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Data Driven Justice Incarceration Report

Identifying Super Utilizers with Incarceration and Prescription
Monitoring Data

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OVERVIEW AND OBJECTIVES


Objectives

- Identify super utilizers using analytical methods applied to key data sources

Defining Super Utilizers

- Identify individuals on the top end of the spectrum in key areas

 Appriss has some or all of the information in this category. Appriss monitors arrest records for 48 states and prescription monitoring data for 24 states

 Other data sources which would help in identifying super utilizers

Overuse of Law Enforcement
Excessive Calls for Service

Overuse of Jails
Excessive Arrests

Excessive Alcohol/ Drug Arrests
Excessive substance related arrests

Overuse of Health Resources
Excessive ER Visits
Mental Health Facilities

Homeless
Arrests which indicate high likelihood of being homeless

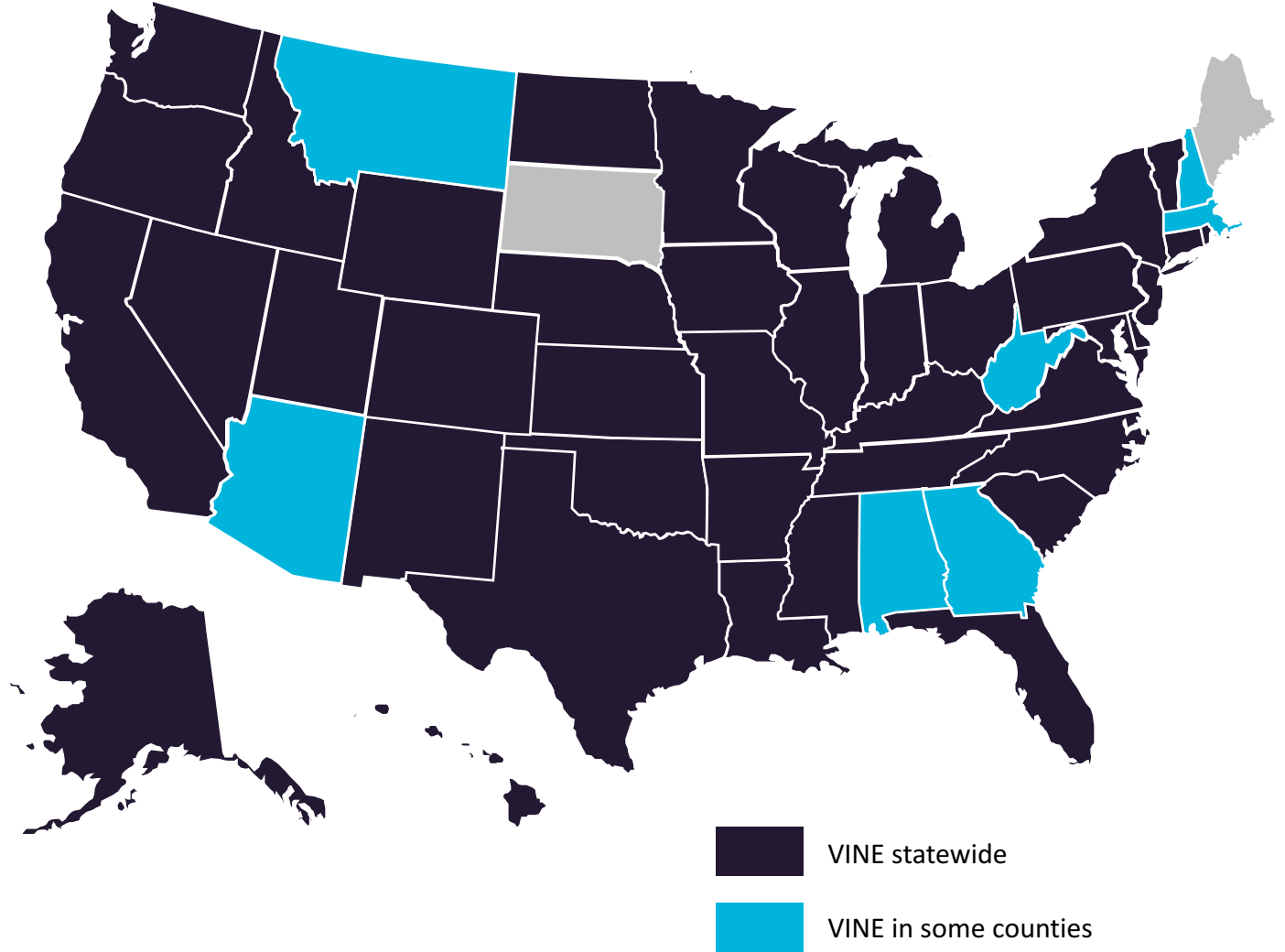
Overuse of Prescription Narcotics
High Abuse Risk



