District of Columbia Trauma Registry

2017 Trauma Registry Report

District of Columbia Department of Health

Health Emergency Preparedness and Response Administration (HEPRA)

October 2019

DC | HEALTH

GOVERNMENT OF THE DISTRICT OF COLUMBIA
MURIEL BOWSER, MAYOR

Front and Back Cover Photo by Bill Homes licensed under CC BY 2.0[1]

[1] Holmes, B. (2006, November 10). National Mall and the Capitol. Retrieved from Flickr: https://www.flickr.com/photos/flaneur/295368703/

Acknowledgements:

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The 2017 Trauma Registry Report was compiled by Trauma Registry Program.

This report is available online at: dchealth.dc.gov/service/district-trauma-system

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Definition of Terms

Trauma	Physical injury.[2]
Blunt Trauma	A usually serious injury caused by a blunt object or collision with a blunt surface (as in an automobile accident or a fall from a building).[3]
Penetrating Trauma	An injury that entering, piercing, or pervading into the body.[4]
Burn Trauma	An injury caused by exposure to heat or flame.[5]
Payer	A person or organization that gives someone money that is due for work done, goods received, or a debt incurred.[6]
Injury Severity Score System (ISS)	An anatomical rating system, provides numerical values for patients with multiple and varying injuries.
Abbreviated Injury score (AIS)	An anatomically based, consensus derived, global severity scoring system that classifies an individual injury by body region according to its relative severity on a 6-point scale.[7]
Crude	Statistics (of figures) not adjusted or corrected.[8]
Case Fatality Rate	The proportion of people who die from a specified disease among all individuals diagnosed with the disease over a certain period of time.[9]
Morbidity	The condition of being diseased.[10]
Mortality	The state of being subject to death.[11]
Comorbidity	The simultaneous presence of two chronic diseases or conditions in a patient.[12]
Complication	A secondary disease or condition aggravating an already existing one.[13]

[2] Oxford University Press. (2019). trauma. Retrieved from Oxford Dictionaries: https://en.oxforddictionaries.com/definition/us/trauma

[3] Merriam-Webster. (2019). blunt trauma. Retrieved from Merriam-Webster.com: https://www.merriam-webster.com/dictionary/blunt%20trauma

[4] Merriam-Webster. (2019). penetrating. Retrieved from Merriam-Webster.com: https://www.merriam-webster.com/dictionary/penetratingly

[5] Oxford University Press. (2019). burn. Retrieved from Oxford Dictionaries: https://en.oxforddictionaries.com/definition/burn

[6] Oxford University Press. (2019). payer. Retrieved from Oxford Dictionaries: https://en.oxforddictionaries.com/definition/payer

[7] Association for the Advancement of Automotive Medicine. (2008). Abbreviated Injury Scale. Retrieved from AAAM.org: https://www.aaam.org/abbreviated-injury-scale-ais/

[8] Oxford University Press. (2019). crude. Retrieved from Oxford Dictionaries: https://en.oxforddictionaries.com/definition/us/crude

[9] Harrington, R. A. (2016, March 16). Case fatality rate. Retrieved from Encyclopedia Britannica: https://www.britannica.com/science/case-fatality-rate

[10] Oxford University Press. (2019). morbidity. Retrieved from Oxford Dictionaries: https://en.oxforddictionaries.com/definition/morbidity

[11] Oxford University Press. (2019). mortality. Retrieved from Oxford Dictionaries: https://en.oxforddictionaries.com/definition/mortality

[12] Oxford University Press. (2019). Comorbidity. Retrieved from Oxford Dictionaries: https://en.oxforddictionaries.com/definition/us/comorbidity

[13] Oxford University Press. (2019). complication. Retrieved from Oxford Dictionaries: https://en.oxforddictionaries.com/definition/us/complication

Overview of the DC Trauma Registry

The District of Columbia Department of Health (DC Health) presents the second annual report of the Trauma Registry for 2017 in the District of Columbia (DC). The mission of DC Health is to promote health, wellness and equity across the District as well as protecting the safety of residents, visitors and those doing business in our nation's Capital. As a component of DC Health, the Health Emergency Preparedness and Response Administration (HEPRA) works with healthcare partners to better understand trauma and patterns of injury within Washington, DC. As part of the Emergency Medical Services Act of 2008 and DC Code § 7–2341.19, DC Health recognizes trauma facilities in DC that are certified by the American College of Surgeons' Committee on Trauma.[14] These facilities are required to submit de-identified data of trauma cases to the American College of Surgeons' National Trauma Data Bank (NTDB) and DC Health as required of the trauma certification process.[15] DC Health receives the data on a quarterly basis from the trauma facilities.

In the District of Columbia, there are four level one (1) trauma centers which have earned accreditation from the American College of Surgeons:

Level One Pediatric Trauma Center (Green)

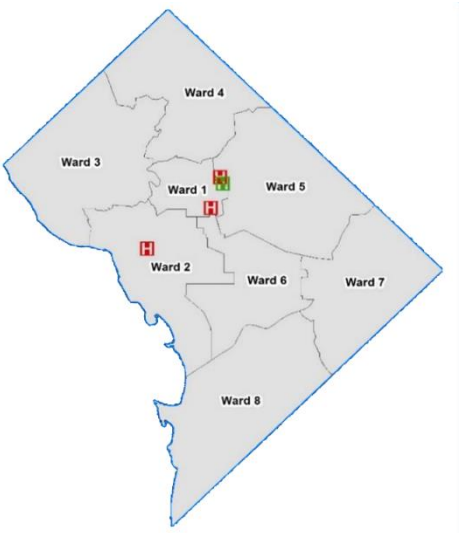
Children's National Health System

Level One Trauma Center (Red)

George Washington University Hospital

Howard University Hospital

MedStar Washington Hospital Center



In addition to the four trauma facilities, there are also four other acute care facilities in 2017 with emergency departments (ED). However, these facilities are not designated as trauma facilities and thus do not submit cases to the trauma registry. The State of Maryland and the Commonwealth of Virginia also accredit trauma facilities, which are situated regionally; however, their data is not included in the trauma report because these facilities are located outside the jurisdiction of DC.

The annual report details descriptive information that includes the demographics, injuries, outcomes, and trends from the four trauma centers in DC. At this time there is insufficient longitudinal data to conduct multiple year comparisons since the registry was only implemented in 2016.

[14] Code of the District of Columbia. (2018, July 17). *§ 7–2341.19. Trauma care system.* Retrieved from DC Council: https://code.dccouncil.us/dc/council/code/sections/7-2341.19.html

[15] American College of Surgeons. (2018). *National Trauma Data Standard*. Retrieved from American College of Surgeons: https://www.facs.org/quality-programs/trauma/ntdb/ntds

Executive Summary

In 2017, there were 5,353 reported trauma cases treated by physicians at the four trauma facilities in DC, of which 2,849 (53%) were DC residents. The trauma cases in this report contain data regarding individuals who experienced a variety of traumatic injuries including but not limited to motor vehicle incidents, falls, shootings, burns, and stabbings. The crude case fatality rate was 2.7 per 100 cases in the District of Columbia compared to the national rate of 4.4 per 100 cases.[16]

Of the 5,353 reported trauma cases, 3,580 (67%) of the patients were injured within DC while the remaining 1,773 (33%) sustained their injuries outside of DC. The primary mode of transportation to the emergency department was by ground ambulance. Patients injured in Maryland account for approximately 1,337 (25%) of all trauma cases treated in DC. A large portion of patients from Maryland arrived via ambulance (36%). Almost 10% of the patients injured in Maryland were transferred to DC trauma facilities via helicopter. They account for 93% of all helicopter transports reported within the DC Trauma Registry. Traumatic injuries occurring in Virginia accounted for 262 (5%) of the total number of trauma patients seen in the District.

Blunt trauma accounted for 4,299 (80%) of all trauma cases, of which 2,084 (73% of all DC trauma cases) occurred within the District. A majority of the blunt trauma cases were a result of injuries sustained from falling. Patients suffering from penetrating trauma represent 905 (17%) of the total cases. The majority of these patients were injured by being cut or pierced. Injuries due to falls and firearms represent the highest mortality rates (26% each) of all mechanisms of injury. There were higher incidence rates of falls, firearm-related events, and motor vehicle transportation incidents compared to other causes of traumatic injuries. Firearm injuries saw a peak incidence rate at ages fifteen to nineteen (15-19) years; whereas, falls had a peak incidence rate at ages eighty-five (85) years and older.

Amongst comorbidities, or disease processes that may have an impact in trauma care and/or recovery, hypertension was the most common; it was identified as a pre-existing condition in almost 17% of all trauma patients seen in DC.

The median length of stay for trauma patients in the emergency department (ED) was approximately 3.3 hours before being discharged or transferred to another unit within the hospital. Trauma cases that required a visit to the operating room (OR) had the shortest median time in the emergency department of 1.7 hours.

Most of the trauma patients in DC were male (69%), with females representing the remaining 31%. African-American males between the ages of 25-29 years represented the largest demographic and constituted almost 6% of all trauma cases. While this report compares the demographic statistics from the trauma registry to those of DC, it must be noted that 2,504 (47%) of all the patients within the registry are non-DC residents.

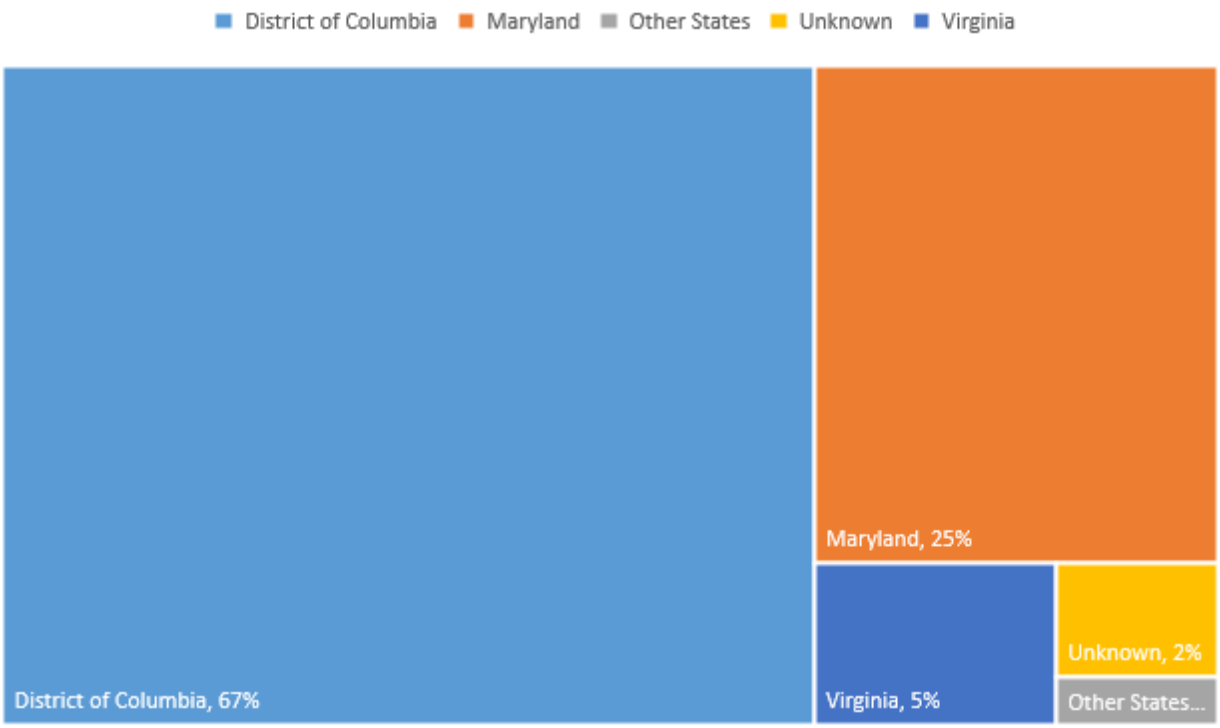
[16] American College of Surgeons. (2016). *National Trauma Data Bank Annual Report 2016.* Retrieved from https://www.facs.org/quality-programs/trauma/ntdb/docpub

Trauma Case Demographics

In 2017, 146 (3%) of the 5,353 reported trauma cases resulted in death. This section provides a snapshot of the demographics of individuals who were treated within the District's trauma care system. There may be additional DC residents who suffered a traumatic injury in 2017; however, the DC Health Trauma Registry only captures data on cases treated at one of the four trauma facilities within the District and reported to DC Health Trauma Registry and simultaneously the identical data was transmitted to the American College of Surgeons Committee on Trauma National Data Bank.

Over two-thirds of all trauma cases treated in the District of Columbia were injured within the boundaries of the District. Another 31% of cases originated from various states: Maryland, Virginia, Delaware, New Jersey, New York, Florida, Tennessee, Texas, and Puerto Rico. Most of the out-of-state injuries were sustained in Maryland and Virginia with the remaining seven (7) states and territories only accounting for approximately 1% of all trauma cases seen within the District. It is suspected that most of the patients originating from distant states were transferred to District trauma facilities for specialized care and subsequently were admitted to the trauma service at their respective facility. Unfortunately, a portion (2%) of the trauma cases lacked a recorded injury location.

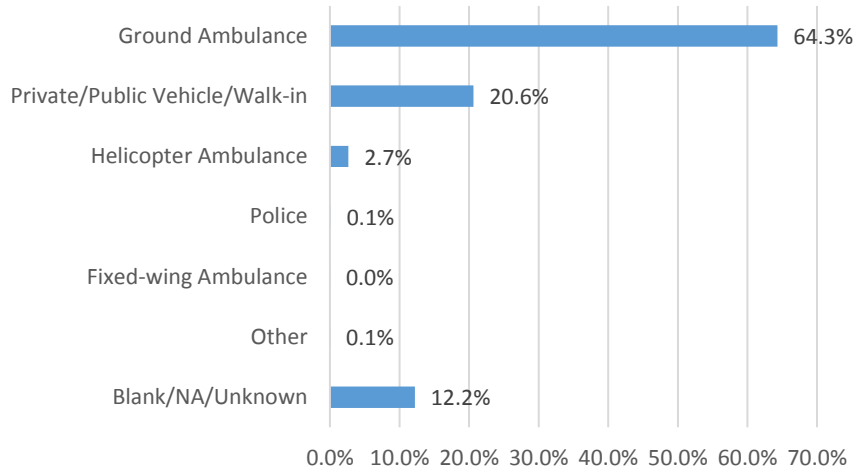
Figure 1: Trauma Cases Treated in the District of Columbia by State Injury Location, 2017



Source: DC Trauma Registry, HEPRA, DC Health

Patient Transportation

Figure 2: Transportation Mode to the Trauma Facilities, 2017



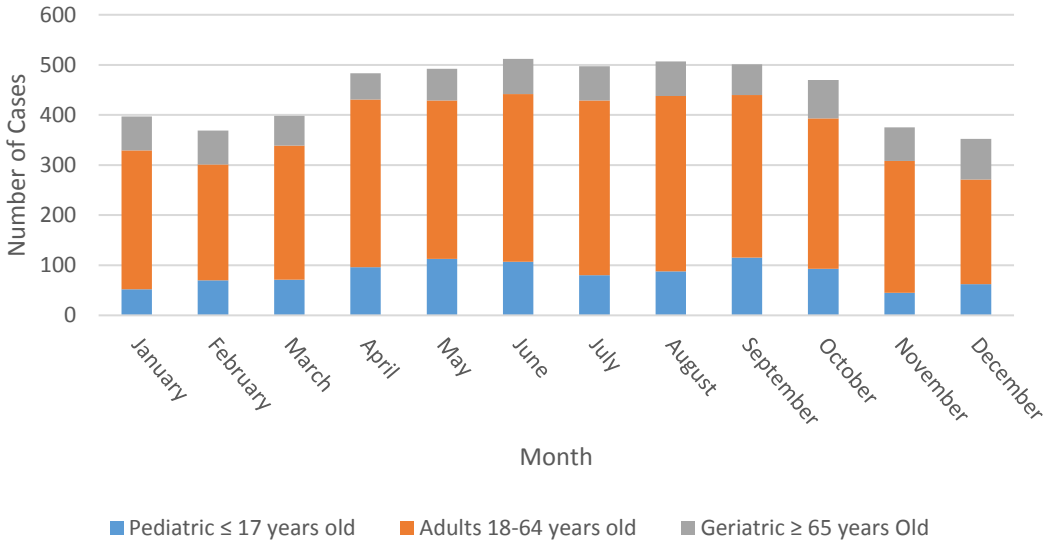
Source: DC Trauma Registry, HEPRA, DC Health

Figure 2 shows that of the recorded modes of transportation, 64.3% of trauma cases were transported by ground ambulance and 20.6% of cases were transported by private/ public vehicles or walked into the facility on their own volition. The majority (93%) of the helicopter transports originated from locations within Maryland. Patients injured in Virginia used ground ambulance as their primary mode of transportation (66%). There were several cases (12.2%) in which the mode of transportation to the facility was not recorded or was unknown.

