# NYPD Shooting Incident Data (Historic)

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The data being used for this report is of a list of every shooting incident that occurred in New York City going back to 2006 through the end of the previous calendar year. This data is manually extracted every quarter and reviewed by a 3rd party before being posted on the NYPD website

## Table of Contents



```
library(tidyverse)
library(lubridate)
```

### 1. Summary of Data

```
## Rows: 25596 Columns: 19
## -- Column specification --------------------------------------------------------
## Delimiter: ","
## chr  (10): OCCUR_DATE, BORO, LOCATION_DESC, PERP_AGE_GROUP, PERP_SEX, PERP_R...
## dbl   (7): INCIDENT_KEY, PRECINCT, JURISDICTION_CODE, X_COORD_CD, Y_COORD_CD...
## lgl   (1): STATISTICAL_MURDER_FLAG
## time  (1): OCCUR_TIME
##
## i Use `spec()` to retrieve the full column specification for this data.
## i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```
## # A tibble: 6 x 19
##   INCIDENT_KEY OCCUR_DATE OCCUR_TIME BORO      PRECINCT JURISDICTION_CODE
##          <dbl> <chr>      <time>     <chr>        <dbl>             <dbl>
## 1     24050482 08/27/2006 05:35      BRONX           52                 0
## 2     77673979 03/11/2011 12:03      QUEENS         106                 0
## 3    226950018 04/14/2021 21:08      BRONX           42                 0
## 4    237710987 12/10/2021 19:30      BRONX           52                 0
## 5    224701998 02/22/2021 00:18      MANHATTAN       34                 0
## 6    225295736 03/07/2021 06:15      BROOKLYN        75                 0
## # ... with 13 more variables: LOCATION_DESC <chr>,
## #   STATISTICAL_MURDER_FLAG <lgl>, PERP_AGE_GROUP <chr>, PERP_SEX <chr>,
```

```
## #   PERP_RACE <chr>, VIC_AGE_GROUP <chr>, VIC_SEX <chr>, VIC_RACE <chr>,
## #   X_COORD_CD <dbl>, Y_COORD_CD <dbl>, Latitude <dbl>, Longitude <dbl>,
## #   Lon_Lat <chr>
```

```
##   INCIDENT_KEY        OCCUR_DATE         OCCUR_TIME           BORO
##  Min.   :  9953245   Length:25596       Length:25596      Length:25596
##  1st Qu.: 61593633   Class :character   Class1:hms        Class :character
##  Median : 86437258   Mode  :character   Class2:difftime   Mode  :character
##  Mean   :112382648                      Mode  :numeric
##  3rd Qu.:166660833
##  Max.   :238490103
##
##     PRECINCT      JURISDICTION_CODE LOCATION_DESC      STATISTICAL_MURDER_FLAG
##  Min.   :  1.00   Min.   :0.0000    Length:25596       Mode :logical
##  1st Qu.: 44.00   1st Qu.:0.0000    Class :character   FALSE:20668
##  Median : 69.00   Median :0.0000    Mode  :character   TRUE :4928
##  Mean   : 65.87   Mean   :0.3316
##  3rd Qu.: 81.00   3rd Qu.:0.0000
##  Max.   :123.00   Max.   :2.0000
##                   NA's   :2
##  PERP_AGE_GROUP       PERP_SEX          PERP_RACE         VIC_AGE_GROUP
##  Length:25596       Length:25596       Length:25596       Length:25596
##  Class :character   Class :character   Class :character   Class :character
##  Mode  :character   Mode  :character   Mode  :character   Mode  :character
##
##
##
##
##    VIC_SEX             VIC_RACE           X_COORD_CD        Y_COORD_CD
##  Length:25596       Length:25596       Min.   : 914928   Min.   :125757
##  Class :character   Class :character   1st Qu.:1000011   1st Qu.:182782
##  Mode  :character   Mode  :character   Median :1007715   Median :194038
##                                        Mean   :1009455   Mean   :207894
##                                        3rd Qu.:1016838   3rd Qu.:239429
##                                        Max.   :1066815   Max.   :271128
##
##     Latitude       Longitude        Lon_Lat
##  Min.   :40.51   Min.   :-74.25   Length:25596
##  1st Qu.:40.67   1st Qu.:-73.94   Class :character
##  Median :40.70   Median :-73.92   Mode  :character
##  Mean   :40.74   Mean   :-73.91
##  3rd Qu.:40.82   3rd Qu.:-73.88
##  Max.   :40.91   Max.   :-73.70
##
```