APPRISS OFFENDER DATA OVERVIEW

Appriss Offender Data Coverage

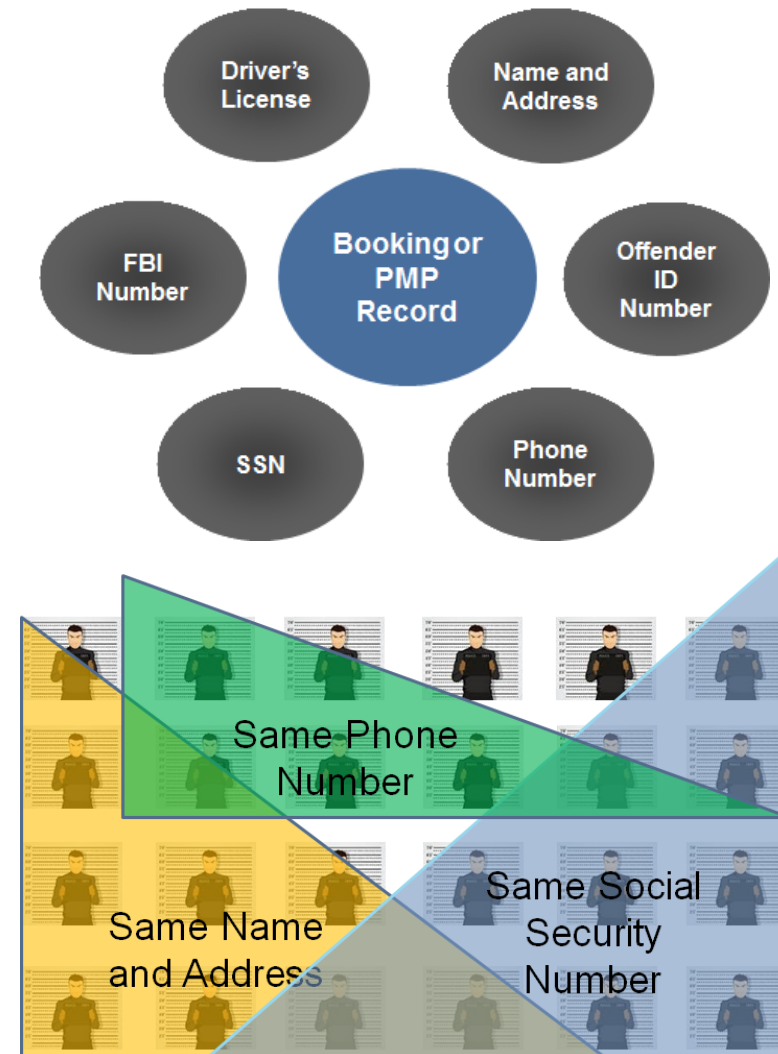
Appriss collects more than 9 million incarceration records annually (48 states), from over 2,000 facilities



*Appriss has limited rights to offender data from some states

Analysis of 2015 Incarcerations

- 9,812,804 bookings from 2015 were used to analyze arrest patterns, repeated bookings and target offenses (described later) from 48 states.
- Appriss' proprietary consolidation logic was used to identify arrest records made on the same individual, but with only some or partially matching characteristics:
 - Key identifiers: Name and address, Driver's license, SSN, phone number, FBI Number, Offender ID number, date of birth
 - Represents 6,881,072 unique consolidated individuals



Additional Details of the Data Used in this Analysis



- Key areas were analyzed
 - Repeated bookings
 - Repeated bookings of target offenses
 - Multiple addresses (or homeless listed as address)
 - Hospital releases
- Data adjustments
 - If an individual is booked to serve out a scheduled term over many bookings which are identifiable (e.g. every weekend for two months they serve out the time), we consolidate those records into a single record.
 - If an individual is booked into two agencies at the same time (which can happen when one agency uses another agency to help accommodate some inmates), we only count that as a single incarceration.

Target Charges of Interest (2015)