Distribution of Trauma Cases

Figure 3 displays the number of cases by month and age group. 64% of trauma patients were 20-64 years of age at the time of their injuries. The average number of trauma cases per month was 446 cases (SD = 62). Higher numbers of cases can been seen April through October with June being the peak month.

Figure 3: Distribution of Trauma Patients by Month and Age, 2017

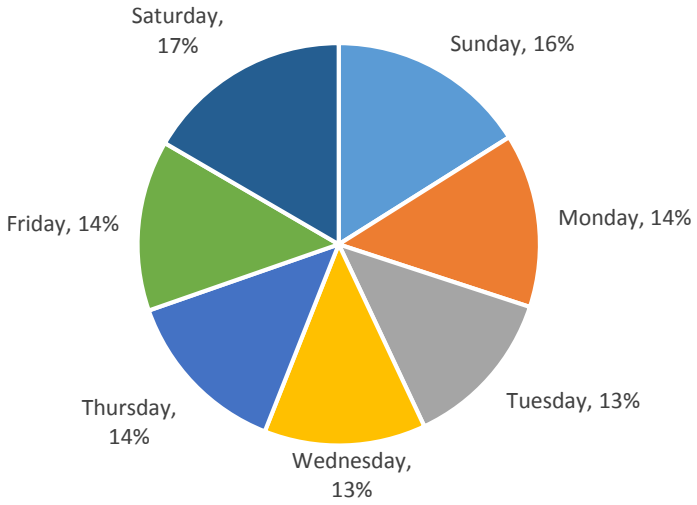


Source: DC Trauma Registry, HEPRA, DC Health

Trauma Cases by the Day of the Week

Figure 4 shows the distribution of trauma cases by the day of the week. Admissions of trauma cases were not uniformly distributed across the days of the week. 17% percent of trauma cases admissions were admitted on Saturday and 16% were admitted on Sunday. In contrast, 13% were admitted on Tuesday and 13% were admitted Wednesday.

Figure 4: Trauma Cases by the Day of Week, 2017

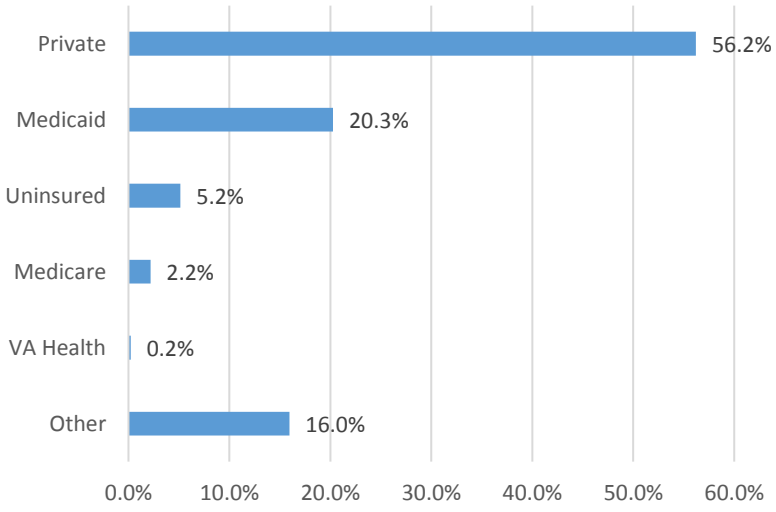


Source: DC Trauma Registry, HEPRA, DC Health

Payer Mix

Figure 5 shows that nearly 95% of the population living in the District of Columbia are covered by health insurance.[17] The majority of the population have coverage through their employer or through the DC Health Link Marketplace. All private health insurance plans in DC are required to be sold through the marketplace.[18] Medicare and Medicaid combined represent 23% of the payer mix. The "Other" category combines the multiple "Other" payer types captured by the Census including: two or more types of health insurance coverage; other private only combinations; other public only combinations; other coverage combinations.

Figure 5: Health Insurance Coverage in the District of Columbia, 2012-2016



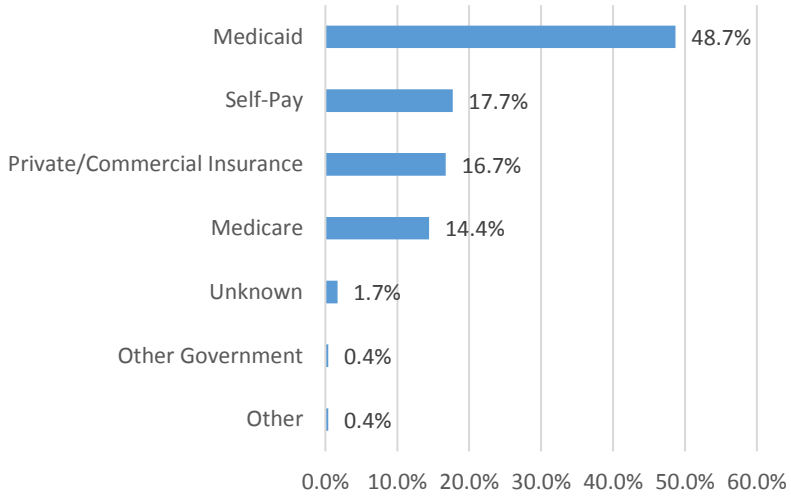
Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-year Estimates

[17] U.S. Census Bureau. (2016). 2012-2016 American Community Survey 5-Year Estimates. Washington, DC: U.S. Government Printing Office. Retrieved from https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml

[18] Code of the District of Columbia. (2014, July 16). *D.C. Law 20-123. Better Prices, Better Quality, Better Choices for Health Coverage Amendment Act of 2013*. Retrieved from DC Council: https://code.dccouncil.us/dc/council/laws/20-123.html

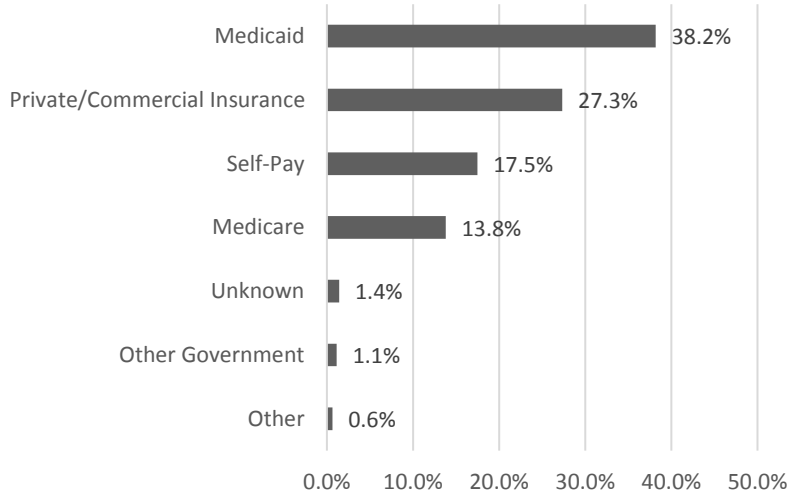
Figure 6 shows the payer mix of DC resident trauma patients. The primary payer for trauma care amongst these cases was Medicaid, almost half of all trauma cases involving a DC resident were insured by Medicaid. Self-pay describes patients who did not present any form of insurance prior to being discharged from the trauma facility or are uninsured. These patients accounted for 17.7% of DC residents treated within the District's trauma system.

Figure 6: Payer Mix of District of Columbia Residents, 2017



Source: DC Trauma Registry, HEPRA, DC Health

Figure 7: Payer Mix of Trauma Cases



Source: DC Trauma Registry, HEPRA, DC Health

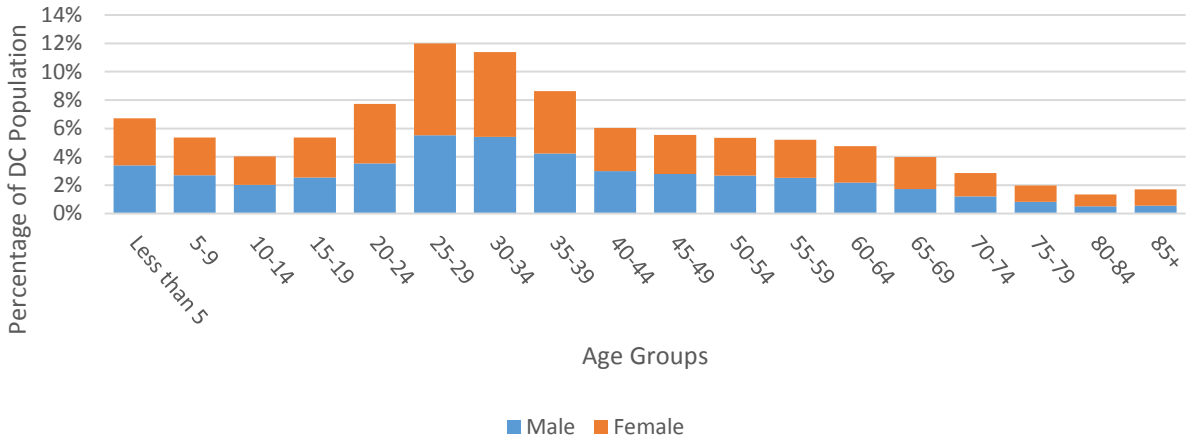
Figure 7 represents the payer mix of all the trauma cases that presented to the four facilities. It is important to note that **Figure 7** contains the insurance information for all trauma cases from patients who were treated in the District including those who do not reside within DC. The payer mix from their state may be different than that of DC. The primary payer of trauma care was Medicaid, which paid for 38% of cases, followed by private insurance, which paid for 27% of trauma cases. Self-pay accounts for 17.5% of all patients treated in DC.

Age, Gender, and Race/Ethnicity

Age and Gender

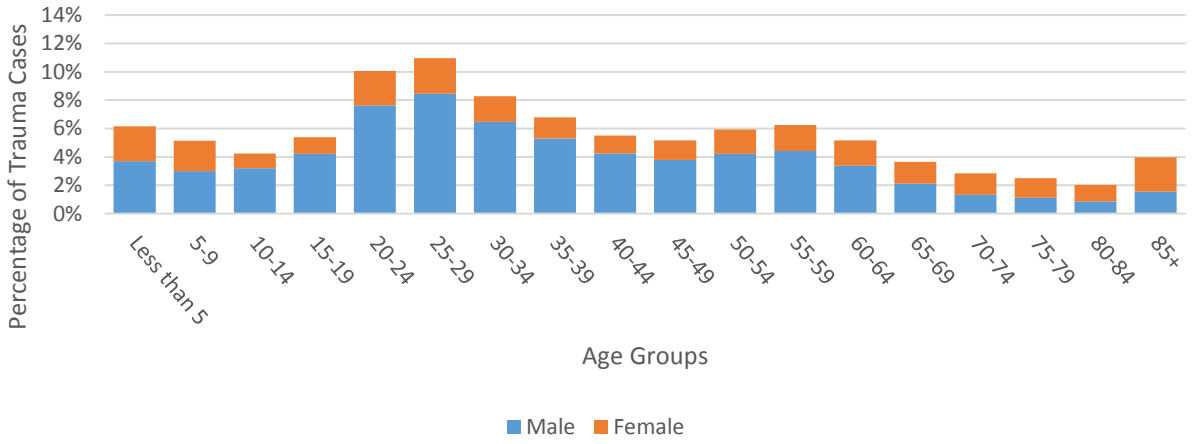
Figure 8 shows the 2017 annual population estimate of DC by age group and Gender.[19] **Figure 9** shows the breakdown of trauma patients seen in the DC by age groups in five-year intervals and by gender. The largest age group according to the Census estimate in the DC population is the 25-29 age group. Most of the trauma patients in **Figure 9** affected by trauma injuries were male (69%) and in the 25-29 age group. Adults aged 20-29 had the largest percentage of trauma cases across all age groups (**Figure 9**).