### 2. Tidy and Transform Data

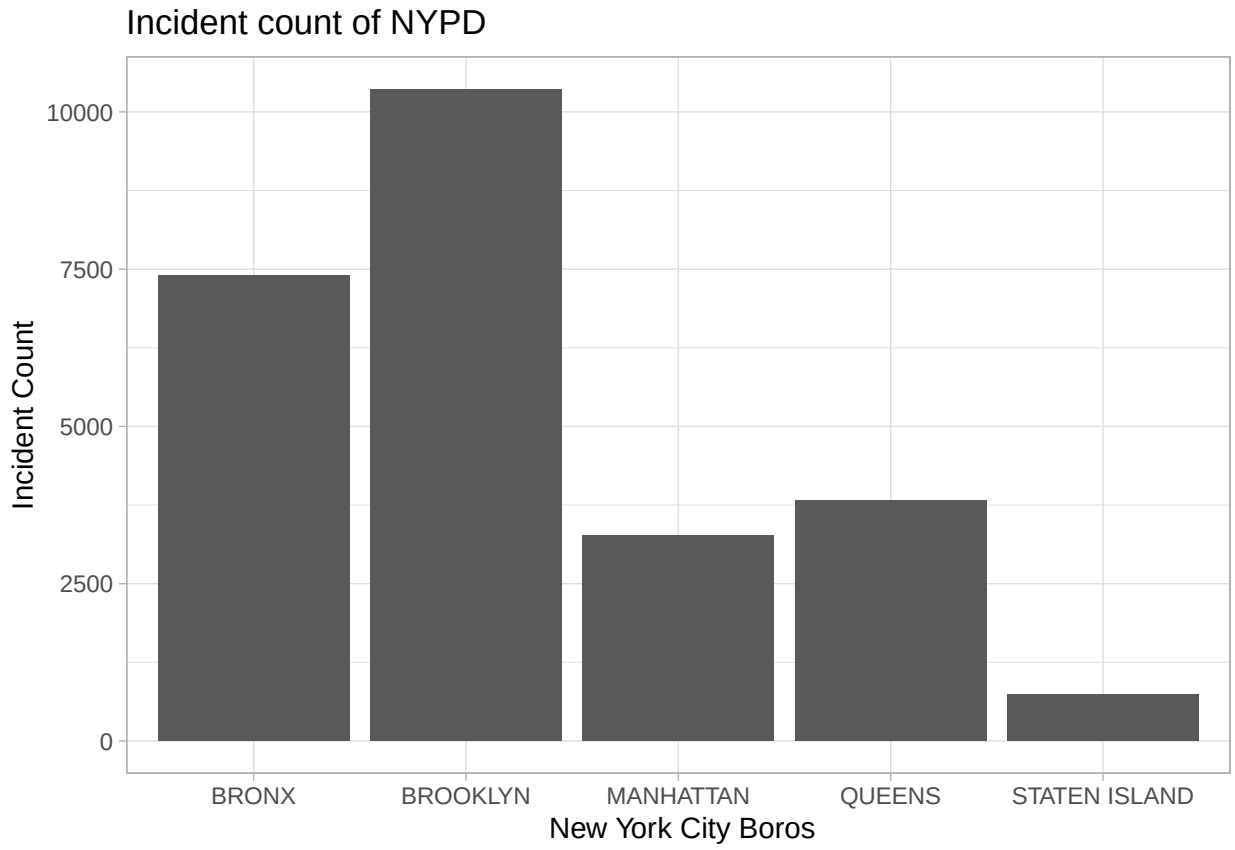
```
##   INCIDENT_KEY        OCCUR_DATE         OCCUR_TIME           BORO
##  Min.   :  9953245   Length:25596       Length:25596      Length:25596
##  1st Qu.: 61593633   Class :character   Class1:hms        Class :character
##  Median : 86437258   Mode  :character   Class2:difftime   Mode  :character
##  Mean   :112382648                      Mode  :numeric
##  3rd Qu.:166660833
```

