

Alabama Head and Spinal Cord Injury Report 2019



2019 Alabama Head and Spinal Cord
Injury Registry (AHSCIR) Report

Data Period:
January 1, 2019 – December 31, 2019

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The Office of Emergency Medical Services (OEMS) wishes to thank everyone who made this report possible, especially the Trauma Registrars and other personnel throughout the state for their diligent work in reporting trauma data to the repository, as required. The OEMS realizes that COVID-19 provided many challenges for continued trauma data entry.

This is the final report from the Version 4 (V4) data reporting system. Effective October 1, 2020, OEMS transitioned to Gen6, a new reporting system. The OEMS appreciates everyone who participated in testing, training, and system step-up.

Background

The Alabama Department of Rehabilitation Services (ADRS) is charged with offering rehabilitation services to patients with moderate to severe traumatic brain and/or spinal cord 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 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 OEMS 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 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. As previously described, the ADRS uses the AHSCIR data to locate patients suffering from head and/or spinal cord injuries to make them aware of state supported services and perform follow-up treatment and referrals.

Methods

According to the Center for Health Statistics, The International Classification of Diseases (ICD) is designed to promote international comparability in the collection, processing, classification, and presentation of mortality statistics. This includes providing a format for reporting causes of death on the death certificate. The reported conditions are then translated into medical codes through use of the classification structure and the selection and modification rules contained in the applicable revision of the ICD, published by the World Health Organization (WHO). These coding rules improve the usefulness of mortality statistics by giving preference to certain categories, by consolidating conditions, and by systematically selecting a single cause of death from a reported sequence of conditions. The single selected cause for tabulation is called the underlying cause of death, and the other reported causes are the no underlying causes of death. The combination of underlying and no underlying causes is the multiple causes of death.

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 was submitted as of September 30, 2020. 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 treatment may erroneously be counted twice if the transfer was not coordinated through the Alabama Trauma Communication Center.

Results

The ATR received reports of 4,693 head and spinal cord injuries for Year 2019 compared to 4,413 head and spinal cord injury cases that were admitted to Alabama hospitals during Calendar Year 2018. This was an increase of 280 new cases from Calendar Year 2018.

Head injuries (TBI), exclusively constituted 92 percent (n=4,317) of the reported cases and spinal cord injuries (SCI), exclusively constituted 7 percent (n=315). There were 61 cases (1 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.

Disclaimer: Calculation for this report used Microsoft Excel for Office 365 (2016).

Traumatic Brain Injury (TBI)

Definition

TBI occurs when an external mechanical force causes brain dysfunction. TBI 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, also can cause TBI. Mild TBI may cause temporary dysfunction of brain cells. More serious TBI 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, 2020, <https://www.mayoclinic.org/diseases-conditions/traumatic-brain-injury/symptoms-causes/syc-20378557>).

Type of Injury
Figure 1(a)
 January 1, 2019 – December 31, 2019
 (n=4,693)

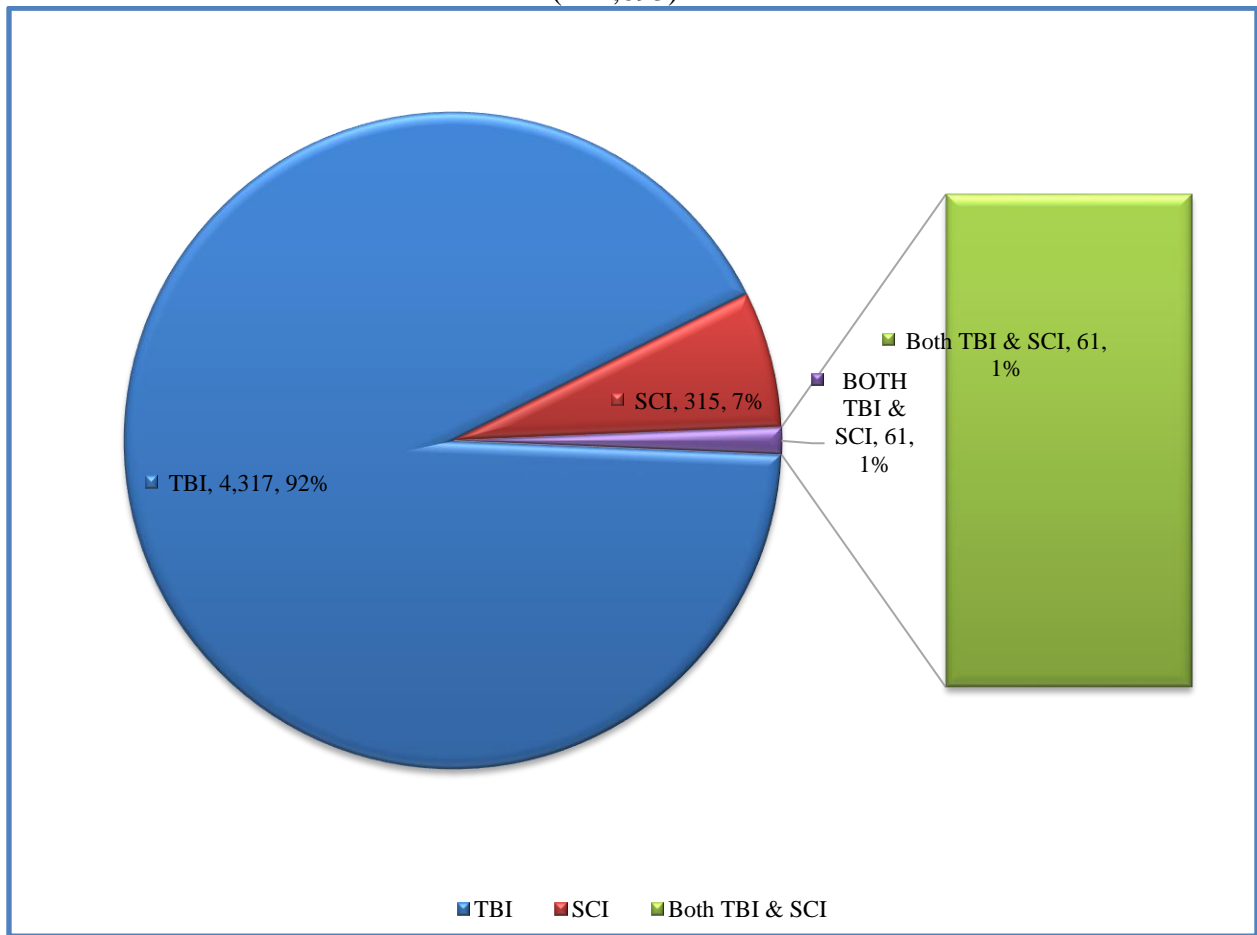


Figure 1(b)

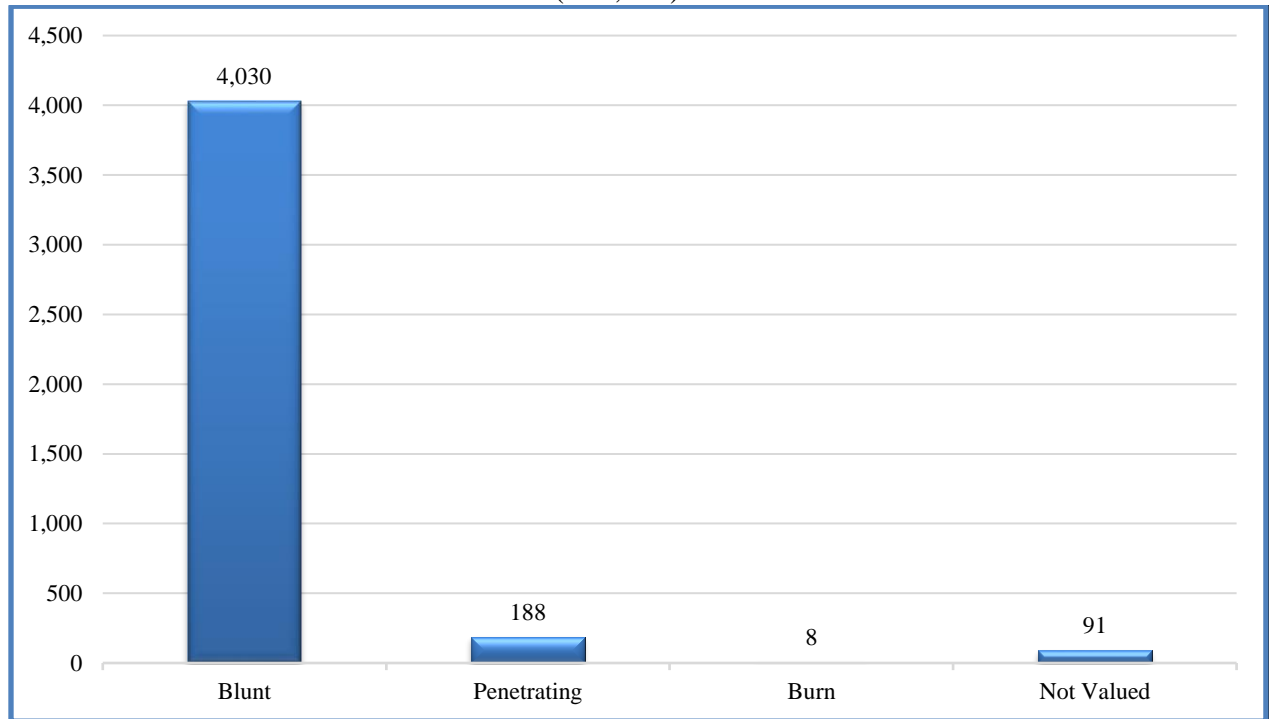
Injury Type	Count	Percentage
TBI	4,317	92%
SCI	315	7%
Both TBI & SCI	61	1%
Total	4,693	100%

TBI Cases by Mechanisms of Injury

Figure 2(a)

January 1, 2019 – December 31, 2019

(n=4,317)



Ninety-three percent (n=4,030) of the TBI cases were injuries due to blunt trauma. Penetrating injuries accounted for 4 percent (n=188) of the TBI cases for 2019.

Figure 2(b)

Type	Count	Percentage
Blunt	4,030	93%
Penetrating	188	4%
Burn	8	0%
Not Valued	91	2%
Total	4,317	100%

KEY

Not Valued Blanks/Unknown/Non-Applicable

TBI Cases by Gender
Figure 3(a)
January 1, 2019 – December 31, 2019
(n=4,317)

