

Alabama Head and Spinal Cord Injury Report 2018



**2018 Alabama Head and Spinal Cord
Injury Registry (AHSCIR) Report**

**Data Period:
January 1, 2018 – December 31, 2018**

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Background

The Alabama Act 98-611 passed in May 1998 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). Subsequently, the Alabama Head and Spinal Cord Injury Registry (AHSCIR) was developed to collect data on patients who have sustained moderate to severe brain, spinal cord, or other debilitating injuries. Patients who suffer specific injuries as listed in Appendix (ICD-10 Codes) must be reported to the AHSCIR. These patients are identified and linked with the Alabama Department of Rehabilitation Services (ADRS) which is charged with offering rehabilitation services to Alabamians. This link helps to increase awareness of state supported rehabilitation services in the hope of improving rehabilitation services, disability management, and workforce re-entry assistance.

The Alabama Trauma Registry (ATR) was established shortly after AHSCIR data collection began in 1999. The ATR is an expansion of the AHSCIR with data collection fields to include data related to all types of trauma. Data submission to the ATR is voluntary whereas AHSCIR data submission is mandatory. Consideration must be given to the fact that, with voluntary reporting, the data may be incomplete. 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 all injuries 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. AHSCIR data are also used by ADRS to contact patients suffering from head and/or spinal cord injuries to make them aware of available state supported services.

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 AHSCIR which was submitted as of December 31, 2018, and retrieved on October 1, 2019. 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 their treatment may be counted twice in this report.

Results

The AHSCIR received reports of 4,413 head and spinal cord injuries for calendar year 2018 compared to 4,297 head and spinal cord injury cases that were admitted to Alabama hospitals during calendar year 2017. This represents an increase of 116 new cases from calendar year 2017.

Head injuries (TBI), exclusively constituted 92 percent (n=4,051) of the reported cases and spinal cord injuries, exclusively (SCI), constituted 7 percent (n=289). There were 73 cases (1 percent) in the registry that had both head and spinal cord injuries. 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:

Calculations for this report used Microsoft Excel for Office 365.

Traumatic Brain Injury (TBI)

Definition

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, September 3, 2019). Available at <https://www.mayoclinic.org/diseases-conditions/traumatic-brain-injury/symptoms-causes/syc-20378557>.

Type of Injury
Figure 1(a)
 Alabama Head and Spinal Cord Injury Registry (AHSCIR)
 January 1, 2018 – December 31, 2018
 (n=4,413)

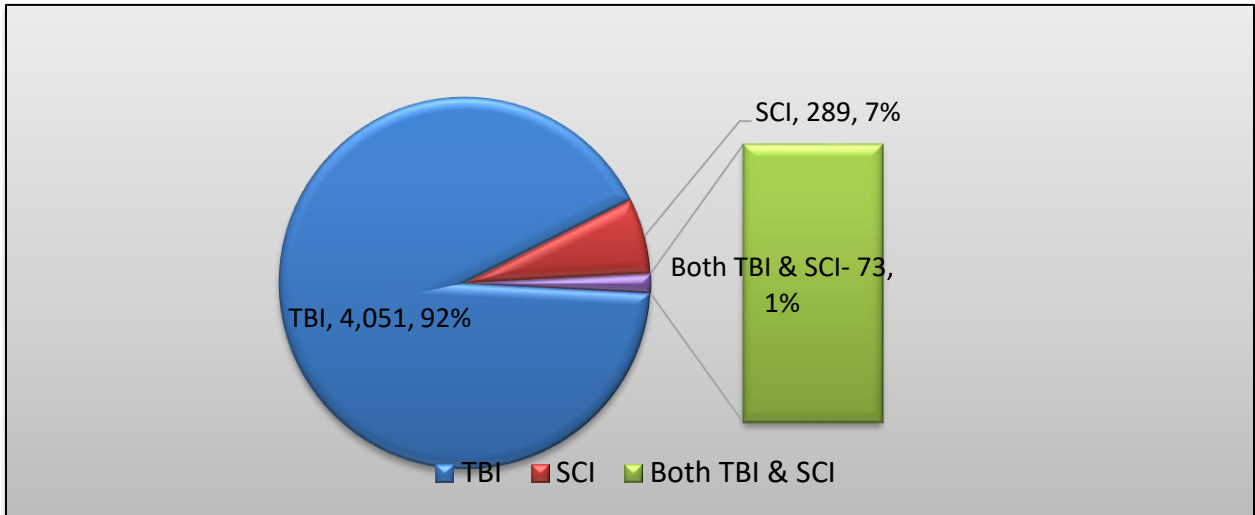
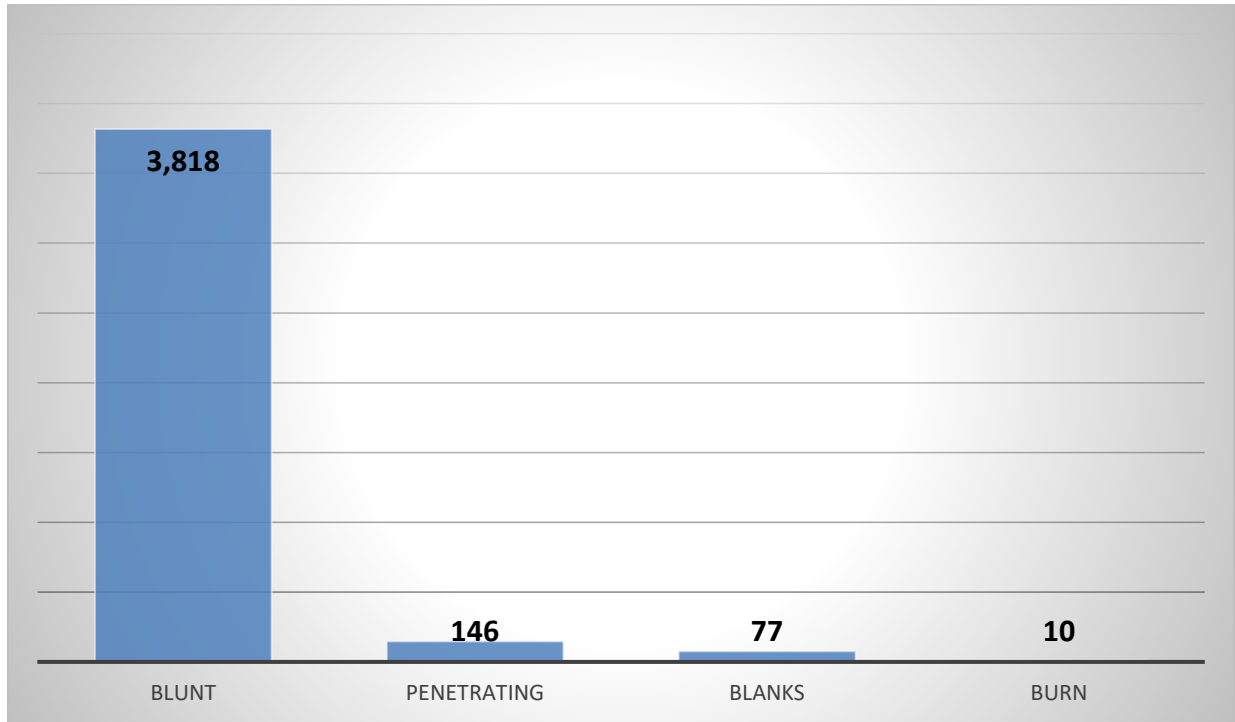


Figure 1(b)

Injury Type	Count	Percentage
TBI	4,051	91.8%
SCI	289	6.6%
Both TBI & SCI	73	1.7%
Total	4,413	100.0%

TBI Mechanisms
Figure 2 (a)
Proportion of TBI Cases by Mechanism of Injury
 Alabama Head and Spinal Cord Injury Registry (AHSCIR)
 January 1, 2018 – December 31, 2018
 (n=4,051)



Ninety-four percent (n=3,818) of the TBI cases were injuries due to blunt trauma. Penetrating injuries accounted for 4 percent (n=146) of the TBI cases for 2018.

Figure 2 (b)

Injury Type	Count	Percentage
Blunt	3,818	94%
Blanks	77	2%
Penetrating	146	4%
Burn	10	0%
Total	4,051	100%

KEY

Blanks	Blanks/Non-Applicable/Unknown
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TBI Cases by Gender
Figure 3 (a)
 Alabama Head and Spinal Cord Injury Registry (AHSCIR)
 January 1, 2018 – December 31, 2018
 (n=4,051)

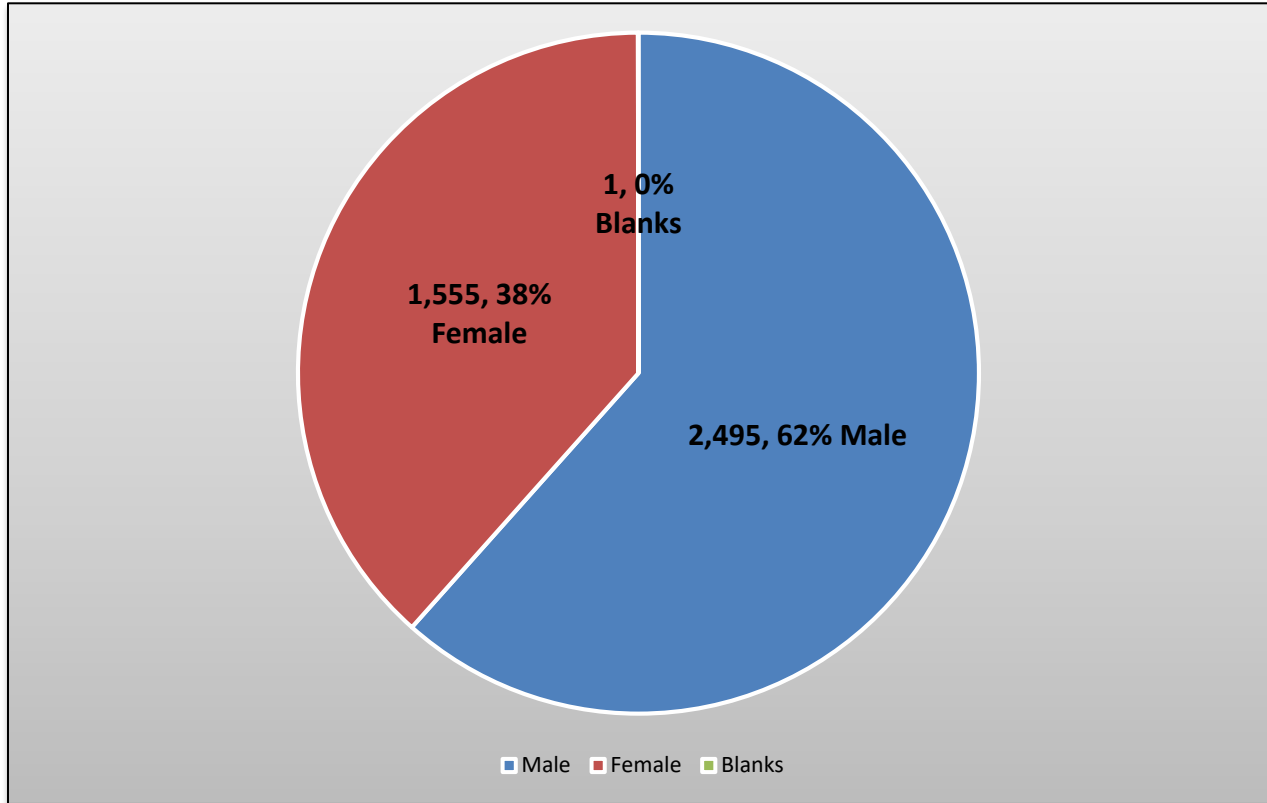


Figure 3 (b)
TBI Cases by Gender

TBI Cases by Gender		
Male	2,495	62%
Female	1,555	38%
Blanks	1	0%
Total	4,051	100%

