

DATA DOCUMENTATION

“10 Facts about Pretrial Electronic Monitoring in Cook County” | *September 2021*

PACKAGES AND FUNCTIONS

```
library(tidyverse)

## — Attaching packages —

tidyverse 1.3.0 —

## ✓ ggplot2 3.3.2      ✓ purrr   0.3.4
## ✓ tibble  3.0.3      ✓ dplyr   1.0.1
## ✓ tidyr   1.1.1      ✓ stringr 1.4.0
## ✓ readr   1.3.1      ✓ forcats 0.5.0

## — Conflicts —

- tidyverse_conflicts() —

## x dplyr::filter() masks stats::filter()
## x dplyr::lag()     masks stats::lag()

library(lubridate)

##
## Attaching package: 'lubridate'

## The following objects are masked from 'package:base':
##
##     date, intersect, setdiff, union

library(rmarkdown)
library(ggthemes)
library(openxlsx)
library(RColorBrewer)
library(readr)
library(readxl)
library(naniar)
library(viridis)

## Loading required package: viridisLite

library(ggmap)

## Google's Terms of Service: https://cloud.google.com/maps-platform/terms/.

## Please cite ggmap if you use it! See citation("ggmap") for details.

library(sp)

###Useful Functions

calc_age <- function(x, refdate = Sys.Date()){
  require(lubridate)
  interval <- interval(x, refdate)
  period <- as.period(interval, unit = "year")
  period$year
}

calc_days <- function(x, refdate = Sys.Date()){
  require(lubridate)
  interval <- interval(x, refdate)
```

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```
period <- as.period(interval, unit = "day")
period$day
}

calc_months <- function(x, refdate = Sys.Date()){
  require(lubridate)
  interval <- interval(x, refdate)
  period <- as.period(interval, unit = "month")
  period$month
}

calc_hours <- function(x, refdate = Sys.Date()){
  require(lubridate)
  interval <- interval(x, refdate)
  period <- as.period(interval, unit = "hour")
  period$hour
}

calc_minutes <- function(x, refdate = Sys.Date()){
  require(lubridate)
  interval <- interval(x, refdate)
  period <- as.period(interval, unit = "minute")
  period$minute
}

bargraph_datalabels <- geom_text(stat = "count", aes(label = ..count.., vjust = -0.2))

AppleseedTheme <- theme(axis.text.x = element_text(angle = 45, vjust = 0.8, hjust = 0.8),
  plot.title = element_text(hjust = 0.5),
  panel.background = element_rect(fill = "white", color = "black"),
  plot.background = element_rect(fill = "white"),
  panel.grid.major.y = element_line(size = 0.1, color = "grey75"),
  panel.grid.major = element_line(size = 0.1, color = "grey75"),
  panel.grid.minor = element_line(size=0.25))

Marquee_cols = c("#df5326", "#f69200", "#fec304", "#a6b727", "#418ab3", "#838383")
```

FACT 1: The number of people incarcerated by the Cook County Sheriff, either behind bars or in their own homes, has risen 23% since April 2020.

These data were pulled from two sources.

The first, DF1_Daily_ADJ_Jail_EM_080521.csv, is a spreadsheet of the daily population of the Cook County Jail and the Cook County Sheriff's EM program from March 1, 2020 through August 5, 2020. This is pulled from the Sheriff's website daily with help from Injustice Watch.

The second spreadsheet, DF2_Monthly_Mean_ADJ_EM_Jail.csv, is the average daily population by month of the electronic monitoring program. It is pulled from several sources.

The first is the Chief Judges's report on the population of the jail and of the electronic monitoring population from January 2014 to December 2018, found here:

<http://www.cookcountycourt.org/Portals/0/Statistics/Bail%20Reform/Bail%20Reform%20Report%20FINAL%20-%20%20Published%2005.9.19.pdf>.

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The second is the Chief Judge's Quarterly Population reports; through the end of 2019, they reported monthly (they now report it quarterly):

http://www.cookcountycourt.org/Portals/0/Chief%20Judge/Model%20Bond%20Court/2019-2020/2019_4%20New%20Dashboard%20V2%20FINAL.pdf?ver=newTanYXBxRf9exBckbBWQ%3d%3d.

January 2020 and February 2020 were hand counted and averaged from the Sheriff's archive of jail and EM population data found here: <https://www.cookcountysheriff.org/data/>.

```
##Import

Daily_ADP <- read_csv("DF1_Daily_ADP_Jail_EM_090821.csv",
  col_types = cols(Date = col_date(format = "%m/%d/%Y")))

## Warning: 1 parsing failure.
## row col expected actual file
## 515 Date date like %m/%d/%Y 8/23/21 'DF1_Daily_ADP_Jail_EM_090821.csv'

Monthly_ADP <- read_csv("DF2_Monthly_Mean_ADP_EM_Jail.csv",
  col_types = cols(Month = col_date(format = "%b-%Y")))

## Warning: Missing column names filled in: 'X4' [4], 'X5' [5], 'X6' [6], 'X7' [7],
## 'X8' [8], 'X9' [9]

Daily_ADP_columns <- Daily_ADP %>%
  rowwise() %>%
  mutate(CCSO = sum(across(ends_with("Pop")), na.rm = TRUE)) %>%
  select(Date, Jail = Jail_Pop, EM = EM_Pop, "Jail & EM Combined" = CCSO)

Daily_ADP_gph <- Daily_ADP_columns %>%
  pivot_longer(cols = c(Jail, EM, `Jail & EM Combined`), names_to = "Jail_EM_CCSO")

Inc_Total_Pop_grph <- ggplot(Daily_ADP_gph, aes(x=Date, color = Jail_EM_CCSO, y=value))+
  geom_line()+
  scale_color_manual(values = c("Jail" = "orange", "EM" = "blue", `Jail & EM Combined` = "black"))+
  scale_x_date(date_breaks = "1 month", date_labels = "%b-%y", expand = c(0.01, 0.01))+
  labs(color = "Custody Type")+
  ggtitle("People in Cook County Jail\n& Sheriff's Electronic Monitoring\nMarch 2020-August 2021")+
  xlab("Date")+
  ylab("Number of People")+
  theme(legend.position = "bottom", aspect.ratio = 1/2)+
  annotate("text", x=as.Date("2020-04-14"), y = 6700, label = "Low: 7109", size = 3, fontface = "bold", color = "black")+
  annotate("text", x=as.Date("2021-06-25"), y = 8500, label = "Current: 8766", size = 3, fontface = "bold", color = "black")+
  annotate("segment", x = as.Date("2020-09-01"), xend = as.Date("2021-04-01"), y = 6750, yend = 8200,
  linetype = 5, color = "red", arrow = arrow(length = unit(0.25, "cm")))+
  annotate("text", x= as.Date("2020-12-31"), y=6900, label = "23% Increase", size = 4, fontface = "bold", color = "red")

ggsave("Inc_Total_Pop_gph.png", Inc_Total_Pop_grph, device = "png")