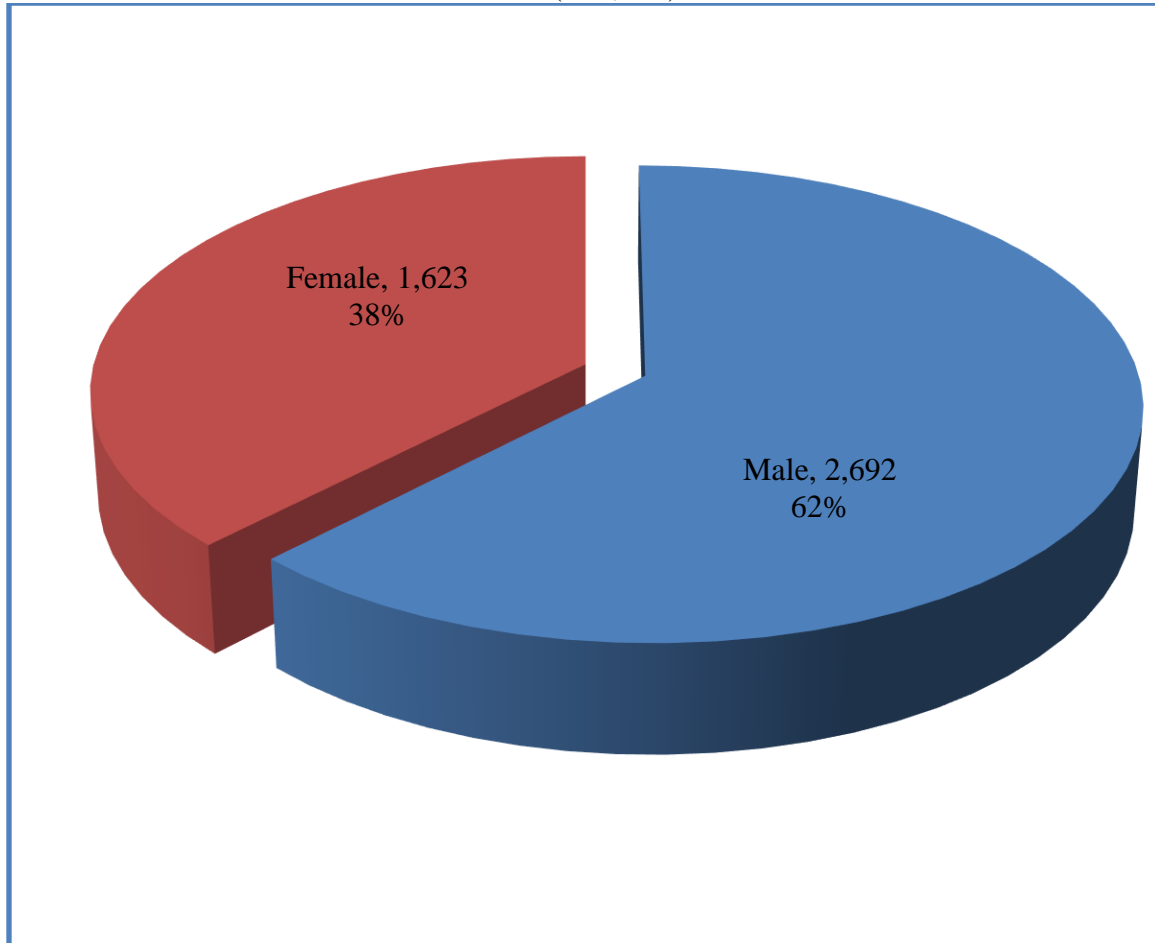


Figure 3(b)

Gender	Count	Percentage
Male	2,692	62%
Female	1,623	38%
Not Valued	2	0%
Total	4,317	100%

TBI Cases by Race
Figure 4(a)
Proportion of TBI Cases by Race
 January 1, 2019 – December 31, 2019
 (n=4,317)

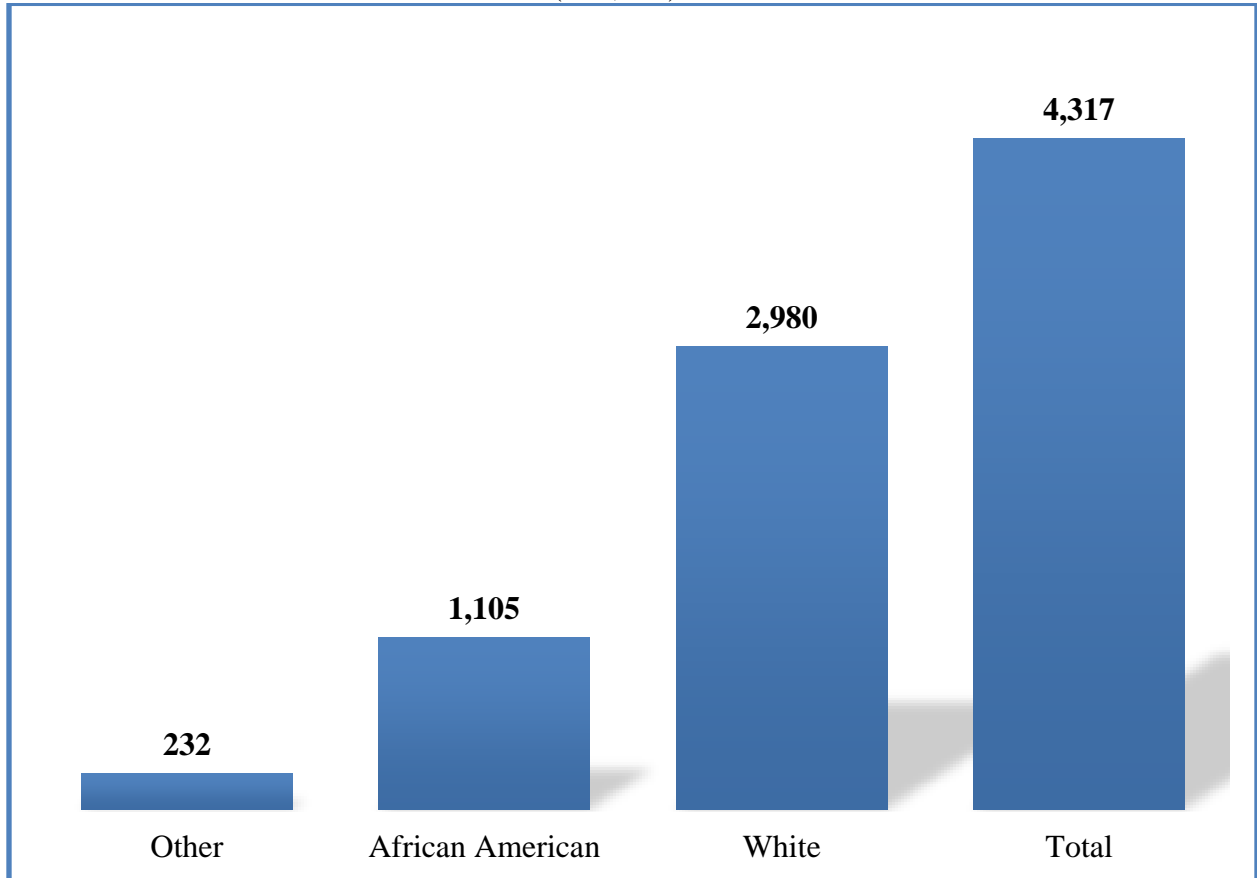


Figure 4(b)

Race	Count	Percentage
Other	232	5%
African American	1,105	26%
White	2,980	69%
Total	4,317	100%

TBI Cases by Gender and Race
Figure 5(a)
 January 1, 2019 – December 31, 2019
 (n=4,317)

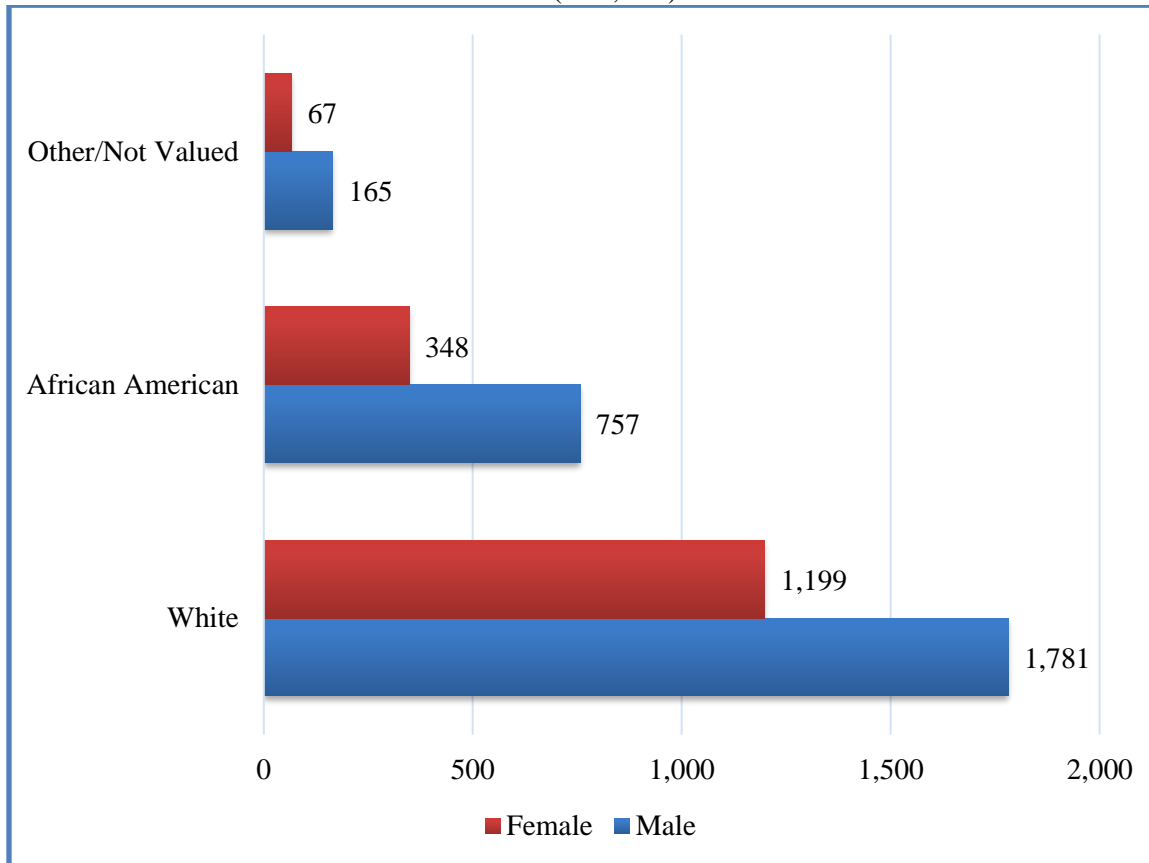


Figure 5(b)

Race	Male	Female	Total	%Male	%Female
White	1,781	1,199	2,980	66%	74%
African American	757	348	1,105	28%	22%
Other/Not Valued	165	67	232	6%	4%
Total	2,703	1,614	4,317	100%	100%

TBI Cases by Age, Gender, and Race: Comparison Table

Table 1(a)

January 1, 2019 – December 31, 2019

(n=4,317)

Age	White Male	White Female	Black Male	Black Female	Other Female	Other Male	Total	% Total
<5	62	44	38	26	7	5	182	4.22%
5-14	100	60	48	18	7	2	235	5.44%
15-24	291	137	144	88	13	34	707	16.38%
25-34	226	92	128	62	18	23	549	12.72%
35-44	191	82	134	37	12	31	487	11.28%
45-54	166	85	69	28	6	12	366	8.48%
55-64	229	114	89	19	18	0	469	10.86%
65-74	240	174	71	28	14	0	527	12.21%
75-84	179	246	25	28	10	8	496	11.49%
>84	95	165	9	14	9	3	295	6.83%
No Data/Blank	2	0	2	0	0	0	4	0.09%
Total	1,781	1,199	757	348	114	118	4,317	100.00%
% Total	41.26%	27.77%	17.54%	8.06%	2.64%	2.73%	100%	