TBI Cases by Race
Figure 4 (a)
 Alabama Head and Spinal Cord Registry (AHSCIR)
 January 1, 2018 – December 31, 2018
 (n=4,051)

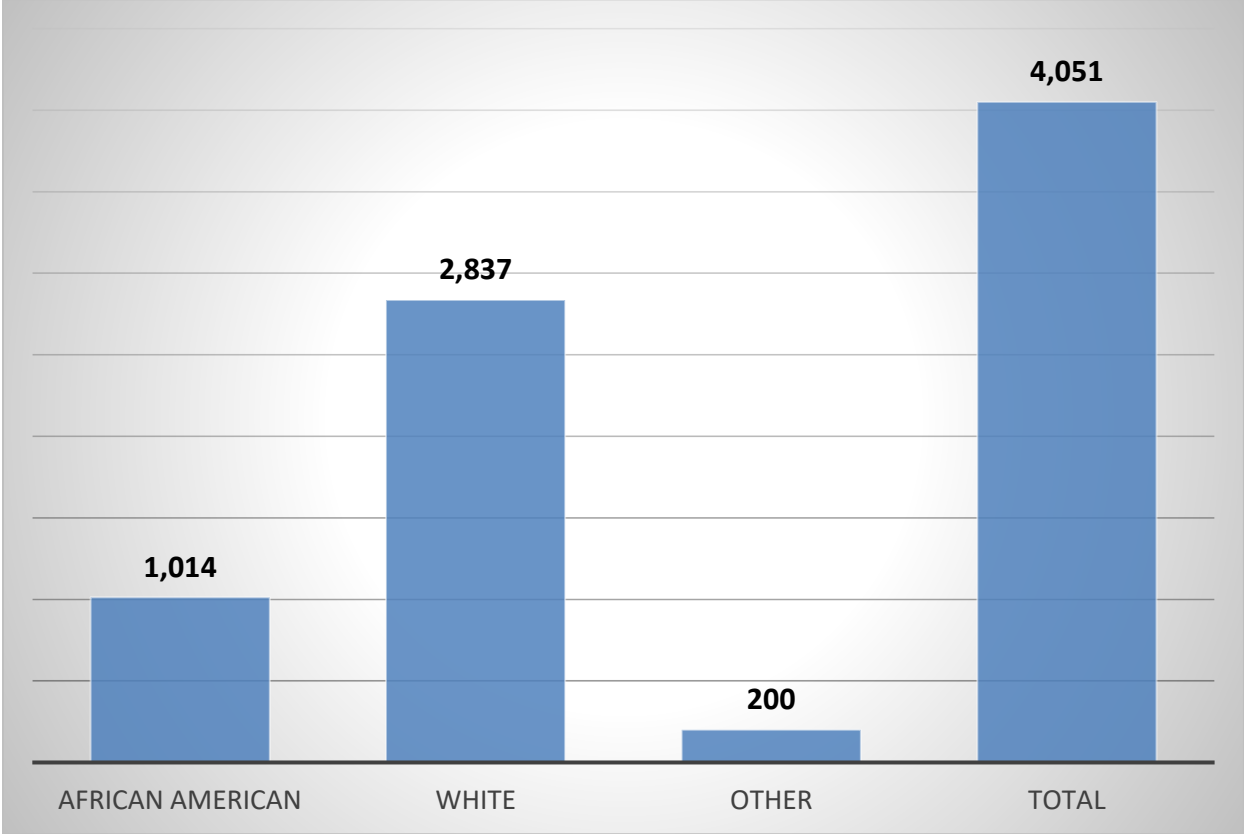


Figure 4 (b)

TBI Race Distribution	Number of Cases	Percentage
African American	1,014	25%
White	2,837	70%
Other	200	5%
Total	4,051	100%

TBI Cases by Gender and Race

Figure 5 (a)

Alabama Head and Spinal Cord Injury Registry (AHSCIR)

January 1, 2018 – December 31, 2018

(n=4,051)

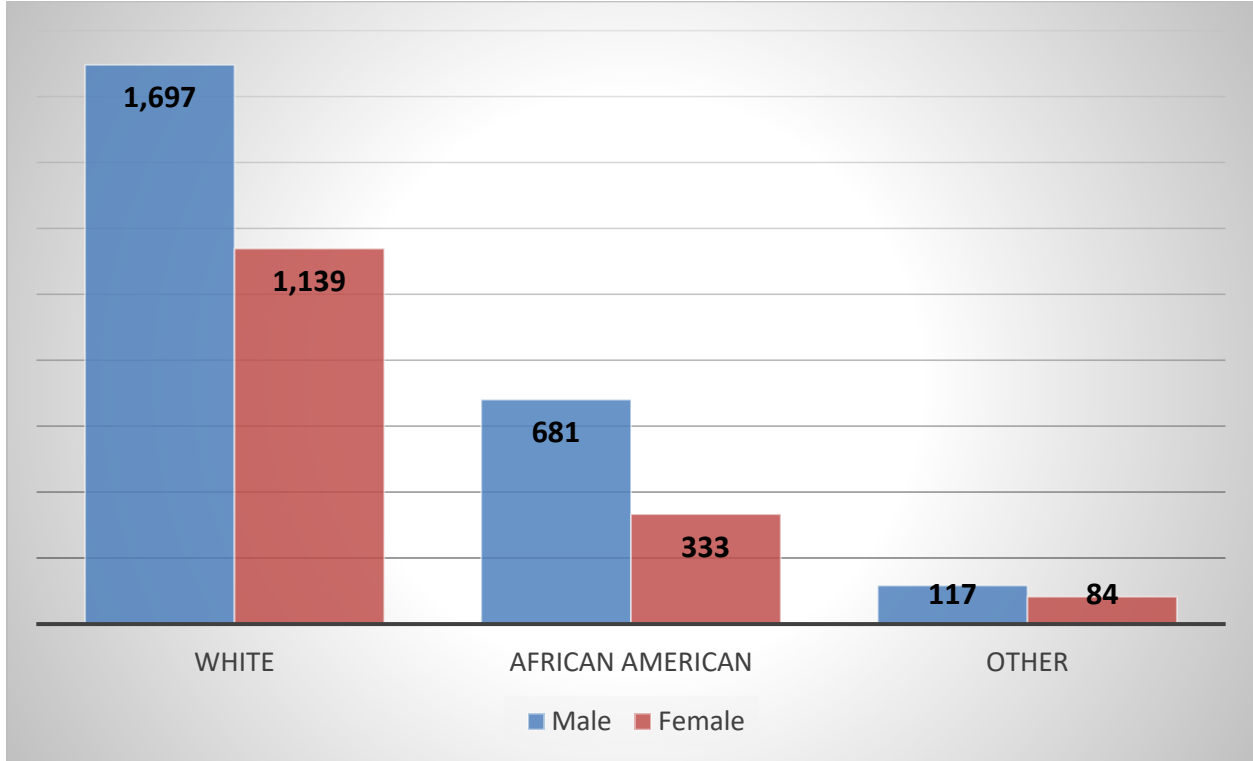


Figure 5 (b)

Race	Male	Female	Total	% Male	% Female
White	1,697	1,139	2,835	68%	73%
African American	681	333	1,014	27%	21%
Other	117	84	201	5%	5%
Total	2,495	1,556	4,051	100%	100%

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

Table 1(a)

Alabama Head and Spinal Cord Injury Registry (AHSCIR)

January 1, 2018 – December 31, 2018

(n=4,051)

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	528	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	1	0	0	0	0	1	2	0.05%
Total	1,698	1,139	681	333	83	117	4,051	100.00%
% Total	41.88%	28.12%	16.81%	8.22%	2.05%	2.89%	100%	

2017 TBI Cases by Age, Gender and Race:

Table 1 (b)

Age	White Male	White Female	Black Male	Black Female	Other Female	Other Male	Total	% Total
<5	45	30	34	32	6	7	154	3.87%
5-14	70	39	35	21	4	2	171	4.29%
15-24	271	133	136	76	12	20	648	16.27%
25-34	221	92	113	45	1	19	491	12.33%
35-44	170	86	122	20	6	20	424	10.65%
45-54	211	98	94	28	4	20	455	11.43%
55-64	246	111	73	22	4	8	464	11.65%
65-74	216	154	24	39	11	9	453	11.38%
75-84	168	202	23	23	7	5	428	10.75%
>84	98	157	11	22	3	3	294	7.38%
Total	1,716	1,102	665	328	58	113	3,982	100.00%
% Total	43.09%	27.67%	16.70%	8.24%	1.46%	2.84%	100%	

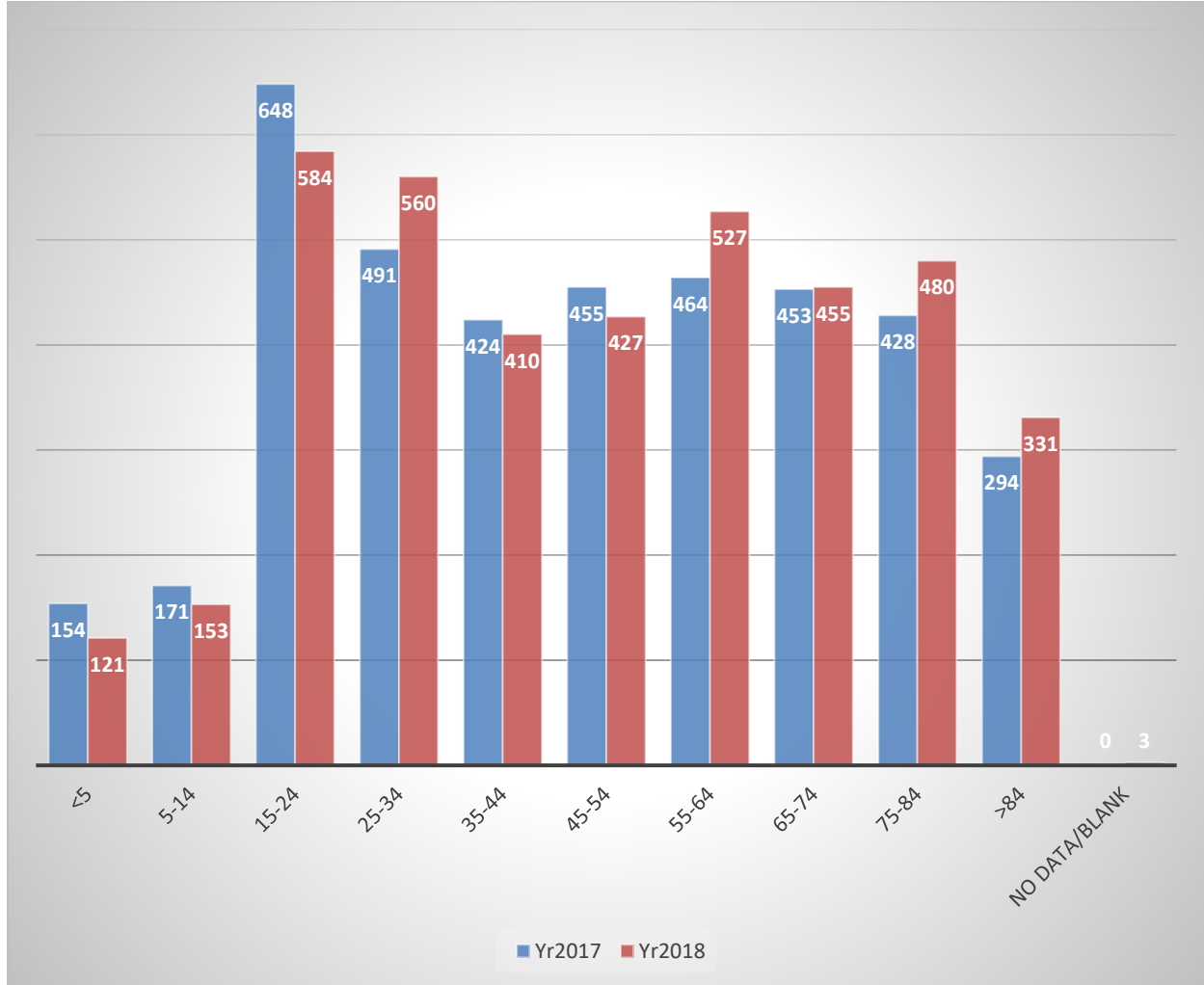
TBI Comparison Graph: CY 2017 and CY 2018

Table 1 (c)

Alabama Head and Spinal Cord Injury Registry (AHSCIR)

January 1, 2018 – December 31, 2018

(n=4,051)



TBI Comparison Table: Age, Gender, and Race – CY 2017 and CY 2018

Table 1 (d)

Age	Yr2017	Yr2018	Decline/Increase
<5	154	121	Declined
5-14	171	153	Declined
15-24	648	584	Declined
25-34	491	560	Increased
35-44	424	410	Declined
45-54	455	427	Declined
55-64	465	528	Increased
65-74	453	455	Increased
75-84	428	480	Increased
>84	294	331	Increased
No Data/Blank	0	2	Increased
Total	3,983	4,051	No Data

From the data it can be observed that there were declines and increases in TBI injuries specific to age, gender, and racial categories from CY 2017 and CY 2018. The increases in TBI cases among ages 55 through 85 and above were alarming. This underscores the need for more public health prevention education and improved triage for those with TBI injuries in Alabama.