Figure 8: Annual Estimate of District of Columbia Population by Age Group and Gender, 2017



Source: U.S. Census Bureau, Population Division

Figure 9: Trauma Cases by Age Group and Gender, 2017



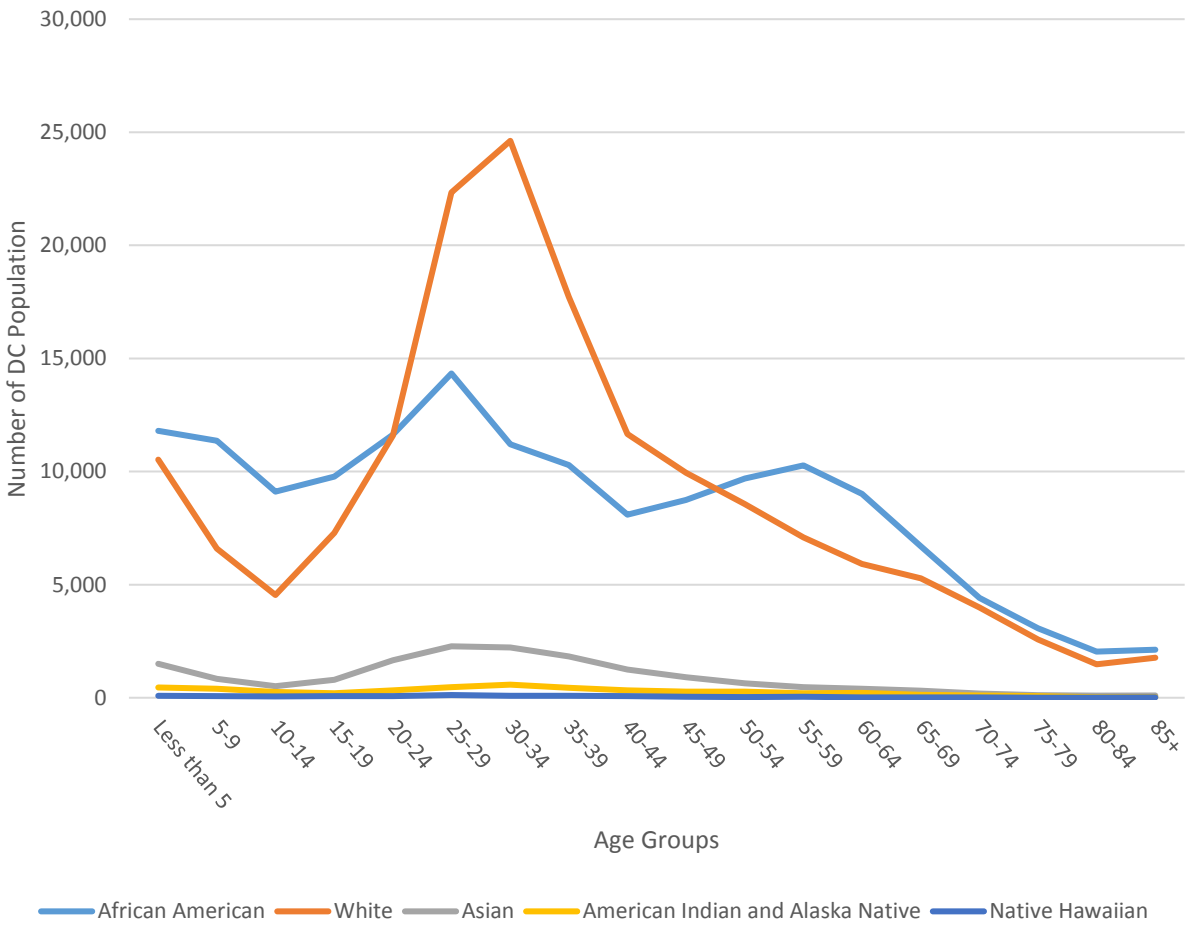
Source: DC Trauma Registry, HEPRA, DC Health

[19] U.S. Census Bureau. (2018, June). Annual Estimates of the Resident Population by Sex, Age, Race Alone or in Combination, and Hispanic Origin for the United States and States: April 1, 2010 to July 1, 2017. Washington, DC. Retrieved from https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP_2017_PEPASR5H

Age, Gender, Race/Ethnicity

African-American males were the largest demographic represented within the trauma registry. Almost 56% of all the trauma cases seen within DC were African-Americans. **Figures 10** and **11** represents the annual estimate District population demographics by age group and race based on gender.[20]

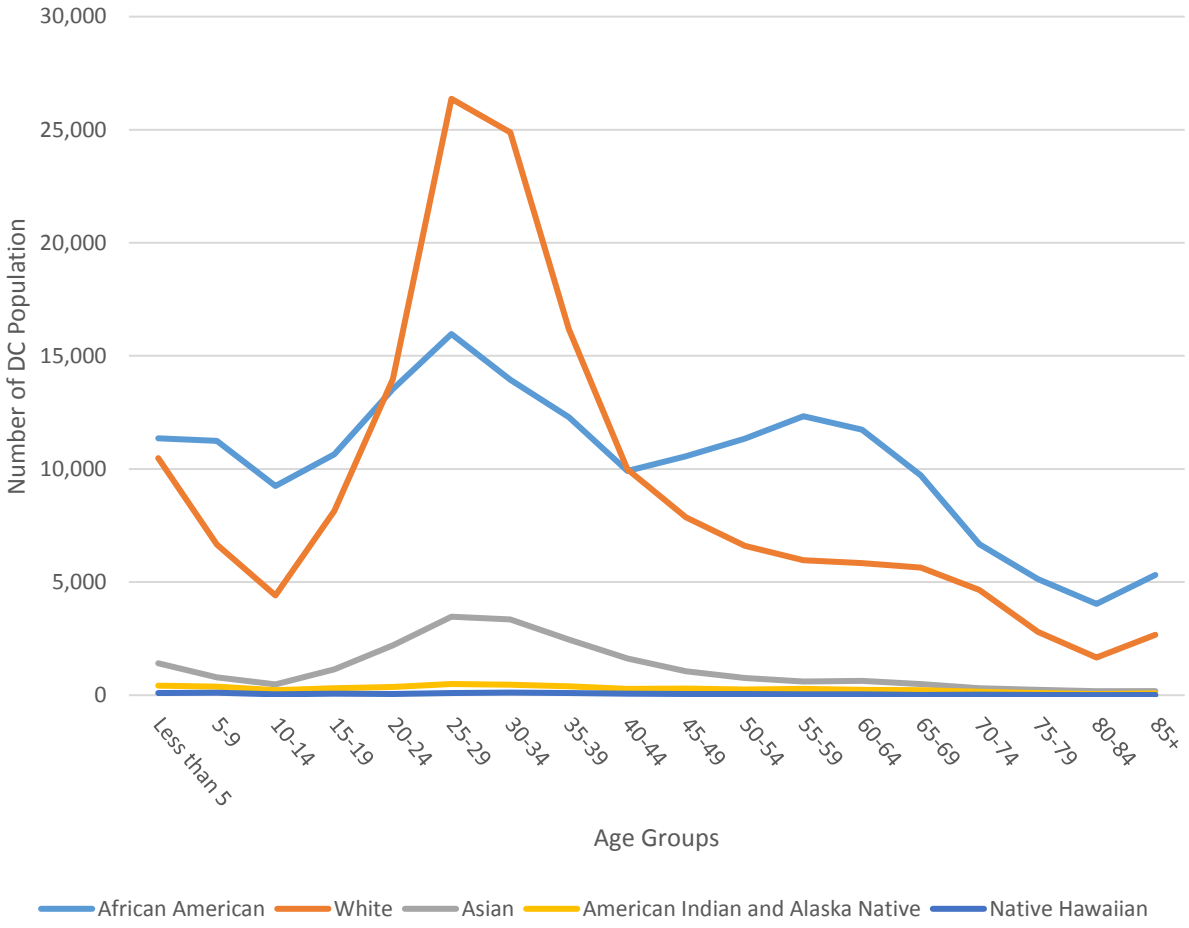
Figure 10: Annual Estimate of District of Columbia Male Population by Age Group and Race, 2017



Source: U.S. Census Bureau, Population Division

[20] U.S. Census Bureau. (2018, June). Annual Estimates of the Resident Population by Sex, Age, Race Alone or in Combination, and Hispanic Origin for the United States and States: April 1, 2010 to July 1, 2017. Washington, DC. Retrieved from https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP_2017_PEPASR5H

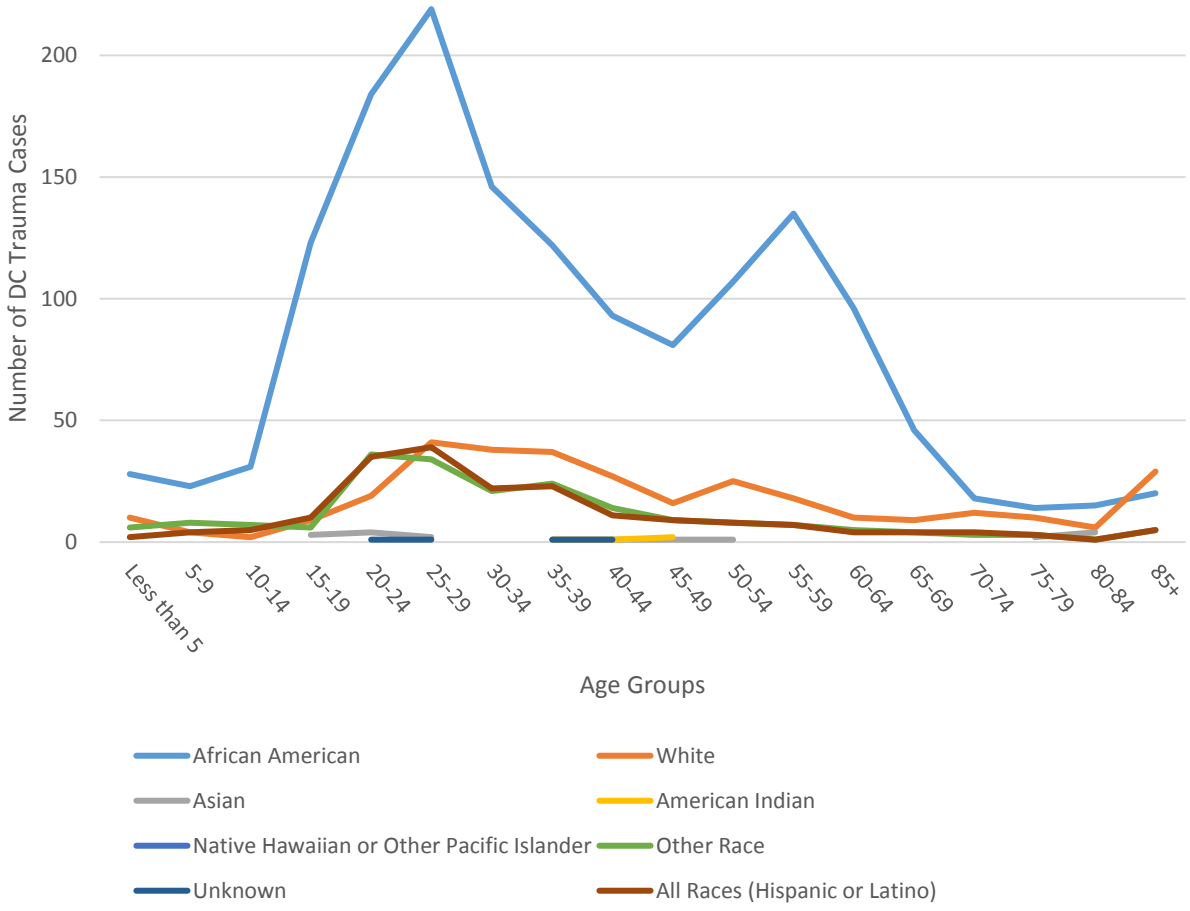
Figure 11: Annual Estimate of District of Columbia Female Population by Age Group and Race, 2017



Source: U.S. Census Bureau, Population Division

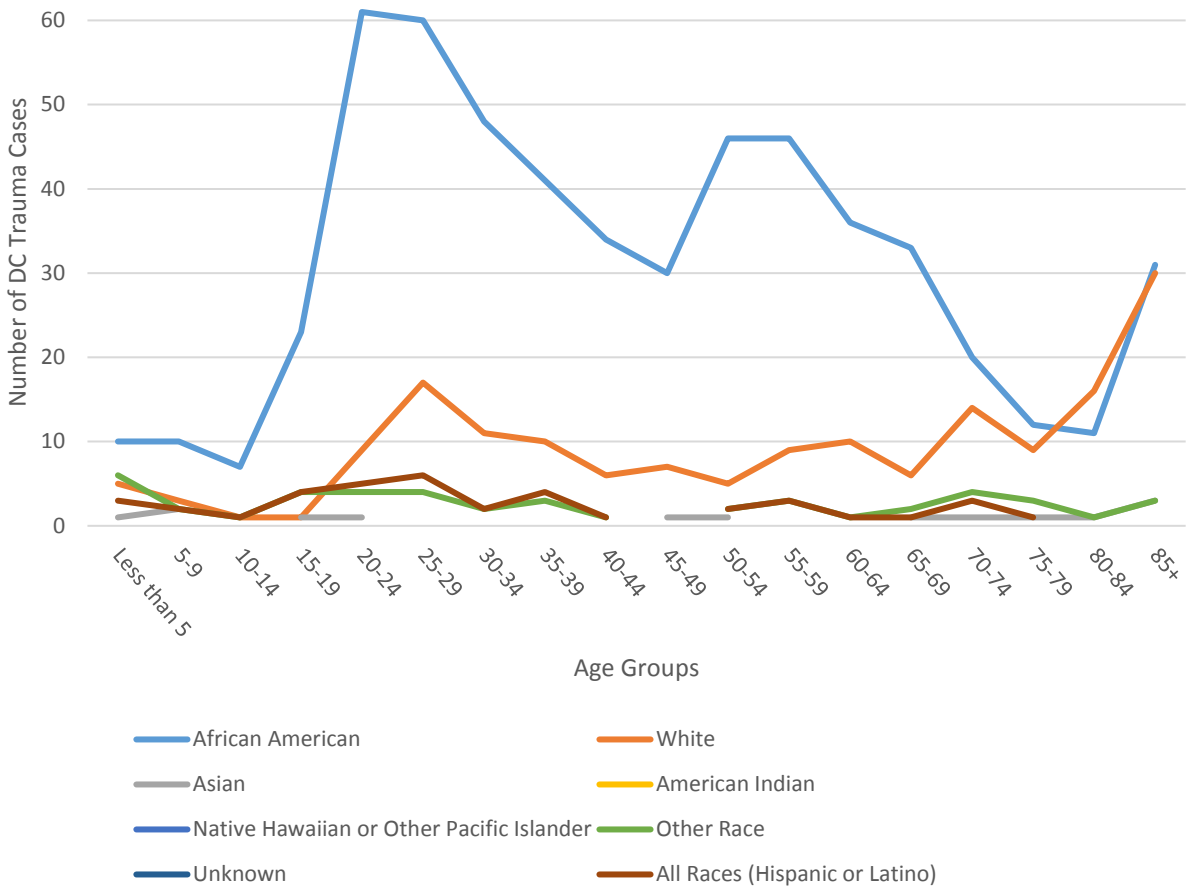
Figures 12 and **13** show the number of trauma cases of DC Residents by age group and race based on their gender. The most frequent demographic, representing 7.7% of DC Resident trauma cases, was African-American males between the ages of twenty-five and twenty-nine (25-29).