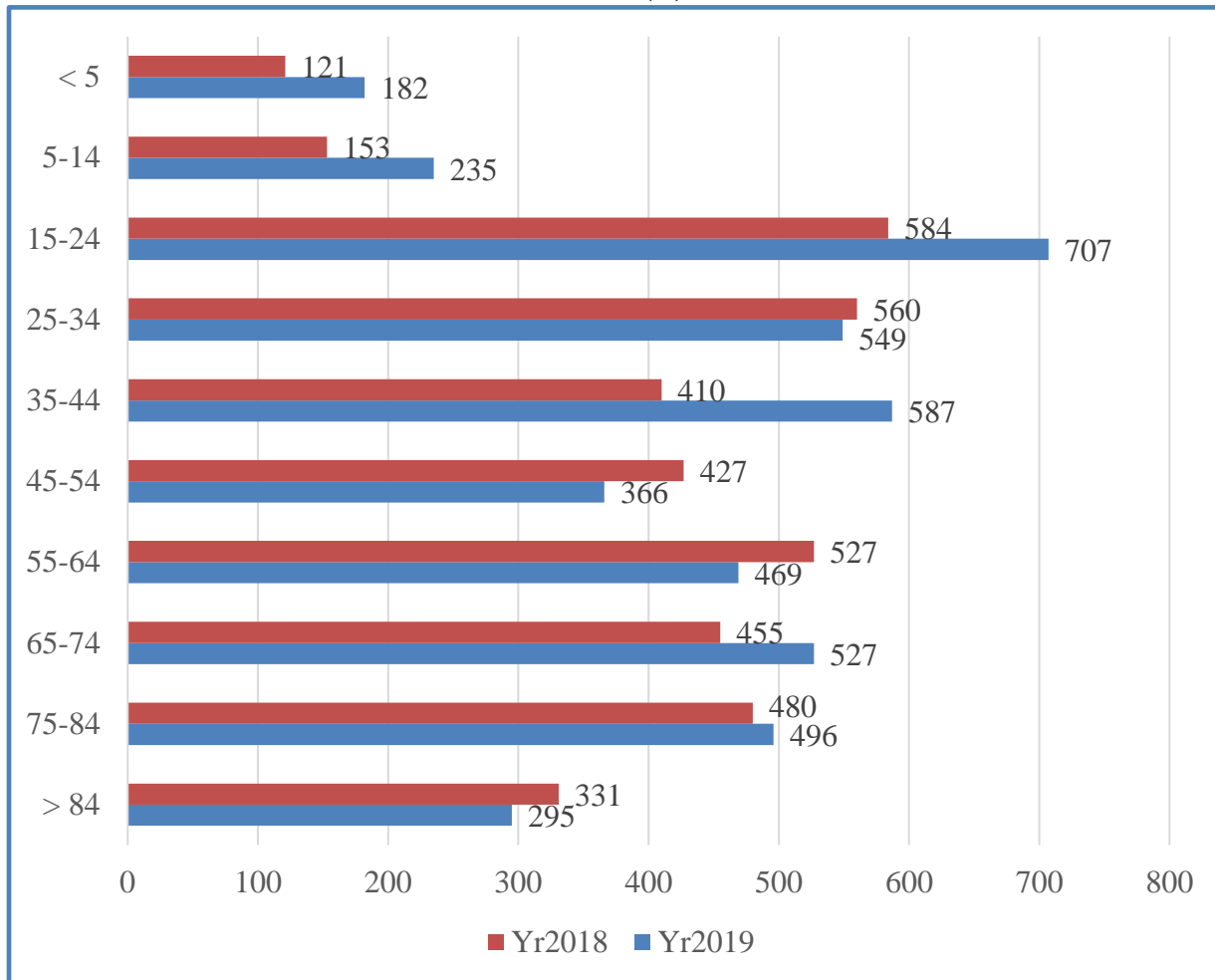
The 15-24-year-old age group sustained the largest percentage of TBI cases both years.

Table 1(b)

2018 TBI Cases by Age, Gender, and Race

Age	White Male	White Female	Black Male	Black Female	Other Female	Other Male	Total	% Total
<5	32	34	27	19	5	4	121	2.99%
5-14	45	38	26	21	6	17	153	3.78%
15-24	235	128	133	67	7	14	584	14.42%
25-34	225	103	136	65	9	22	560	13.83%
35-44	208	69	85	29	5	14	410	10.12%
45-54	185	92	97	30	5	19	427	10.54%
55-64	255	119	97	35	14	7	527	13.01%
65-74	195	161	49	32	13	5	455	11.23%
75-84	204	226	21	14	9	6	480	11.85%
>84	113	169	10	21	10	8	331	8.17%
No Data/Blank	0	0	0	0	0	1	2	0.05%
Total	1,697	1,139	681	333	83	117	4,050	100.00%
% Total	41.88%	28.12%	16.81%	8.22%	2.05%	2.89%	100%	

TBI Comparison Graph: CY 2018 and CY 2019
Table 1(C)



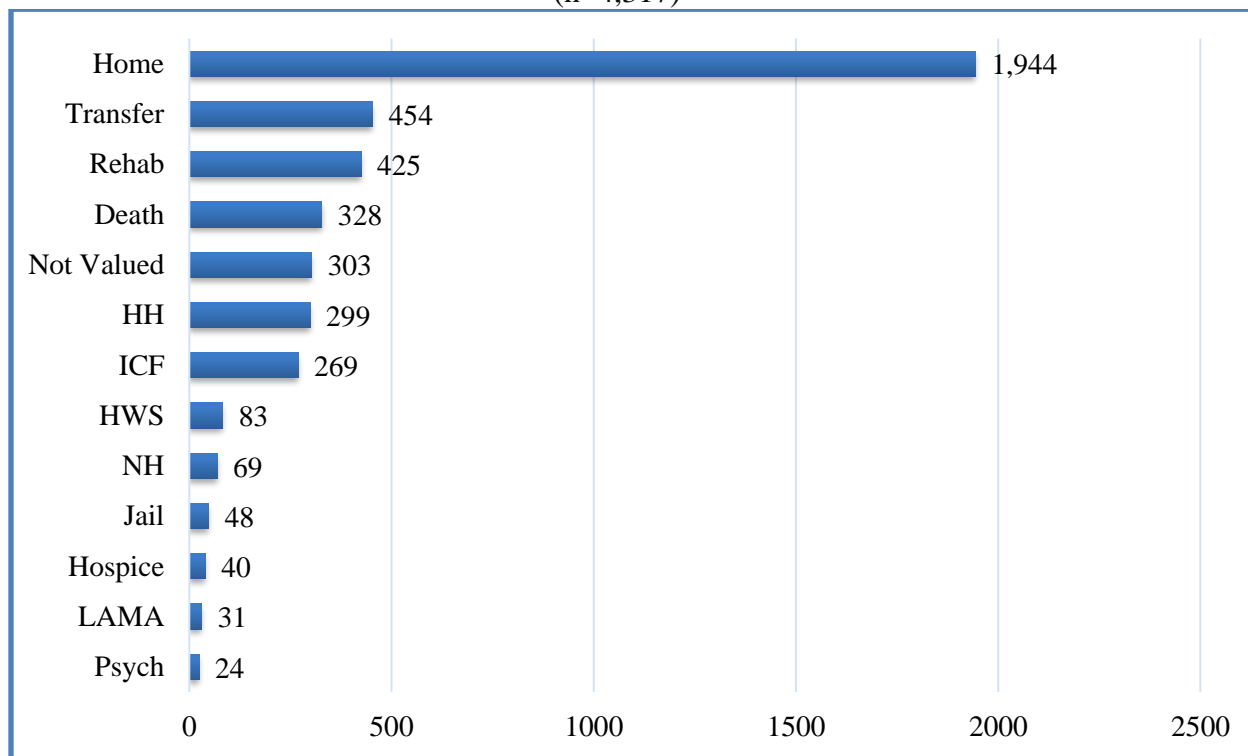
From the data, it can be observed that there were declines in TBI cases among the following age groups: 45-54, 55-64, and above 84. However, substantial increases in TBI cases were reported in the younger age/gender/race groups for under age 5, 5-14, and 15-24. See graph above.

Discharge Disposition Following TBI Cases

Figure 6

January 1, 2019 – December 31, 2019

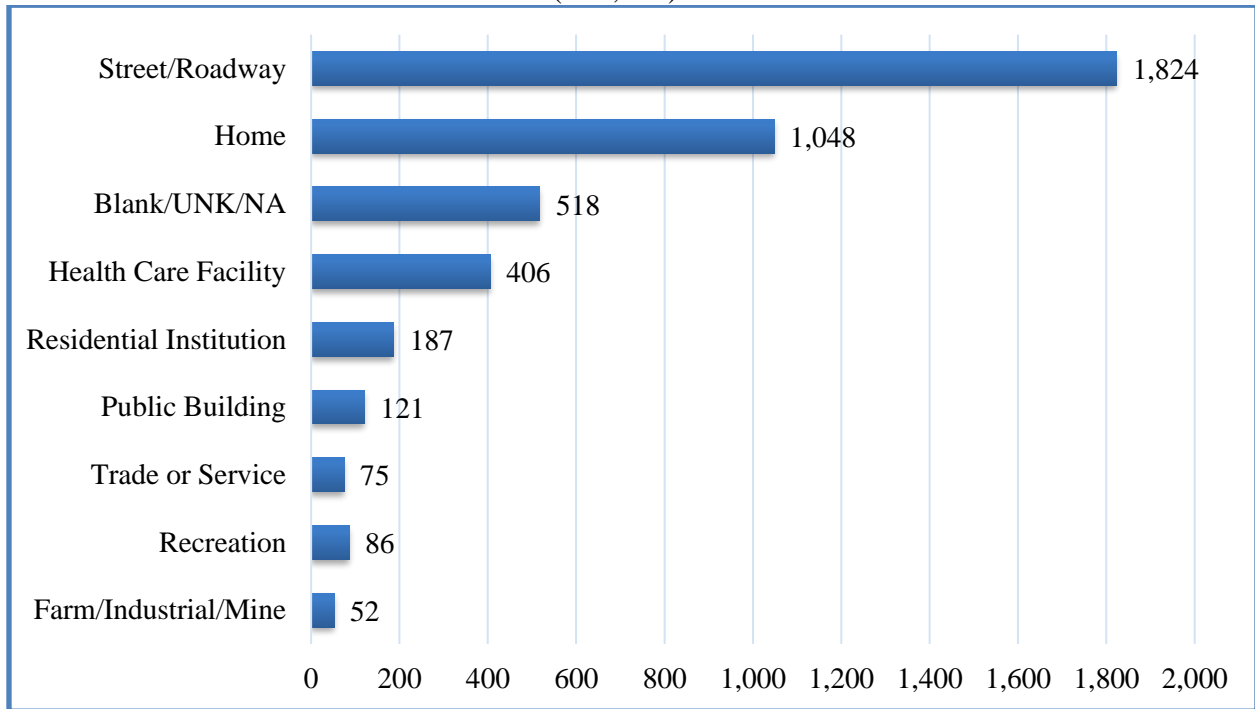
(n=4,317)



The greatest proportion of patients, 45 percent (n=1,944), were discharged home. From the data, 11 percent (n=425) of patients were discharged to rehabilitation facilities. The data is currently not linked to enable follow-up outcomes of patients discharged to rehabilitation facilities.