## Saving 5 x 4 in image

## Warning: Removed 3 row(s) containing missing values (geom_path).

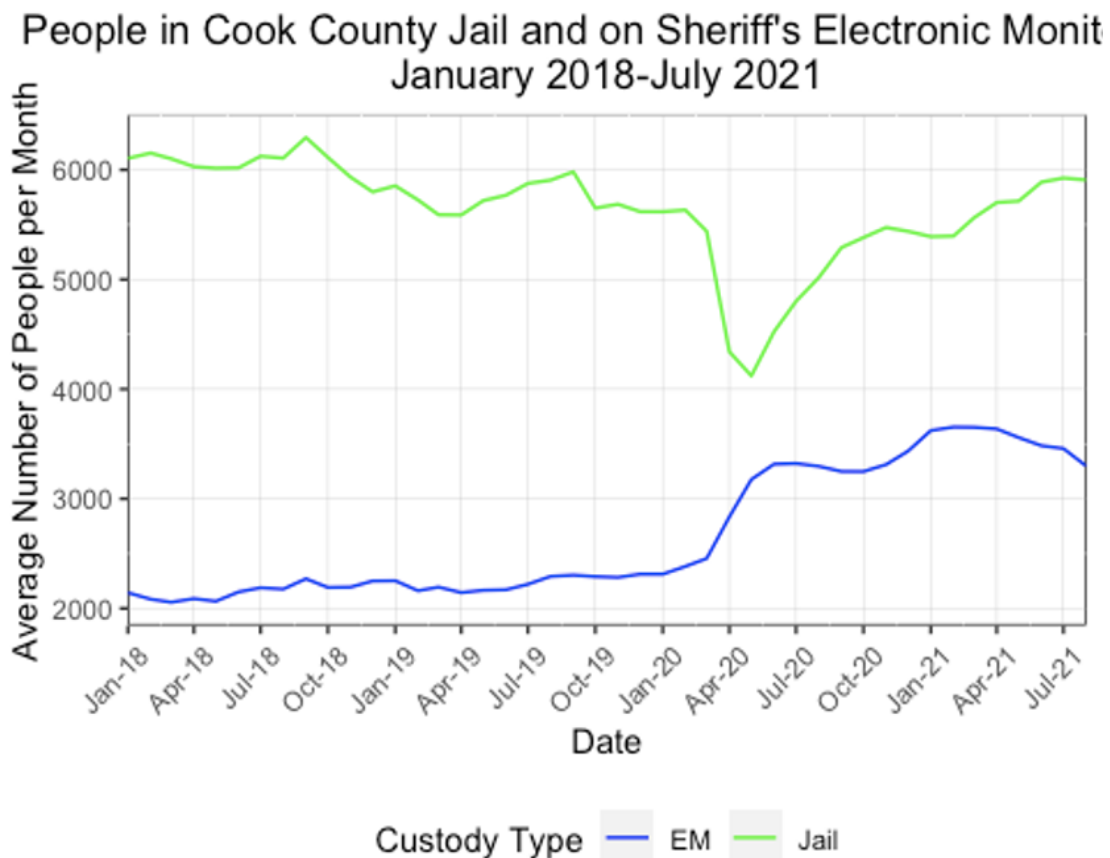
Monthly_ADP_gph_1821 <- Monthly_ADP %>%
  rename(Jail = ADP_Jail, EM = ADP_EM) %>%
  pivot_longer(cols = c(Jail, EM), names_to = "Jail_EM") %>%
```

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```
filter(year(Month) %in% 2018:2021)

ggplot(Monthly_ADP_gph_1821, aes(x=Month, color = Jail_EM, y=value))+
  geom_line()+
  scale_color_manual(values = c("Jail" = "green", "EM" = "blue"))+
  scale_x_date(date_breaks = "3 months", date_labels = "%b-%y", expand = c(0, 0))+
  labs(color = "Custody Type")+
  ggtitle("People in Cook County Jail and on Sheriff's Electronic Monitoring\nJanuary 2018-July 2021")+
  xlab("Date")+
  ylab("Average Number of People per Month")+
  AppleseedTheme +
  theme(legend.position = "bottom")
```



FACT 2: The number of people incarcerated by the Cook County Sheriff, either behind bars or in their own homes, has risen 23% since April 2020.

The code below takes the roster of all people in CCSO custody for July 31, 2021, provided via FOIA request and available from the Sheriff's Office. I get this data from a monthly FOIA agreement with the office - the original FOIA request is number R009626-072920 and reads:

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Note, this is the same information I requested in FOIA Request R006896-043020, and can be pulled with the exact same queries with the addition of TWO fields I neglected to include in my last request: Race and Gender. The FOIA request reads:

I am requesting the following rosters as of July 31, 2020, and once per month on the last day of the month thereafter: (1) A Roster of jail inmates and individuals with the following information (I am requesting information on all cases for each inmate, rather than simply the “lead” charge: - Booking ID - Booking Date - First and Last name - RACE - GENDER - IR Number - Current Circuit Court Docket Number - Original Circuit Court Docket Number at time of booking - Date of Birth - No Place to Stay (NPTS) status - Whether they are Sentenced, Pre-trial, or held because of a custody hold from an outside entity (I have seen this marked as “Detainer” in previous spreadsheets obtained from CCSO) - The outside entity whose hold is keeping them in custody, if any - Description of Charge - Statute citation of Charge - Class of Charge - Bond Type by charge - Money bond amount by charge, if applicable - Last Court Date, per charge - Last Court location, per charge - Next Court date, per charge - Next court location, per charge - Judge, per charge - Housing Location. (2) A spreadsheet of the same fields as applicable for individuals participating in the Sheriff’s Electronic Monitoring Program.

```
CCSO_July21_clean <- read_csv("CCSO_July21_EM_rpt.csv",
  col_types = cols(Booking_Date = col_date(format = "%m/%d/%Y"),
    Report_Date = col_date(format = "%m/%d/%Y"),
    NCD = col_date(format = "%m/%d/%Y %H:%M"),
    LCD = col_date(format = "%m/%d/%Y"),
    Column1 = col_skip()))

CCSO_July20_clean <- read_csv("CCSO_Pop_Jul20.csv",
  col_types = cols(`Birth Date` = col_date(format = "%F"),
    `Booking Date` = col_date(format = "%F %T"),
    `Last Court Date` = col_date(format = "%m/%d/%y"),
    `Last Court Date 2` = col_date(format = "%m/%d/%y"),
    `Next Court Date` = col_date(format = "%F %T")))

## Warning: 27 parsing failures.
## row      col expected      actual      file
## 1702 IR Number a double NOT ASSIGNED. 'CCSO_Pop_Jul20.csv'
## 1800 IR Number a double NOT ASSIGNED. 'CCSO_Pop_Jul20.csv'
## 2688 IR Number a double NOT ASSIGNED. 'CCSO_Pop_Jul20.csv'
## 2897 IR Number a double NOT ASSIGNED. 'CCSO_Pop_Jul20.csv'
## 4147 IR Number a double NOT ASSIGNED. 'CCSO_Pop_Jul20.csv'
## ....
## See problems(...) for more details.

#

EM_ppl_Class_Jul21 <- CCSO_July21_clean %>%
  mutate(Class_fac_prep = fct_collapse(Chg_Class, "M" = "M", "X" = "X", "1" = "1", "2" = "2", "3" = "3", "4" = "4",
    "A" = "A", "B" = "B", "C" = "C", "P" = c("L", "P"), "W" = "W", "U" = "U"), Class_fac = factor(Class_fac_prep,
    ordered = is.ordered(Class_fac_prep))) %>%
  select(-Class_fac_prep) %>%
  arrange(Class_fac) %>%
  distinct(Booking_ID, .keep_all = TRUE) %>%
  filter(Custody_Status == "EM") %>%
  mutate(Cat_Class = paste(Class_fac, Macro_Cat, sep = "-"), Days_On = calc_days(Booking_Date,
    as.Date("2021-07-31")), LOS_Cat = cut(Days_On, breaks = c(0, 31, 91, 181, 366, 4000), labels = c(">1 mo",
    "1-3 mo", "3-6 mo", "6-12 mo", "1 year+"))) %>%
  select(Report_Date, First_Name, Last_Name, Race, Gender, Booking_ID, Booking_Date, Days_In, LOS_Cat)

EM_ppl_Class_Jul20 <- CCSO_July20_clean %>%
```

