture
	S32.058B	Other fracture of fifth lumbar vertebra, initial encounter for open fracture
	S32.059A	Unspecified fracture of fifth lumbar vertebra, initial encounter for closed fracture
	S32.059B	Unspecified fracture of fifth lumbar vertebra, initial encounter for open fracture
S34 Injury lumbar/sacral spinal cord and nerves		
	S34.01XA	Concussion and edema of lumbar spinal cord, initial encounter
	S34.02XA	Concussion and edema of sacral spinal cord, initial encounter
	S34.101A	Unspecified injury to L1 level of lumbar spinal cord, initial encounter
	S34.102A	Unspecified injury to L2 level of lumbar spinal cord, initial encounter
	S34.103A	Unspecified injury to L3 level of lumbar spinal cord, initial encounter
	S34.104A	Unspecified injury to L4 level of lumbar spinal cord, initial encounter
	S34.105A	Unspecified injury to L5 level of lumbar spinal cord, initial encounter
	S34.109A	Unspecified injury to NOS level of lumbar spinal cord, initial encounter
	S34.111A	Complete lesion of L1 level of lumbar spinal cord, initial encounter
	S34.112A	Complete lesion of L2 level of lumbar spinal cord, initial encounter
	S34.113A	Complete lesion of L3 level of lumbar spinal cord, initial encounter
	S34.114A	Complete lesion of L4 level of lumbar spinal cord, initial encounter
	S34.115A	Complete lesion of L5 level of lumbar spinal cord, initial encounter
	S34.119A	Complete lesion of NOS level of lumbar spinal cord, initial encounter
	S34.121A	Incomplete lesion of L1 level of lumbar spinal cord, initial encounter
	S34.122A	Incomplete lesion of L2 level of lumbar spinal cord, initial encounter
	S34.123A	Incomplete lesion of L3 level of lumbar spinal cord, initial encounter
	S34.124A	Incomplete lesion of L4 level of lumbar spinal cord, initial encounter

Category	Full Code	Description
S34 Injury lumbar/sacral spinal cord and nerves		
	S34.125A	Incomplete lesion of L5 level of lumbar spinal cord, initial encounter
	S34.129A	Incomplete lesion of NOS level of lumbar spinal cord, initial encounter
	S34.131A	Complete lesion of sacral spinal cord, initial encounter
	S34.132A	Incomplete lesion of sacral spinal cord, initial encounter
	S34.139A	Unspecified injury to sacral spinal cord, initial encounter
	S34.21XA	Injury of nerve root of lumbar spine, initial encounter
	S34.22XA	Injury of nerve root of sacral spine, initial encounter
	S34.3XXA	Initial cauda equina, initial encounter
	S34.4XXA	Injury of lumbosacral plexus, initial encounter
	S34.5XXA	Injury of lumbar, sacral and pelvic sympathetic nerves, initial encounter
	S34.6XXA	Injury of peripheral nerve(s) at abdomen, lower back and pelvis level, initial encounter
	S34.8XXA	Injury of other nerves at abdomen, lower back and pelvis level, initial encounter
	S34.9XXA	Injury of NOS nerves at abdomen, lower back and pelvis level, initial encounter