KEY	
HH	Home Health Agency
Home	Home with No Home Service
Hospice	Discharged/Transferred to Hospice Care
HWS	Home with Outpatient Services
ICF	Intermediate Care Facility
LAMA	Left Against Medical Advice
NH	Nursing Home
Not Valued	Not Valued, Unknown, Not Recorded
Rehab	Rehabilitation
Transfer	Transfer

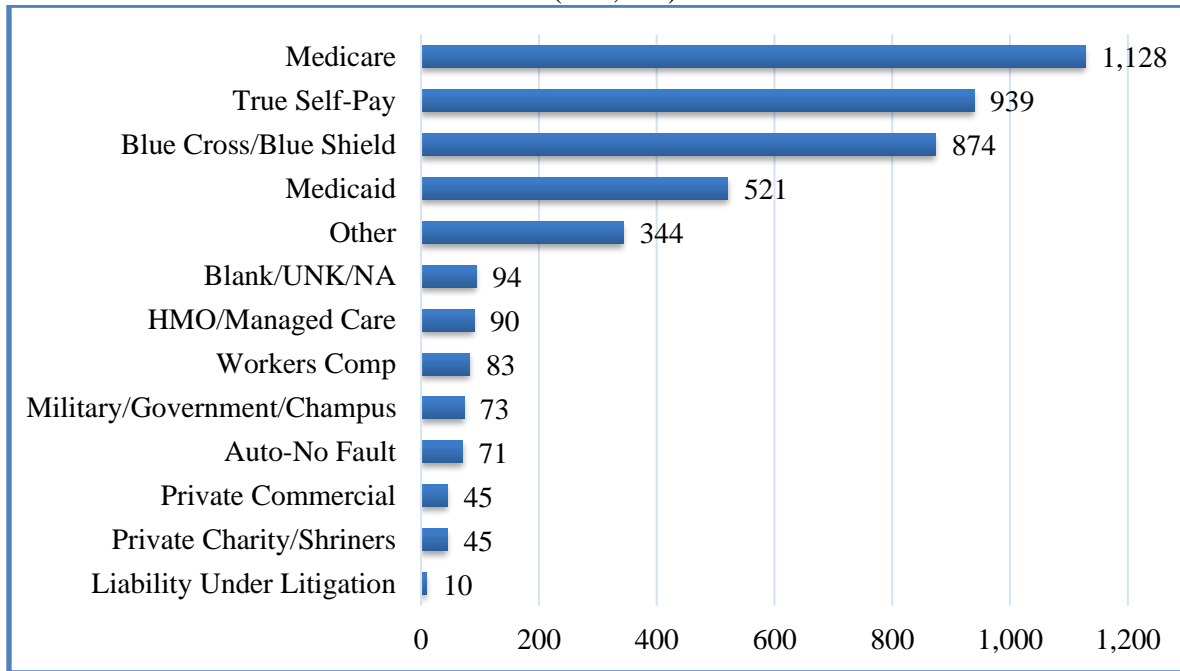
Site of Injury Occurrence in TBI Cases
Figure 7
 January 1, 2019 – December 31, 2019
 (n=4,317)



From the reports received, 42 percent (n=1,824) of TBI cases occurred on Streets and Roadways. Twenty-four percent (n=1,048) of TBI cases occurred in the Home. Nine percent (n=406) occurred in Health Care Facilities, while in 4 percent of cases (n=187) occurred in Residential Institutions. Areas designated as Trade and Service reported 2 percent (n=75) of cases. Twelve percent (n=518) of data was unreported or unknown for TBI site of Injury Occurrence.

Type	Count	Percentage
Farm/Industrial/Mine	52	1%
Recreation	86	2%
Trade or Service	75	2%
Public Building	121	3%
Residential Institution	187	4%
Health Care Facility	406	9%
Blank/UNK/NA	518	12%
Home	1,048	24%
Street/Roadway	1,824	42%
Total	4,317	100%

Payer Source for TBI Cases
Figure 8
 January 1, 2019 – December 31, 2019
 (n=4,317)



From the data, Medicare paid 26 percent (n=1,128) and True Self-Pay paid 22 percent (n=939) of claims respectively for TBI patients in Year 2019. Other payers are shown with their respective reimbursement and percentages.

Type	Count	Percentage
Liability Under Litigation	10	0%
Private Charity/Shriners	45	1%
Private Commercial	45	1%
Auto-No Fault	71	2%
Military/Government/Champus	73	2%
Workers Comp	83	2%
HMO/Managed Care	90	2%
Blank/UNK/NA	94	2%
Other	344	8%
Medicaid	521	12%
Blue Cross/Blue Shield	874	20%
True Self-Pay	939	22%
Medicare	1,128	26%
Total	4,317	100%

Spinal Cord Injury (SCI)

The Mayo Clinic (2020) 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.

Causes

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 one-quarter of spinal cord injuries.
- Acts of violence. Around 15 percent of spinal cord injuries result from violent encounters, often involving gunshot and knife wounds, according to the National Spinal Cord Injury Statistical Center.
- 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 can also cause spinal cord injuries. (Disease cases are not counted in this report.)

SCI Cases by Mechanism of Injury
Figure 9(a)
 January 1, 2019 – December 31, 2019
 (n=315)

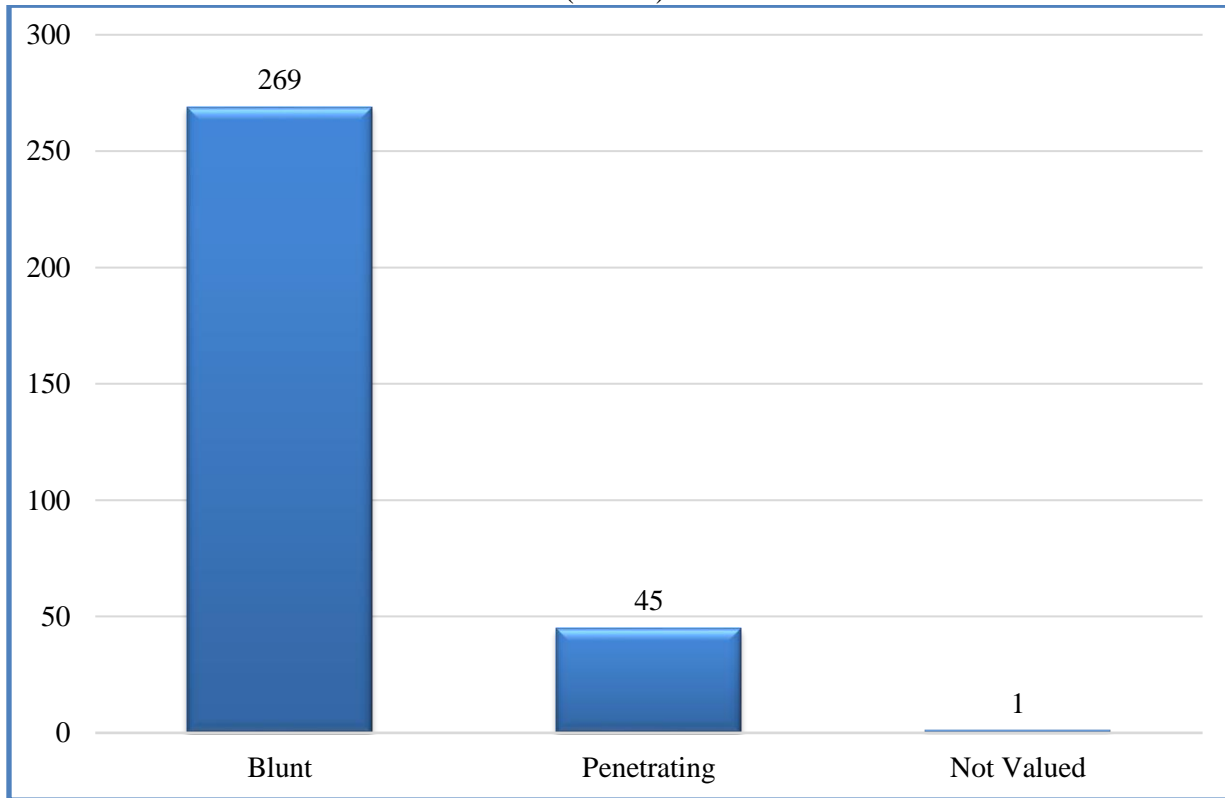


Figure 9(b)

Injury Mechanism	Count	Percentage
Blunt	269	85%
Penetrating	45	14%
Not Valued	1	0%
Total	315	100%

Eighty-five percent (n=269) of the SCI cases were injuries due to blunt trauma. Penetrating injuries accounted for 14 percent (n=45) of the SCI cases for 2019.

SCI Cases by Gender
Figure 10(a)
January 1, 2019 – December 31, 2019
(n=315)

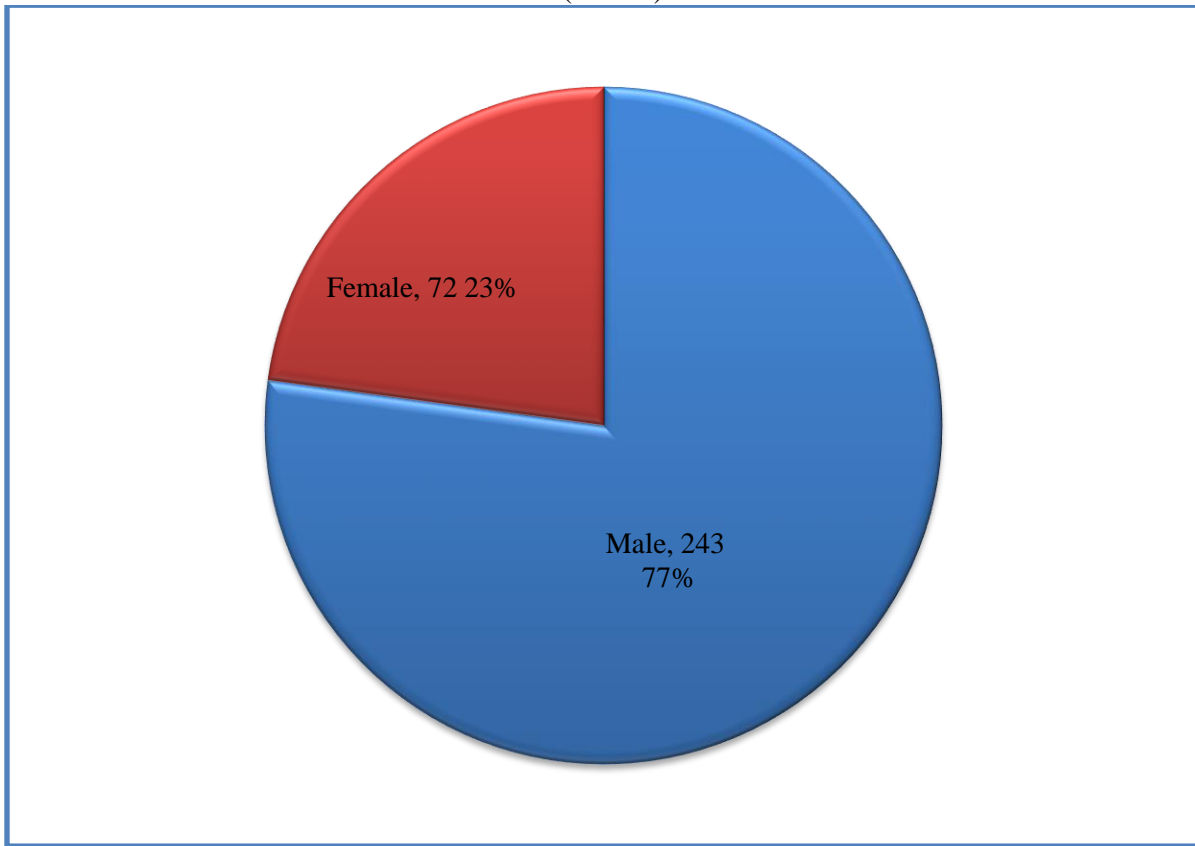


Figure 10(b)

Gender	Count	Percentage
Male	243	77%
Female	72	23%
Total	315	100%

Males made up 77 percent (n=243) of the SCI cases reported in the Year 2019, while females constituted 23 percent (n=72) of the cases reported to the AHSCIR.