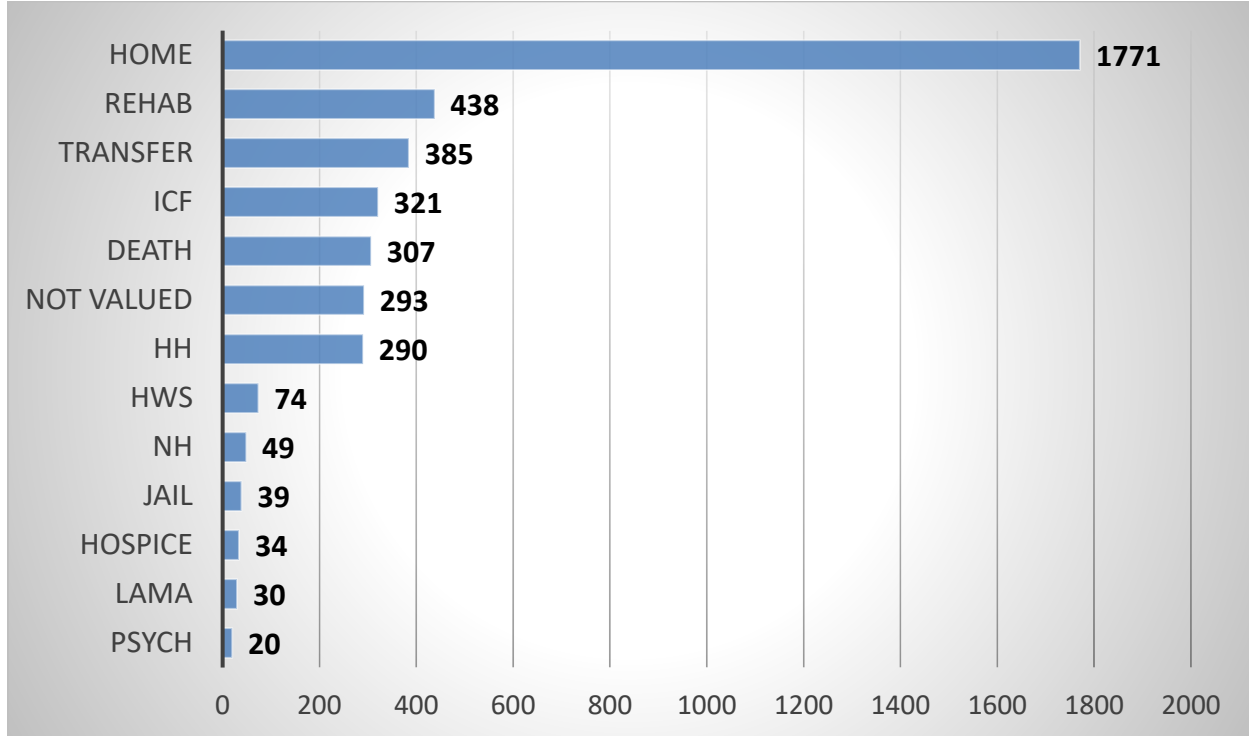
Discharge Dispositions Following TBI Cases

Figure 6 (a)

Alabama Head and Spinal Cord Injury Registry (AHSCIR)

January 1, 2018 – December 31, 2018

(n=4,051)



The greatest proportion of patients, 44 percent (n=1,771), 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.

Figure 6 (b)

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	Unknown, Not Recorded
Rehab	Rehabilitation
Transfer	Transfer of Care

Site of Injury Occurrence in TBI Cases
Figure 7 (a)
 Alabama Head and Spinal Cord Injury Registry (AHSCIR)
 January 1, 2018 – December 31, 2018
 (n=4,051)

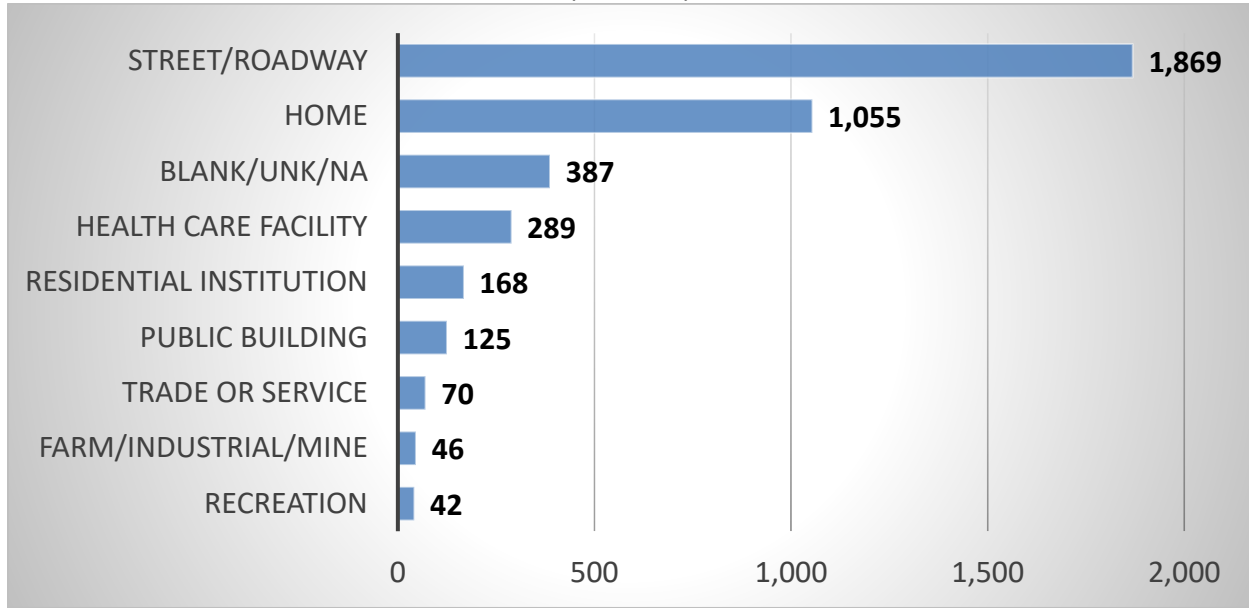
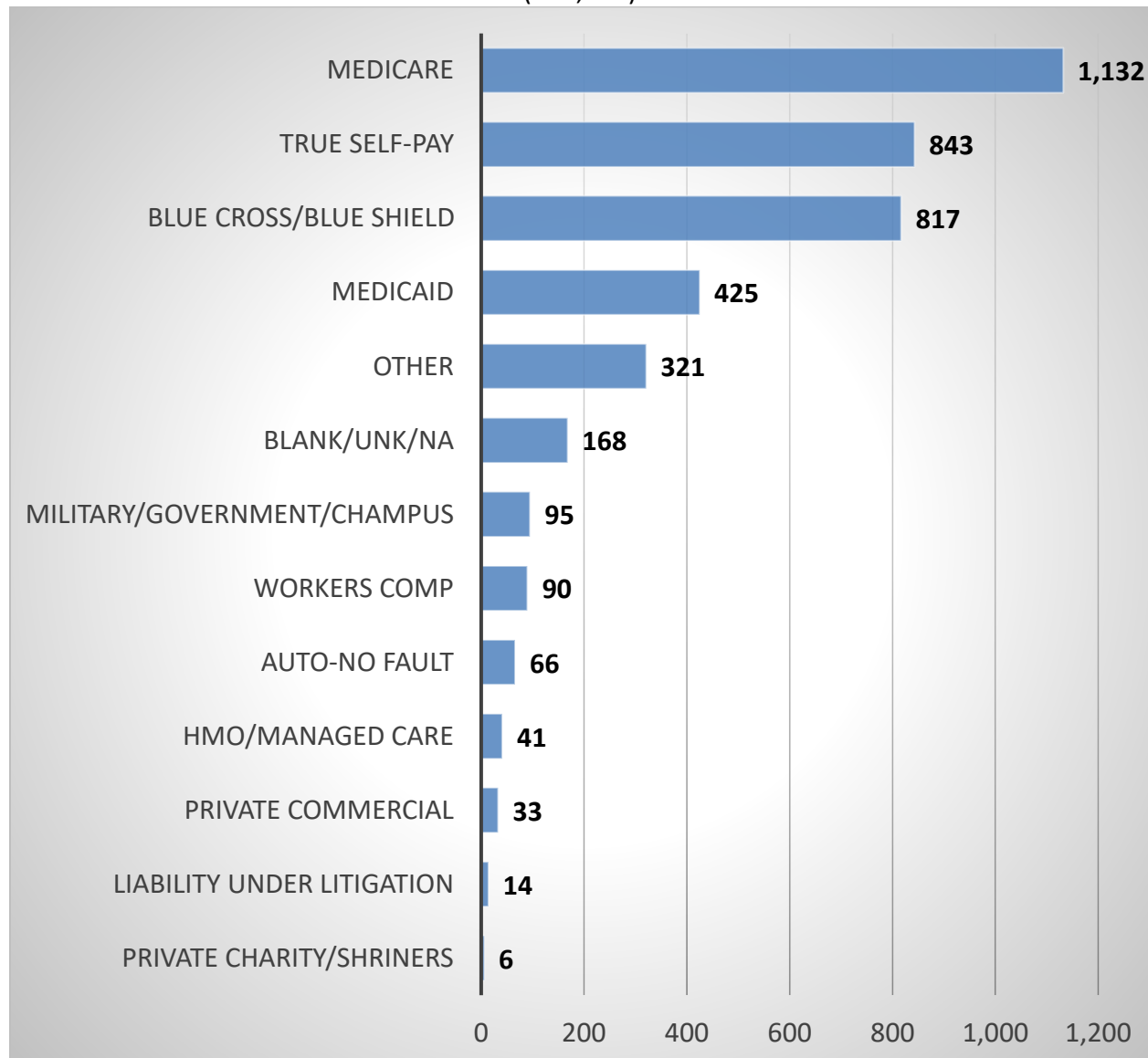


Figure 7 (b)

Type	Count	Percentage
Street/Roadway	1,869	46%
Home	1,055	26%
Blank/UNK/NA	387	10%
Health Care Facility	289	7%
Residential Institution	168	4%
Public Building	125	3%
Trade or Service	70	2%
Farm/Industrial/Mine	46	1%
Recreation	42	1%
Total	4,051	100%

From the reports received, 46 percent (n=1,869), of TBI cases occurred on Streets and Roadways. Twenty-six percent (n=1,055) of TBI cases occurred in the Home. Seven percent (n=289) occurred in Health Care Facilities, while 4 percent of cases (n=168) occurred in Residential Institution.