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```
mutate(Class_fac_prep = fct_collapse(`Charge Class`, "M" = "CLASS M-MURDER", "X" = "CLASS X FELONY", "1" = "CLASS 1 FELONY", "2" = "CLASS 2 FELONY", "3" = "CLASS 3 FELONY", "4" = "CLASS 4 FELONY", "A" = "CLASS A MISDEMEANOR", "B" = "CLASS B MISDEMEANOR", "C" = "CLASS C MISDEMEANOR", "P" = "PETTY_TRAFFIC", "U" = c("UNKNOWN", "Unclassified Felony")), Class_fac = factor(Class_fac_prep, levels = c("M", "X", "1", "2", "3", "4", "A", "B", "C", "P", "U"), ordered = is.ordered(Class_fac_prep)) %>%
  select(-Class_fac_prep) %>%
  arrange(Class_fac) %>%
  distinct(Bookingid, .keep_all = TRUE) %>%
  filter(`Custody Status` == "EM") %>%
  mutate(Days_In = calc_days(`Booking Date`, as.Date("2020-07-31")), LOS_Cat = cut(Days_In, breaks = c(0, 31, 91, 181, 366, 4000), labels = c(">1 mo", "1-3 mo", "3-6 mo", "6-12 mo", "1 year+")), Report_Date = as.Date("2020-07-31")) %>%
  select(Report_Date, First_Name = "Inmate First", Last_Name = "Inmate Last", Race, Gender, Booking_ID = Bookingid, Booking_Date = "Booking Date", Days_In, LOS_Cat)

EM_July_Compare <- rbind(EM_ppl_Class_Jul20, EM_ppl_Class_Jul21) %>%
  mutate(Report_Date = ifelse(Report_Date == "2020-07-31", "July 2020", "July 2021"))

LOS_plot <- ggplot(EM_July_Compare, aes(x=LOS_Cat, fill = Report_Date))+
  geom_bar(width = 0.5, position = "dodge") +
  scale_fill_manual(values = c("July 2020" = "#418ab3", "July 2021" = "#df5326"))+
  geom_text(stat = "count", position = position_dodge(width = 0.5), aes(label = ..count.., vjust = -0.2), size = 3)+
  ggtitle("Electronic Monitoring Detainees by Length of Time in Custody,\nJuly 31, 2020 vs July 31, 2021")+
  xlab("Time in Custody")+
  ylab("Number of Detainees")+
  labs(fill = "Date")+
  AppleseedTheme+
  theme(axis.text.x = element_text(angle = 0, hjust = 0.5), aspect.ratio = 1/2)

#ggsave("LOS_plot.png", LOS_plot, device = "png")
```

FACT 3: 23% of Cook County's population is Black but 74% of the Electronic Monitoring Population is Black.

This fact pulls from census information found here

<https://www.census.gov/quickfacts/fact/table/cookcountyvillinois/PST120219>, and from a the race breakdown of the July 31, 2021 Data.

```
EM_pop_race <- EM_ppl_Class_Jul21 %>%
  group_by(Race) %>%
  summarize(Total = n(), Percent = round(Total/3355*100, 2))

## `summarise()` ungrouping output (override with `.groups` argument)

Race_Percents <- tibble(Race = c("Black", "Latinx", "Other", "White", "Black", "Latinx", "Other", "White"),
  Source = c("Electronic Monitoring", "Electronic Monitoring", "Electronic Monitoring", "Electronic Monitoring", "Cook County", "Cook County", "Cook County", "Cook County"), Percent = c(74.19, 18.63, 0.86, 6.35, 23.8, 25.6, 8.6, 42.0))

colors_race <- c("White" = "#fec304", "Black" = "#418ab3", "Other" = "#a5b727", "Latinx" = "#df5326")
```

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```
Race_compare_plot <- ggplot(Race_Percents, aes(x=Source, y=Percent, fill = Race))+  
  geom_col(width = 0.5)+  
  ggtitle("Cook County Census Data, 2019 vs. \nPeople on Electronic Monitoring by Race, July 31, 2021")+  
  xlab("")+  
  ylab("Percent")+  
  scale_fill_manual(values = colors_race)+  
  AppleseedTheme+  
  theme(aspect.ratio = 1/2, axis.text.x = element_text(angle = 0, hjust = 0.5))  
  
ggsave("Race_compare_plot.png", Race_compare_plot, device = "png")  
  
## Saving 5 x 4 in image
```

Fact 4: 83% of people on Electronic Monitoring have had to pay a money bond in addition to being placed on EM.

One of the difficult things about the CCSO Roster data is that each line is a case, and each case may have its own bond status. In order to find all the people who have a money bond on any case, the code below cleans up the data slightly, then sorts it with Money bonds as the highest ranked choice, then picks the first instance in the dataset of each Booking ID. This means that if someone has a money bond on any of their cases, they are counted as having a money bond, and only people who do not have a money bond on ANY case are counted as not having one.

```
EM_ppl_Bond <- CCSO_July21_clean %>%  
  mutate(Bond_fac_money = factor(Bond_Type_Case, levels = c("D-Bond", "D-Bond w/EM", "No Bond",  
    "Inert/Blocking", "EM-I Bond", "I-Bond", "Unknown"), ordered = is.ordered(Bond_Type_Case))) %>%  
  filter(Custody_Status == "EM") %>%  
  arrange(Bond_fac_money) %>%  
  distinct(Booking_ID, .keep_all = TRUE)  
  
Bond_Type <- ggplot(EM_ppl_Bond, aes(x=fct_infreq(fct_lump(Bond_Type_Case, n=2))))+  
  geom_bar(fill = "#418ab3", width = 0.5)+  
  xlab("Type of Bond")+  
  ylab("Number of EM Detainees")+  
  scale_y_continuous(breaks = seq(0,3000,250))+  
  ggtitle("Sheriff's EM Detainees by Type of Bond\nJuly 31, 2021")+  
  annotate("text", x = 1, y=1400, label = "83%")+  
  annotate("text", x=2, y=180, label = "11%")+  
  annotate("text", x=3, y=87, label = "5%")+  
  AppleseedTheme+  
  theme(aspect.ratio = 1/2)
```

Fact 5: 67% of People spend at least 2 days in Jail before being released on EM, threatening their employment, housing, and family lives.

In order to determine the total amount of time people spend in jail prior to being released on EM, I had to combine two datasets that contain information on the amount of time someone spends in custody. CCSO provided via FOIA a list of all people who were placed on Electronic Monitoring between 2016-2020, along with their Booking Date and Time and the date and time that they

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were released onto Electronic Monitoring. But this does not accurately capture the full amount of time that people spend in custody when they are first arrested. When people are first arrested, they also spend sometimes as long as 48-72 hours, but usually around 12-24 hours, in the custody of the Chicago Police Department in Lockup. These custody periods are found in CPD's arrest data available at <https://data.cityofchicago.org/Public-Safety/Arrests/dpt3-jri9>. A daily updated copy of that arrest data with names of arrestees can be obtained via request to the city data portal team.

I narrowed this join to arrests in Chicago (previously, I had coded all Chicago Zipcodes with the Courthouse name 26th street, where they are handled). For felony cases and any case where EM would be assigned right after arrest, a person is held overnight until a "bond court bus" arrives at each police station to transport them to central bond court between 3-5 AM. Accordingly, the person goes to bond court at noon the day they get out of police lockup. This code constructs that bond court time, then calculates the time between Arrest and Bond Court. Then, it joins to the EM dataset, joining only if the Booking date is within a 72 hour buffer of the Arrest Date. This likely excludes some outlier cases where people actually spend over 72 hours in CPD custody. To calculate the total time in custody, I simply added the time in CPD custody to the time in CCSO custody.