Figure 12: Number of Male District of Columbia Resident Trauma Cases by Age Group and Race/Ethnicity, 2017



Source: DC Trauma Registry, HEPRA, DC Health

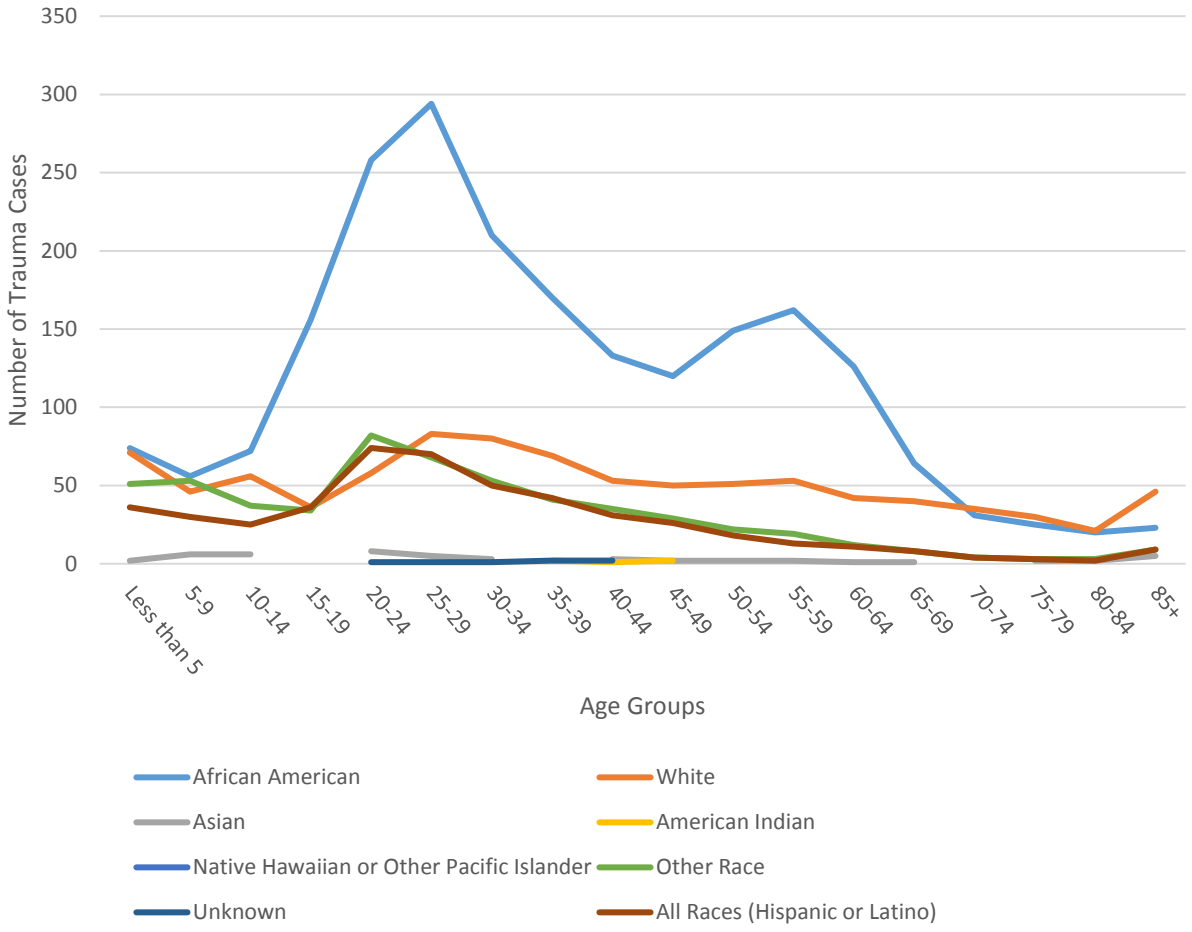
Figure 13: Number of Female DC Resident Trauma Cases by Age Group and Race/Ethnicity, 2017



Source: DC Trauma Registry, HEPRA, DC Health

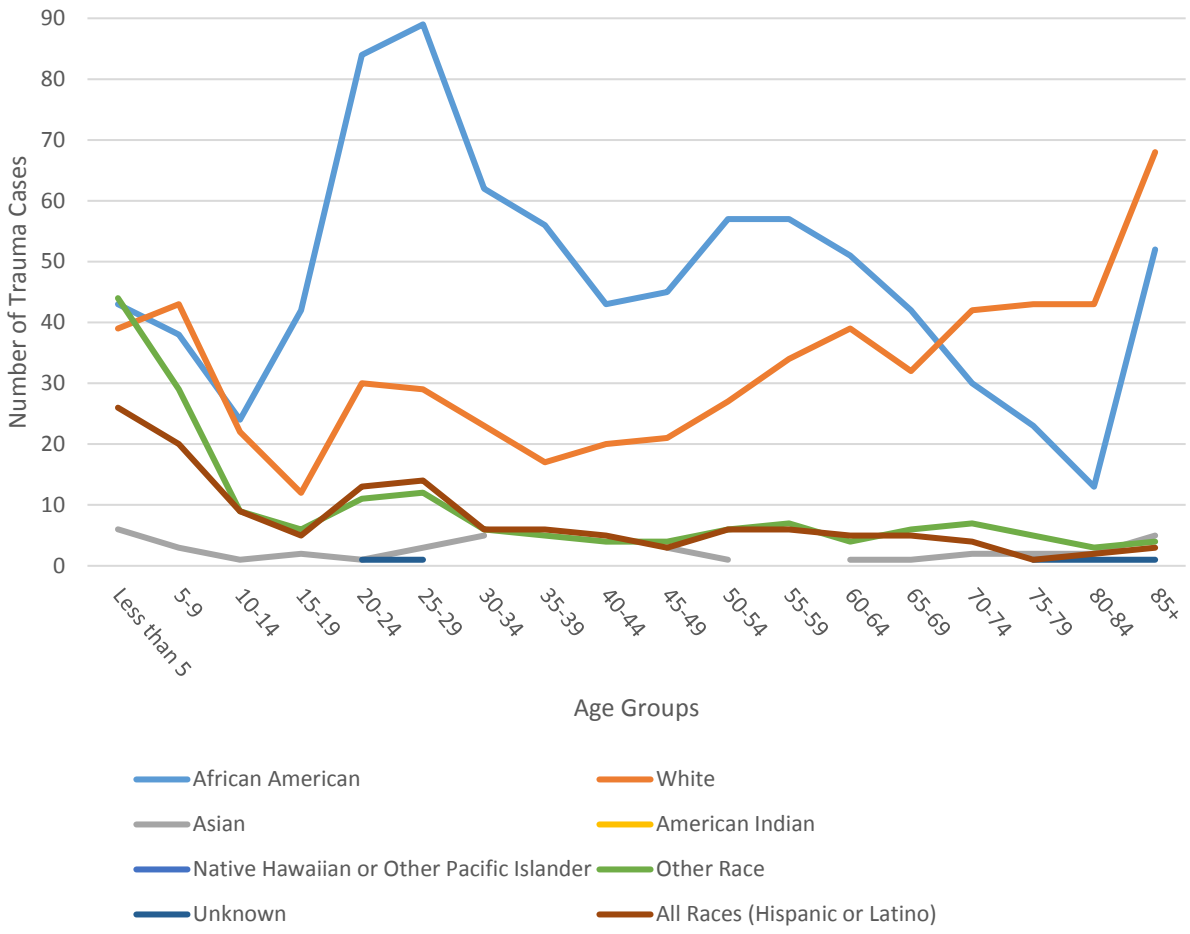
Figures 14 and **15** show the number of trauma cases by age group and race based on their gender. The most frequent demographic, representing 5.5% of all trauma cases, was African-American males between the ages of twenty-five and twenty-nine (25-29) years. Detailed demographic counts of all trauma cases can be found in **Appendix 1** of this report.

Figure 14: Number of Male Trauma Cases by Age Group and Race/Ethnicity, 2017



Source: DC Trauma Registry, HEPRA, DC Health

Figure 15: Number of Female Trauma Cases by Age Group and Race/Ethnicity, 2017

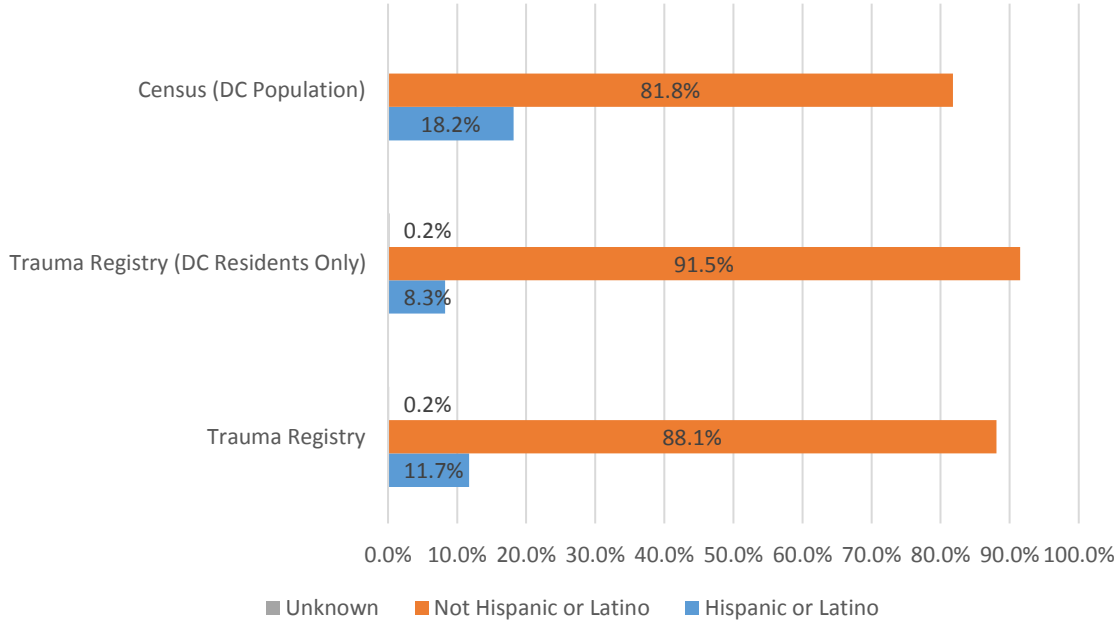


Source: DC Trauma Registry, HEPRA, DC Health

Ethnicity

Figure 16 shows a comparison of the annual population Census estimate of DC by percentage of Hispanic or Latino ethnicity with DC Trauma Registry.[21] Smaller percentage of the DC population that identify as Hispanic or Latino effected by trauma related injuries compare to DC population Census estimate.

Figure 16: Ethnicity Percentage of Census Estimate of DC Residents, All District of Columbia-Resident Trauma Cases, and All Trauma Cases, 2017



Source: U.S. Census Bureau, Population Division; DC Trauma Registry, HEPRA, DC Health

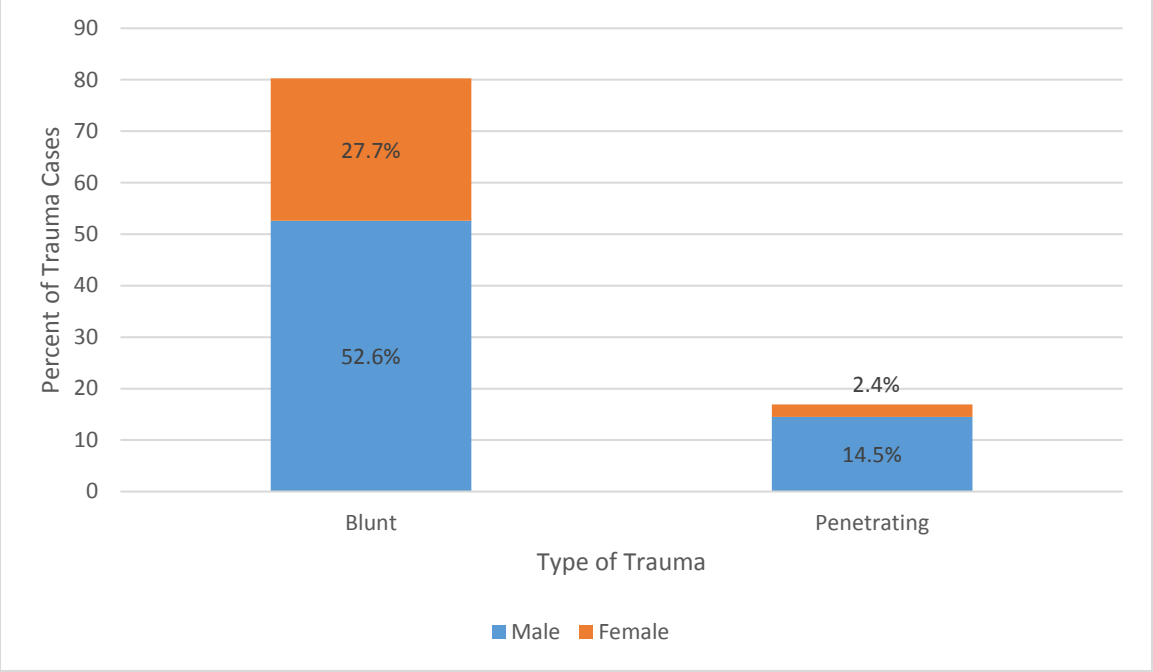
Types of Trauma

Injury Types

The DC Trauma Registry records the primary mechanism of injury for each trauma case as well as the classification of injury type. **Figure 17** represents the breakdown of two (2) types of injury classification captured by the registry: blunt or penetrating trauma. Many of the injuries (80%) treated in DC were due to a blunt injury; this includes injuries that are sustained by a fall, struck by or against, motor vehicle incidents, pedestrian incidents, bicycle injuries, and physical domestic abuse. Penetrating trauma represented 17% of all trauma cases in DC, due to cuts or piercings, firearms, and environmental (animal bites). Burn injuries, non-penetrating/non-blunt trauma injuries, or trauma injuries of unknown etiology, when combined represented less than 3% of traumatic injuries reported to the Trauma Registry in 2017.

[21] U.S. Census Bureau. (2018, June). Annual Estimates of the Resident Population by Sex, Age, Race Alone or in Combination, and Hispanic Origin for the United States and States: April 1, 2010 to July 1, 2017. Washington, DC. Retrieved from https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP_2017_PEPASR5H