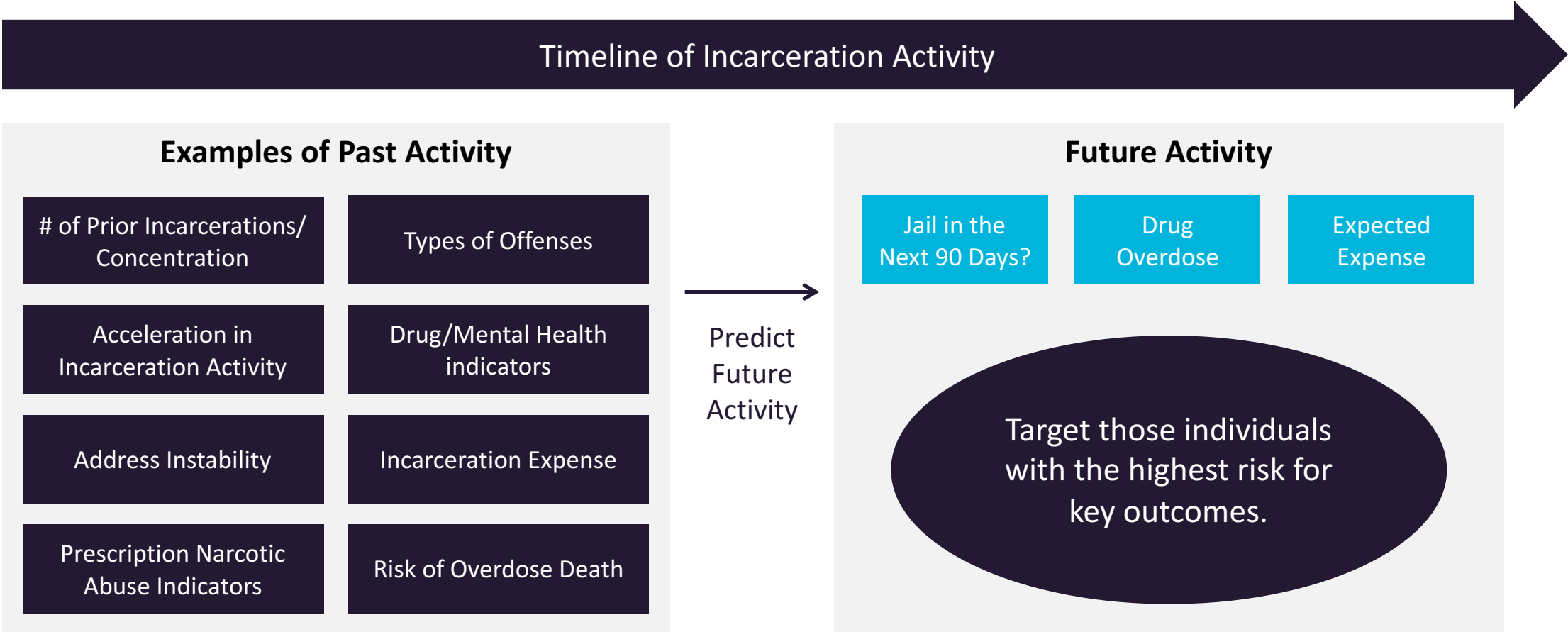
Appriss found 2.8 Million arrests for super-utilizer-type offenses in 2015. Super utilizers will have arrests across multiple target categories in a short period of time.

| Target Charge | Number of Records in 2015 |
|--------------------------------------|---------------------------|
| POSSESSION OF CONTROLLED SUBSTANCE | 1,326,610 |
| DRIVING UNDER INFLUENCE | 643,318 |
| PUBLIC INTOXICATION | 196,807 |
| DISTRIBUTION OF CONTROLLED SUBSTANCE | 179,096 |
| TRESPASSING | 141,705 |
| DISORDERLY CONDUCT | 133,246 |
| MINOR IN POSSESSION | 31,505 |
| OPEN CONTAINER | 30,721 |
| CITY ORDINANCE | 28,888 |
| DISTURBING THE PEACE | 22,910 |
| REFUSAL TO SUBMIT BREATHALYZER | 8,220 |
| LOITERING | 5,871 |
| INDECENT EXPOSURE | 5,861 |
| VAGRANCY | 1,050 |
| Total | 2,755,808 |

*Target offenses were chosen which are associated with substance abuse or homelessness