Payer Source for TBI Cases
Figure 8
 Alabama Head and Spinal Cord Injury Registry (AHSCIR)
 January 1, 2018 – December 31, 2018
 (n=4,051)



From the data, Medicare Payer Source was 28 percent (n=1,132) and True Self-Pay was 21 percent (n=843) of claims respectively for TBI patients in CY 2018.

Spinal Cord Injury (SCI)

The Mayo Clinic (2019) defines a spinal cord injury as damage to any part of the spinal cord or nerves at the end of the spinal canal (cauda equina). 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 may also 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 disc degeneration of the spine.

Causes

The most common causes of SCI injuries are:

- Motor vehicle accidents. 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.
- 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 SCI injuries result from violent encounters, often involving gunshot and knife wounds, according to the National SCI Injury Statistical Center.
- Sports and recreation injuries. Athletic activities, such as contact 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.

SCI Cases by Mechanism of Injury
Figure 9 (a)
 Alabama Head and Spinal Cord Injury Registry (AHSCIR)
 January 1, 2018 – December 31, 2018
 (n=289)

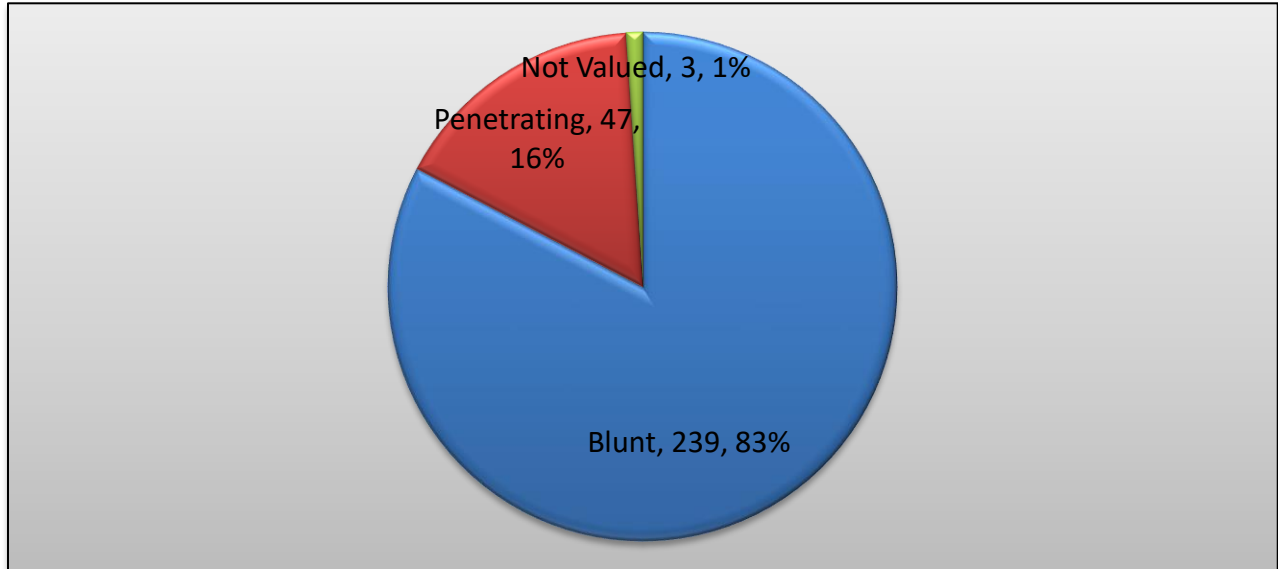


Figure 9 (b)

Type	Count	Percentage
Blunt	239	83%
Penetrating	47	16%
Not Valued	3	1%
Total	289	100%

Eighty-three percent (n=239) of the SCI cases were injuries due to blunt trauma. Penetrating injuries accounted for 16 percent (n=47) of the SCI cases for CY 2018. Not Valued accounted for one percent (n=3) of the reported cases for SCI.

Key	
Not Valued	Not Recorded/Unknown

SCI Cases by Gender
Figure 10 (a)
 Alabama Head and Spinal Cord Injury Registry (AHSCIR)
 January 1, 2018 – December 31, 2018
 (n=289)

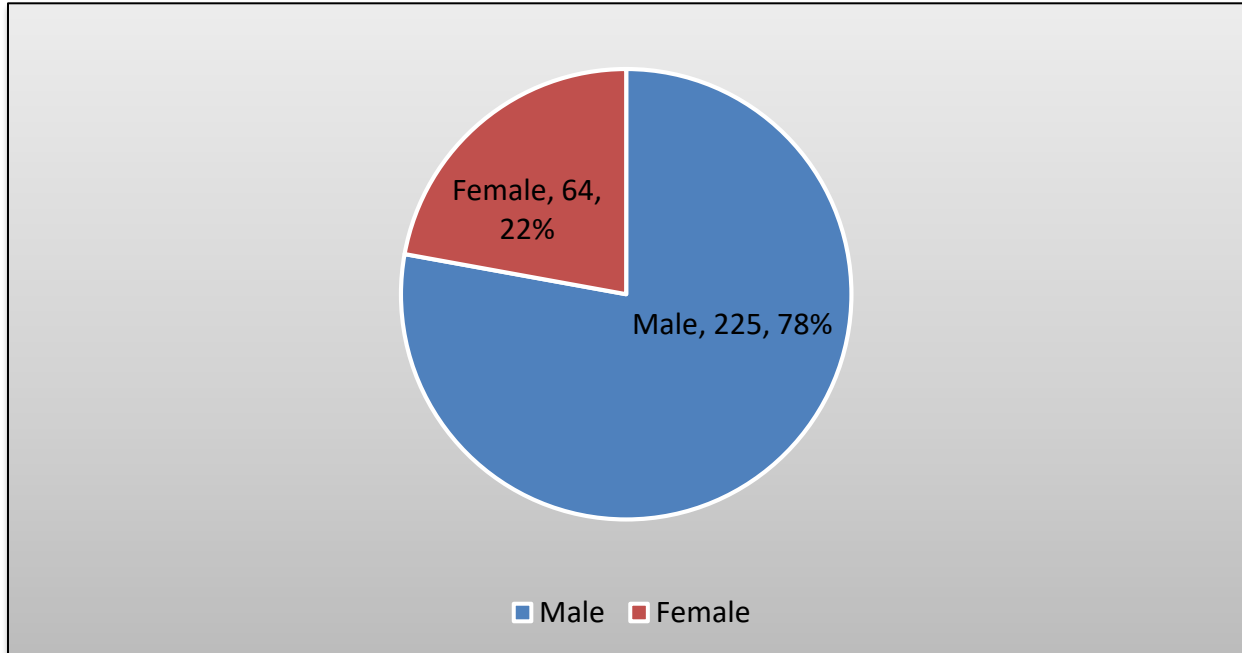


Figure 10 (b)

SCI Gender	Number of Cases	Percentage
Male	225	78%
Female	64	22%
Total	289	100%

Males made up 78 percent (n=225) of the SCI cases reported in the year 2018, while females constituted 22 percent (n=64) of the cases reported to the Alabama Head and Spinal Cord Injury Registry (AHSCIR).

SCI Cases by Race
Figure 11 (a)
 Alabama Head and Spinal Cord Injury Registry (AHSCIR)
 January 1, 2018 – December 31, 2018
 (n=289)

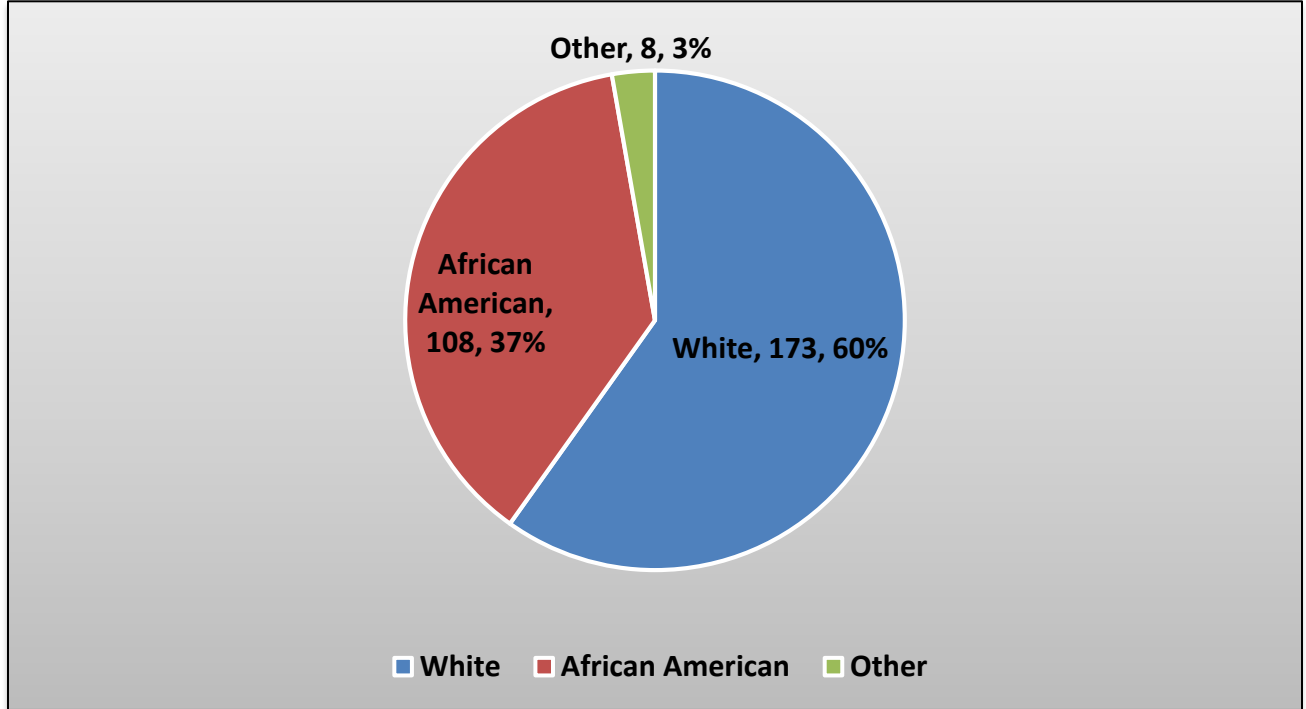


Figure 11 (b)