Overall, this likely undercounts the total time in custody by a few hours for each person, since it usually takes a few hours between when bond court starts for bond court to finish and for people to be formally booked into the jail.

#Importing the Arrest Data

```
Arrests_060721 <- read_csv("Arrests_060721.csv",
  col_types = cols(`ARREST DATE` = col_datetime(format = "%m/%d/%Y %H:%M:%S %p"),
    `RECEIVED IN LOCKUP` = col_datetime(format = "%m/%d/%Y %H:%M:%S %p"),
    `RELEASED FROM LOCKUP` = col_datetime(format = "%m/%d/%Y %H:%M:%S %p")))

CPD_Crosswalk_Final_June2021 <- read_csv("CPD_Crosswalk_Final_June2021.csv")

## Parsed with column specification:
## cols(
##   Statute = col_character(),
##   Type = col_character(),
##   Class = col_character(),
##   FBI = col_character(),
##   FBI_Meaning = col_character(),
##   Count = col_double(),
##   Description = col_character(),
##   Micro_Category = col_character(),
##   Police_Related = col_logical(),
##   Forcible = col_logical(),
##   Macro_Category = col_character(),
##   `PFA-Detainable` = col_logical()
## )

Arrests_1620_clean <- Arrests_060721 %>%
  select(CB_No = `CB NO`, RD_No = `CASE NUMBER`, Arrest_Datetime = `ARREST DATE`, First_Name = `FIRST NAME`,
    Middle_Name = `MIDDLE NAME`, Last_Name = `LAST NAME`, Age = AGE, Gender = SEX, Race = RACE, Street_No =
    STREET_NO, Street_Dir = STREET_DIR, Street_Name = STREET_NAME, District = DISTRICT, Beat = BEAT, Lockup_In =
    `RECEIVED IN LOCKUP`, Lockup_Out = `RELEASED FROM LOCKUP`, Bond_Type = `BOND TYPE CD`, Bond_Amount = `BOND
    AMT`, Bond_Post_Datetime = `BOND DATE`, Chg_1_Statute = `CHARGE 1 STATUTE`, Chg_1_Desc = `CHARGE 1
    DESCRIPTION`, Chg_1_Type = `CHARGE 1 TYPE`, Chg_1_Class = `CHARGE 1 CLASS`, Chg_1_FBI = `CHARGE 1 FBI_CODE`,
    Chg_2_Statute = `CHARGE 2 STATUTE`, Chg_2_Desc = `CHARGE 2 DESCRIPTION`, Chg_2_Type = `CHARGE 2 TYPE`,
    Chg_2_Class = `CHARGE 2 CLASS`, Chg_2_FBI = `CHARGE 2 FBI_CODE`, Chg_3_Statute = `CHARGE 3 STATUTE`,
    Chg_3_Desc = `CHARGE 3 DESCRIPTION`, Chg_3_Type = `CHARGE 3 TYPE`, Chg_3_Class = `CHARGE 3 CLASS`, Chg_3_FBI =
    `CHARGE 3 FBI_CODE`, Chg_4_Statute = `CHARGE 4 STATUTE`, Chg_4_Desc = `CHARGE 4 DESCRIPTION`, Chg_4_Type =
    `CHARGE 4 TYPE`, Chg_4_Class = `CHARGE 4 CLASS`, Chg_4_FBI = `CHARGE 4 FBI_CODE`) %>%
```


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```
mutate(Arrest_Date = as.Date(Arrest_Datetime),
  Year_of_Birth = year(Arrest_Date) - Age,
  Race = fct_collapse(Race, Indigenous = "AMER INDIAN / ALASKAN NATIVE",
    Asian = "ASIAN / PACIFIC ISLANDER",
    Black = "BLACK",
    Latinx = c("BLACK HISPANIC", "WHITE HISPANIC"),
    White = "WHITE",
    Unknown = "UNKNOWN / REFUSED"),
  Gender = fct_recode(Gender, Female = "FEMALE", Male = "MALE", Unknown = "UNKNOWN"),
  Street_Address = str_c(Street_No, Street_Dir, Street_Name, sep = " "),
  Time_In_Lockup = calc_hours(Lockup_In, Lockup_Out),
  Arrest_to_Lockup = calc_hours(Arrest_Datetime, Lockup_In),
  Bond_Bus = ifelse(is.na(Bond_Type) & Chg_1_Type == "F" & hour(Lockup_Out) %in% c(5, 6, 7), TRUE,
FALSE),
  Arrest_Month = floor_date(Arrest_Date, "month"),
  Arrest_Year = year(Arrest_Date),
  Chg_1_Class = fct_collapse(Chg_1_Class, M = "M", X = "X", "1" = "1", "2" = "2", "3" = "3", "4" = "4",
"A" = "A", "B" = "B", "C" = "C", "P" = c("P", "Z", "U", "L")),
  Bond_Type = fct_collapse(Bond_Type, "ID Surrender" = c("BCARD", "DRLIC"), "D-Bond" = c("CASH",
"DBOND"), "I-Bond" = "IBOND", "No Bond Posted" = "NOBONDP", Other = "OTHER"),
  Full_Name = paste(First_Name, Last_Name, sep = "_") %>%
  left_join(CPD_Crosswalk_Final_June2021, by = c("Chg_1_Desc" = "Description")) %>%
  select(CB_No, RD_No, Arrest_Datetime = Arrest_Datetime, Arrest_Date, Arrest_Month, Arrest_Year, Last_Name,
First_Name, Age, Year_of_Birth, Race, Gender, Street_Address, District, Beat, Chg_Desc = Chg_1_Desc,
Chg_Class = Chg_1_Class, Micro_Cat = Micro_Category, Macro_Cat = Macro_Category, Statute = Chg_1_Statute,
FBI_Code = Chg_1_FBI, Bond_Type, Bond_Amount, Bond_Post_Time = Bond_Post_Datetime, Lockup_In, Lockup_Out,
Time_In_Lockup, Bond_Bus, Full_Name) %>%
  filter(year(Arrest_Date) %in% 2016:2020)

Arrests_1620_sm <- select(Arrests_1620_clean, Full_Name, Arrest_Datetime, Race, Gender, Age, District, Beat,
Chg_Desc, Chg_Class, Micro_Cat, Macro_Cat)

JAC_EM_Data_all <- read_csv("JAC_EM_Data_all.csv",
  col_types = cols(AWOL_End_Date = col_date(format = "%m/%d/%Y"),
  AWOL_Start_Date = col_date(format = "%m/%d/%Y"),
  Booking_Date = col_date(format = "%m/%d/%Y"),
  EM_End_Date = col_date(format = "%m/%d/%Y"),
  EM_Start_Date = col_date(format = "%m/%d/%Y"),
  GPS_Start_Date = col_date(format = "%m/%d/%Y"),
  Release_Date = col_date(format = "%m/%d/%Y"))

## Warning: Missing column names filled in: 'X1' [1]

JAC_Booking_to_EM <- JAC_EM_Data_all %>%
  arrange(EM_Start_Date) %>%
  distinct(Indiv_Index, .keep_all = TRUE) %>%
  filter(year(Booking_Date) %in% 2016:2020, EM_Start_Date >= Booking_Date, Courthouse == "26th Street") %>%
  mutate(Full_Name = paste(First_Name, Last_Name, sep = "_"), Booking_to_EM = calc_hours(Booking_Date,
EM_Start_Date))