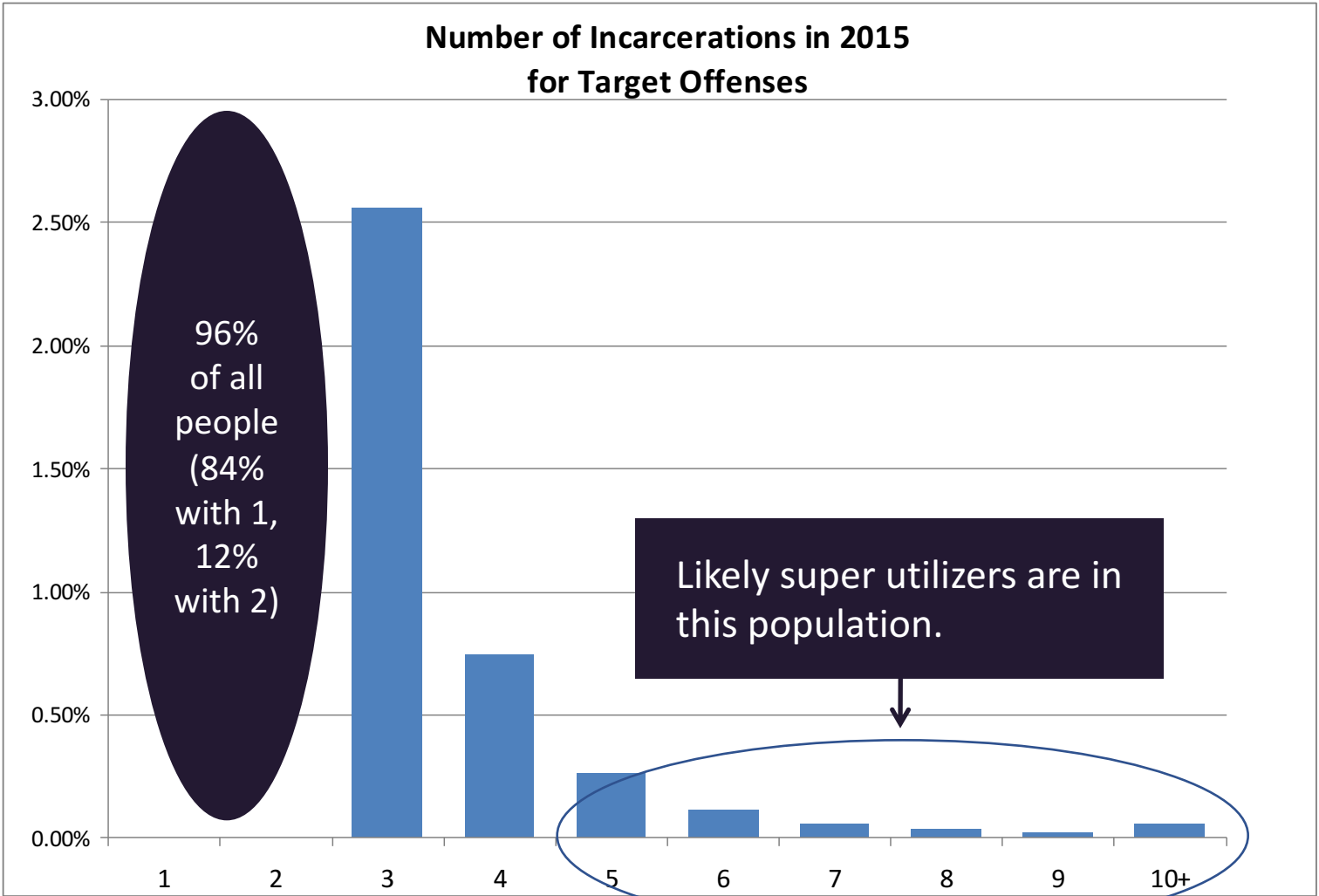
Probability-Based Identification

Super Utilizers of jail facilities are identified by their probability of future incarceration for key offenses at any point in time.



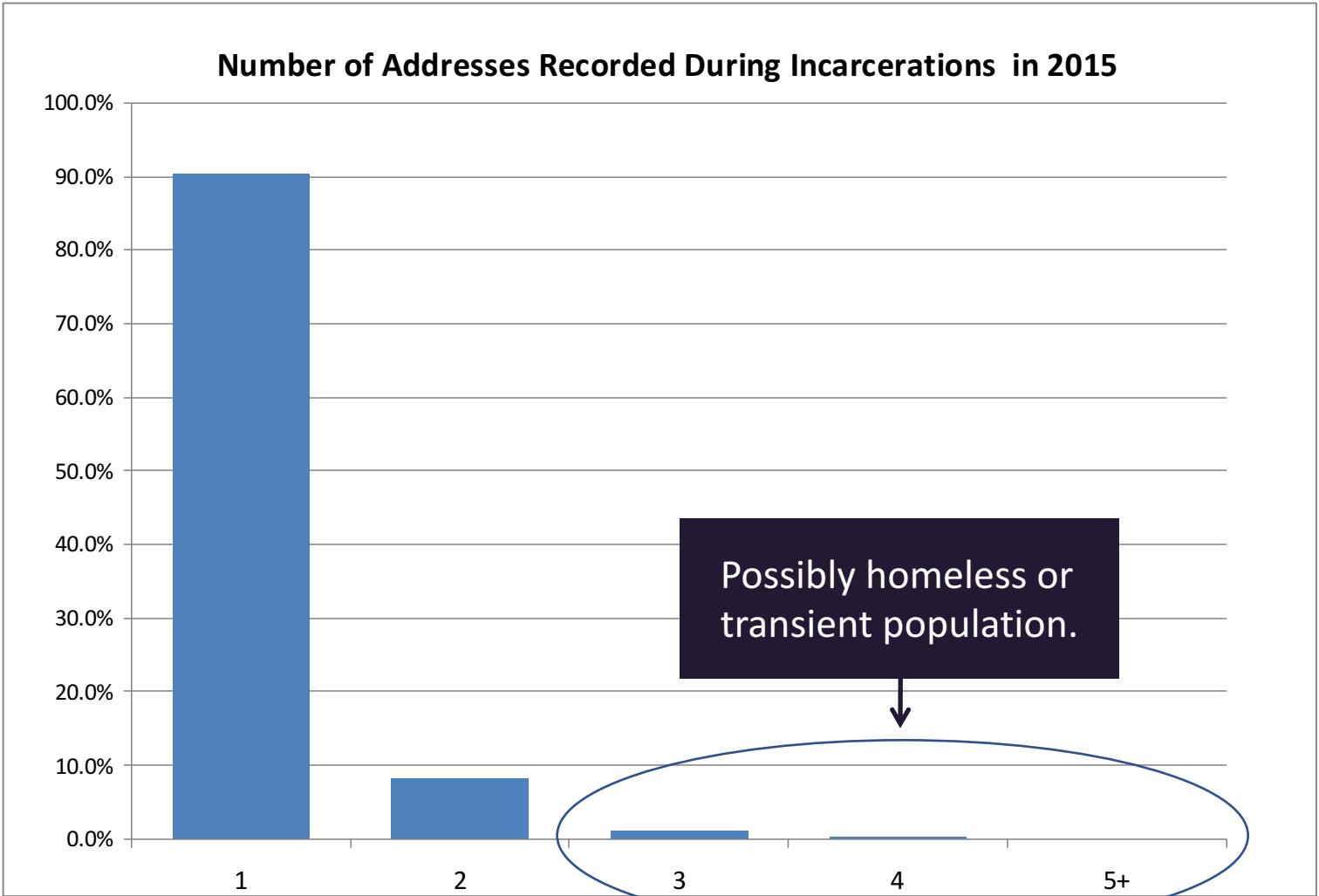
Example Variable – Number of Target Incarcerations

96% of those incarcerated in 2015 had only one or two bookings. 0.5% of individuals had **5+** bookings in 2015.