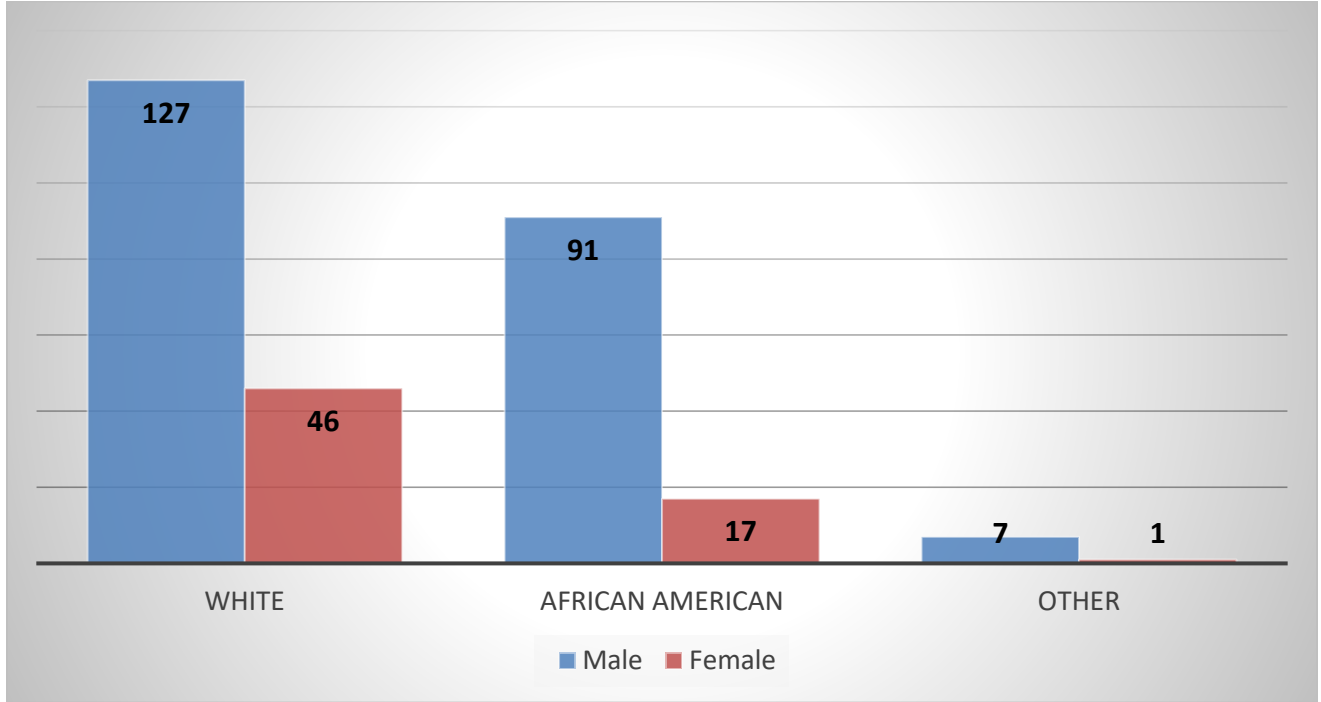
SCI- Race Distribution	Number of Cases	Percentage
White	173	60%
African American	108	37%
Other	8	3%
Total	289	100%

Whites constituted 60 percent (n=173) of the SCI cases, African-Americans constituted 37 percent (n=108), and “Other” represented 3 percent (n=8) in calendar year 2018.

SCI Cases by Race and Gender

Figure 12 (a)

Alabama Head and Spinal Cord Injury Registry (AHSCIR)
 January 1, 2018 – December 31, 2018
 (n=289)



Overall, 56 percent (n=127) of SCI cases were recorded in white males, 40 percent (n=91) in African American males, whereas 72 percent of SCI cases were reported for white females (n=46) with 27 percent (n=17) for African American females for calendar year 2018.

Figure 12 (b)

SCI-Gender and Race	Male	Female	Total	% Male	% Female
White	127	46	173	56%	72%
African American	91	17	108	40%	27
Other	7	1	8	3%	2%
Total	225	64	289	100%	100%

Comparison Table: SCI Cases by Age, Gender, and Race
2018 SCI Cases by Age, Gender, and Race

Table 2

Alabama Head and Spinal Cord Injury Registry (AHSCIR)
 January 1, 2018 – December 31, 2018
 (n=289)

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	15%
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	289	100%
% Total	43.94%	15.92%	31.49%	5.88%	0.35%	1.73%	1.04%	100%	

Table 3

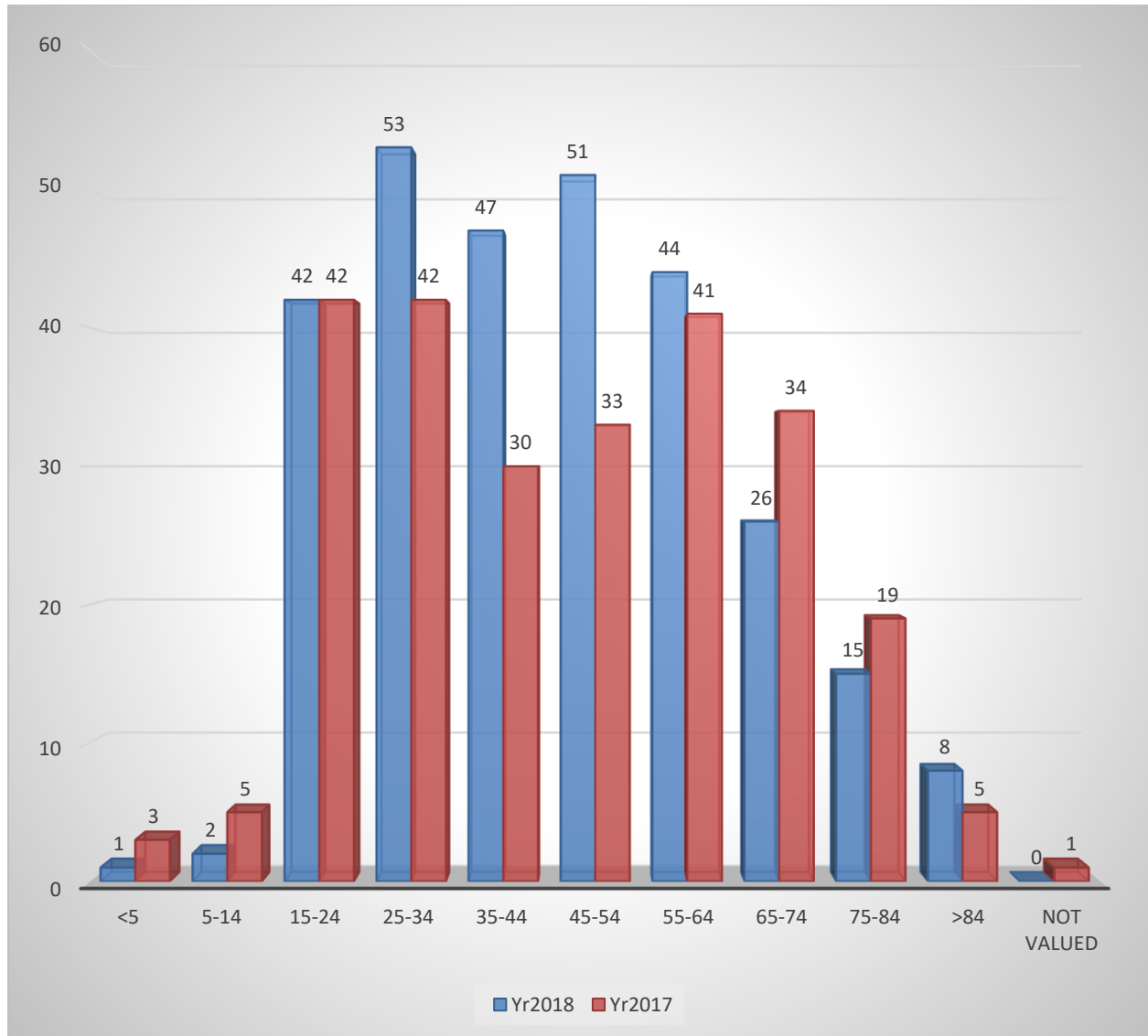
2017 SCI Cases by Age, Gender, and Race

January 1, 2017 – December 31, 2017
 (n=255)

Age	White Males	White Females	Black Males	Black Females	Other Females	Other Males	Not Valued	Total	% Total
<5	1	0	0	1	0	1	0	3	1%
5-14	3	0	1	1	0	0	0	5	2%
15-24	17	7	14	2	1	1	0	42	16%
25-34	25	3	10	3	0	1	0	42	16%
35-44	11	5	11	2	1	0	0	30	12%
45-54	18	4	9	1	0	0	1	33	13%
55-64	25	5	10	0	0	0	1	41	16%
65-74	15	6	10	1	1	0	1	34	13%
75-84	9	4	4	2	0	0	0	19	7%
>84	3	2	0	0	0	0	0	5	2%
Not Valued	0	0	0	1	0	0	0	1	0%
Total	127	36	69	14	3	3	3	255	100%
% Total	49.80%	14.12%	27.06%	5.49%	1.18%	1.18%	1.18%	100%	

Comparison Table and Graph: SCI Cases by Age, Gender, and Race CY 2017 and CY 2018

Table 4



Discharge Disposition Following SCI Cases

Figure 13

Alabama Head and Spinal Cord Injury Registry (AHSCIR)

January 1, 2018 – December 31, 2018

(n=289)

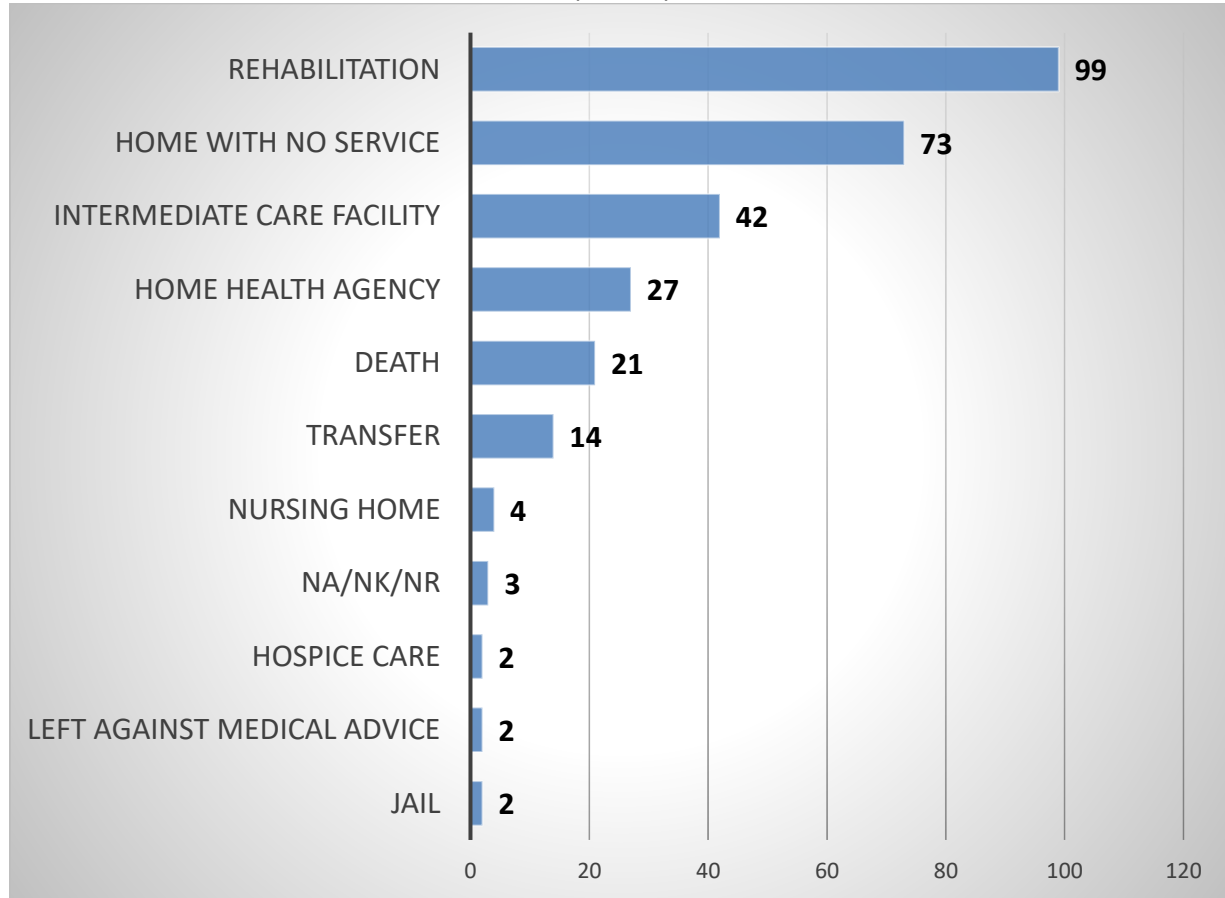


Figure 13 shows the respective discharge dispositions following SCI injuries in 2018. From the data, 34 percent (n=99) of SCI patients were sent to Rehabilitation facilities in Alabama for 2018. Twenty-five percent of SCI patients (n=73) were discharged Home With No Service.