Figure 17: Trauma Cases by Injury Type, 2017



Source: DC Trauma Registry, HEPRA, DC Health

Mechanisms of Injury

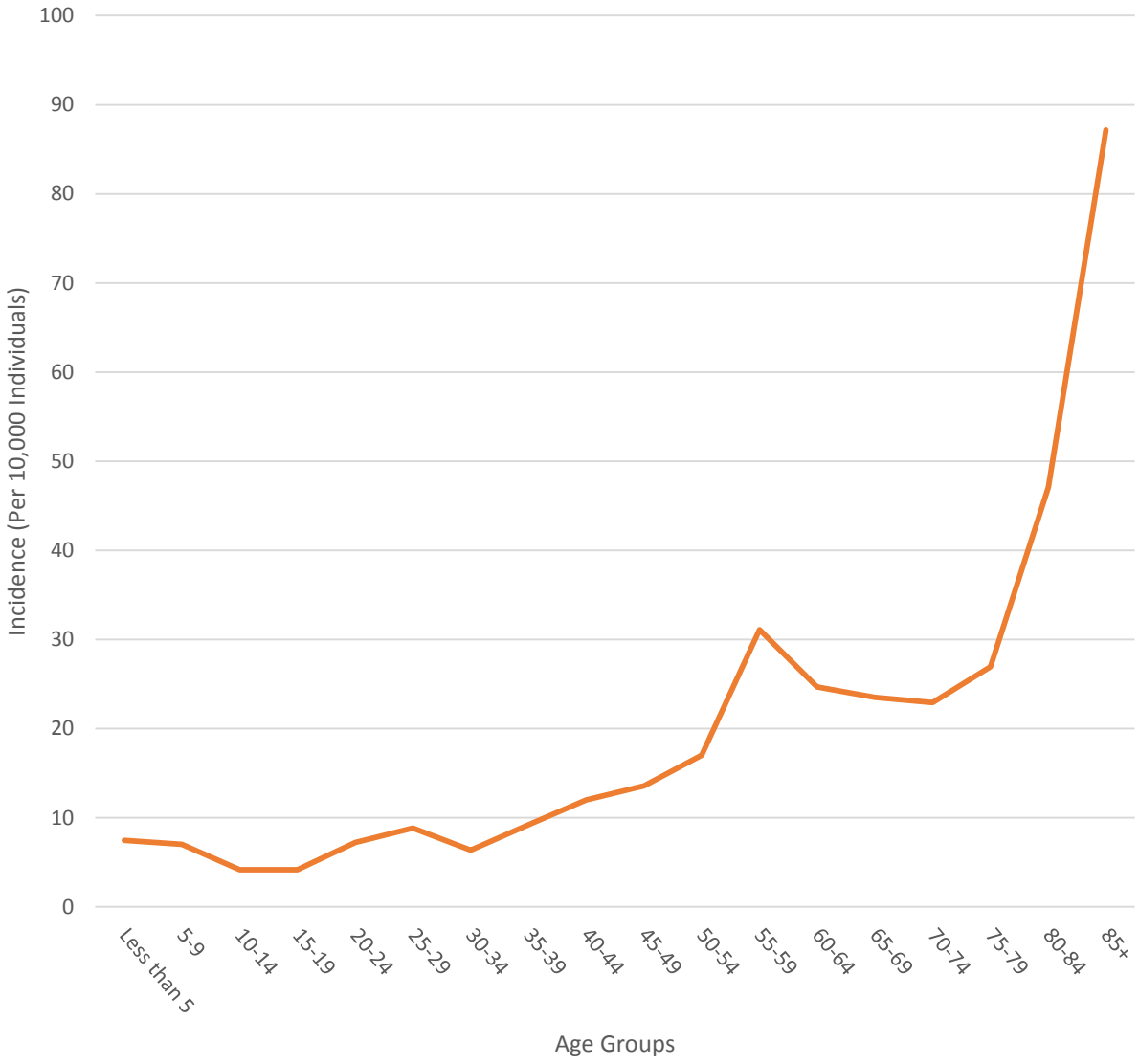
The incidence rates of specific mechanisms of injury are defined as the number of cases in a year per capita. For this report, the incidence of selected mechanisms of injury was calculated per 10,000 individuals based on the 2017 annual estimates published by the U.S. Census Bureau for each age group in DC.[22] Incidence rate calculation only included DC-resident trauma cases and excluded all non-residents as the per capita estimates may not accurately represent the age demographics of their respective communities. **Figure 18** shows a higher incidence of traumatic injuries of DC residents resulting from falls in older populations, a similar trend can be seen in the National Trauma Data Bank (*NTDB) Annual Report*.[23] **Figure 19** shows the incidence of DC resident cases per 10,000 individuals by selected mechanisms of injury and age group. There were two notable peaks in incidence rates of firearm injuries patients aged fifteen to nineteen (15-19) years and twenty to twenty-four (20-24) years. The following equation was used to calculate the incidence rates for each mechanism of injury.

$$Incidence\ Rate\ = \frac{Number\ of\ Cases\ in\ Age\ Group}{2017\ DC\ Annual\ Population\ of\ Age\ Group} \times 10{,}000\ persons$$

[22] U.S. Census Bureau. (2018, June). Annual Estimates of the Resident Population by Sex, Age, Race Alone or in Combination, and Hispanic Origin for the United States and States: April 1, 2010 to July 1, 2017. Washington, DC. Retrieved from https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP_2017_PEPASR5H

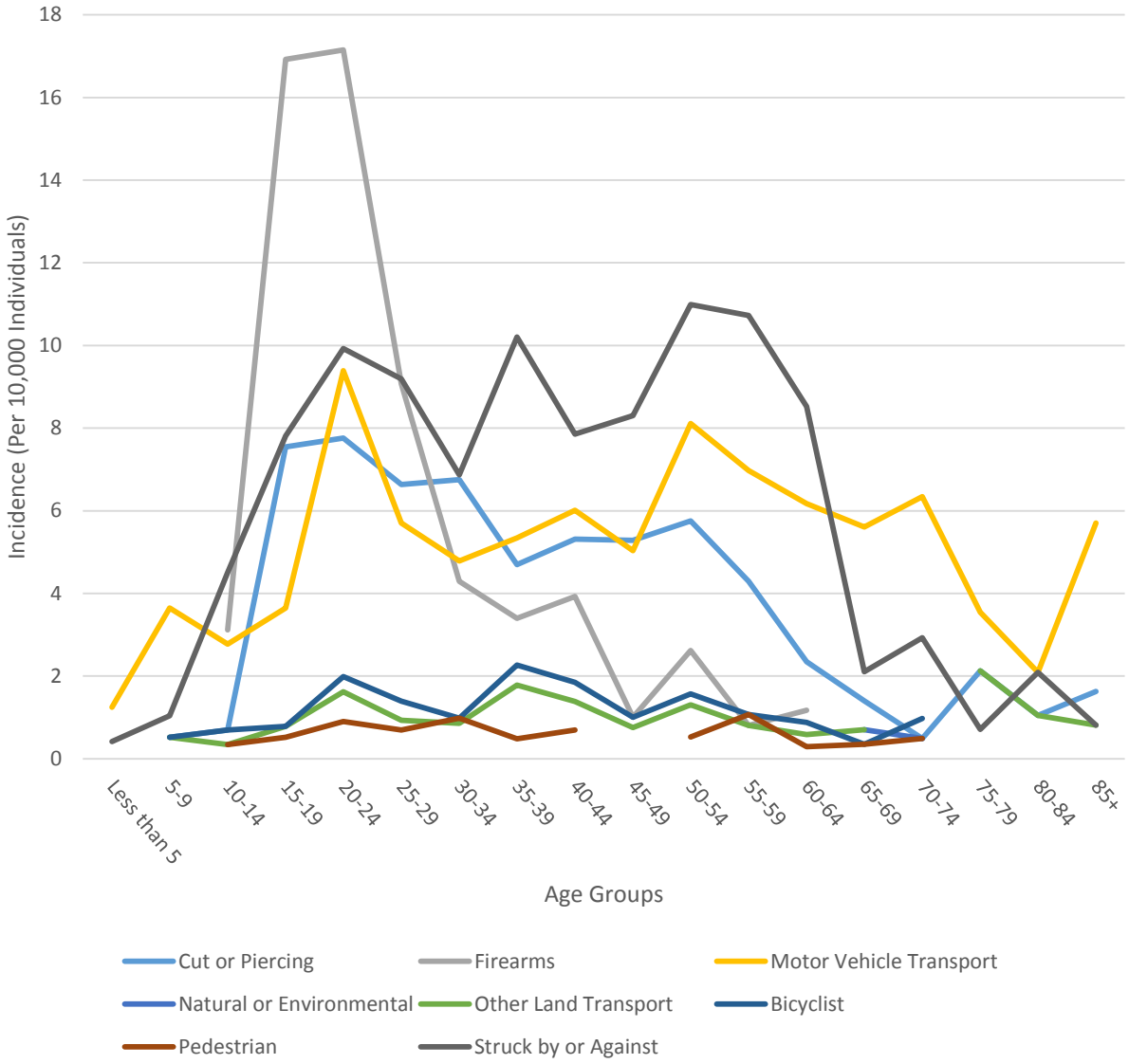
[23] American College of Surgeons. (2016). *National Trauma Data Bank Annual Report 2016. Page 43.* Retrieved from https://www.facs.org/quality-programs/trauma/ntdb/docpub

Figure 18: Incidence of Falling Injuries among District of Columbia Residents per 10,000 Individuals by Age Group, 2017



Source: DC Trauma Registry, HEPRA, DC Health

Figure 19: Incidence of Selected Mechanisms of Injury among District of Columbia Residents per 10,000 Individuals by Age Group, 2017



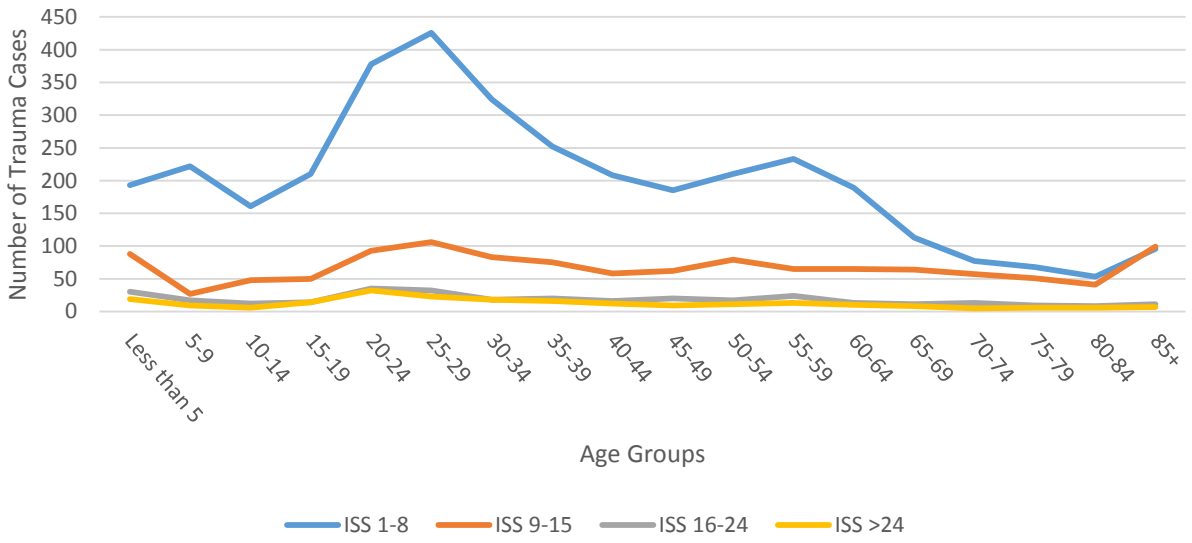
Source: DC Trauma Registry, HEPRA, DC Health

Trauma Severity

The severity of trauma cases is evaluated using the Injury Severity Score (ISS) System.[24] ISS, an anatomical rating system, provides numerical values for patients with multiple and varying injuries. ISS value is calculated for each trauma case as a function of the Abbreviated Injury Score (AIS). This score provides an overall score for patients with multiple injuries. Each injury is assigned an AIS for each of six body regions: head, face, chest, abdomen, extremities, or external. The AIS for any given region ranges from one (minor injury) to six (maximum injury). Only the highest AIS scores for each region are used in calculating the ISS. The three most severely injured body regions' AIS scores are squared and totaled to produce the ISS.

The ISS can range from 0 to 75. Any AIS of six will automatically result in an ISS of 75. The ISS is the only anatomical scoring system in use and correlates with patient mortality and morbidity, hospital stay, and other measures of severity.[25] The NTDB breaks the ISS into four groups/ranges: 1-8 (minor), 9-15 (moderate), 16-24 (severe), and 24-75 (very severe). **Figure 20** shows the number of trauma cases by age group and ISS range.

Figure 20: Injury Severity Score by Age, 2017



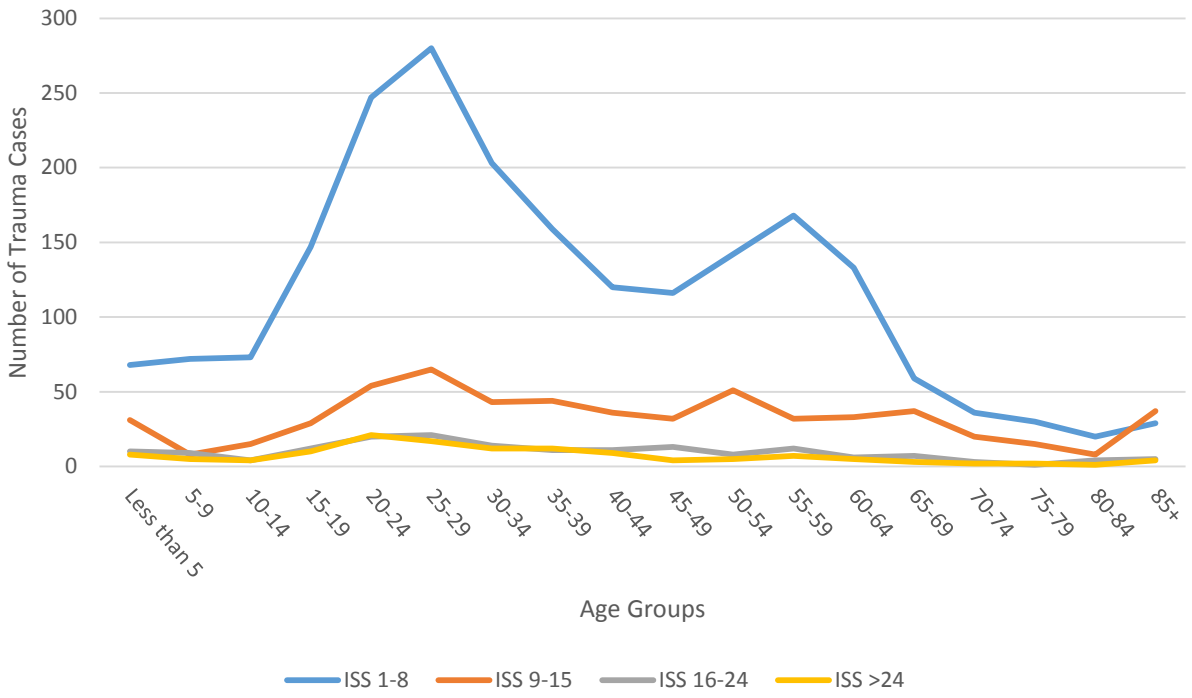
Source: DC Trauma Registry, HEPRA, DC Health

Trauma Severity by Race, Gender, and Age Groups

Figures 21 to **23** show the number of trauma cases by race, age group, and ISS Range. The figures show almost equal amount of trauma cases across different races for patients below the age of 10 with similar ISS ranges. **Figure 23** shows the number of trauma cases by gender and ISS Range.