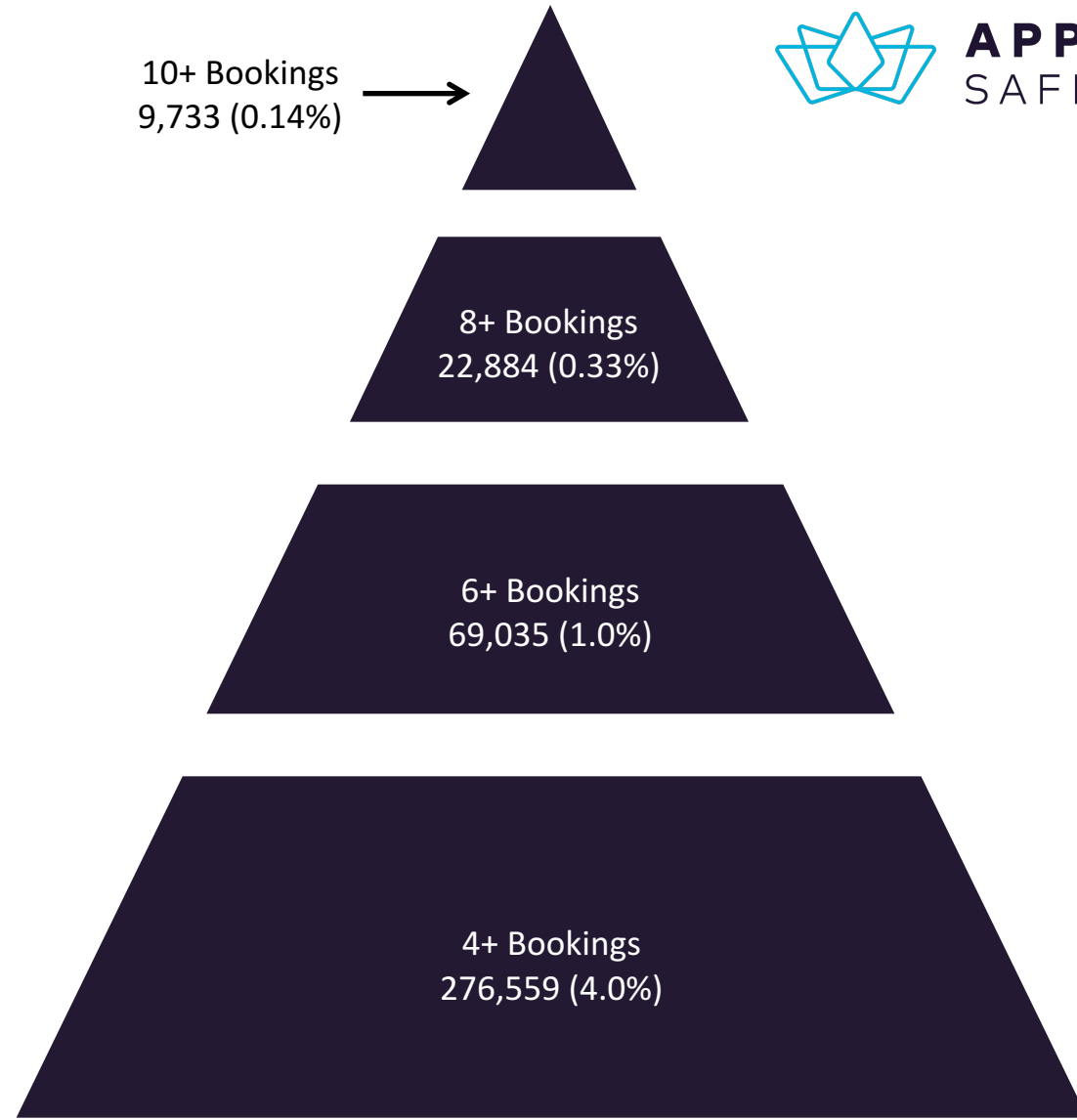
Example Variable – Number of Addresses

95% of those incarcerated in 2015 had only one or two addresses provided. 0.8% of individuals had **3+** addresses provided in 2015.



How Many People Over-Utilize Jail Facilities?