KEY

KEY	
NA	Not Applicable
NK	Not Known
NR	Not Recorded

Site of Injury Occurrence in SCI Cases

Figure 14 (a)

Alabama Head and Spinal Cord Injury Registry (AHSCIR)

January 1, 2018 – December 31, 2018

(n =289)

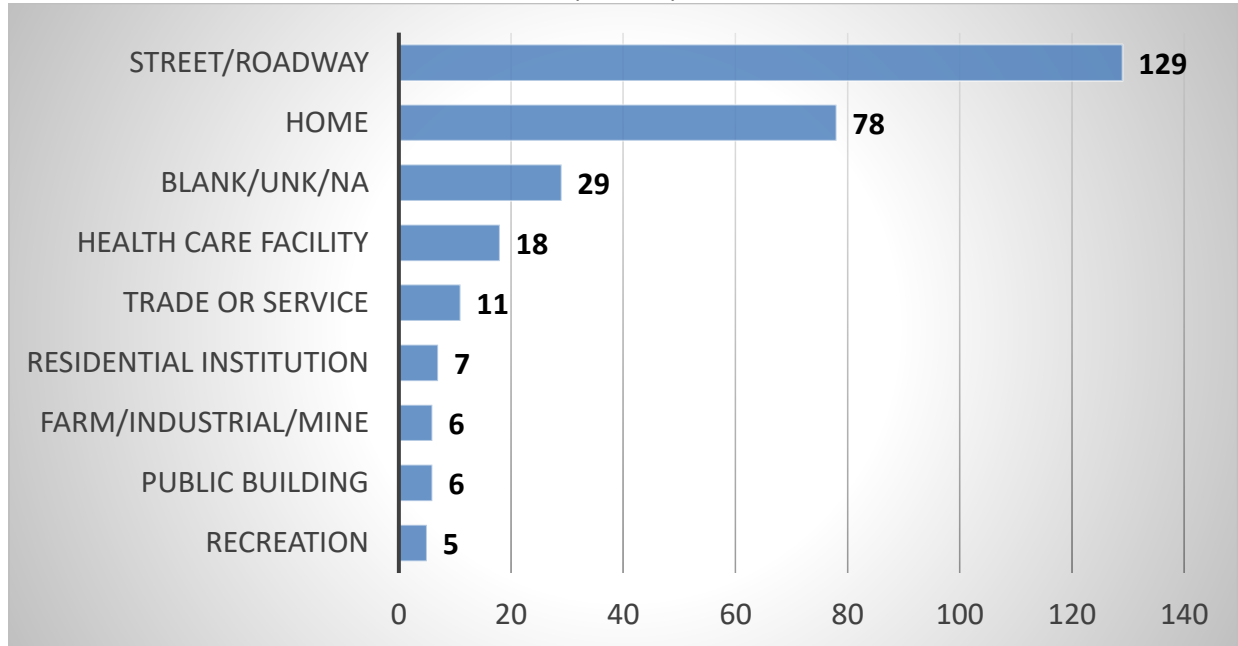


Figure 14 shows site of injury occurrence in SCI cases with their respective counts and percentages.

Figure 14 (b)

Injury Site	Count	Percentage
Street/Roadway	129	45%
Home	78	27%
Blank/UNK/NA	29	10%
Health Care Facility	18	6%
Trade or Service	11	4%
Residential Institution	7	2%
Public Building	6	2%
Farm/Industrial/Mine	6	2%
Recreation	5	2%
Total	289	100%

Payer Source for SCI Cases

Figure 15 (a)

Alabama Head and Spinal Cord Injury Registry (AHSCIR)

January 1, 2018 – December 31, 2018

(n =289)

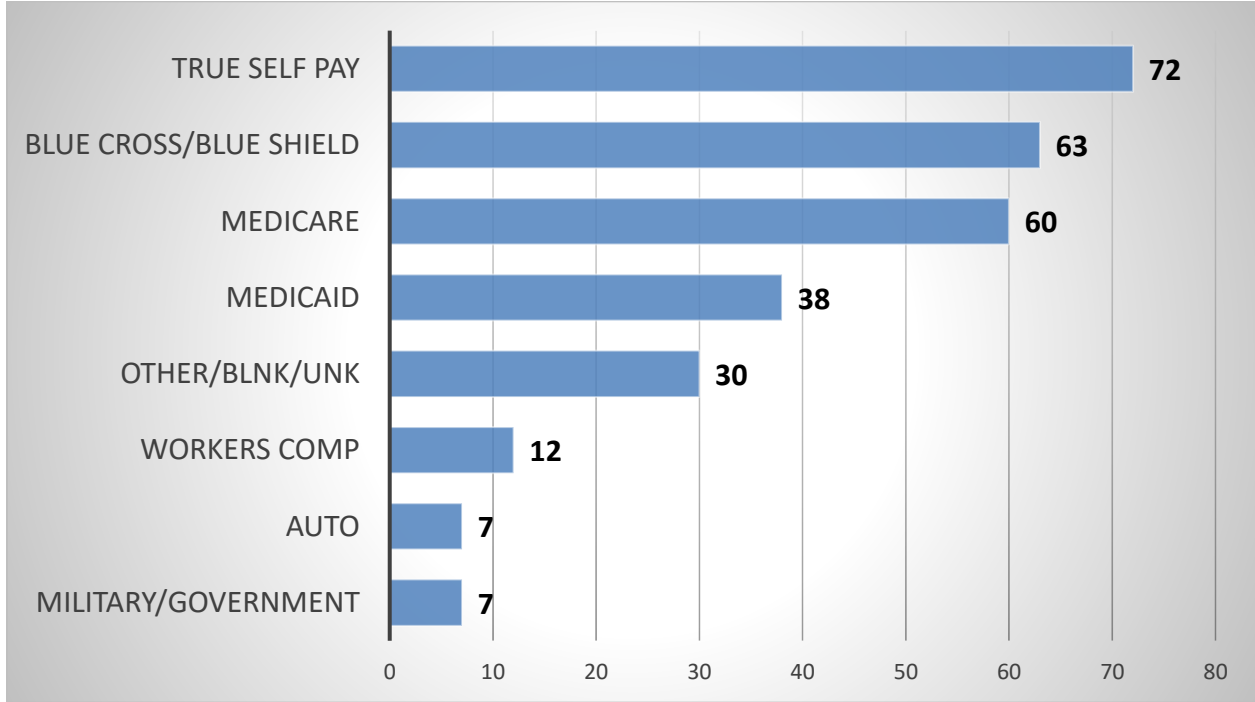


Figure 15 (b)

Payer	Count	Percentage
True Self Pay	72	25%
Blue Cross/Blue Shield	63	22%
Medicare	60	21%
Medicaid	38	13%
Other/BLNK/UNK	30	10%
Workers Comp	12	4%
Military/Government	7	2%
Auto	7	2%
Total	289	100%

For those who presented to Alabama hospitals with SCI for the calendar year 2018, True Self-Pay insurance was 25 percent (n=72), Blue Cross Blue Shield was 22 percent (n=63). Medicare paid 21 percent (n=60) and Medicaid paid 13 percent (n=38), respectively.

Cases with Both Head and Spinal Cord Injuries

Figure 16 (a)

Alabama Head and Spinal Cord Injury Registry (AHSCIR)

January 1, 2018 – December 31, 2018

(n=73)

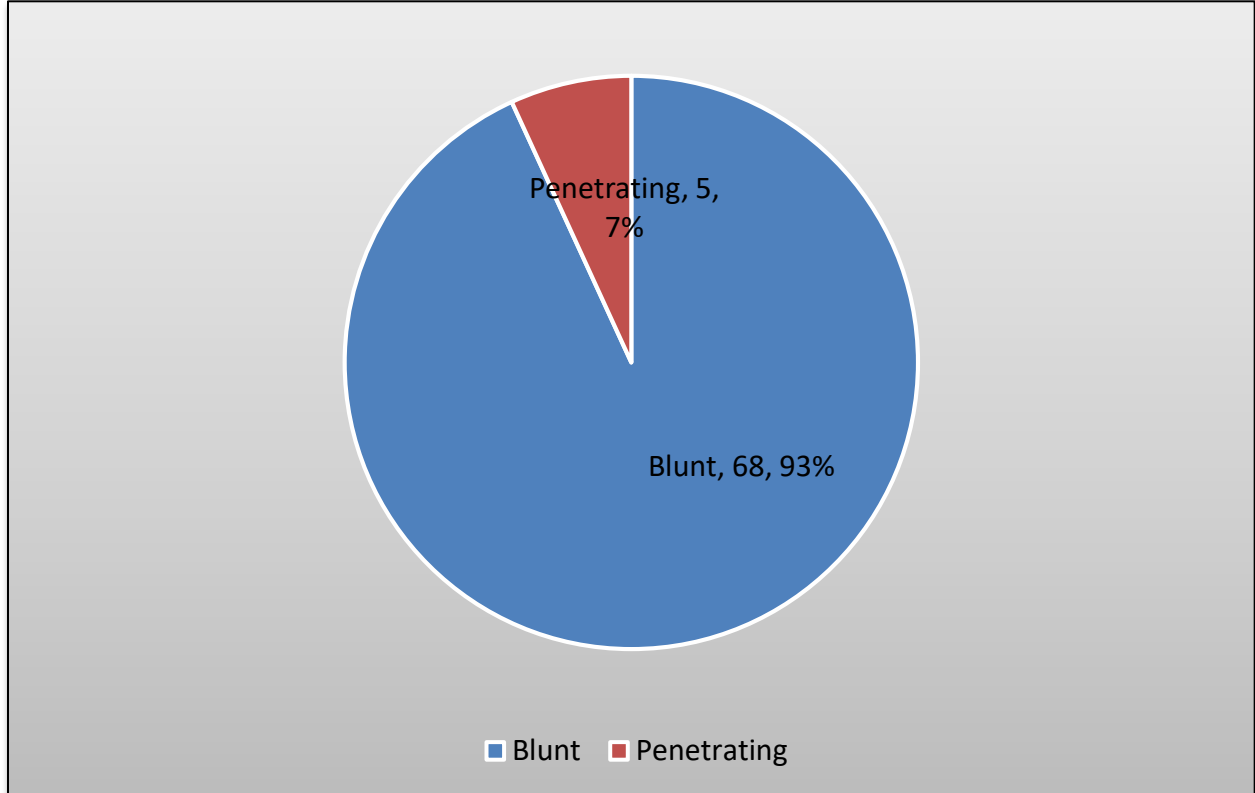


Figure 16 (b)

Both TBI and SCI Injury Mechanism	Number of Cases	Percentage
Blunt	68	93%
Penetrating	5	7%
Total	73	100%

From the data reported to the AHSCIR for 2018, 93 percent (n=68) of both TBI and SCI cases were injuries due to blunt trauma. Penetrating injuries accounted for 7 percent (n=5) of both TBI and SCI cases for 2018.