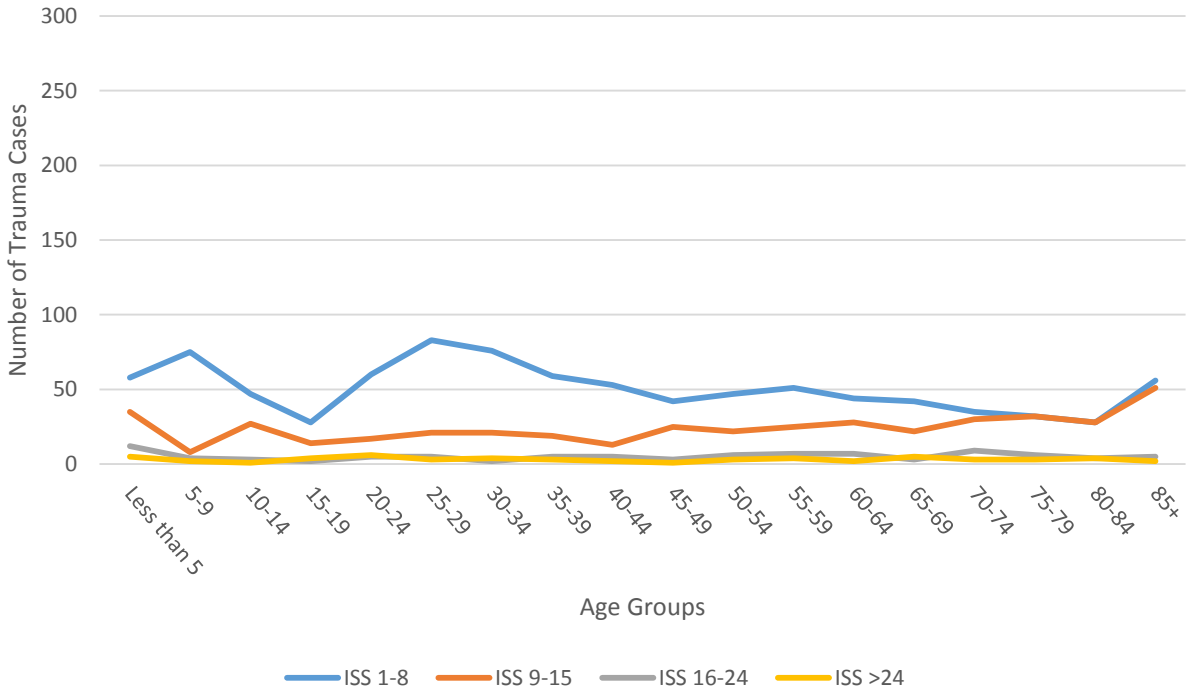
[24] Baker, S. P., O'Neil, B., Haddon, W., & Long, W. B. (1974, April). The Injury Severity Score: A Method for Describing Patients with Multiple Injuries and Evaluating Emergency Care. *Journal of Trauma, 14*(3), 187-196.
[25] Bolorunduro, O., Villegas, C., Oyetunji, T., Haut, E., Stevens, K., Chang, D., . . . Efron, D. (2011, March). Validating the Injury Severity Score (ISS) in Different Populations: ISS Predicts Mortality Better Among Hispanics and Females. Journal of Surgical Research, 166(1), 40-44. Retrieved from http://doi.org/fd4kmt

Figure 21: Number of African-American Trauma Patients by Age Group and Injury Severity Score, 2017



Source: DC Trauma Registry, HEPRA, DC Health

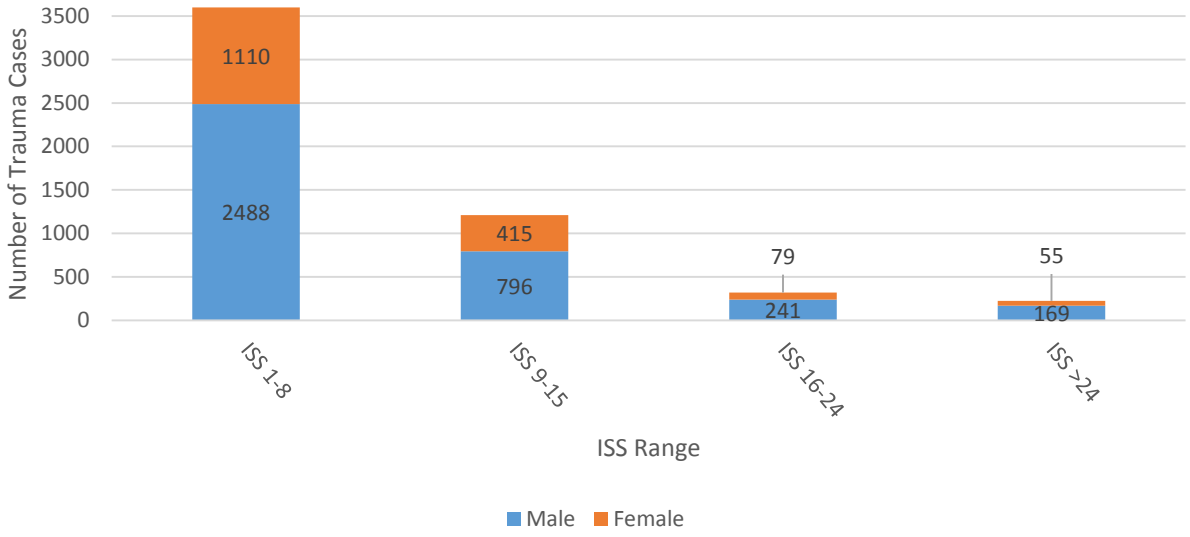
Figure 22: Number of White Trauma Patients by Age Group and Injury Severity Score, 2017



Source: DC Trauma Registry, HEPRA, DC Health

Note: Figures for Number of trauma patients with Hispanic or Latino ethnicity by Age group and Injury Severity Score were excluded due to small population in the DC Trauma Registry.

Figure 23: Number of Trauma Patients by Gender and Injury Severity Score, 2017

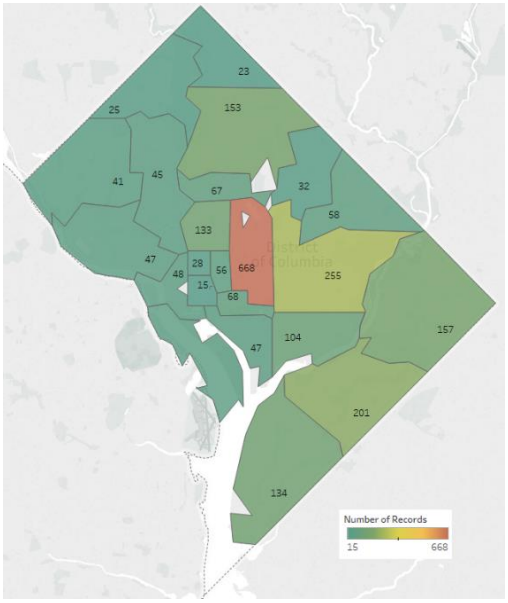


Source: DC Trauma Registry, HEPRA, DC Health

DC Trauma Injuries and Patient Residence Maps

As part of the trauma record, trauma registrars attempt to obtain the location where the injury occurred as well as the patient's home address. To get a better understanding of where trauma injuries occur within the District, a gradient map was created showing the frequency of trauma cases by zip codes. **Figures 24** and **25** geographically show the number of trauma cases injured by blunt and penetrating trauma, respectively. These figures do not include 33% of the trauma cases that were injured outside of DC or where the injury location was unknown. **Figure 26** shows a gradient map of the number of patients residing in the District who also appeared within the trauma registry. This map excludes all non-DC residents, unknown values, and those residents who suffered a trauma injury outside of the District. It must be noted that in the interest of patient privacy, zip codes that had less than five (5) cases were excluded from these graphics.

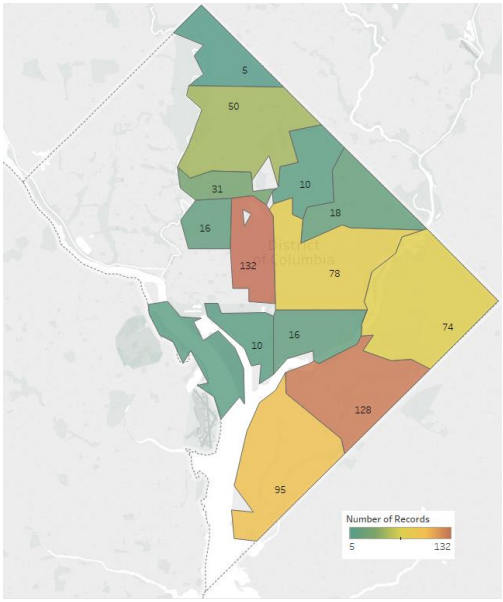
Figure 24: Blunt Injuries in the District of Columbia in 2017, N=2,405



Source: DC Trauma Registry, HEPRA, DC Health

Note: Zip Codes with less than five (5) cases were excluded

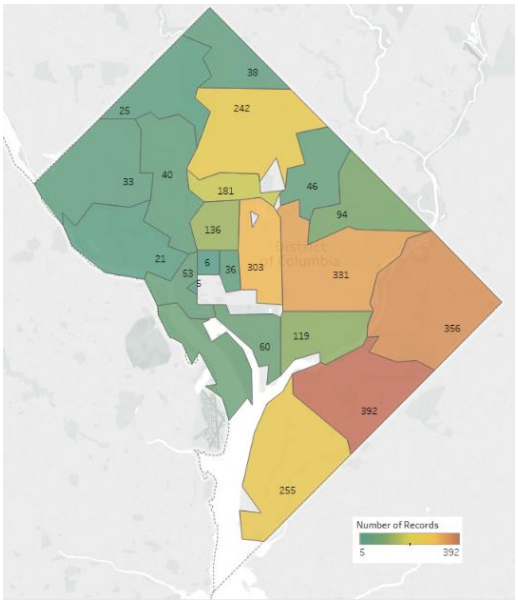
Figure 25: Penetrating Injuries in the District of Columbia in 2017, N=663



Source: DC Trauma Registry, HEPRA, DC Health

Note: Zip Codes with less than five (5) cases were excluded

Figure 26: Patient Residence in the District of Columbia in 2017, N=2,849



Source: DC Trauma Registry, HEPRA, DC Health

Note: Zip Codes with less than five (5) cases were excluded

Note: There may be a greater number of DC residents who suffered a traumatic injury in 2017; however, these data only capture those individuals whose injuries were treated at one of the four trauma facilities within the District.

Injury Severity Score (ISS), Gender, Deaths, and Case Fatality Rate

Table 1 provides a breakdown of the number of trauma cases by ISS, gender, number of deaths, and the crude case fatality rate per 100 individuals. As referenced earlier, increasing ISS values correlate to higher probability of mortality. The table shows that patients who had an ISS value over twenty-four (24) had a crude case fatality rate of 38%; of the two hundred twenty-four (224) individuals with ISS values greater than 24, eighty-five (85) of them died. The crude case facility rate has not changed from 2016, which was reported in the 2016 DC Trauma Registry Report as 2.7.[26] The crude case fatality rate was calculated without any adjustments to risk associated with trauma cases in the registry.

$$Crude\ Case\ Fatality\ Rate = \frac{Deaths}{Cases} \times 100$$

Table 1: Case Fatality Rates by Injury Severity Score (ISS) Ranges and Gender and Number of Deaths, 2017

ISS Range	Cases			Deaths			Case-Fatality Rate (Per 100 People)		
	Male	Female	Total	Male	Female	Total	Male	Female	Overall
1-8	2488	1110	3598	8	2	10	0.3	0.2	0.3
9-15	796	415	1211	16	12	28	2.0	2.9	2.3
16-24	241	79	320	18	5	23	7.5	6.3	7.2
>24	169	55	224	65	20	85	38.5	36.4	37.9
Overall	3694	1659	5353	107	39	146	2.9	2.4	2.7

Source: DC Trauma Registry, HEPRA, DC Health

Table 2 through **6** provide the crude case fatality rates by ISS ranges and injury type for all trauma cases treated in DC. The tables show that penetrating traumatic injuries are associated with the highest case-fatality rates, 5.5 deaths per 100 cases. Case fatality rates with less than twenty (20) deaths may not be statistically reliable (e.g., “Burns” or “Other Injuries”).

[26] District of Columbia Department of Health. (2018). 2016 Trauma Registry Report. Washington, DC. Retrieved from https://dchealth.dc.gov/service/district-trauma-system

Table 2: Blunt Injuries, 2017

ISS Range	Cases	Deaths	Case Fatality Rate†
1-8	2888	6	0.2
9-15	1015	23	2.3
16-24	250	10	4.0
>24	146	51	34.9
Overall	4299	90	2.1

Source: DC Trauma Registry, HEPRA, DC Health

Table 3: Penetrating Injuries, 2017

ISS Range	Cases	Deaths	Case Fatality Rate†
1-8	599	3	0.5
9-15	170	4	2.4
16-24	67	13	19.4
>24	69	30	43.5
Overall	905	50	5.5

Source: DC Trauma Registry, HEPRA, DC Health

Table 4: Burn Injuries, 2017

ISS Range	Cases	Deaths	Case Fatality Rate†
1-8	6	0	0
9-15	4	0	0
16-24	0	0	N/A
>24	0	0	N/A
Overall	10	0	0

Source: DC Trauma Registry, HEPRA, DC Health

Table 5: Other Injuries, 2017

ISS Range	Cases	Deaths	Case Fatality Rate†
1-8	45	1	2.2
9-15	9	1	11.1
16-24	1	0	0.0
>24	1	1	100.0
Overall	56	3	5.4

Source: DC Trauma Registry, HEPRA, DC Health

Table 6: Unknown Injuries, 2017

ISS Range	Cases	Deaths	Case-Fatality Ratio†
1-8	60	0	0.0
9-15	13	0	0.0
16-24	2	0	0.0
>24	8	3	37.5
Overall	83	3	3.6

Source: DC Trauma Registry, HEPRA, DC Health

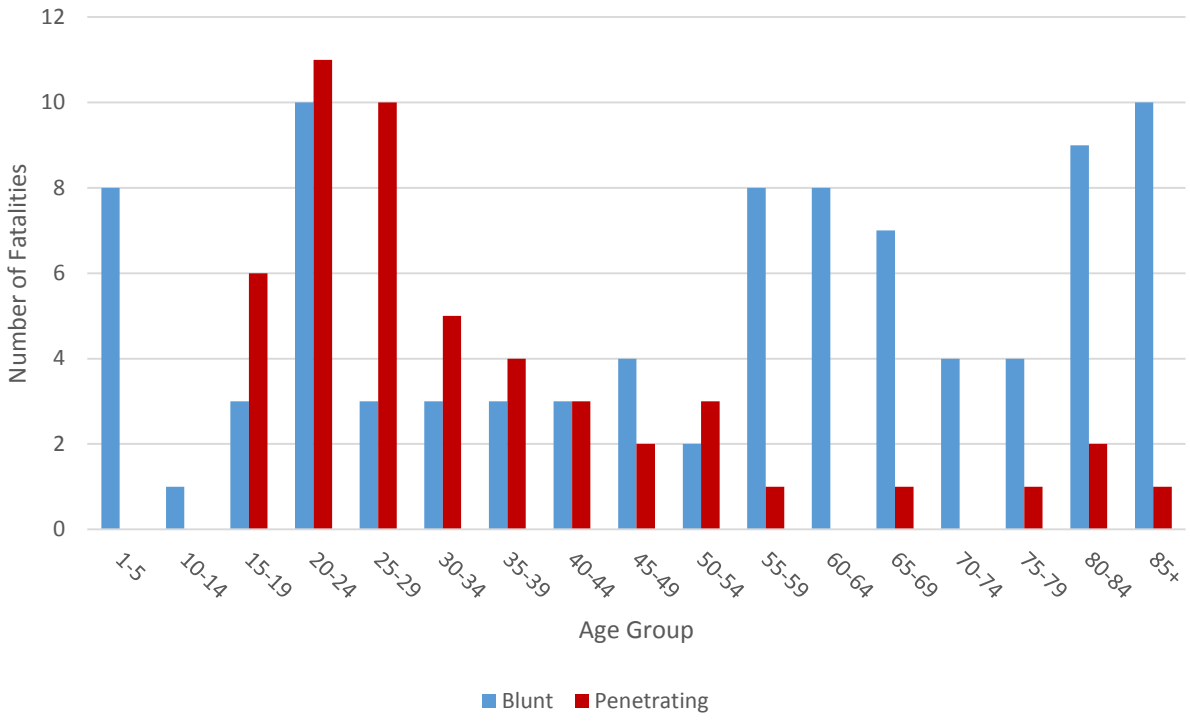
Note: Unknown injuries are injuries recorded as not applicable

†Case Fatality Rate less than twenty (20) deaths may not be statistically reliable.

Case Fatalities

In 2017, of the 5,353 trauma cases, 146 deaths were recorded in the DC Trauma Registry. These were patients who suffered a traumatic injury and were transported to one of the four trauma facilities within DC. This number does not include individuals who suffered traumatic injuries but were declared dead on the scene of the incident by pre-hospital providers. **Figure 27** shows the number of fatalities by age group and injury type. Six (6) of the 146 deaths were excluded because an injury type was not recorded in the trauma record.