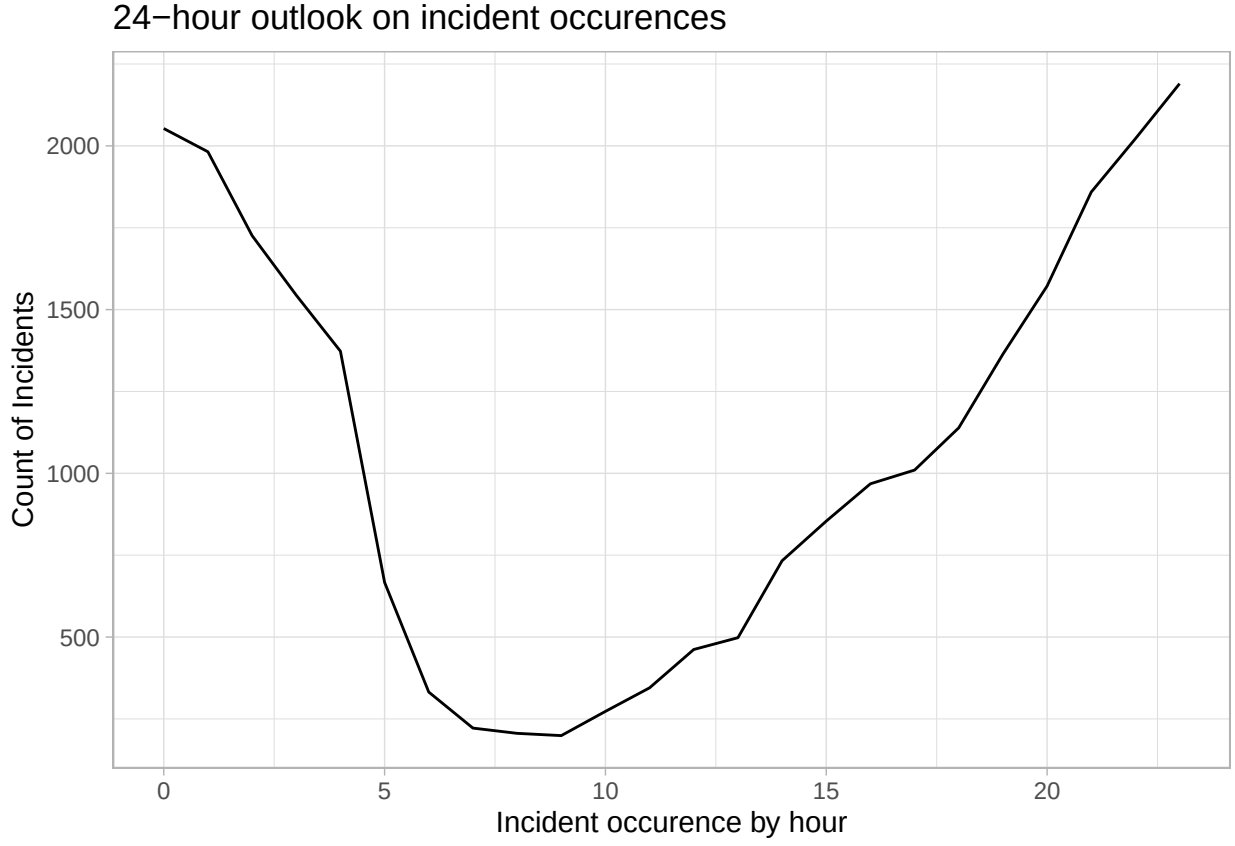
```
##  Max.   :238490103
##
##     PRECINCT      JURISDICTION_CODE LOCATION_DESC      STATISTICAL_MURDER_FLAG
##  Min.   :  1.00   Min.   :0.0000    Length:25596       Mode :logical
##  1st Qu.: 44.00   1st Qu.:0.0000    Class :character   FALSE:20668
##  Median : 69.00   Median :0.0000    Mode  :character   TRUE :4928
##  Mean   : 65.87   Mean   :0.3316
##  3rd Qu.: 81.00   3rd Qu.:0.0000
##  Max.   :123.00   Max.   :2.0000
##                   NA's   :2
##  PERP_AGE_GROUP       PERP_SEX          PERP_RACE         VIC_AGE_GROUP
##  Length:25596       Length:25596       Length:25596       Length:25596
##  Class :character   Class :character   Class :character   Class :character
##  Mode  :character   Mode  :character   Mode  :character   Mode  :character
##
##
##
##
##    VIC_SEX             VIC_RACE           X_COORD_CD        Y_COORD_CD
##  Length:25596       Length:25596       Min.   : 914928   Min.   :125757
##  Class :character   Class :character   1st Qu.:1000011   1st Qu.:182782
##  Mode  :character   Mode  :character   Median :1007715   Median :194038
##                                        Mean   :1009455   Mean   :207894
##                                        3rd Qu.:1016838   3rd Qu.:239429
##                                        Max.   :1066815   Max.   :271128
##
##     Latitude       Longitude        Lon_Lat
##  Min.   :40.51   Min.   :-74.25   Length:25596
##  1st Qu.:40.67   1st Qu.:-73.94   Class :character
##  Median :40.70   Median :-73.92   Mode  :character
##  Mean   :40.74   Mean   :-73.91
##  3rd Qu.:40.82   3rd Qu.:-73.88
##  Max.   :40.91   Max.   :-73.70
##

##  INCIDENT_KEY        OCCUR_DATE         OCCUR_TIME                  BORO
##  Length:25593       Length:25593       Length:25593      BRONX        : 7400
##  Class :character   Class :character   Class1:hms        BROOKLYN     :10364
##  Mode  :character   Mode  :character   Class2:difftime   MANHATTAN    : 3265
##                                        Mode  :numeric    QUEENS       : 3828
##                                                          STATEN ISLAND:  736
##
##
##  STATISTICAL_MURDER_FLAG PERP_AGE_GROUP     PERP_SEX
##  Mode :logical           <18    : 1463   F      :  371
##  FALSE:20665             18-24  : 5844   M      :14413
##  TRUE :4928              25-44  : 5202   Unknown:10809
##                          45-64  :  535
##                          65+    :   57
##                          Unknown:12492
##
##                            PERP_RACE     VIC_AGE_GROUP      VIC_SEX
##  AMERICAN INDIAN/ALASKAN NATIVE:    2   <18    : 2681   F      : 2403
##  ASIAN / PACIFIC ISLANDER      :  141   18-24  : 9603   M      :23179
```

```
##  BLACK                          :10667   25-44  :11384   Unknown:   11
##  BLACK HISPANIC                 : 1203   45-64  : 1698
##  Unknown                        :11146   65+    :  167
##  WHITE                          :  272   UNKNOWN:   60
##  WHITE HISPANIC                 : 2162
##                              VIC_RACE       Latitude       Longitude
##  AMERICAN INDIAN/ALASKAN NATIVE:    9   Min.   :40.51   Min.   :-74.25
##  ASIAN / PACIFIC ISLANDER       :  354   1st Qu.:40.67   1st Qu.:-73.94
##  BLACK                          :18280   Median :40.70   Median :-73.92
##  BLACK HISPANIC                 : 2485   Mean   :40.74   Mean   :-73.91
##  Unknown                        :   65   3rd Qu.:40.82   3rd Qu.:-73.88
##  WHITE                          :  660   Max.   :40.91   Max.   :-73.70
##  WHITE HISPANIC                 : 3740
```