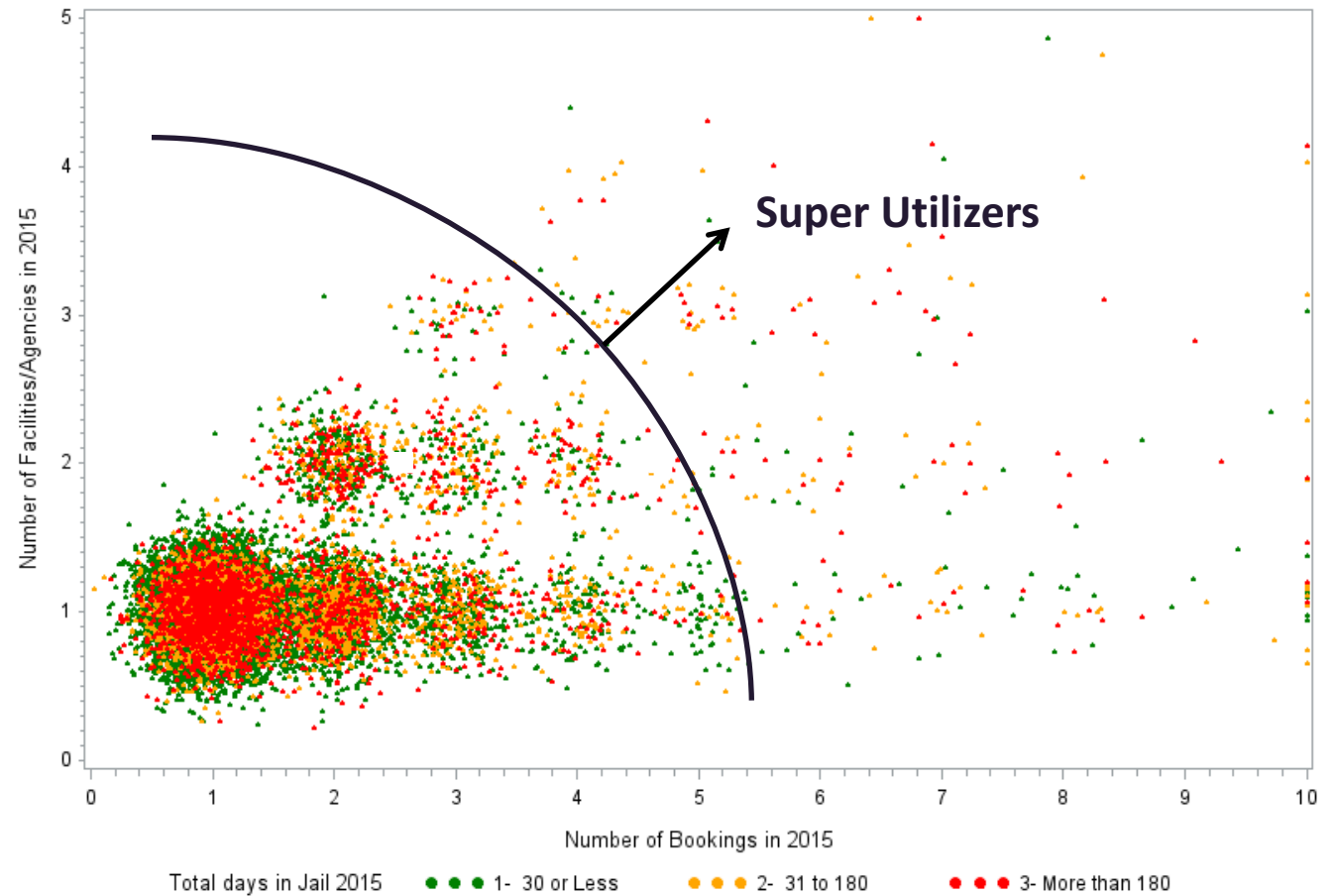
A significant number of individuals have multiple bookings in jails annually and may be considered super utilizers.