Cases with Both TBI and SCI by Gender

Figure 17 (a)

Alabama Head and Spinal Cord Injury Registry (AHSCIR)

January 1, 2018 – December 31, 2018

(n=73)

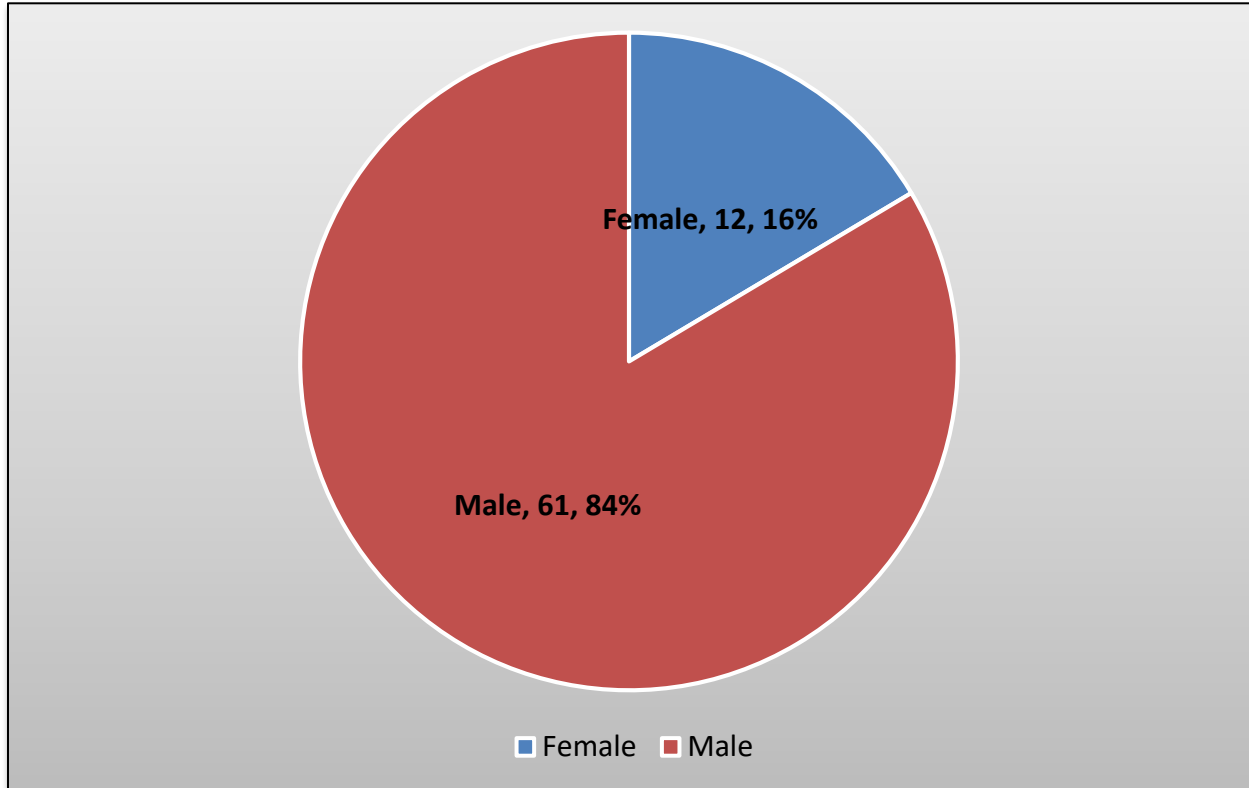


Figure 17 (b)

TBI and SCI Cases by Gender	Number of Cases	Percentage
Male	61	84%
Female	12	16%
Total	73	100%

For both TBI and SCI cases reported to the AHSCIR, 84 percent (n=61) were males and 16 percent (n=12) were females.

Cases with Both TBI and SCI by Race
Figure 18 (a)
 Alabama Head and Spinal Cord Injury Registry (AHSCIR)
 January 1, 2018 – December 31, 2018
 (n=73)

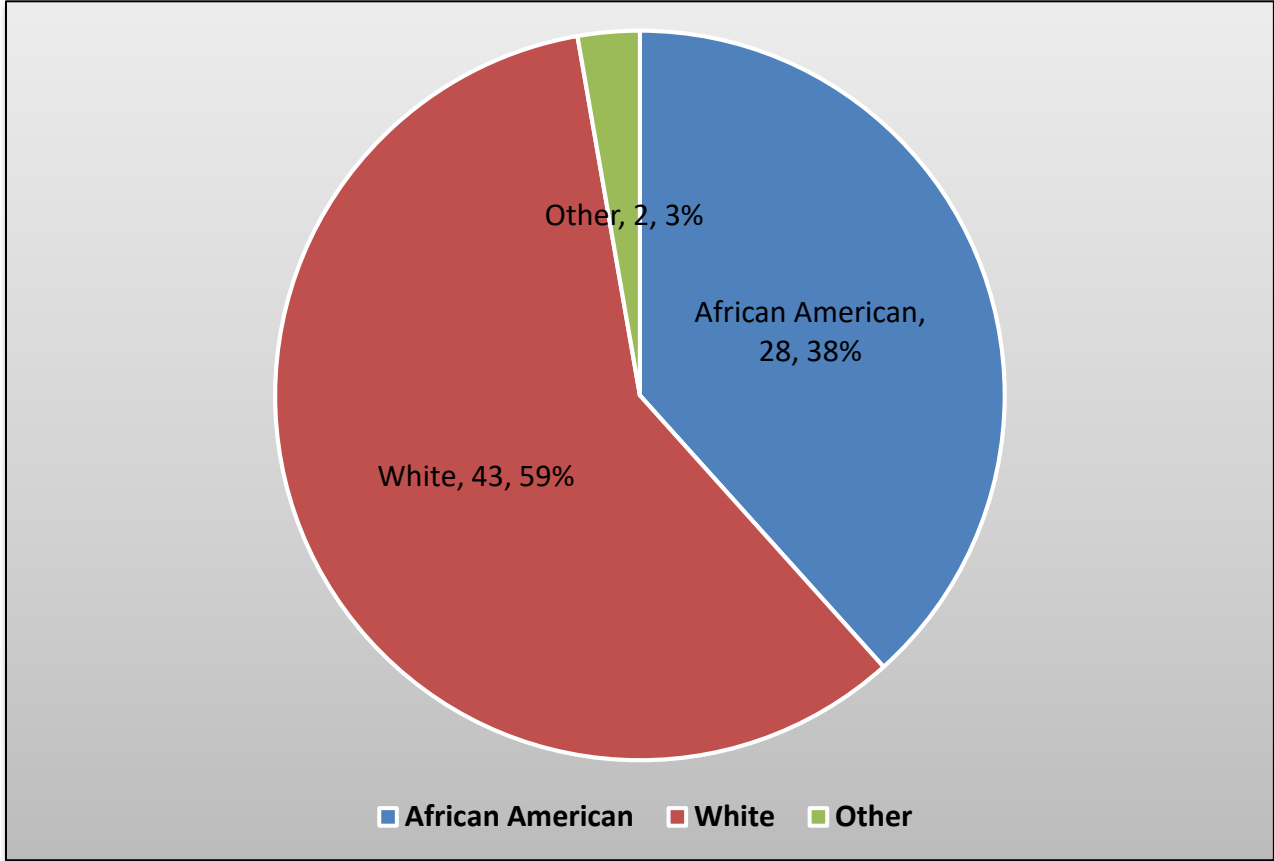


Figure 18 (b)

Race	Count	Percentage
African American	28	38%
White	43	59%
Other	2	3%
Total	73	100%

Whites constituted 59 percent (n=43) of both TBI and SCI cases, African Americans made up 38 percent (n=28) for 2018. The “Other” constituted 3 percent (n=2).

Cases with Both TBI and SCI by Gender and Race
Figure 19 (a)
 Alabama Head and Spinal Cord Injury Registry (AHSCIR)
 January 1, 2018 – December 31, 2018
 (n=73)

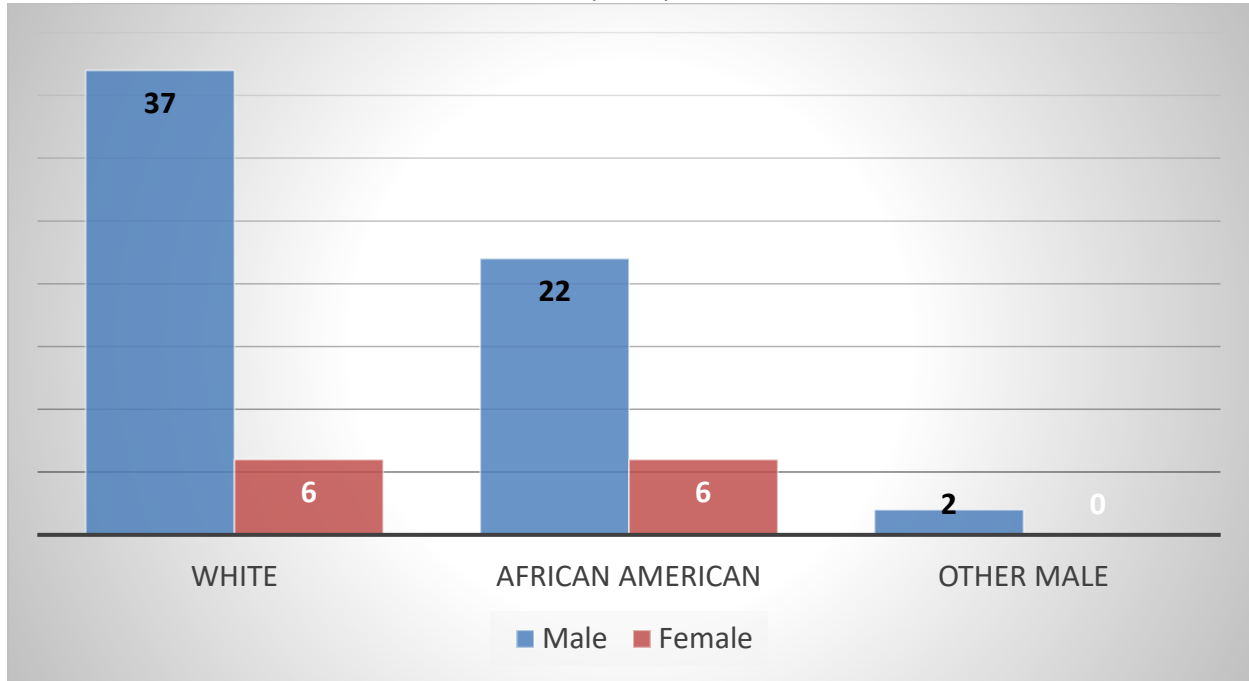


Figure 19 (b)

Gender & Race	White	African American	Other Female	Total
Male	37	22	2	61
Female	6	6	0	12
Total	43	28	2	73

Comparison Table: Both TBI and SCI Cases CY 2018 and CY 2017

Table 5 (a)

Alabama Head and Spinal Cord Injury Registry (AHSCIR)

January 1, 2018 – December 31, 2018

(n=73)

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

Table 5 (b)

2017 Both TBI and SCI Cases by Age, Gender and Race

Alabama Head and Spinal Cord Injury Registry (AHSCIR)