Bond_Court_Wait_Times <- Arrests_1620_clean %>%
  filter(Chg_Class %in% c("X", "M", "1", "2", "3", "4")) %>%
  mutate(Arrest_to_Lockup_Out = calc_hours(Arrest_Datetime, Lockup_Out), Lockup_Out_Date =
as.Date(Lockup_Out), Bond_Court_Time_Prep = paste(Lockup_Out_Date, "12:00"), Bond_Court_Time =
as.POSIXct(Bond_Court_Time_Prep, tz = "UTC", format = "%Y-%m-%d %H:%M"), Time_to_Bond_Court =
calc_hours(Arrest_Datetime, Bond_Court_Time), Arrest_Buffer = interval(Arrest_Datetime - days(1),
Arrest_Datetime + days(2))) %>%
  select(Full_Name, Race, Gender, Arrest_Buffer, Time_to_Bond_Court)
```

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```
JAC_Bond_Wait_join <- JAC_Booking_to_EM %>%
  left_join(Bond_Court_Wait_Times, by = c("Full_Name", "Race", "Gender")) %>%
  filter(Booking_Date %within% Arrest_Buffer) %>%
  distinct(Indiv_Index, EM_Start_Date, .keep_all = TRUE) %>%
  mutate(Total_Wait_Time = Time_to_Bond_Court + Booking_to_EM, Arrest_to_Release_cat = cut(Total_Wait_Time,
breaks = c(0, 25, 49, 169, 337, 721, 40000), labels = c(">24 hours", "1-2 days", "2-7 days", "8-14 days",
"15-30 days", "1 month+"))))
```

Fact 6: Most people on Electronic Monitoring are facing charges for non violent crimes.

This work requires categorizing the charge descriptions in the CCSO population data. I used categories similar to the ones used by other researchers. "Person" cases are cases where there is a person harmed by violence or threat of violence. "Property" crimes are those where property is stolen, damaged, or trespassed on, but there is no violence or threat of violence towards a person. (As an example, "Robbery" is a Person crime, as is residential burglary; retail theft and burglary of commercial establishments are not). "Vehicle" crimes are those related to driving - primarily DUIs and Driving on a Suspended or Revoked License. Drug cases are any involving the possession or sale of any drug. "Firearm Possession" charges - often referred to as "weapon" charges in other reports - are crimes where a gun was possessed but no person was harmed by it. It includes both straight possession, where the gun is not fired (the vast majority of cases) and Reckless and Aggravated Discharge, where the gun is fired but is not aimed at any person. "Other" charges are those in none of these categories.

```
raw_CCSO_Pop_Aug21 <- read_csv("CCSO_083121.csv",
  col_types = cols(
    `Bond Type (Case Level)` = col_factor(levels = c("0. Bond not applicable b/c inert dispo",
      "1. I-bond", "2. EMI Bond", "3. Money Bond",
      "4. Deposit Bond with EM", "5. Unknown",
      "6. No Bond", "8. Bond not applicable b/c blocking dispo")),
    `Booking Date` = col_datetime(format = "%F %T"),
    `Charge Class` = col_factor(levels = c("CLASS M-MURDER",
      "CLASS X FELONY", "CLASS 1 FELONY",
      "CLASS 2 FELONY", "CLASS 3 FELONY",
      "CLASS 4 FELONY", "Unclassified Felony",
      "CLASS A MISDEMEANOR", "CLASS B MISDEMEANOR",
      "CLASS C MISDEMEANOR", "Unclassified Misdemeanor",
      "PETTY_TRAFFIC", "UNKNOWN")),
    `Custody Status` = col_factor(levels = c("Jail",
      "EM")), `Detainer Status` = col_factor(levels = c("Pre-trial",
      "Awaiting Release", "Pending",
      "Detainer", "County Sentenced")),
    `Last Court Date` = col_date(format = "%m/%d/%y"),
    `Last Court Date 2` = col_date(format = "%m/%d/%y"),
    NPTS = col_factor(levels = c("Yes",
      "No")),
    `Next Court Date` = col_datetime(format = "%F %T"),
    `Primary Bond Type (Booking Level)` = col_factor(levels = c("0. Bond not applicable b/c inert dispo",
      "1. I-bond", "2. EMI Bond", "3. Money Bond",
      "4. Deposit Bond with EM", "5. Unknown",
      "6. No Bond", "8. Bond not applicable b/c blocking dispo"))))

## Warning: 24 parsing failures.
## row      col expected      actual      file
## 1927 IR Number a double NOT ASSIGNED. 'CCSO_083121.csv'
## 2868 IR Number a double NOT ASSIGNED. 'CCSO_083121.csv'
## 2869 IR Number a double NOT ASSIGNED. 'CCSO_083121.csv'
## 5041 IR Number a double NOT ASSIGNED. 'CCSO_083121.csv'
```

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```
## 5042 IR Number a double NOT ASSIGNED. 'CCSO_083121.csv'
## .....
## See problems(...) for more details.

CCSO_Pop_Aug21 <- raw_CCSO_Pop_Aug21 %>%
  mutate(Bond_Type_Case = fct_collapse(`Bond Type (Case Level)`,
    "Inert/Blocking" = c("0. Bond not applicable b/c inert dispo", "8. Bond
not applicable b/c blocking dispo"),
    "I-Bond" = "1. I-bond",
    "EM-I Bond" = "2. EMI Bond",
    "D-Bond" = "3. Money Bond",
    "D-Bond w/EM" = "4. Deposit Bond with EM",
    "Unknown" = "5. Unknown",
    "No Bond" = "6. No Bond"),
    Booking_Date = as.Date(`Booking Date`),
    Booking_Datetime = `Booking Date`,
    Chg_Class = fct_recode(`Charge Class`, "M" = "CLASS M-MURDER", "X" = "CLASS X FELONY", "1" = "CLASS 1
FELONY", "2" = "CLASS 2 FELONY", "3" = "CLASS 3 FELONY", "4" = "CLASS 4 FELONY", "UF" = "Unclassified
Felony", "A" = "CLASS A MISDEMEANOR", "B" = "CLASS B MISDEMEANOR", "C" = "CLASS C MISDEMEANOR", "UM" =
"Unclassified Misdemeanor", "U" = "UNKNOWN"),
    Chg_Class_ord = factor(Chg_Class, levels = c("M", "X", "1", "2", "3", "4", "UF", "A", "B", "C", "UM",
"U"), ordered = is.ordered(Chg_Class)),
    Bond_Type_Primary = fct_collapse(`Primary Bond Type (Booking Level)`,
    "Inert/Blocking" = c("0. Bond not applicable b/c inert dispo", "8. Bond
not applicable b/c blocking dispo"),
    "I-Bond" = "1. I-bond",
    "EM-I Bond" = "2. EMI Bond",
    "D-Bond" = "3. Money Bond",
    "D-Bond w/EM" = "4. Deposit Bond with EM",
    "Unknown" = "5. Unknown",
    "No Bond" = "6. No Bond"),
    Division_dummy = str_sub(`Bed Assignment`, start = 1, end = 5),
    Division_dummy2 = str_remove_all(Division_dummy, "-"),
    Division = str_replace_all(Division_dummy2, "DIV08", "DIV8"),
    Report_Date = as.Date("2021-08-31"),
    Race_Cat = fct_collapse(Race, "Asian" = "Asian", "Black" = "Black", "Latinx" = c("Hispanic Black",
"Hispanic White", "Latino"), "White" = "White", "Other" = c("Unknown", "American Indian")),
    Days_In = calc_days(Booking_Date, Report_Date)) %>%
  select(Report_Date, First_Name = `Inmate First`, Last_Name = `Inmate Last`, Race = Race_Cat, Gender, IR =
`IR Number`, Booking_ID = Bookingid, Booking_Date, Booking_Datetime, Days_In, Custody_Status = `Custody
Status`, NPTS, Detainer_Status = `Detainer Status`, Detainer_Agency = `Detainer Issuing Agency`, Case_Number =
`Circuit Court Docket`, Orig_Case_Number = `Original Circuit Court Docket`, Chg_Desc = `Charge
Description`, Statute, Chg_Class, Lead_Charge = `Lead Charge`, Bond_Type_Case, Bond_Amount_Case = `Amount to
Walk (Case Level)`, LCD = `Last Court Date`, LCD_2 = `Last Court Date 2`, NCD = `Next Court Date`,
Bond_Type_Primary, Bond_Amount_Total = `Total Amount to Post (Booking Level)`, Division, Bed = `Bed
Assignment`, Chg_Class_ord)