Figure 27: Trauma Case Fatalities by Injury Type and Age Group, 2017



Source: DC Trauma Registry, HEPRA, DC Health

Table 7 shows the top five causes of fatalities seen at the trauma facilities out of the 146 deaths. The "other" comprises of remaining fatalities not in the top five. The top two causes of all deaths from trauma injuries, falls and firearms, accounted for almost 53% of all fatalities seen within the DC trauma system.

Table 7: Top five Mechanisms of Injury by the Number of Case Fatalities, 2017

Mechanism of Injury	Deaths	Percent
Firearms	39	26.7%
Fall	38	26.0%
MVT - Pedestrian†	18	12.3%
MVT - Occupant†	16	11.0%
Cut or Piercing	11	7.5%
Other	24	16.4%

Source: DC Trauma Registry, HEPRA, DC Health

†MVT – Motor Vehicle Transport

Contributing Factors and Outcomes

Tables 8 and **9** detail the disposition of patients from the emergency department by blunt and penetrating trauma, respectively. The cases are divided by patients admitted to the hospital (floor bed, ICU, observation unit, or step-down unit), sent directly to the operating room, and patients who died in the emergency department. The remaining patients were discharged home from the ED.

The data suggest that there is higher mortality associated with penetrating versus blunt injuries, specifically those cases associated with firearms as the primary mechanism of injury. About 25% of penetrating trauma cases were directed to the OR compared to 5% of blunt trauma cases. A higher percentage of blunt trauma cases (71%) are admitted to the hospital versus penetrating trauma cases (47%).

Table 8: ED Disposition for All Trauma Cases in the District of Columbia with Blunt Injury, 2017

Mechanism of Injury	Total Cases		Admitted to Floor Bed, ICU, Observation Unit, or Step-Down Unit from ED		Transferred from the ED to the OR		Expired in the ED	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Fall	2084	48.5%	1608	77.2%	83	4.0%	7	0.3%
Struck by or Against	792	18.4%	474	59.8%	37	4.7%	2	0.3%
MVT - Occupant†	498	11.6%	322	64.7%	30	6.0%	5	1.0%
MVT - Pedestrian†	252	5.9%	183	72.6%	26	10.3%	9	3.6%
Other Land Transport	176	4.1%	115	65.3%	13	7.4%	2	1.1%
Pedal Cyclist, Other	166	3.9%	120	72.3%	5	3.0%	0	0.0%
MVT - Motorcyclist†	80	1.9%	50	62.5%	11	13.8%	2	2.5%
MVT - Pedal Cyclist†	74	1.7%	35	47.3%	3	4.1%	0	0.0%
Abuse	50	1.2%	45	90.0%	2	4.0%	0	0.0%
Pedestrian, Other	46	1.1%	26	56.5%	4	8.7%	0	0.0%
Pedestrian Conveyance	34	0.8%	28	82.4%	1	2.9%	0	0.0%
Mechanical	20	0.5%	10	50.0%	4	20.0%	0	0.0%
Natural or Environmental	6	0.1%	6	100.0%	0	0.0%	0	0.0%
Machinery	5	0.1%	1	20.0%	1	20.0%	0	0.0%
Other Transport	4	0.1%	2	50.0%	1	25.0%	0	0.0%
Other Specified, Classifiable	3	0.1%	1	33.3%	1	33.3%	0	0.0%
MVT - Unspecified†	2	0.0%	2	100.0%	0	0.0%	0	0.0%
Other Specified, Not Elsewhere Classified	1	0.0%	0	0.0%	0	0.0%	1	100.0%
Total	4293	100.0%	3028	70.5%	222	5.2%	28	0.7%

Source: DC Trauma Registry, HEPRA, DC Health
†MVT – Motor Vehicle Transport

Table 9: ED Disposition for All Trauma Cases for District of Columbia with Penetrating Injury type, 2017

Mechanism of Injury	Total Cases		Admitted to Floor Bed, ICU, or Step-Down Unit		Transferred from the ED to the OR		Expired in the ED	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Cut or Piercing	453	50.1%	203	44.8%	107	23.6%	8	1.8%
Firearms	441	48.1%	215	48.5%	116	26.7%	22	5.1%
Environmental	17	1.9%	9	52.9%	3	17.6%	0	0.0%
Total	911	100.0%	427	46.9%	226	24.8%	30	3.3%

Source: DC Trauma Registry, HEPRA, DC Health

Comorbidities and Complications

When analyzing trauma outcomes, it is important to understand the implications of comorbidities and complications that can impact morbidity and mortality. Comorbidity is the presence of more than one condition or disease occurring at the same time as the primary condition.[27] In 2017, over 55% of patients who experienced a traumatic injury and reported to a DC trauma facility also had a pre-existing condition/comorbidity. **Table 10** presents the top 10 comorbidities. Some trauma patients may have more than one comorbidity resulting in the same trauma case being placed in two or more categories. The documented comorbidities outside the top ten were combined and are represented by "Other Comorbidities". In situations where a comorbidity was not found within the system or the hospital has a specific risk factor that is not coded within the DC Trauma Registry, those submissions are submitted as "Other".

Table 10: Top Ten Comorbidities for Patients Recorded in the Trauma Registry, 2017

Comorbidity	Percent
Hypertension	17.6%
Current smoker	12.7%
Diabetes mellitus	7.2%
Mental/Personality Disorder	6.2%
Substance Abuse Disorder	6.0%
Alcohol Use Disorder	5.6%
Anticoagulant Therapy	2.8%
Functionally dependent health Status	2.7%
Cerebrovascular Accident (CVA)	1.6%
Other Comorbidities	9.3%
Other	28.2%

Source: DC Trauma Registry, HEPRA, DC Health

[27] *Oxford University Press. (2019). Comorbidity. Retrieved f Source: DC Trauma Registry, HEPRA, DC Health*

https://en.oxforddictionaries.com/definition/us/comorbidity

Complications

Table 11 lists the complications and percentages of all cases that were treated by DC trauma teams. In the Registry, 20.1% of trauma cases were affected by complications. Like comorbidity, a single patient may have multiple complications. **Table 11** has a one-to-many relationship of trauma cases to complications. The large "Other" category comes as a result of trauma facilities being able to further specify complications outside of the American College of Surgeons National Trauma Data Bank Data Standard that has also been adopted by DC Health; therefore, these complications are noted as "Other." An example of one of these complications would be phlebitis secondary to a peripheral intravenous (IV) catheter site.

Table 11: Number of Trauma Cases with Complications, 2017

Complication	Percent
Unplanned Admission to ICU	1.1%
Unplanned intubation	0.7%
Acute kidney injury	0.5%
Deep Vein Thrombosis (DVT)	0.4%
Pulmonary embolism	0.4%
Unplanned return to OR	0.3%
Cardiac arrest with CPR	0.3%
Severe sepsis	0.3%
Ventilator-Associated Pneumonia (VAP)	0.2%
Pressure Ulcer	0.1%
Acute Respiratory Distress Syndrome (ARDS)	0.1%
Catheter-Associated Urinary Tract Infection (CAUTI)	0.1%
Extremity Compartment syndrome	0.1%
Organ/space surgical site infection	0.1%
Stroke / CVA	0.1%
Alcohol Withdrawal Syndrome	0.0%
Deep surgical site infection	0.0%
Myocardial Infarction	0.0%
Superficial Incisional Surgical Site Infection	0.0%
Central Line-Associated Bloodstream Infection (CLABSI)	0.0%
Other	17.2%

Source: DC Trauma Registry, HEPRA, DC Health

Discharge Dispositions

Tables 12 and **13** list the discharge dispositions of patients treated by trauma care teams in the emergency department and hospital, respectively.

Table 12: Emergency Department Discharge Disposition, 2017

Emergency Department Discharge Disposition	Count	Percent
Floor Bed	2394	44.7%
Intensive Care Unit (ICU)	1127	21.1%
Home without Services	988	18.5%
Operating Room	463	8.6%
Not Applicable	224	4.2%
Died/Expired	60	1.1%
Left Against Medical Advice	44	0.8%
Other	22	0.4%
Transferred to Another Hospital	18	0.3%
Telemetry/Step-down Unit	9	0.2%
Home with Services	3	0.1%
Observation Unit	1	0.0%

Source: DC Trauma Registry, HEPRA, DC Health

Table 13: Hospital Discharge Disposition, 2017

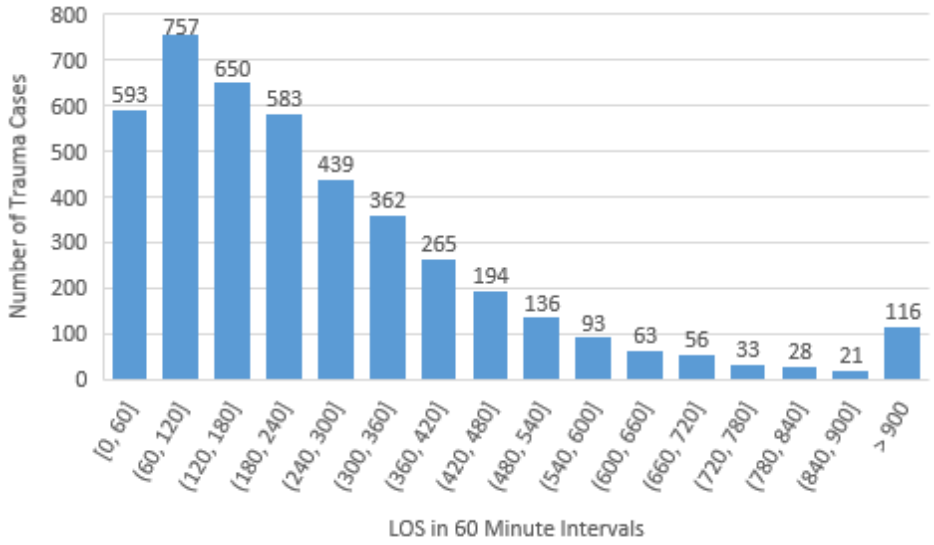
Hospital Discharge Disposition	Count	Percent
Home or Self Care (Routine Discharge)	3265	61.0%
Inpatient Rehab or Designated Unit	287	5.4%
Skilled Nursing Facility	209	3.9%
Home with Services	148	2.8%
Deaths	86	1.6%
Court/Law Enforcement	81	1.5%
Left Against Medical Advice or Discontinued Care	65	1.2%
Transferred to Another Hospital	27	0.5%
Psychiatric Hospital or Psychiatric Distinct Part of a Hospital	26	0.5%
Long Term Care Hospital (LTCH)	16	0.3%
Hospice	4	0.1%
Intermediate Care Facility	3	0.1%
Another Type of Inpatient Facility Not Defined Elsewhere	1	0.0%
Unknown	1135	21.2%

Source: DC Trauma Registry, HEPRA, DC Health

Length of Stay

The average length of stay (LOS) of trauma patients in the emergency department was approximately 4.4 hours (SD = 267.2 minutes) and the median LOS was over 3.3 hours (SE = 4 minutes). **Figure 28** shows the number of trauma cases by LOS in the emergency department from zero to 15 hours in 60-minute intervals. Trauma cases that required a visit to the OR had the shortest average time in the ED waiting 3.3 hours (SD = 339.6 minutes) the median being 1.7 hours (SE = 16.9 minutes).

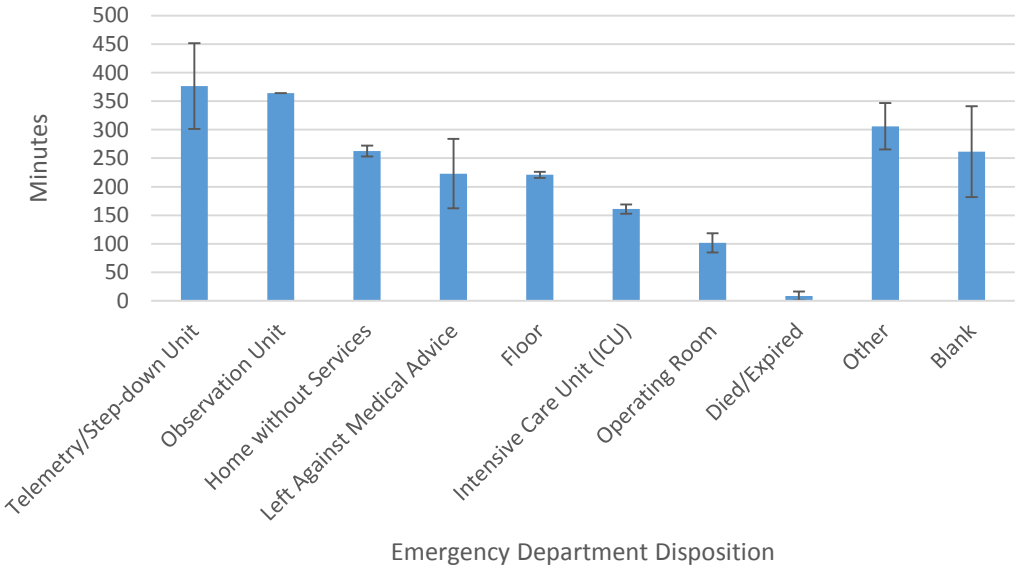
Figure 28: Length of Stay in the Emergency Department by Minutes in 2017, N=4,389



Source: DC Trauma Registry, HEPRA, DC Health

Figure 29 shows the median LOS in minutes by emergency department disposition destination. The median value that was chosen to represent the data because the averages were significantly affected by extreme LOS values. The error bars represent the standard error values for each of the median time measurements.

Figure 29: Median Length of Stay in the Emergency Department by Disposition Destination in 2017, N=4,389



Source: DC Trauma Registry, HEPRA, DC Health

Table 14 shows the average and median length of stay for patients admitted to the trauma service based on the mechanism of injury. Both the average and median values are included to give perspective that there are some patients who have extended stays in the hospital/ICU that affect the average lengths of stay.