*Booking data analyzed from 2015

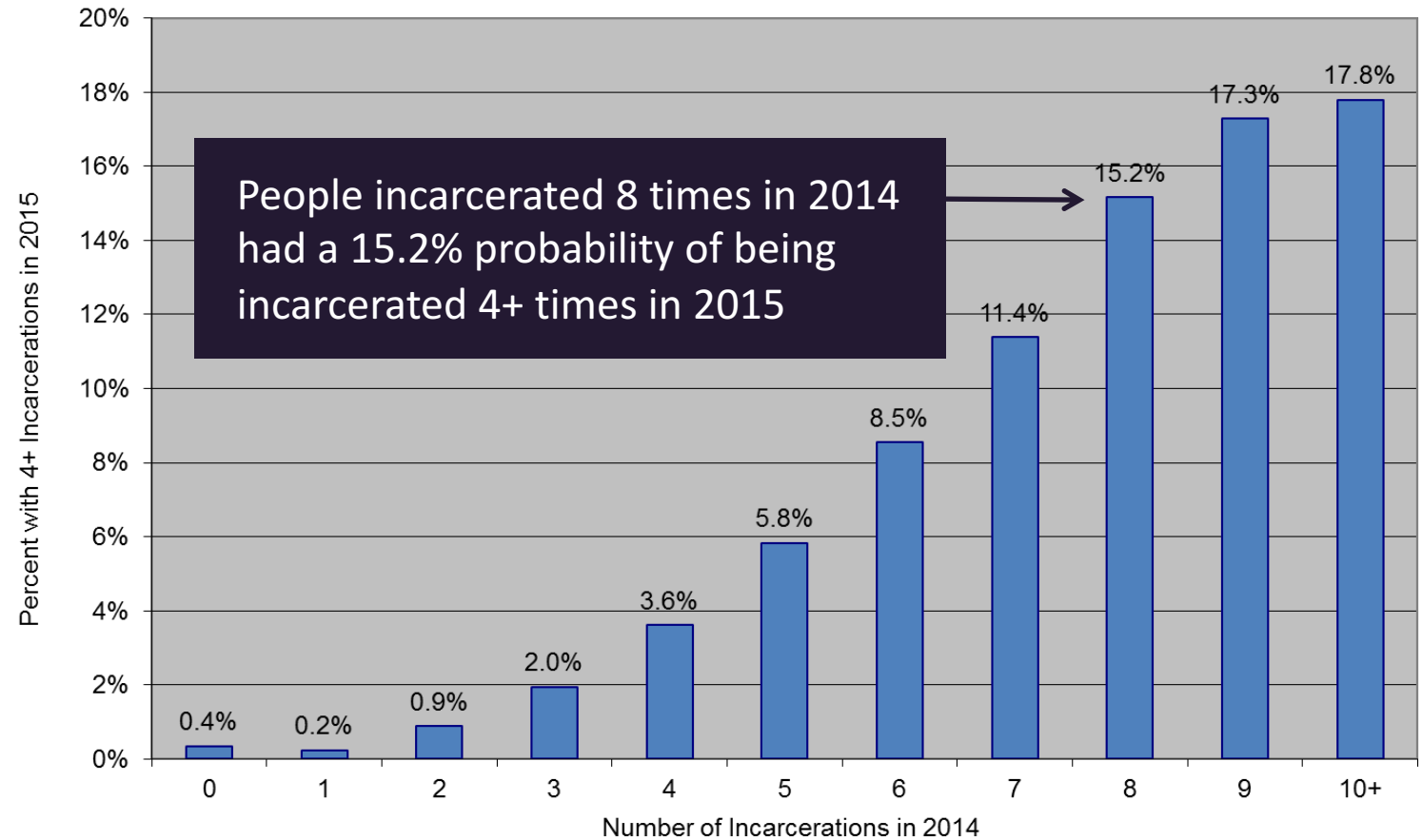
Identifying Outliers

Number of Bookings vs. Number of Agencies in 2015
Each dot represents a single individual