Categorization_CCSO_Aug2021 <- read_csv("Categorization_CCSO_Aug2021.csv")
## Parsed with column specification:
## cols(
##   Chg_Desc = col_character(),
##   Class_Repair = col_character(),
##   Micro_Cat = col_character(),
##   Macro_Cat = col_character(),
##   Police_Related = col_logical(),
##   Forcible = col_logical(),
##   PFA_Det = col_logical()
## )
CCSO_Pop_Aug21_categorized <- left_join(CCSO_Pop_Aug21, Categorization_CCSO_Aug2021, by = "Chg_Desc") %>%
  distinct(.keep_all = TRUE) %>%
```

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```
mutate(Chg_Class_Final = factor(Class_Repair, levels = c("M", "X", "1", "2", "3", "4", "A", "B", "C", "P", "L", "U", "W"), ordered = is.ordered(Class_Repair)))

CCSO_Aug21_final <- CCSO_Pop_Aug21_categorized %>%
  select(Report_Date, First_Name, Last_Name, Race, Gender, IR, Booking_ID, Booking_Date, Days_In,
  Custody_Status, NPTS, Detainer_Status, Chg_Class = Chg_Class_Final, Chg_Desc, Statute, Micro_Cat, Macro_Cat,
  Police_Related, Forcible, PFA_Det, Bond_Type_Case, Bond_Amount_Case, LCD, NCD, Bond_Type_Primary,
  Bond_Amount_Total, Detainer_Agency, Case_Number, Orig_Case_Number, Division, Bed)

EM_ppl <- CCSO_Aug21_final %>%
  filter(Custody_Status == "EM") %>%
  arrange(Chg_Class) %>%
  distinct(Booking_ID, .keep_all = TRUE) %>%
  mutate(Days_In_Cat = cut(Days_In, breaks = c(-50,90,180,365,10000), labels = c("<3", "3-6", "6-12",
  "12+"))) %>%
  filter(!is.na(Micro_Cat)) %>%
  mutate(Class_Cat = paste(Chg_Class, Macro_Cat, sep = "-"))

EM_ppl_Macro_Chg <- EM_ppl %>%
  mutate(Macro_Cat_new = fct_collapse(Macro_Cat, "Firearm Possession" = "Firearm", "Drug" = "Drug", "Vehicle"
  = "Vehicle", "Property" = "Property", "Person" = "Person", other_level = "Other")) %>%
  group_by(Macro_Cat_new) %>%
  summarize(Total_on_EM = n())

## `summarise()` ungrouping output (override with `.groups` argument)

#Graph made in excel
```

Fact 7: Less than one in twelve people in Chicago are arrested for a new crime while on Electronic Monitoring. Of those, most are re-arrested for low-level offenses.

This code again looks only at individuals in Chicago since it combines CPD data with CCSO data. The code first creates a buffer for arrests that occur within 2 days AFTER the EM Starts (to avoid the arrest that caused the EM in the first place, until up to 3 days BEFORE the EM Ends - to find the arrest that actually ended the EM Stint.) The sample of dates is from 2016 - June 30, 2020 (so that there is 'time' for the 2020 admits to get arrested.)

Then, the code splits the data into two groups - those with an 'AWOL' marked and those without. If someone is re-arrested when AWOL, we would expect the re-arrest to be around the AWOL_End_Date. If someone was re-arrested while on EM and not declared AWOL, we would expect the re-arrest to be around the EM_End_Date. After those chunks are re-combined, I clean and join in the CPD Arrests data for the same time period. The summary tables I create below give the number of people re-arrested for charges of each type. Note that I separated class "P", which represents both arrests on warrants and arrests for low level ordinance violations, into categories for each and added the low level ordinance violations to the misdemeanor category.

```
EM_Stints_Completed <- JAC_EM_Data_all %>%
  filter(!is.na(EM_End_Date)) %>%
  arrange(desc(EM_Start_Date)) %>%
  distinct(Stint_Index, .keep_all = TRUE) %>%
  mutate(EM_Interval = interval(EM_Start_Date, EM_End_Date), Stint_AWOL = ifelse(AWOL_Start_Date %within%
  EM_Interval & !is.na(AWOL_Start_Date), TRUE, FALSE))

EM_Stints_1620 <- EM_Stints_Completed %>%
  filter(year(EM_End_Date) %in% 2016:2020, year(EM_Start_Date) %in% 2016:2020)
```

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```
Chi_Stints_1620_noAWOL <- EM_Stints_1620 %>%
  filter(Courthouse == "26th Street", Stint_AWOL == FALSE, year(EM_Start_Date) %in% 2016:2020, EM_Start_Date
<= as.Date("2020-06-30")) %>%
  mutate(Full_Name = paste(First_Name, Last_Name, sep = "_"), EM_Buffer = interval(EM_Start_Date + days(2),
EM_End_Date + days(2)), Final_End = EM_End_Date) %>%
  select(Indiv_Index, Stint_Index, Case_Index, Booking_ID, Full_Name, Race, Gender, Booking_Date,
EM_Start_Date, EM_End_Date, Release_Date, Release_Reason, Days_on_EM, Chg_Type, Chg_Class = Chg_Class_New,
Chg_Desc, Micro_Cat, Macro_Cat, First_Zip, Courthouse, Area, Case_Dispo, Case_Dispo_Cat, EM_Buffer,
Final_End)

Chi_Stints_1620_AWOL <- EM_Stints_1620 %>%
  filter(Courthouse == "26th Street", Stint_AWOL == TRUE, year(EM_Start_Date) %in% 2016:2020, EM_Start_Date
<= as.Date("2020-06-30")) %>%
  mutate(Full_Name = paste(First_Name, Last_Name, sep = "_"), EM_Buffer = interval(EM_Start_Date +
days(2), AWOL_End_Date + days(2)), Final_End = AWOL_End_Date) %>%
  select(Indiv_Index, Stint_Index, Case_Index, Booking_ID, Full_Name, Race, Gender, Booking_Date,
EM_Start_Date, EM_End_Date, Release_Date, Release_Reason, Days_on_EM, Chg_Type, Chg_Class = Chg_Class_New,
Chg_Desc, Micro_Cat, Macro_Cat, First_Zip, Courthouse, Area, Case_Dispo, Case_Dispo_Cat, EM_Buffer,
Final_End)

All_Chi_Stints_1620 <- rbind(Chi_Stints_1620_AWOL, Chi_Stints_1620_noAWOL)
#Total of 23014 records.