SCI Cases by Race
Figure 11(a)
 January 1, 2019 – December 31, 2019
 (n=315)

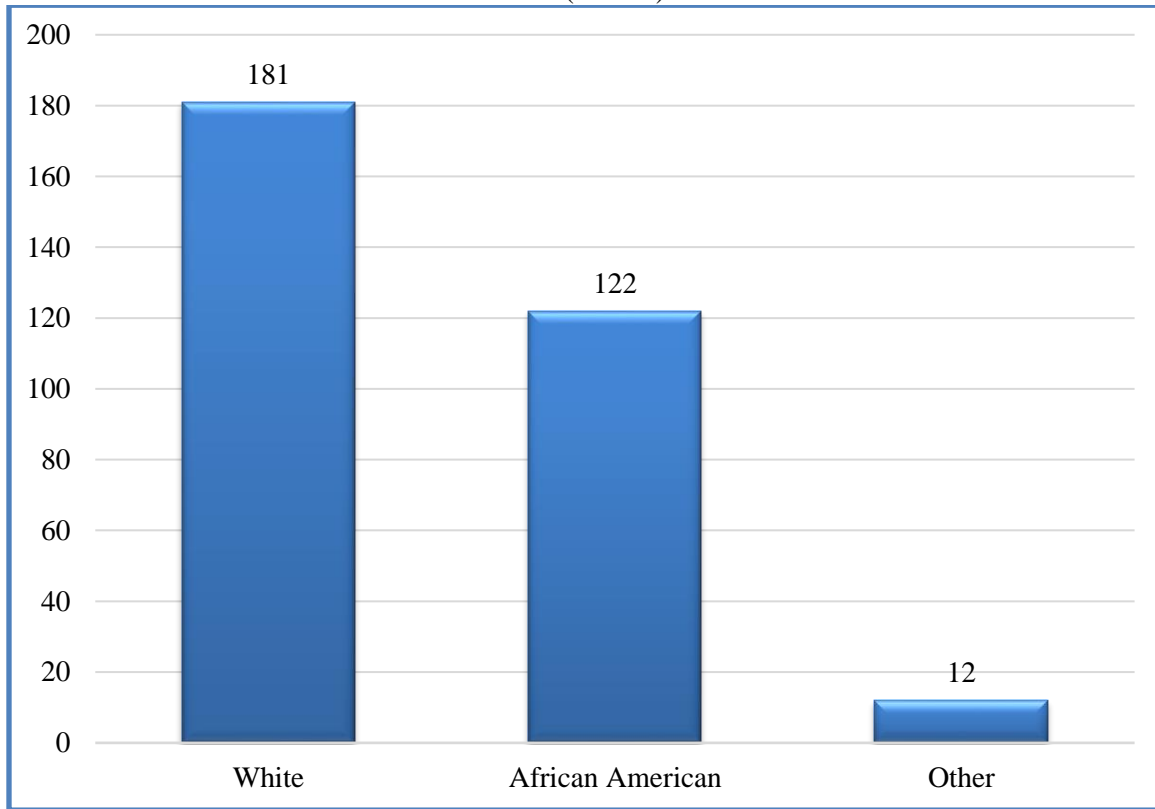


Figure 11(b)

Race	Count	Percentage
White	181	57%
African American	122	39%
Other	12	4%
Total	315	100%

Whites constituted 57 percent (n=181) of the SCI cases, African Americans constituted 39 percent (n=122), and Other represented 4 percent (n=12) in Calendar Year 2019.

SCI Cases by Race and Gender
Figure 12(a)
 January 1, 2019 – December 31, 2019
 (n=315)

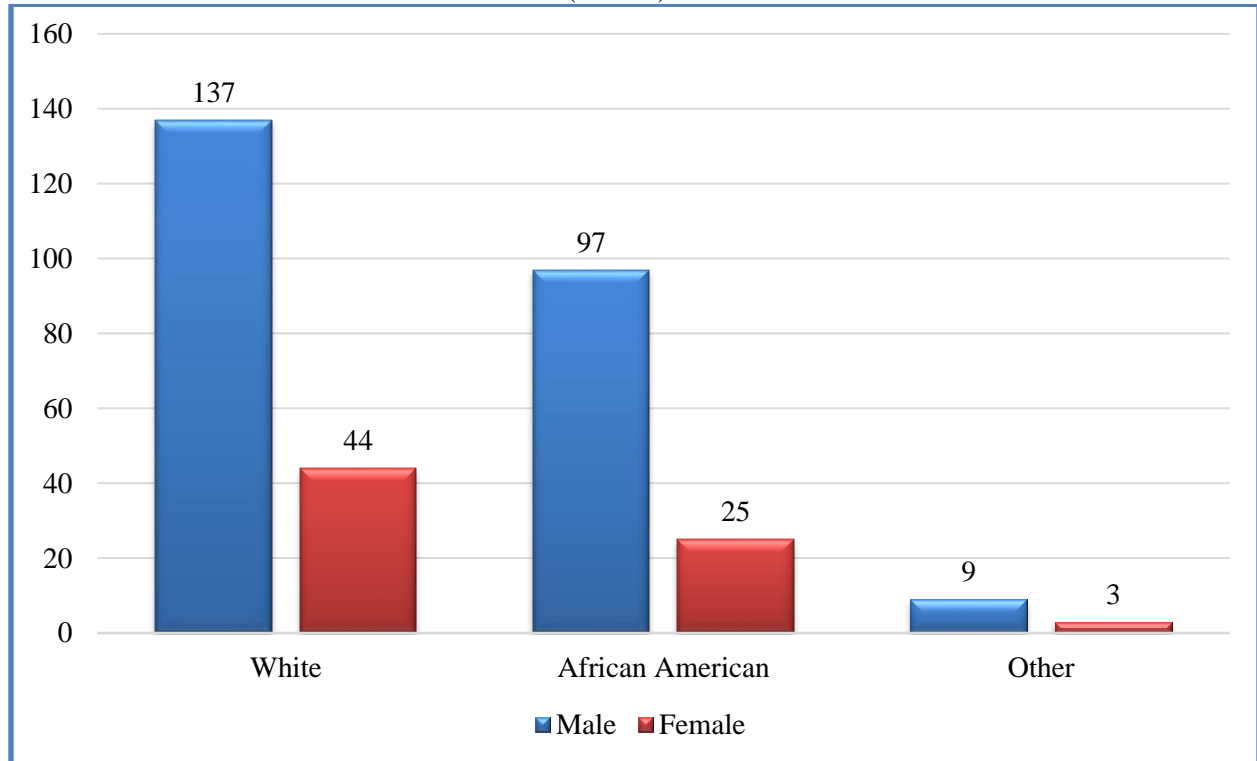


Figure 12(b)

SCI-Gender and Race	Male	Female	Total	Percentage Male	Percentage Female
White	137	44	181	56%	61%
African American	97	25	122	40%	35%
Other	9	3	12	4%	4%
Total	243	72	315	100%	100%

Overall, 56 percentage (n=137) of SCI cases were recorded in white males, 40 percent (n=97) in African American males, whereas 61 percent of SCI cases were reported for white females (n=44) with 35 percent (n=25) for African American females for Calendar Year 2019.

SCI Cases by Age, Gender, and Race
Table 2
 January 1, 2019 – December 31, 2019
 (n=315)

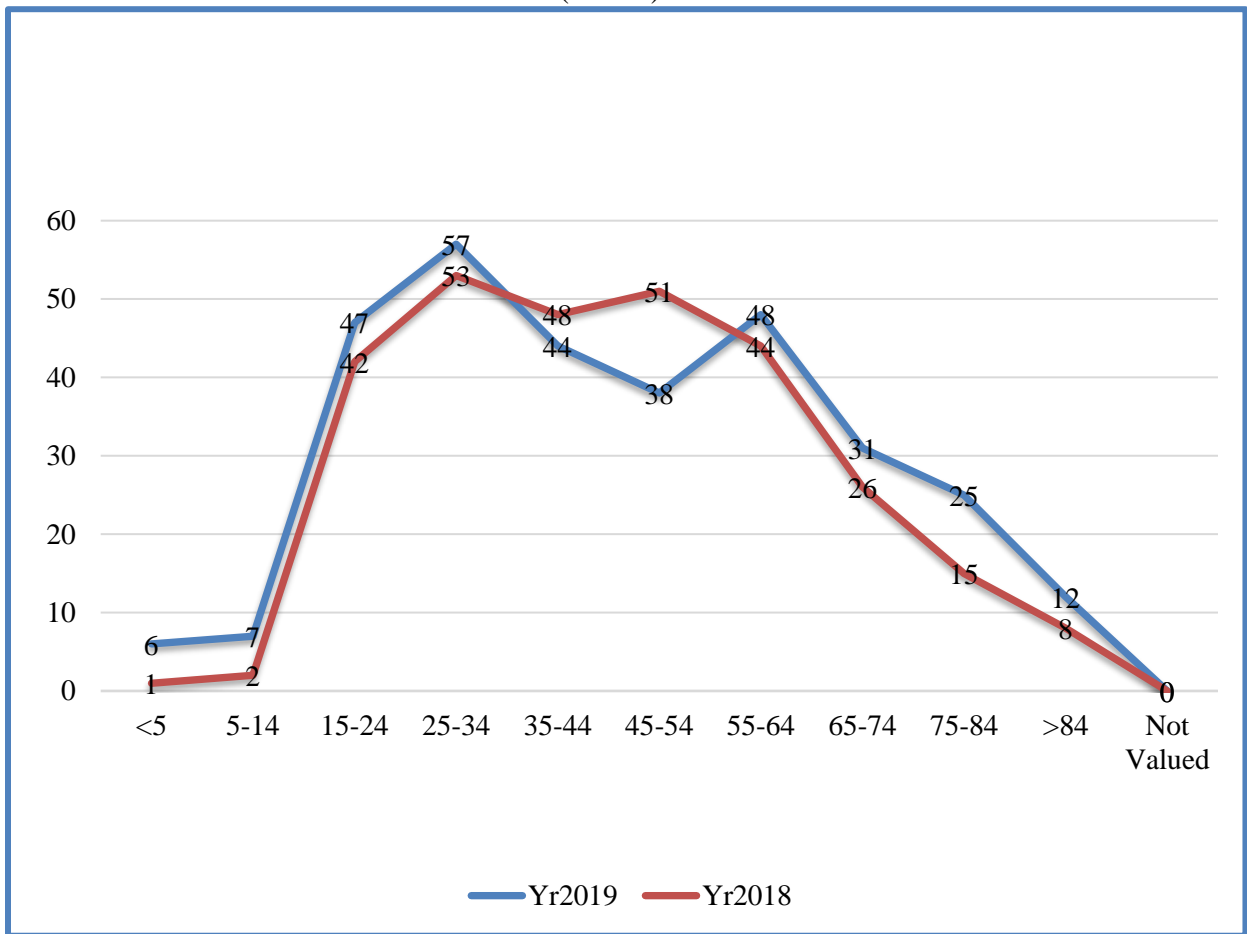
Age	White Males	White Females	Black Males	Black Females	Other Females	Other Males	Not Valued	Total	% Total
<5	2	1	0	3	0	0	0	6	2%
5-14	4	1	1	0	0	1	0	7	2%
15-24	14	4	21	6	0	2	0	47	15%
25-34	25	6	21	3	0	2	0	57	18%
35-44	17	3	19	4	0	1	0	44	14%
45-54	19	5	10	1	0	1	2	38	12%
55-64	19	8	16	4	0	1	0	48	15%
65-74	23	1	3	3	0	1	0	31	10%
75-84	11	8	4	1	0	1	0	25	8%
>84	3	7	2	0	0	0	0	12	4%
Not Valued	0	0	0	0	0	0	0	0	0%
Total	137	44	97	25	0	10	2	315	100%
% Total	43.49%	13.97%	30.79%	7.94%	0.00%	3.17%	0.63%	100%	

No significant increases or declines were reported for 2019 compared with 2018.