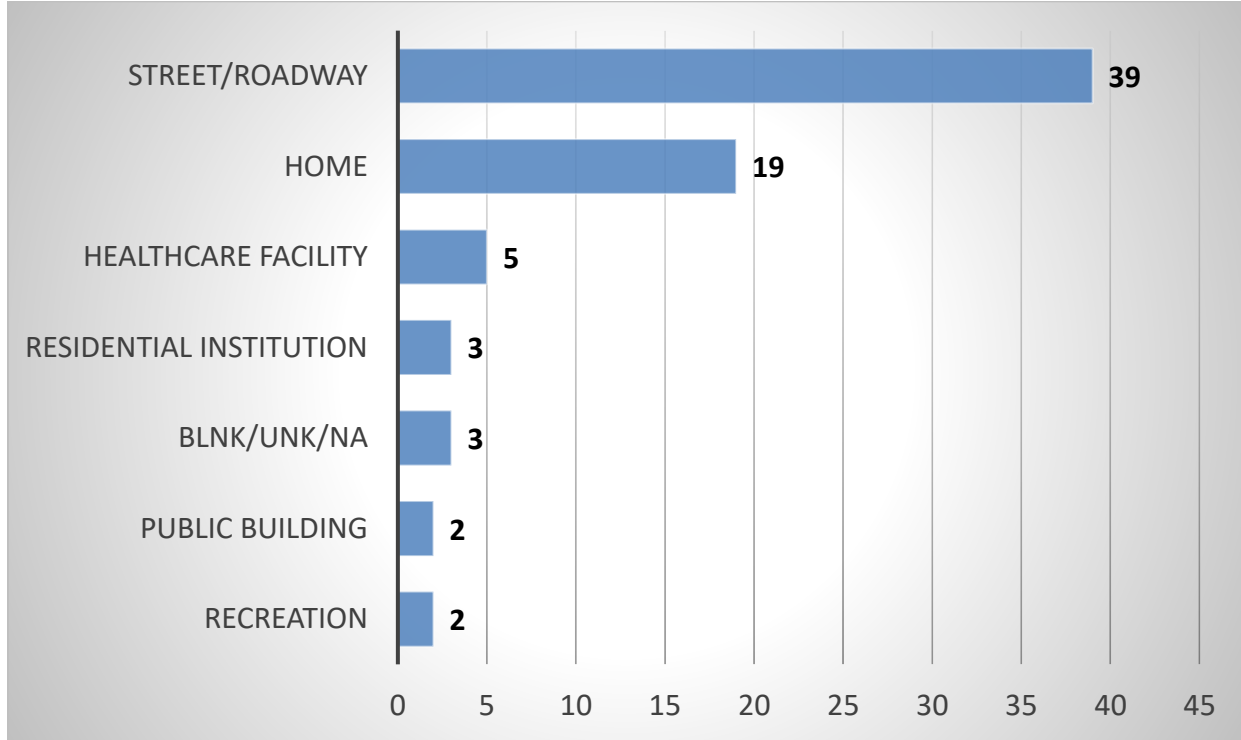
January 1, 2017 – December 31, 2017

(n=60)

Age	White Male	White Female	Black Male	Black Female	Other Male	Other Female	Not Valued	Total	% Total
<5	0	0	0	1	0	0	1	2	3.33%
5-14	1	0	0	0	0	0	0	1	1.67%
15-24	5	1	4	0	0	1	0	11	18.33%
25-34	10	0	0	0	0	0	0	10	16.67%
35-44	2	1	2	0	0	0	0	5	8.33%
45-54	5	0	5	0	0	0	0	10	16.67%
55-64	4	2	2	1	0	0	0	9	15.00%
65-74	3	0	5	0	0	0	0	8	13.33%
75-84	1	0	0	0	0	0	0	1	1.67%
>84	1	0	2	0	0	0	0	3	5.00%
Total	32	4	20	2	0	1	1	60	100%
% Total	53.33%	6.67%	33.33%	3.33%	0.00%	1.67%	1.67%	100%	

Table 5 shows the various age groups, counts, and percentages.

Site of Injury Occurrence in Both TBI and SCI Cases
Figure 20 (a)
 Alabama Head and Spinal Cord Injury Registry (AHSCIR)
 January 1, 2018 – December 31, 2018
 (n=73)

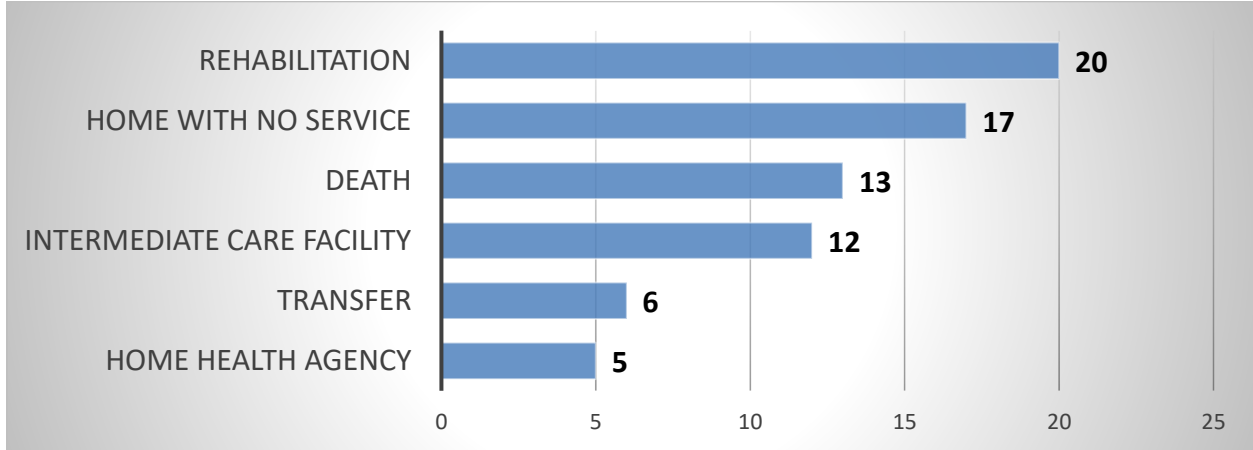


Fifty-three percent (n=39) of AHSCIR cases with both TBI and SCI occurred on Streets and Roadways. Twenty-six percent (n=19) occurred in the Home.

Figure 20 (b)

Injury Site	Count	Percentage
Street/Roadway	39	53%
Home	19	26%
Healthcare Facility	5	7%
BLNK/UNK/NA	3	4%
Residential Institution	3	4%
Recreation	2	3%
Public Building	2	3%
Total	73	100%

Discharge Disposition Following Cases with Both TBI and SCI
Figure 21 (a)
 Alabama Head and Spinal Cord Injury Registry (AHSCIR)
 January 1, 2018 – December 31, 2018
 (n=73)



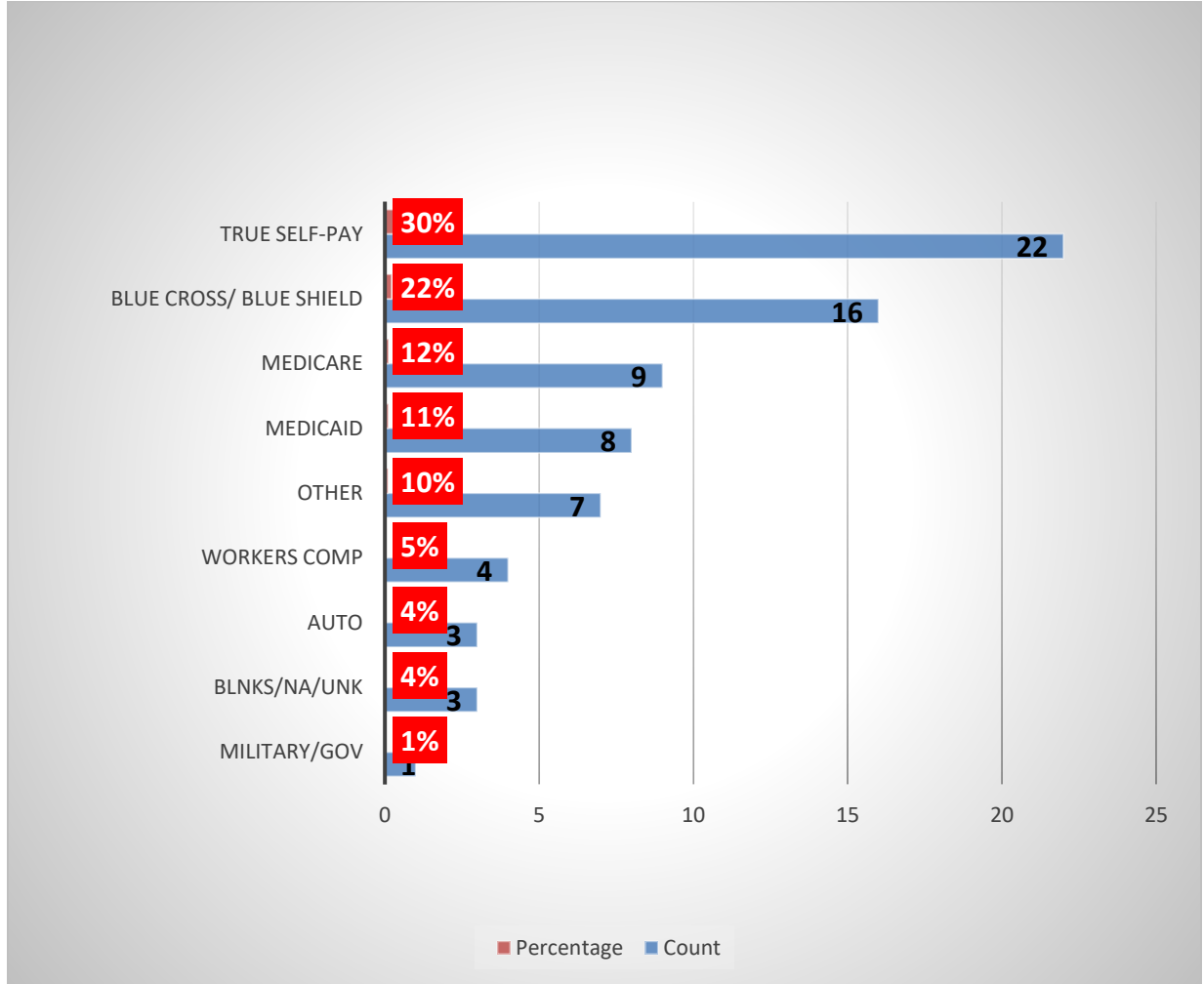
Twenty-seven percent (n=20) of patients were discharged to Rehabilitation Centers. Twenty-three percent (n=17) were discharged Home with No Service. Eighteen percent (n=13) patients expired.

Figure 21 (b)

Discharge Disposition	Count	Percentage
Rehabilitation	20	27%
Home with No Service	17	23%
Death	13	18%
Intermediate Care Facility	12	16%
Transfer	6	8%
Home Health Agency	5	7%
Total	73	100%

KEY:	
NA	Not Applicable
NK	Not Known
NR	Not Recorded

Payer Sources for Cases with Both TBI and SCI
Figure 22
 Alabama Head and Spinal Cord Injury Registry (AHSCIR)
 January 1, 2018 – December 31, 2018
 (n=73)



True Self-Pay paid 30 percent (n=22) of all cases with both TBI and SCI reported to the AHSCIR for 2018.

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 causes 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:

- Children, especially newborns to 4-year-olds (Mayo Clinic, 2019)
<https://www.mayoclinic.org/diseases-conditions/traumatic-brain-injury/symptoms-causes/syc-20378557>.
- 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.
- Don't let children play on fire escapes or balconies.
- Supervise and watch children at play.

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 protection when playing contact sports. Avoid driving while intoxicated, distracted driving such as texting while driving, or driving under the influence of drugs.

TBI/SCI Injury Prevention in Alabama

Prevention of TBI/SCI in Alabama entails coalition building with principal actors in disease prevention, injury prevention, and health promotion. Based on data reported to the AHSCIR, motor traffic accidents account for over 70 percent of all TBI and SCI cases; therefore, prevention efforts must target motor vehicle accident prevention education. Secondly, falls among the elderly population in Alabama compared to other age groups account for a higher proportion of TBI and SCI cases; therefore, prevention activities must target fall prevention in the elderly population (75 and above) in Alabama.

References

1. ICD-10-CM (2018). <https://www.cms.gov/medicare/Coding/ICD10/index.html>
2. Injury Prevention & Control: Traumatic Brain Injury & Concussion. (2018). Retrieved 09/03/2019 from http://www.cdc.gov/traumaticbraininjury/data/dist_death.html
3. Mayo Clinic. (2019). Diseases and Conditions. Retrieved 10/22/2018 from <http://www.mayoclinic.org/diseases-conditions/spinal-cord-injury/basics/definition/con-20023837>
4. Mayo Clinic. (2019). Traumatic Brain Injury (Risk Factors). <https://www.mayoclinic.org/diseases-conditions/traumatic-brain-injury/symptoms-causes/syc-20378557>

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>