All_Rearrest_1620 <- All_Chi_Stints_1620 %>%
  left_join(Arrests_1620_sm, by = c("Full_Name", "Race", "Gender"), suffix = c("_EM", "_Arrest")) %>%
  filter(Arrest_Datetime %within% EM_Buffer) %>%
  mutate(EM_Assign_to_Arrest = calc_days(EM_Start_Date, Arrest_Datetime), Arrest_to_EM_End =
calc_days(Arrest_Datetime, Final_End), Micro_Class_Arrest = paste(Chg_Class_Arrest, Micro_Cat_Arrest, sep =
"-")) %>%
  filter(Arrest_to_EM_End <= 3) %>%
  arrange(Arrest_to_EM_End) %>%
  distinct(Stint_Index, .keep_all = TRUE)

Rearrest_FTA_1620 <- filter(All_Rearrest_1620, Micro_Cat_Arrest == "Warrant/FTA")

Rearrest_by_Arrest_Class <- All_Rearrest_1620 %>%
  group_by(Chg_Class_Arrest) %>%
  summarize(Count = n())

## `summarise()` ungrouping output (override with `.groups` argument)
```

Fact 8: The number of people re-incarcerated for technical violations of EM - rather than a new arrest or missed court date - is over 4 times higher in 2021 than it was in 2019.

This code looks at a spreadsheet obtained via FOIA by the Chicago Community Bond Fund and provided to Chicago Appleseed. The reference for that request is R017063-060921. This spreadsheet shows the Reasons for End of Service as recorded by BI Incorporated, the private contractor who owns the EM Bands and administers CCSO's call center. I first grouped the End reasons into categories, and then into even broader "macro" categories. I looked at January-June of each year so that I could reasonably compare 2021's data.

```
CCBF_End_Reasons_with_demo <- read_csv("CCBF_End_Reasons_with_demo.csv",
  col_types = cols(EM_End_Date_BI = col_date(format = "%F"),
  EM_Start_Date_BI = col_date(format = "%F")))
```

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```
## Warning: Missing column names filled in: 'X1' [1]

CCBF_End_Reasons_sm <- CCBF_End_Reasons_with_demo %>%
  select(Booking_ID, Full_Name = Full_Name.x, Race, Gender, Zip_Code, EM_Start_Date_BI, EM_End_Date_BI,
  Device_Type, End_of_Service_Reason_BI)

ZipCodes_Areas <- read_csv("ZipCodes_Areas.csv")

## Parsed with column specification:
## cols(
##   Zip = col_double(),
##   Area = col_character(),
##   Courthouse = col_character()
## )

Chicago_Zips <- filter(ZipCodes_Areas, Courthouse == "26th Street")

Chi_BI_Data <- CCBF_End_Reasons_sm %>%
  filter(Zip_Code %in% Chicago_Zips$Zip)

Chi_BI_End_Reasons <- Chi_BI_Data %>%
  select(Booking_ID, Race, Gender, Full_Name, Zip_Code, EM_Start_Date_BI, EM_End_Date_BI, Device_Type,
  End_Reason_BI = End_of_Service_Reason_BI) %>%
  mutate(Days_On = calc_days(EM_Start_Date_BI, EM_End_Date_BI)) %>%
  mutate(End_Reason_Cat = fct_collapse(End_Reason_BI, "AWOL" = c("ACTIVE AWOL", "AWOL"),
  "New Arrest or Warrant" = c("ARREST", "NEW ARREST", "ACTIVE WARRANT",
  "BOND FORFEITURE", "BOND FORFEITURE WARRANT", "NEW WARRANT", "AWOL CAPTURE", "ESCAPE CHARGES PER EM"),
  "Case Disposed" = c("TIME CONSIDERED SERVED", "EM CASE ADJUDICATED",
  "NOT GUILTY", "SENTENCE EXPIRED", "PROBATION", "SENTENCED", "NOLLE PROSSE", "NO PROBABLE CAUSE", "CASE
  DISPOSITION", "PROBATION SATISFACTORY", "PROBATION UNSATISFACTORY", "STRICKEN ON LEAVE", "SUPERVISION",
  "JAIL/PRISON", "CONDITIONAL DISCHARGE", "NON SUIT", "TASC"),
  "Technical Violation" = c("UNAUTHORIZED LEAVE", "TECHNICAL VIOLATION
  PER CCSO", "ON VIEW VIOLATION", "CURFEW", "VIOL WORK SCHOOL", "EXCESSIVE", "AGENCY COMPLAINT", "EXCESSIVE
  VIOLATIONS"),
  "Bond Off EM" = "D-BOND",
  "Ordered Released by Judge" = c("COURT ORDER", "I-BOND", "REMOVE
  FROM EM - CASE CONTINUED"),
  "Deceased" = "DECEASED",
  "Band Tamper" = "TAMPER",
  "Error" = c("WRONG DEFENDANT", "WRONG DEFENDANT-INCORRECT
  INFORMATION"),
  "No Place to Stay" = c("NO PLACE TO STAY", "WITHDRAWAL OF CONSENT"),
  "In Custody of Another Jurisdiction" = c("OTHER JURISDICTION",
  "REINCARCERATED", "REINCARCERATION"),
  "New Release Reject" = "NEW RELEASE REJECT",
  "Remanded" = c("REMANDED", "REMANDED AT COURT"),
  other_level = "Other")) %>%
  mutate(Name_Race_Gender = paste(Full_Name, Race, Gender, sep = "_"), Rearrest_TF = ifelse(Booking_ID %in%
  All_Rearrest_1620$Booking_ID, TRUE, FALSE))

Chi_End_Reasons_1621 <- filter(Chi_BI_End_Reasons, year(EM_End_Date_BI) %in% 2016:2021, EM_Start_Date_BI <=
  as.Date("2021-06-30"), month(EM_End_Date_BI) %in% 1:6) %>%
  arrange(desc(EM_End_Date_BI)) %>%
  distinct(Booking_ID, .keep_all = TRUE) %>%
  mutate(End_Reason_Macro = fct_collapse(End_Reason_Cat, "Case Disposed" = "Case Disposed", "Tech Violation"
  = c("Technical Violation", "Band Tamper"), "No Place to Stay" = "No Place to Stay", "New Arrest" = c("New
  Arrest or Warrant", "In Custody of Another Jurisdiction"), "Remanded" = "Remanded", "Released While Case
  Still Pending" = c("Ordered Released by Judge", "Bond Off EM"), "AWOL" = "AWOL", "Other" = c("Deceased",
  "Other", "Error", "New Release Reject")) %>%
  mutate(Success_Complete = fct_collapse(End_Reason_Macro, "Successful" = c("Case Disposed", "Released While
```


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```
Case_Still_Pending", "Other"), "Unsuccessful" = c("Tech Violation", "New Arrest", "AWOL", "No Place to Stay"), "Unknown" = "Remanded"))

Chi_End_Reasons_2021 <- filter(Chi_End_Reasons_1621, year(EM_End_Date_BI) == 2021, month(EM_End_Date_BI) %in% 1:6)
Chi_End_Reasons_2019 <- filter(Chi_End_Reasons_1621, year(EM_End_Date_BI) == 2019, month(EM_End_Date_BI) %in% 1:6)

Chi_End_Reasons_1921 <- filter(Chi_End_Reasons_1621, year(EM_End_Date_BI) %in% 2019:2021)

Chi_Unsuccessful_1621 <- filter(Chi_End_Reasons_1621, Success_Complete == "Unsuccessful")

Chi_End_Reason_Arrest <- filter(Chi_End_Reasons_1621, Rearrest_TF == TRUE)

Chi_End_Reason_NoArrest <- Chi_End_Reasons_1621 %>%
  filter(!Booking_ID %in% Chi_End_Reason_Arrest$Booking_ID)

#ggplot(Chi_End_Reasons_1621, aes(x=End_Reason_Macro, fill = factor(year(EM_End_Date_BI))))+
#  geom_bar(position = "dodge")+
#  # scale_fill_gdocs()+
#  # scale_y_continuous(breaks = seq(0,3000,100))+
#  # AppleseedTheme