2018 SCI Cases by Age, Gender, and Race

Age	White Males	White Females	Black Males	Black Females	Other Females	Other Males	Not Valued	Total	% Total
<5	1	0	0	0	0	0	0	0	0%
5-14	0	0	2	0	0	0	0	2	1%
15-24	22	3	11	3	1	1	1	42	14%
25-34	16	9	21	5	0	2	0	53	18%
35-44	25	7	14	2	0	0	0	48	17%
45-54	24	6	15	4	0	1	1	51	18%
55-64	14	4	22	3	0	0	1	44	15%
65-74	12	8	5	0	0	1	0	26	9%
75-84	11	4	0	0	0	0	0	15	5%
>84	2	5	1	0	0	0	0	8	3%
Not Valued	0	0	0	0	0	0	0	0	0%
Total	127	46	91	17	1	5	3	290	100%
% Total	43.79%	15.86%	31.38%	5.86%	0.34%	1.72%	1.03%	100%	

SCI Cases by Age, Gender, and Race
Table 3
 January 1, 2018 – December 31, 2019
 (n=315)



Discharge Disposition Following SCI Cases

Figure 13(a)

January 1, 2019 – December 31, 2019

(n=315)

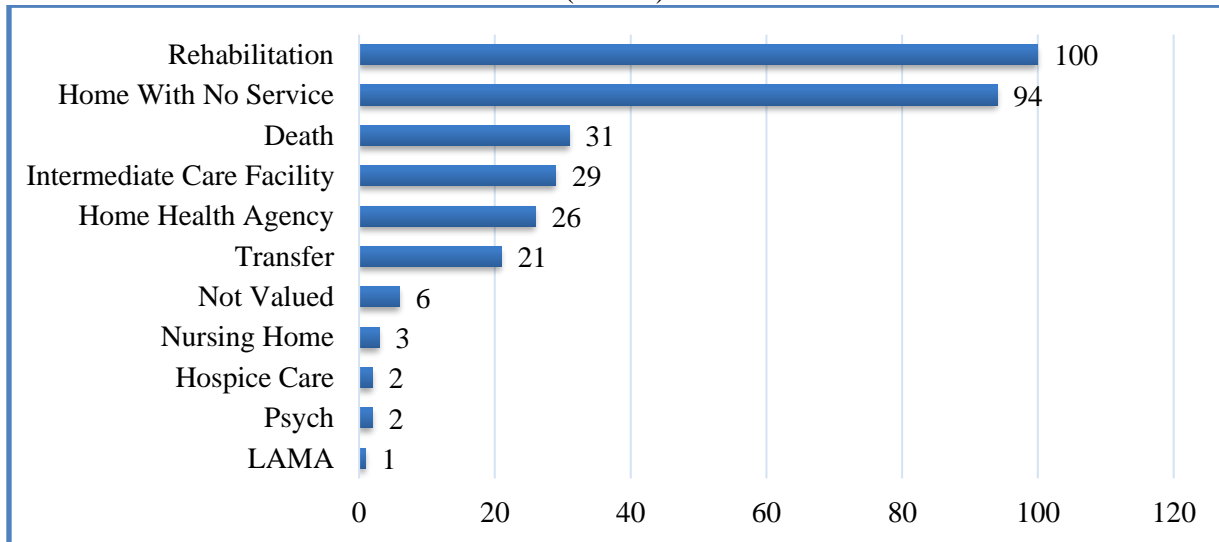


Figure 13(a) shows the respective discharge dispositions following SCI injuries in 2019. From the data, 32 percent (n=100) of SCI patients were sent to rehabilitation facilities in Alabama for 2019. Thirty percent of SCI patients (n=94) were discharged home with no service.

Figure 13(b)

Discharge Disposition Following SCI Cases	Count	Percentage
LAMA **	1	0%
Psych	2	1%
Hospice Care	2	1%
Nursing Home	3	1%
Not Valued	6	2%
Transfer	21	7%
Home Health Agency	26	8%
Intermediate Care Facility	29	9%
Death	31	10%
Home with No Service	94	30%
Rehabilitation	100	32%
Total	315	100%

**Left Against Medical Advice

Site of Injury Occurrence in SCI Cases
Figure 14(a)
 January 1, 2019 – December 31, 2019
 (n=315)

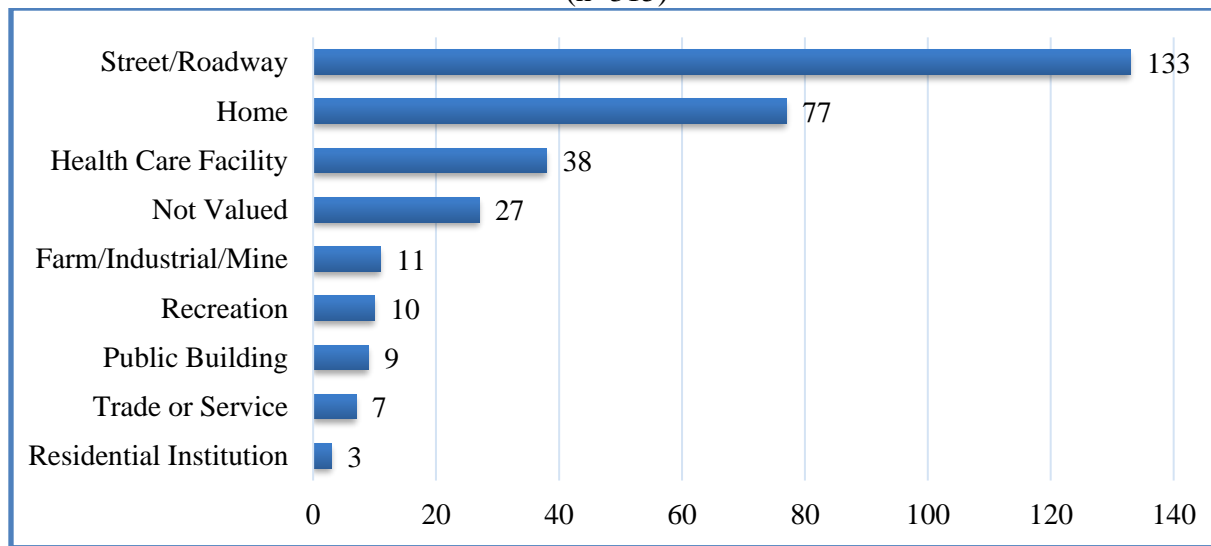


Figure 14(a) shows site of injury occurrence in SCI cases with their respective counts.

Figure 14(b)

Site of Injury Occurrence in SCI Cases	Count	Percentage
Residential Institution	3	1%
Trade or Service	7	2%
Public Building	9	3%
Recreation	10	3%
Farm/Industrial/Mine	11	3%
Not Valued	27	9%
Health Care Facility	38	12%
Home	77	24%
Street/Roadway	133	42%
Total	315	100%

Payer Source for SCI Cases
Figure 15(a)
 January 1, 2019 – December 31, 2019
 (n=315)

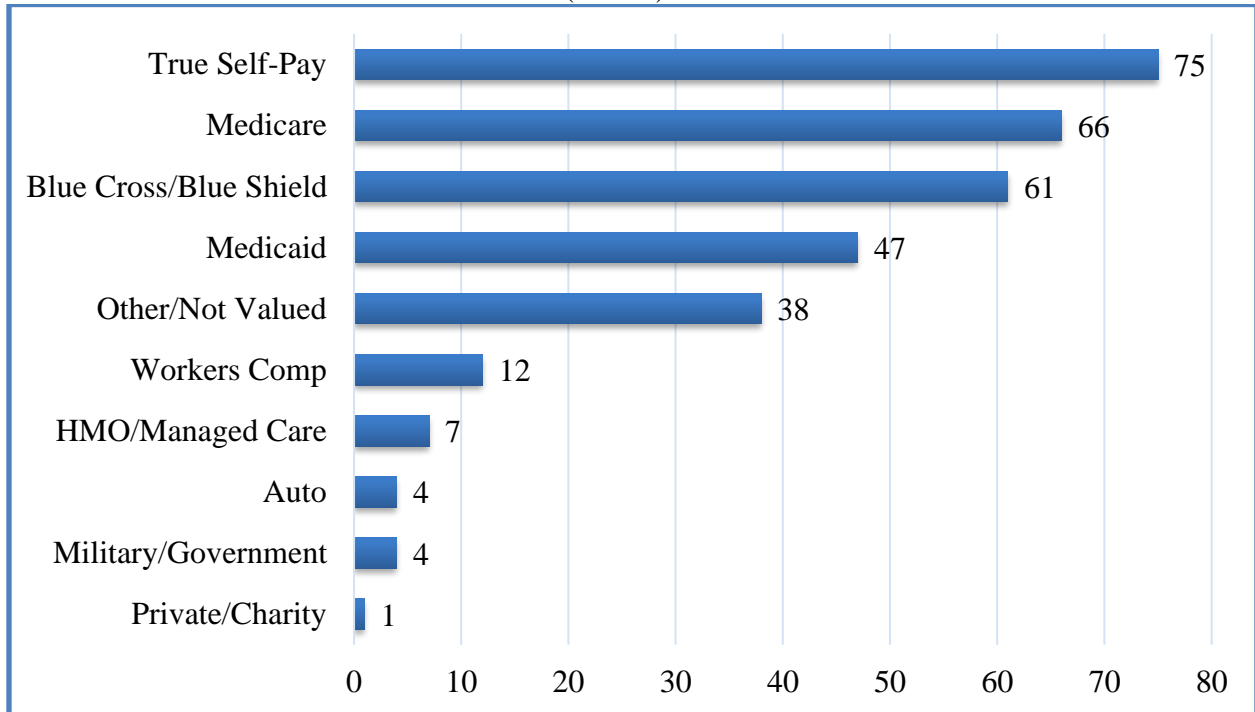
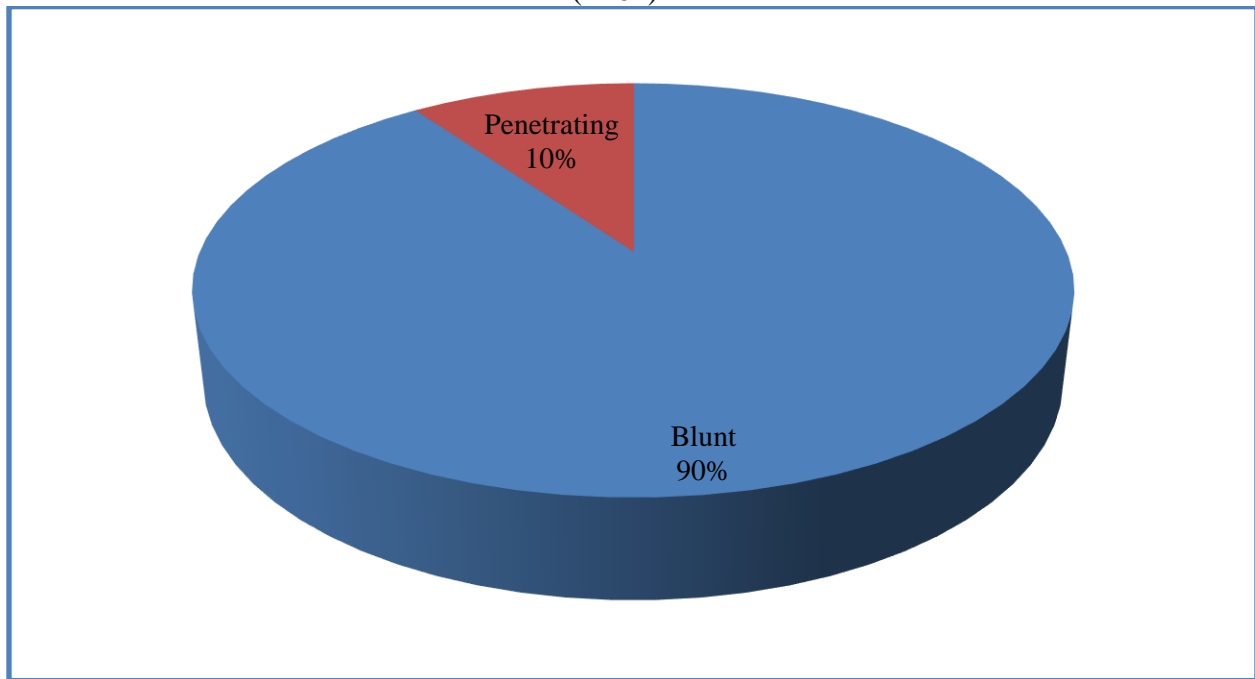


Figure 15(b)

Payer	Count	Percentage
Private/Charity	1	0%
Military/Government	4	1%
Auto	4	1%
HMO/Managed Care	7	2%
Workers Comp	12	4%
Other/Not Valued	38	12%
Medicaid	47	15%
Blue Cross/Blue Shield	61	19%
Medicare	66	21%
True Self-Pay	75	24%
Total	315	100%

For those who presented to Alabama hospitals with SCI for the Calendar Year 2019, True Self-Pay insurance was 24 percent (n=75), Blue Cross Blue Shield was 19 percent (n=61). Medicare paid 21 percent (n=66) and Medicaid paid 15 percent (n=47), respectively. Health Maintenance Organizations (HMO/Managed Care) paid 2 percent (n=7). Military and other government insurance plans paid 1 percent (n=4), and Worker's Compensation was the primary payer in 4 percent (n=12). Payment source was indicated as Auto in 1 percent (n=4) of these 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.