Table 14 Average and Median Length of Stay in the Hospital and ICU by Mechanism of Injury, 2017

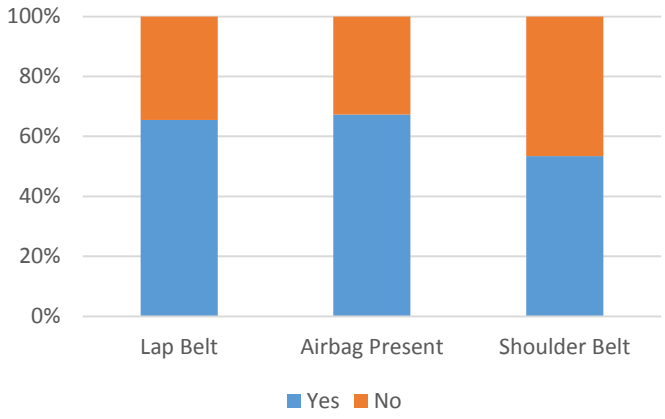
	Hospital		ICU*	
Mechanism of Injury	Average (Days)	Median (Days)	Average (Days)	Median (Days)
Abuse	6.9 (SD=9.9)	3.0 (SE=1.3)	7.9 (SD=9.0)	3.5 (SE=2.0)
Cut or Pierce	2.4 (SD=3.4)	1.0 (SE=0.2)	2.5 (SD=2.0)	2.0 (SE=0.2)
Explosion	2.0 (SD=2.2)	1.0 (SE=1.0)	1.0 (SD=0.0)	1.0 (SE=0.0)
Falls	3.8 (SD=6.2)	1.0 (SE=0.1)	3.5 (SD=4.5)	2.0 (SE=0.2)
Firearms	5.4 (SD=11.6)	2.0 (SE=0.6)	5.1 (SD=11.2)	2.0 (SE=0.9)
Hot Object or Substance	5.1 (SD=5.3)	2.0 (SE=2.0)	2.0 (SD=1.0)	2.0 (SE=0.6)
Machinery	3.2 (SD=3.2)	1.0 (SE=1.4)	2	2
Mechanical	2.6 (SD=2.8)	1.0 (SE=0.6)	2	2
MVT - Motorcyclist	5.0 (SD=6.5)	2.0 (SE=0.7)	4.1 (SD=3.3)	3.0 (SE=0.7)
MVT - Occupant	5.2 (SD=9.3)	1.0 (SE=0.4)	5.7 (SD=9.8)	2.0 (SE=0.8)
MVT - Pedal Cyclist	2.7 (SD=3.7)	1.0 (SE=0.4)	3.4 (SD=3.9)	2.0 (SE=0.8)
MVT - Pedestrian	6.5 (SD=10.0)	2.0 (SE=0.6)	5.4 (SD=6.4)	3.0 (SE=0.6)
Natural or Environmental	2.0 (SD=2.5)	1.0 (SE=0.5)	2	2
Not Classified	3.5 (SD=8.4)	1.0 (SE=1.9)	5.3 (SD=10.9)	2.0 (SE=3.3)
Other Land Transport	3.2 (SD=4.5)	1.0 (SE=0.3)	3.2 (SD=4.5)	2.0 (SE=0.6)
Other Specified, Classifiable	4.3 (SD=6.0)	1.0 (SE=1.0)	4.6 (SD=3.6)	3.5 (SE=0.9)
Other Specified, Not Elsewhere Classified	2.7 (SD=3.9)	1.0 (SE=0.9)	3.0 (SD=1.4)	3.0 (SE=1.0)
Overexertion	1.6 (SD=0.9)	1.0 (SE=0.3)	--	--
Pedal Cyclist, Other	2.9 (SD=5.7)	1.0 (SE=0.4)	3.7 (SD=5.1)	2.0 (SE=1.0)
Pedestrian Conveyance	3.4 (SD=5.0)	2.0 (SE=0.9)	2.5 (SD=0.8)	3.0 (SE=0.2)
Pedestrian, Other	3.5 (SD=6.6)	1.0 (SE=1.0)	3.0 (SD=3.6)	2.0 (SE=0.9)
Struck by or Against	2.1 (SD=3.8)	1.0 (SE=0.1)	2.4 (SD=2.8)	2.0 (SE=0.2)

** ICU averages and median values were based on the patients who had at least one day in the ICU*
Source: DC Trauma Registry, HEPRA, DC Health

Protective Devices

When analyzing morbidity and mortality amongst trauma injuries, it is important to understand the role, if any, of mitigating factors including but not limited to protective devices. The Registry collects information regarding the reported usage of protective devices. **Figure 30** displays the percentage of reported lap and shoulder belt usage and airbag deployment for trauma cases involving motor vehicle incidents.

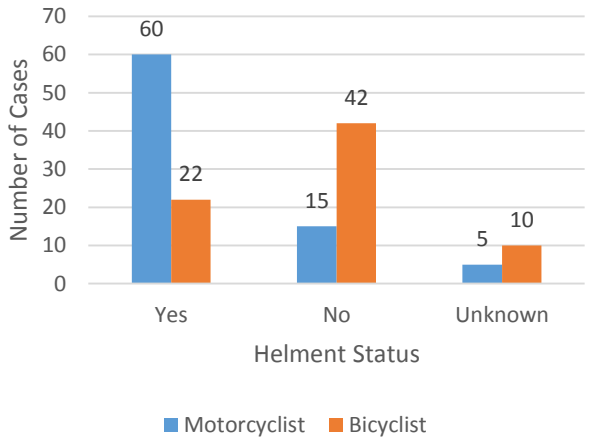
Figure 30: Protective Equipment present for Motor Vehicle Occupants in 2017, N=498



Source: DC Trauma Registry, HEPRA, DC Health

Figure 311 provides the usage of helmets among individuals riding motorcycles and bicycles. There are eighty (80) trauma cases involving motorcycles and seventy-four (74) trauma cases with bicycles. Almost 75% of motorcyclists were wearing helmets compared to 30% of bicyclists. The District of Columbia, Maryland, and Virginia have universal motorcycle helmet laws which require all individuals riding motorcycles to wear helmets.[28] There are no state laws mandating that adults wear helmets while riding a bicycle.[29]

Figure 31: Helmet Use of Motorcyclists and Bicyclists Seen by the Trauma System in the District of Columbia, 2017



Source: DC Trauma Registry, HEPRA, DC Health

[28] Insurance Institute for Highway Safety. (2018, August). *Motorcycle helmet use*. Retrieved from Insurance Institute for Highway Safety: http://www.iihs.org/iihs/topics/laws/helmetuse

[29] Insurance Institute for Highway Safety. (2018, August). *Bicycle helmet use*. Retrieved from Insurance Institute for Highway Safety: http://www.iihs.org/iihs/topics/laws/bicycle-laws/table-bicycle-helmet-use

Next Steps

The trauma data described within this report is aggregated data from 2016 and highlights a key segment of our specialized healthcare system within the District of Columbia. DC Health will continue to collect data regarding traumatic injuries so that we can track, longitudinally, the impact of trauma care on our residents and visitors. Information from our analysis of trauma data will aid DC Health in making data-driven recommendations that support injury and violence prevention efforts, improving patient care for trauma victims, and executing public health strategies across the District that reduce incidence, morbidity, and mortality.

The first step will be to work collaboratively with stakeholders from the trauma centers to improve overall standardization of the trauma registry data across the District. An example of this process would be to better understand the use of “other” and “blank” values. This effort will also increase the value of the Registry for scientific and research purposes as assumptions about the data will become more uniform. It will also allow for increased quality assurance, control, and programmatic improvement surrounding the data, data entry, and trauma care within the District’s trauma system.

DC Trauma Registry data analysis offers a unique insight into the incidence and injury patterns amongst residents and visitors to the nation’s capital based on race/ethnicity, gender, place of residence and injury location. Targeted injury prevention strategies could potentially be conceptualized and developed in order to concentrate on areas of the city that are experiencing increased incidence of specific types of traumatic injuries. Outreach campaigns can be championed by DC Health, as well as by strategic public-private partnerships, that may be able to more easily implement culturally competent initiatives in relevant communities. These programs can be aimed at delivering the information, resources, and training that ultimately may minimize the incidence, morbidity, and mortality of traumatic injuries.

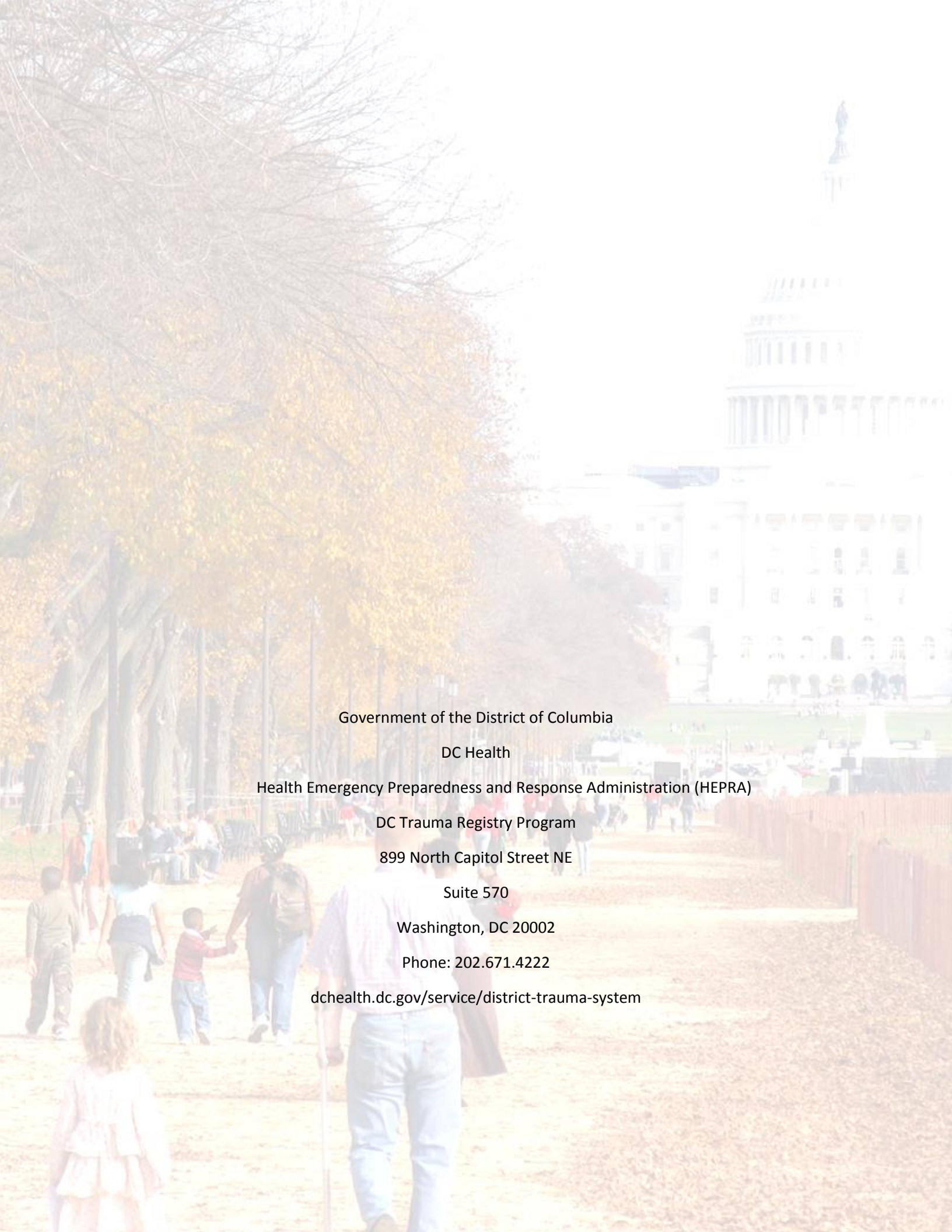
Appendix 1: Age, Gender, Race, and Trauma Type of Cases, 2017

		Female							Male						
Age Group	Trauma Type	American Indian	Asian	Black or African American	Native Hawaiian or Other Pacific Islander	Other Race	Unknown	White	American Indian	Asian	Black or African American	Native Hawaiian or Other Pacific Islander	Other Race	Unknown	White
Less than 5	**Total**		6	43		44		39		2	74		51		71
	Blunt		6	39		42		37		2	65		48		67
	Burn			1							1				
	Other			2		2					6		2		2
	Penetrating			1				2			2		1		2
5-9	**Total**		3	38		29	1	43		6	56		53		46
	Blunt		2	34		27	1	42		6	52		50		45
	Burn					1		1							
	Penetrating		1	4		1					4		3		1
10-14	**Total**		1	24		9		22		6	72		37		56
	Blunt		1	21		8		21		5	60		33		54
	Burn			1											
	Other										4		1		1
	Penetrating			2		1		1		1	8		3		1
15-19	**Total**		2	42		6		12			156		34		36
	Blunt		2	20		5		12			73		19		30
	Other			2							5		1		1
	Penetrating			20		1					78		14		5

		Female							Male						
Age Group	Trauma Type	American Indian	Asian	Black or African American	Native Hawaiian or Other Pacific Islander	Other Race	Unknown	White	American Indian	Asian	Black or African American	Native Hawaiian or Other Pacific Islander	Other Race	Unknown	White
20-24	**Total**	3	1	84		11	1	30		8	258	1	82	1	58
	Blunt	3	1	67		10	1	29		8	114		58		54
	Burn										1				
	Other			1				1			4		3		
	Penetrating			16		1					139	1	21	1	4
25-29	**Total**		3	89		12	1	29	2	5	294		68	1	83
	Blunt		3	72		11	1	27	2	5	152		52	1	66
	Burn												1		1
	Other			6							9				4
	Penetrating			11		1		2			133		15		12
30-34	**Total**		5	62		6		23		3	210		53	1	80
	Blunt		5	48		5		22		2	120		40	1	70
	Other			2						1	7		1		3
	Penetrating			12		1		1			83		12		7
35-39	**Total**			56		5	1	17	2		170		41	2	69
	Blunt			43		3	1	17	2		116		35	2	62
	Other			3							2		2		4
	Penetrating			10		2					52		4		3
40-44	**Total**			43		4		20	1	3	133		35	2	53
	Blunt			30		4		18	1	3	92		29	2	51
	Other			2							3		2		1
	Penetrating			11				2			38		4		1

		Female							Male						
Age Group	Trauma Type	American Indian	Asian	Black or African American	Native Hawaiian or Other Pacific Islander	Other Race	Unknown	White	American Indian	Asian	Black or African American	Native Hawaiian or Other Pacific Islander	Other Race	Unknown	White
45-49	**Total**		3	45		4		21	2	2	120		29		50
	Blunt		3	36		4		20	1	2	87		26		47
	Other			4					1		5				
	Penetrating			5				1			28		3		3
50-54	**Total**		1	57		6		27		2	149		22	2	51
	Blunt		1	43		5		27		2	115		18	2	45
	Other			6		1					6				3
	Penetrating			8							28		4		3
55-59	**Total**			57		7	1	34		2	162		19		53
	Blunt			54		7	1	34		2	136		16		53
	Other			3							3				
	Penetrating										23		3		
60-64	**Total**		1	51	1	4		39		1	126		12		42
	Blunt		1	45	1	3		38		1	114		10		39
	Other			3				1			2		1		
	Penetrating			3		1					10		1		3
65-69	**Total**	1	1	42		6	1	32		1	64		8		40
	Blunt	1	1	39		6	1	32		1	60		7		38
	Burn										1				
	Other			2							1				
	Penetrating			1							2		1		2

		Female							Male						
Age Group	Trauma Type	American Indian	Asian	Black or African American	Native Hawaiian or Other Pacific Islander	Other Race	Unknown	White	American Indian	Asian	Black or African American	Native Hawaiian or Other Pacific Islander	Other Race	Unknown	White
70-74	**Total**		2	30		7		42			31		4	1	35
	Blunt		2	29		7		42			29		3	1	35
	Other										1		1		
	Penetrating			1							1				
75-79	**Total**		2	23		5	1	43		2	25		3		30
	Blunt		2	18		5	1	43		2	25		2		30
	Other			3											
	Penetrating			2									1		
80-84	**Total**		2	13		3	1	43		2	20		3		21
	Blunt		2	12		3	1	42		2	18		3		21
	Burn										1				
	Other			1											
	Penetrating							1			1				
85+	**Total**		5	52		4	1	68		5	23		9		46
	Blunt		5	51		4	1	68		5	15		9		46
	Other			1											
	Penetrating										8				



Government of the District of Columbia

DC Health

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