TechVios <- filter(Chi_End_Reasons_1621, End_Reason_Macro %in% c("Tech Violation"))
NPTS <- filter(Chi_End_Reasons_1621, End_Reason_Macro == "No Place to Stay")
TechVios_NPTS <- rbind(TechVios, NPTS)
NewArrest <- filter(Chi_End_Reasons_1621, End_Reason_Macro == "New Arrest")
AWOL <- filter(Chi_End_Reasons_1621, End_Reason_Macro == "AWOL")

TechVioPlot <- ggplot(TechVios, aes(x=factor(year(EM_End_Date_BI))))+
  geom_bar(fill = "#418ab3", width = 0.5)+
  ggtitle("Number of People in Chicago With EM Terms Ended for Technical Violations,\nBI Inc. Data, 2016-2021\n(January-June each Year)")+
  ylab("Number of EM Terminations")+
  xlab("Year")+
  scale_y_continuous(breaks = seq(0,750,50))+
  geom_text(stat = "count", aes(label = ..count.., vjust = -0.2), size = 3)+
  AppleseedTheme+
  theme(aspect.ratio = 1/2)

#ggsave("TechVioPlot.png", TechVioPlot, device = "png")
```

Fact 9: Historical data suggests that EM has no meaningful effect on the likelihood of people being rearrested while released or their likelihood of appearing in court.

This analysis draws on data from the Office of the Chief Judge, accessible at <https://www.cookcountycourt.org/HOME/Bail-Reform>. I simply looked at the number of people who failed to appear, were arrested, and were arrested for a new violent crime and compared the rates of all Released people to the rates of people on EM.

```
AllBondCourtData_ed <- read_csv("AllBondCourtData_ed.csv")

## Parsed with column specification:
```


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```
## cols(
##   .default = col_character(),
##   RecordID = col_number(),
##   AccompanyingMatter = col_logical(),
##   PSAVioFlag = col_logical(),
##   IBondOrder = col_logical(),
##   DBondOrder = col_logical(),
##   EMOrder = col_logical(),
##   NoBailOrder = col_logical(),
##   DBond10pAmt = col_double(),
##   PretrialRelease = col_logical(),
##   NewVioCrimActivity = col_logical()
## )

## See spec(...) for full column specifications.

All_Bond_Ct_Clean <- AllBondCourtData_ed %>%
  select(RecordID, Pre_Post_GO = PrePostGOIndicator, Chg_Cat = ChargeCategory, Chg_Class = ChargeClass,
  Probation_Case = AccompanyingMatter, Gender, RaceEthnicity, Age_Cat = AgeCategory, PSA_Super_Rec =
  PSASuperRec, FTA_Score = FTAScale, NCA_Score = NCAScale, NVCA_Flag = PSAVioFlag, Initial_Bond_Order =
  InitialBondOrder, IBondOrder, DBondOrder, EMOrder, NoBailOrder, Bond_Amt_Cat = DBond10pAmtCategory, Bond_Amt
  = DBond10pAmt, Released = PretrialRelease, FTA_Actual = FailToAppear, NCA_Actual = NewCrimActivity,
  NVCA_Actual = NewVioCrimActivity) %>%
  mutate(Pre_Post_GO = fct_recode(Pre_Post_GO, "Pre GO" = "Pre G.O. 18.8A", "Post GO" = "Post G.O. 18.8A"),
  FTA_Score_avg = fct_recode(FTA_Score, "1.5" = "1 or 2", "3.5" = "3 or 4", "5.5" = "5 or 6"), NCA_Score_avg =
  fct_recode(FTA_Score, "1.5" = "1 or 2", "3.5" = "3 or 4", "5.5" = "5 or 6"), Num_FTA =
  as.numeric(FTA_Score_avg), Num_NCA = as.numeric(NCA_Score_avg), NVCA_Actual2 = ifelse(NVCA_Actual == TRUE,
  "NVCA", "No NVCA")) %>%
  select(-FTA_Score_avg, -NCA_Score_avg)

All_EM <- All_Bond_Ct_Clean %>%
  filter(EMOrder == TRUE, Probation_Case == FALSE, Released == TRUE)

All_Released_NoEM <- All_Bond_Ct_Clean %>%
  filter(Released == TRUE, Probation_Case == FALSE, EMOrder == FALSE)

NoEM_Released_NVCA <- All_Released_NoEM %>%
  group_by(Pre_Post_GO, NVCA_Actual2) %>%
  summarize(Total_ppl = n()) %>%
  pivot_wider(names_from = NVCA_Actual2, values_from = Total_ppl) %>%
  rowwise() %>%
  mutate(Total_Released = sum(c(`No NVCA`, NVCA)), Percent_NVCA = NVCA/Total_Released*100)

## `summarise()` regrouping output by 'Pre_Post_GO' (override with `.groups` argument)

NoEM_Released_NCA <- All_Released_NoEM %>%
  group_by(Pre_Post_GO, NCA_Actual) %>%
  summarize(Total_ppl = n()) %>%
  pivot_wider(names_from = NCA_Actual, values_from = Total_ppl) %>%
  rowwise() %>%
  mutate(Total_Released = sum(c(`No NCA`, NCA)), Percent_NCA = NCA/Total_Released*100)

## `summarise()` regrouping output by 'Pre_Post_GO' (override with `.groups` argument)

NoEM_Released_FTA <- All_Released_NoEM %>%
  group_by(Pre_Post_GO, FTA_Actual) %>%
  summarize(Total_ppl = n()) %>%
  pivot_wider(names_from = FTA_Actual, values_from = Total_ppl) %>%
  rowwise() %>%
  mutate(Total_Released = sum(c(`No FTA`, FTA)), Percent_FTA = FTA/Total_Released*100)
```

DATA DOCUMENTATION

“10 Facts about Pretrial Electronic Monitoring in Cook County” | *September 2021*

```
## `summarise()` regrouping output by 'Pre_Post_GO' (override with `.groups` argument)

EM_FTA <- All_EM %>%
  group_by(Pre_Post_GO, FTA_Actual) %>%
  summarize(Total_ppl = n()) %>%
  pivot_wider(names_from = FTA_Actual, values_from = Total_ppl) %>%
  rowwise() %>%
  mutate(Total_on_EM = sum(c(`No FTA`, FTA)), Percent_FTA = FTA/Total_on_EM*100)

## `summarise()` regrouping output by 'Pre_Post_GO' (override with `.groups` argument)

EM_NCA <- All_EM %>%
  group_by(Pre_Post_GO, NCA_Actual) %>%
  summarize(Total_ppl = n()) %>%
  pivot_wider(names_from = NCA_Actual, values_from = Total_ppl) %>%
  rowwise() %>%
  mutate(Total_on_EM = sum(c(`No NCA`, NCA)), Percent_NCA = NCA/Total_on_EM*100)

## `summarise()` regrouping output by 'Pre_Post_GO' (override with `.groups` argument)

EM_NVCA <- All_EM %>%
  group_by(Pre_Post_GO, NVCA_Actual2) %>%
  summarize(Total_ppl = n()) %>%
  pivot_wider(names_from = NVCA_Actual2, values_from = Total_ppl) %>%
  rowwise() %>%
  mutate(Total_on_EM = sum(c(`No NVCA`, NVCA)), Percent_NVCA = NVCA/Total_on_EM*100)

## `summarise()` regrouping output by 'Pre_Post_GO' (override with `.groups` argument)
```

Fact 10: Despite the harms caused by the electronic monitoring program and the lack of evidence that it is effective, Cook County spends \$19.4 million per year on the Sheriff's EM Program.

There was no data analysis needed for this fact.