Mechanism of Injury for
Both TBI and SCI
Figure 16
January 1, 2019 – December 31, 2019
(n=61)



From the data reported to the AHSCIR for 2019, 90 percent (n=55) of both TBI and SCI cases were injuries due to blunt trauma. Penetrating injuries accounted for 10 percent (n=6) of both TBI and SCI cases for 2019.

Cases with Both TBI and SCI by Gender
Figure 17(a)
 January 1, 2019 – December 31, 2019
 (n=61)

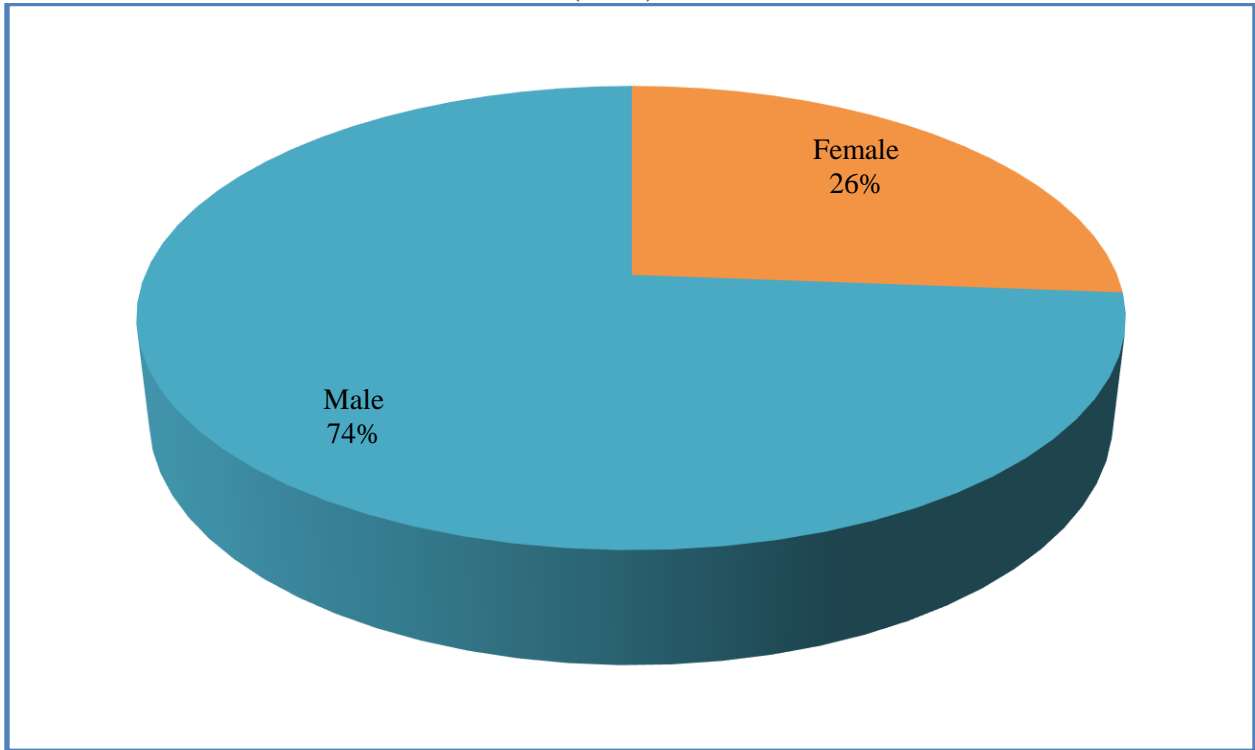


Figure 17(b)

Gender	Count	Percentage
Female	16	26%
Male	45	74%
Total	61	100%

For both TBI and SCI cases reported to the AHSCIR, 74 percent (n=45) were males and 26 percent (n=16) were females.

Cases with Both TBI and SCI by Race
Figure 18(a)
 January 1, 2019 – December 31, 2019
 (n=61)

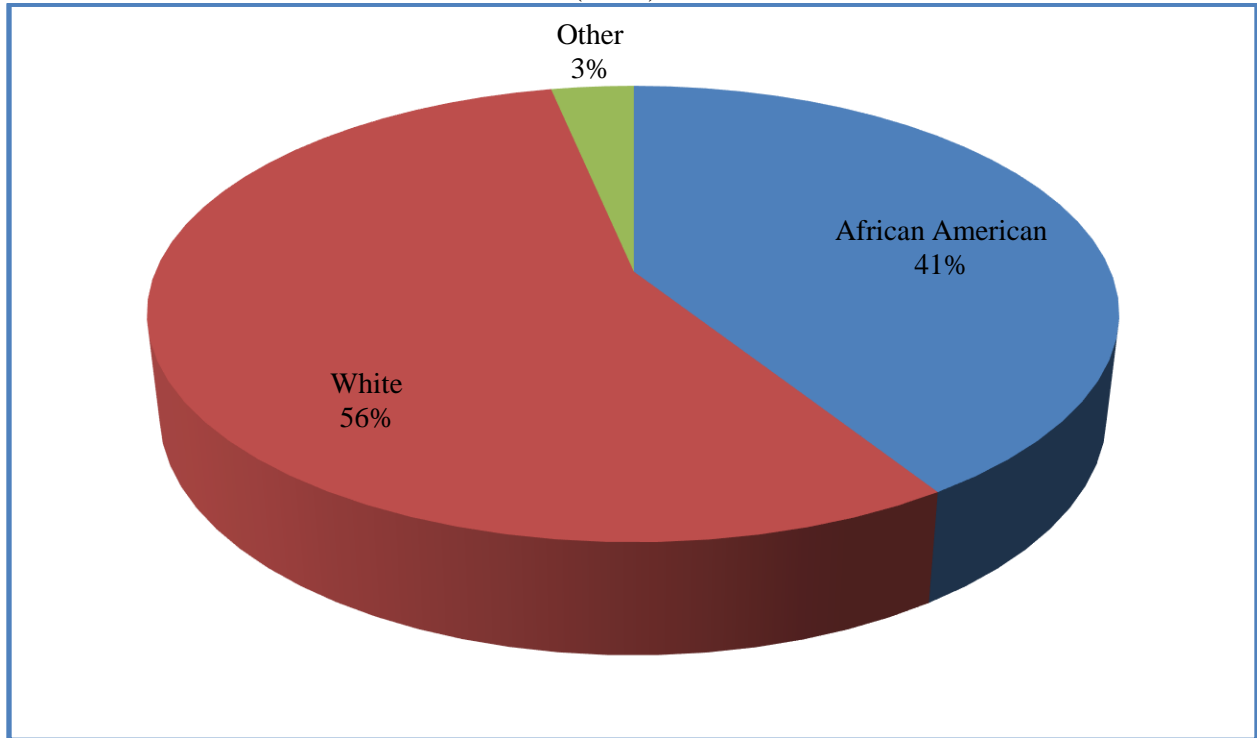


Figure 18(b)

Race	Count	Percentage
African American	25	41%
White	34	56%
Other	2	3%
Total	61	100%

Whites constituted 56 percent (n=34) of both TBI and SCI cases, African Americans made up 41 percent (n=25) for 2019. Other constituted 3 percent (n=2).

Cases with Both TBI and SCI by Gender and Race

Figure 19(a)

January 1, 2019 – December 31, 2019

(n=61)

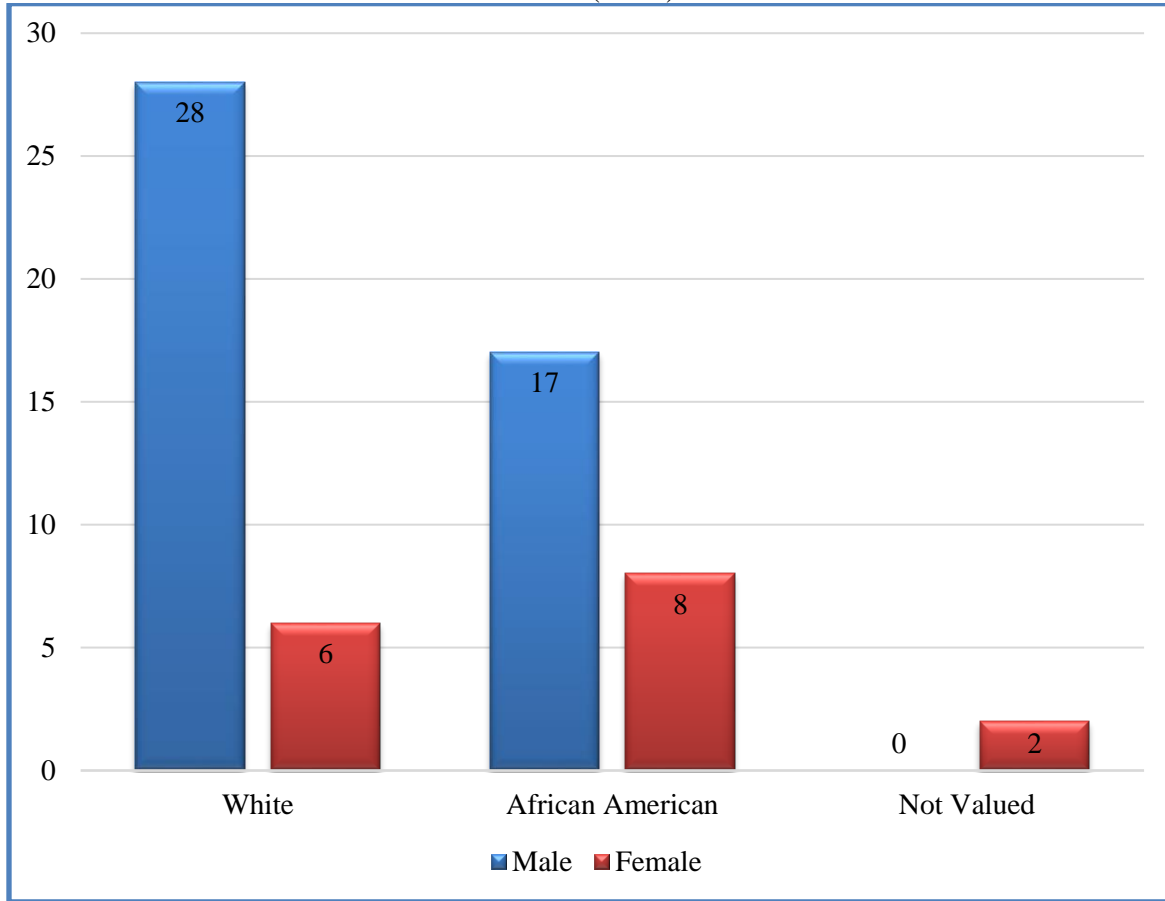


Figure 19(b)

Gender & Race	White	African American	Not Valued	Total
Male	28	17	0	45
Female	6	8	2	16
Total	34	25	2	61

Cases with Both TBI and SCI Cases by Age, Gender, and Race

Table 4(a)

January 1, 2019 – December 31, 2019

(n=61)

Age	White Male	White Female	Black Male	Black Female	Other Male	Other Female	Not Valued	Total	% Total
<5	0	1	0	3	0	0	0	4	6.56%
5-14	1	1	0	0	0	0	0	2	3.28%
15-24	4	0	4	0	0	0	0	8	13.11%
25-34	8	0	3	1	0	0	0	12	19.67%
35-44	2	1	4	1	0	0	0	8	13.11%
45-54	2	1	1	0	0	0	1	5	8.20%
55-64	2	1	2	1	0	0	0	6	9.84%
65-74	7	0	2	1	0	0	0	10	16.39%
75-84	2	1	1	0	0	1	0	5	8.20%
>84	0	0	0	1	0	0	0	1	1.64%
Total	28	6	17	8	0	1	1	61	100%
% Total	45.90%	9.84%	27.87%	13.11%	0.00%	1.64%	1.64%	100%	

Based on the data reported, there were no significant increases in cases with Both TBI and SCI.