### 3. Visualizations



### 4. Bias Identification & Data Analysis

With this data report on NYPD shootings, there can be a bias towards a certain age and race group when it comes to the incident count and where the incident took place. Being a young black man myself and seeing the news coverage across the US over the last decade of other young black men being mistreated by law enforcement can put the bias in me that the "protect and serve" only applies to people of certian race or socioeconomical backgrounds. In my case to mitigate this bias I need create a hypohthesis and must stricly adhere to the data and scientific process that I have been provided to draw any conclusions from. With this report, I have been able to draw a few conclusions free of bias: Staten Island is the safest of all boros, the boro with most incident count on record is Brooklyn, most crimes are committed by males and the victims of these crimes tends to be females, most incidents take place during the late night hours of 8pm - 4am.

### 5. Session Info

```
## R version 4.2.0 (2022-04-22 ucrt)
## Platform: x86_64-w64-mingw32/x64 (64-bit)
## Running under: Windows 10 x64 (build 19043)
##
## Matrix products: default
##
## locale:
## [1] LC_COLLATE=English_United States.utf8
## [2] LC_CTYPE=English_United States.utf8
## [3] LC_MONETARY=English_United States.utf8
## [4] LC_NUMERIC=C
## [5] LC_TIME=English_United States.utf8
##
## attached base packages:
## [1] stats     graphics  grDevices utils     datasets  methods   base
##
## other attached packages:
##  [1] lubridate_1.8.0 forcats_0.5.1   stringr_1.4.0   dplyr_1.0.9
##  [5] purrr_0.3.4     readr_2.1.2     tidyr_1.2.0     tibble_3.1.7
##  [9] ggplot2_3.3.6   tidyverse_1.3.1
##
## loaded via a namespace (and not attached):
##  [1] tidyselect_1.1.2 xfun_0.31        haven_2.5.0      colorspace_2.0-3
##  [5] vctrs_0.4.1      generics_0.1.2   htmltools_0.5.2  yaml_2.3.5
##  [9] utf8_1.2.2       rlang_1.0.2      pillar_1.7.0     glue_1.6.2
## [13] withr_2.5.0      DBI_1.1.2        bit64_4.0.5      dbplyr_2.1.1
## [17] modelr_0.1.8     readxl_1.4.0     lifecycle_1.0.1  munsell_0.5.0
## [21] gtable_0.3.0     cellranger_1.1.0 rvest_1.0.2      evaluate_0.15
## [25] labeling_0.4.2   knitr_1.39       tzdb_0.3.0       fastmap_1.1.0
## [29] curl_4.3.2       parallel_4.2.0   fansi_1.0.3      highr_0.9
## [33] broom_0.8.0      backports_1.4.1  scales_1.2.0     vroom_1.5.7
## [37] jsonlite_1.8.0   farver_2.1.0     bit_4.0.4        fs_1.5.2
## [41] hms_1.1.1        digest_0.6.29    stringi_1.7.6    grid_4.2.0
## [45] cli_3.3.0        tools_4.2.0      magrittr_2.0.3   crayon_1.5.1
## [49] pkgconfig_2.0.3  ellipsis_0.3.2   xml2_1.3.3       reprex_2.0.1
## [53] assertthat_0.2.1 rmarkdown_2.14   httr_1.4.3       rstudioapi_0.13
## [57] R6_2.5.1         compiler_4.2.0
```