Cases with Both TBI and SCI by Age, Gender, and Race

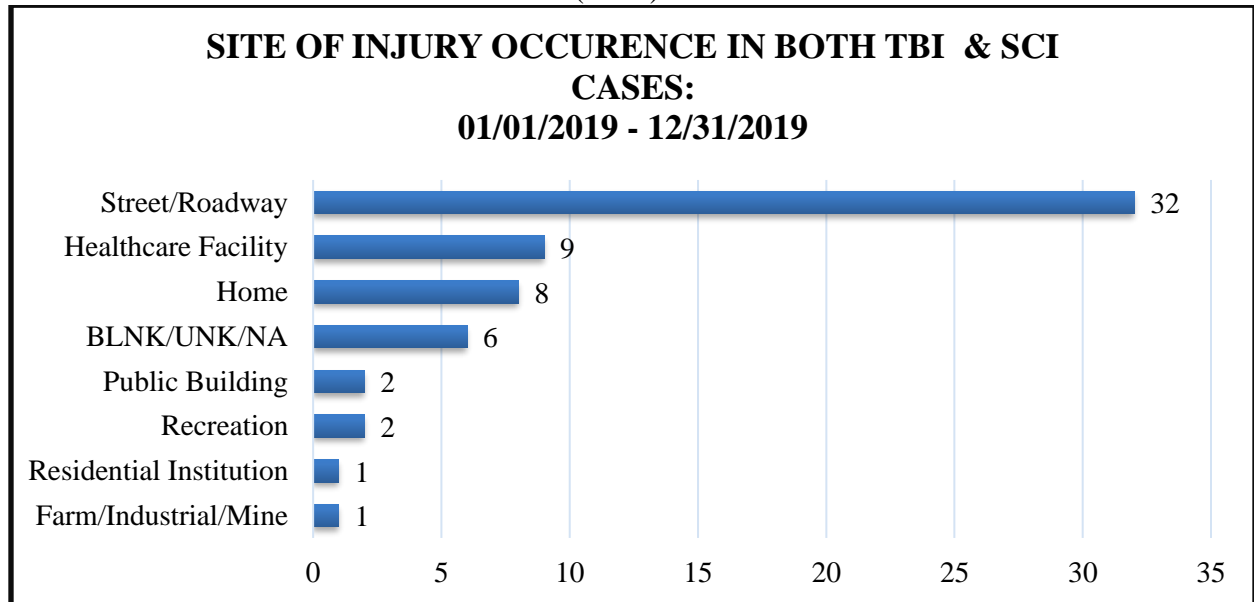
Table 4(b)

January 1, 2018 - December 31, 2018

(n=73)

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	0.00%
5-14	0	0	2	0	0	0	0	2	2.74%
15-24	6	0	4	1	0	0	0	11	15.07%
25-34	5	0	7	2	1	0	0	15	20.55%
35-44	6	0	3	0	1	0	0	10	13.70%
45-54	7	1	2	1	0	0	0	11	15.07%
55-64	7	1	3	2	0	0	0	13	17.81%
65-74	2	1	1	0	0	0	0	4	5.48%
75-84	3	1	0	0	0	0	0	4	5.48%
>84	1	2	0	0	0	0	0	3	4.11%
Total	37	6	22	6	2	0	0	73	100%
% Total	50.68%	8.22%	30.14%	8.22%	2.74%	0.00%	0.00%	100%	

Site of Injury Occurrence in Both TBI and SCI Cases
Figure 20(a)
 January 1, 2019 – December 31, 2019
 (n=61)



Fifty-two percent (n=32) of AHSCIR cases with both TBI and SCI occurred on Streets and Roadways. Fifteen percent (n=9) occurred in a healthcare facility.

Figure 20(b)

Site of Injury	Count	Percentage
Farm/Industrial/Mine	1	2%
Residential Institution	1	2%
Recreation	2	2%
Public Building	2	3%
BLNK/UNK/NA	6	10%
Home	8	13%
Healthcare Facility	9	15%
Street/Roadway	32	52%
Total	61	100%

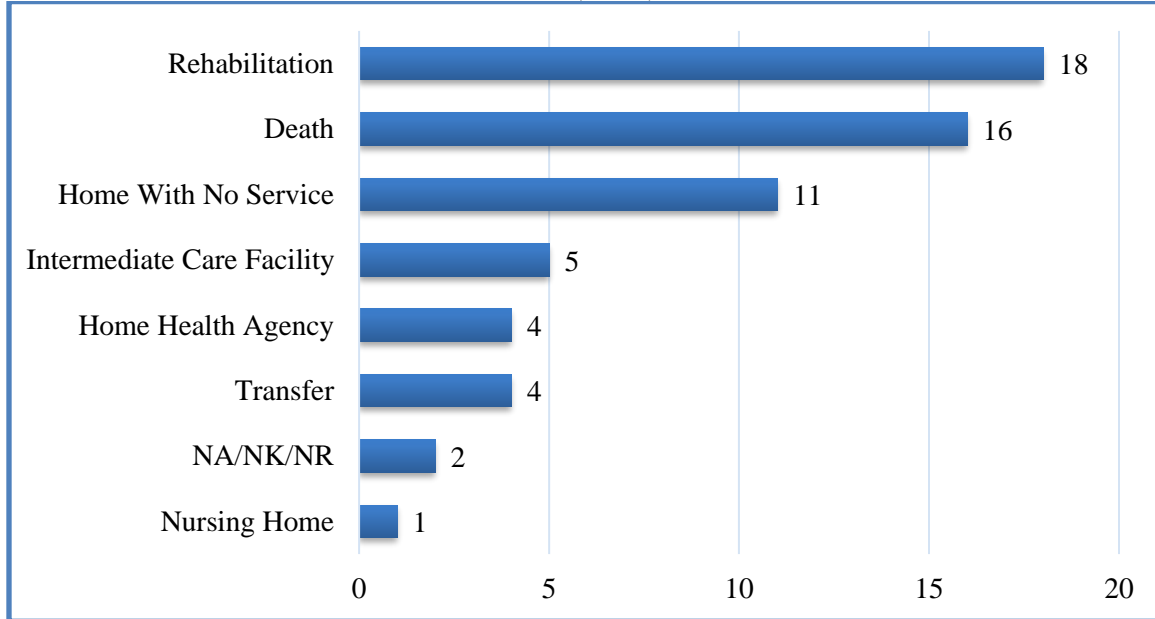
KEY:	
BLNK/UNK/NA	Blank, Unknown, Not Applicable

Discharge Disposition Following Cases with Both TBI and SCI

Figure 21(a)

January 1, 2019 – December 31, 2019

(n=61)

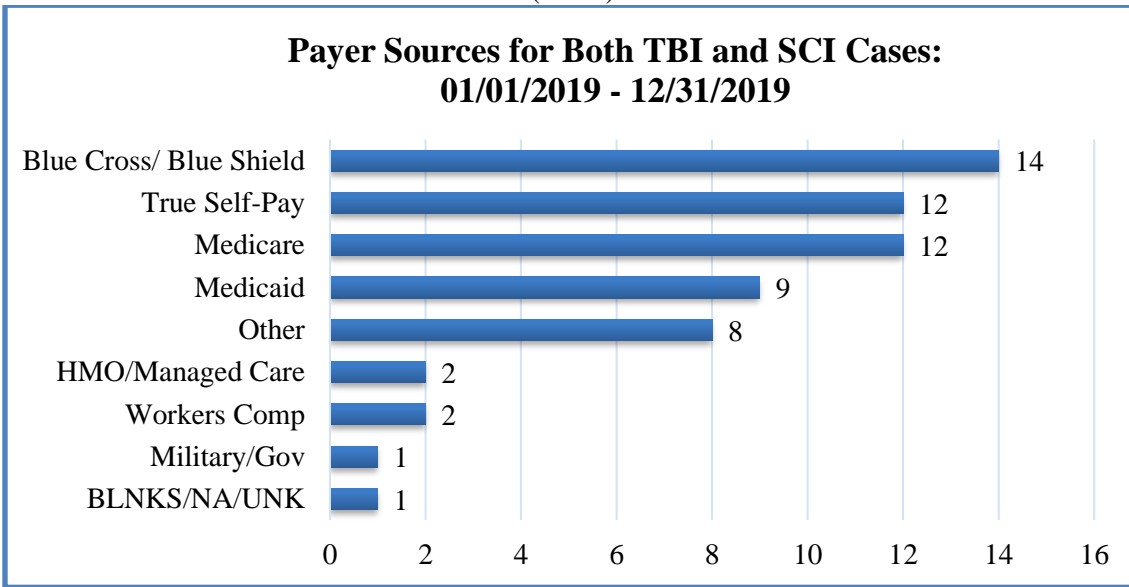


Thirty percent (n=18) patients were discharged to Rehabilitation Centers. Eighteen percent (n=11) were discharged to Home With No Services. Twenty-six percent (n=16) patients expired.

Figure 21(b)

Discharge Disposition	Count	Percentage
Nursing Home	1	2%
NA/NK/NR	2	3%
Transfer	4	7%
Home Health Agency	4	7%
Intermediate Care Facility	5	8%
Home with No Service	11	18%
Death	16	26%
Rehabilitation	18	30%
Total	61	100%

Payer Sources for Cases with Both TBI and SCI
Figure 22(a)
 January 1, 2019 – December 31, 2019
 (n=61)



Blue Cross/Blue Shield paid 23 percent (n=14) of all cases with both TBI and SCI reported to the AHSCIR for 2019. True Self-Pay paid 20 percent (n=12), Medicare paid 20 percent (n=12) and Other paid 13 percent (n=8). The chart shows the breakdown of the various categories of payments.

Figure 22(b)

Payer	Count	Percentage
BLNKS/NA/UNK	1	2%
Military/Gov	1	2%
Workers Comp	2	3%
HMO/Managed Care	2	3%
Other	8	13%
Medicaid	9	15%
Medicare	12	20%
True Self-Pay	12	20%
Blue Cross/ Blue Shield	14	23%
Total	61	100%

KEY:	
BLNKS/NA/UNK	Blanks/Not Applicable/Unknown

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 common causes of traumatic brain injury.

The people most at risk of traumatic brain injury include:

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

Prevention

- Obey manufacturer guidelines on the use of all safety equipment while operating any motorized equipment.
- 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.
- Avoid alcohol and drug use.
- The use of safety helmets while riding a bicycle, skateboard, motorcycle, snowmobile, or all-terrain vehicle are recommended.

Preventing Falls

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

Preventing Head Injuries in Children

- Install safety gates at the top of a stairway.
- Keep stairs clear of clutter.
- Install window guards to prevent falls.
- Use playgrounds that have shock-absorbing materials on the ground.
- Make sure area rugs are secured.

- Do not let children play on fire escapes or balconies.
- Supervise and watch children at play. Do not let children play alone.

Spinal Cord Injury

Auto and motorcycle accidents are the leading causes 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 (2018). 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.

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. (2018). Retrieved 10/13/2020 from http://www.cdc.gov/traumaticbraininjury/data/dist_death.html
2. Mayo Clinic. (2020). Diseases and Conditions. Retrieved 10/13/2020 from <http://www.mayoclinic.org/diseases-conditions/spinal-cord-injury/basics/definition/con-20023837>
3. ICD-10-CM (2020). <https://www.cms.gov/medicare/Coding/ICD10/index.html>

Appendix

Effective October 1, 2016, all data reported used ICD-10-CM codes as follows:

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

<https://www.cms.gov/medicare/Coding/ICD10/index.html>