Predicting Future Incarceration Activity

Incarceration Activity in 2014 is Predictive of 2015



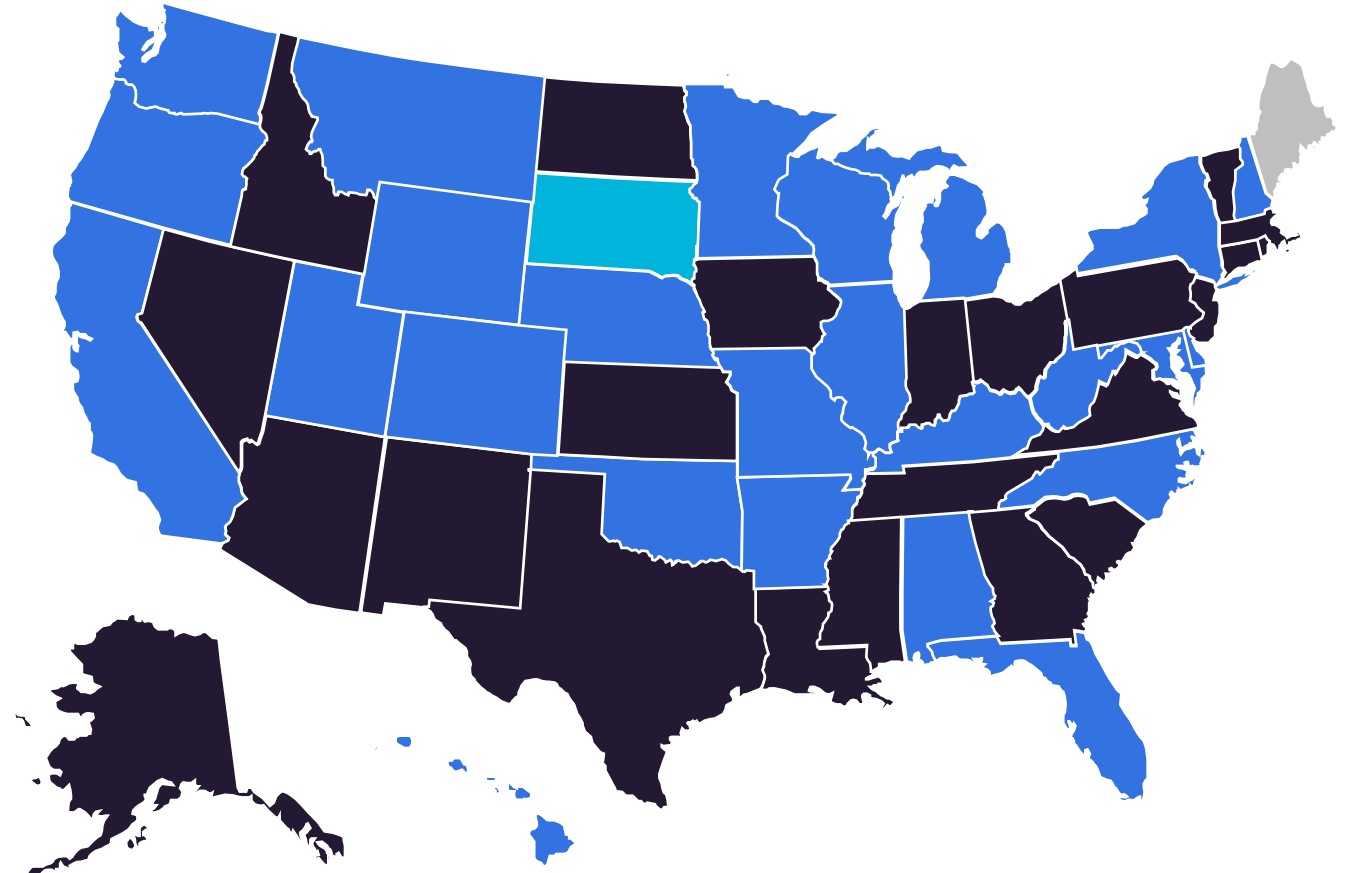


Identifying Super Utilizers

Using Narcotic Prescriptions Combined with Arrest Records

Appriss Data Overview

Appriss tracks prescriptions (PMP) for 24 states and Washington D.C.



*Appriss has no rights to PMP data and very limited rights to offender data from some states



What is NarxCare?



- NarxCare is a patented algorithm that analyzes controlled substance data from PDMPs and provides easy-to-use insights into a patient's controlled substance use creating a predictive analysis of the likelihood of drug overdose death.
- NarxCare quantifies risk with a 3-digit score, termed a "Narx Score", which ranges from 000-999.
- Narx Scores have been computed for 3 different drug types,
 - Narcotics
 - Sedatives
 - Stimulants
- The distribution of the scores are such that in any given population, about 75% of scores will fall below 200, about 5% will be above 500, and only 1% will be above 650.

NarxCare as a Predictor of Risk of Opioid-Related Death

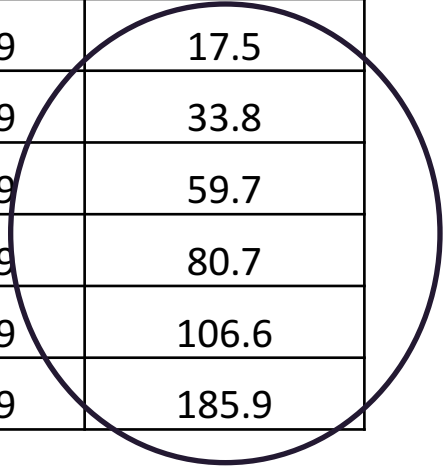


- A study was conducted which overlaid the Ohio Prescription Drug Monitoring Program Data (PDMP) with a database from the State of Ohio on known unintentional overdose deaths to assess the predictive power of the NARxCHECK score.
- The study found that as the score increased, the risk of overdose death increased markedly.
- Appriss' proprietary narcotics abuse score is a good indicator of individuals with prescription abuse problems.
- As score increases, the risk of overdose increases dramatically

Target those individuals with the highest risk for overdose.



| Narx Score | Relative Odds of Overdose Death |
|------------|---------------------------------|
| 000-099 | 1 |
| 100-199 | 8.4 |
| 200-299 | 10.8 |
| 300-399 | 10.6 |
| 400-499 | 17.5 |
| 500-599 | 33.8 |
| 600-699 | 59.7 |
| 700-799 | 80.7 |
| 800-899 | 106.6 |
| 900-999 | 185.9 |

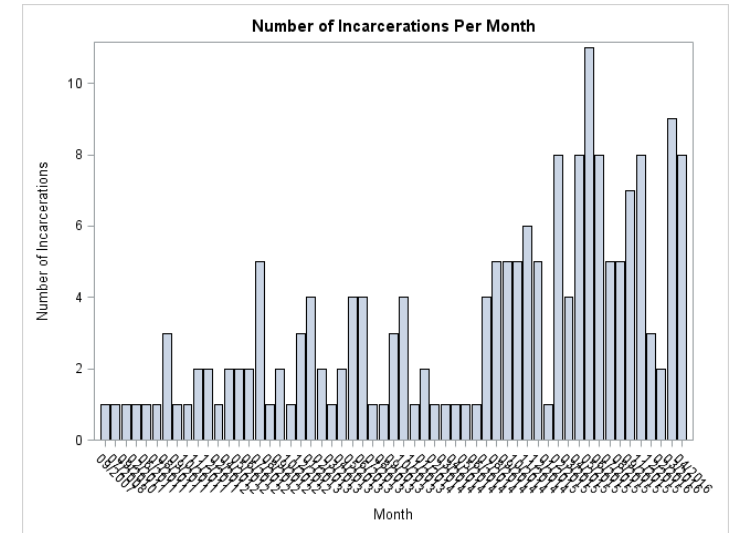


EXAMPLE CASES

Example 1 – Homeless in Oklahoma

- 185 bookings total between 2007 and 2016
- 68 bookings in 2015 alone

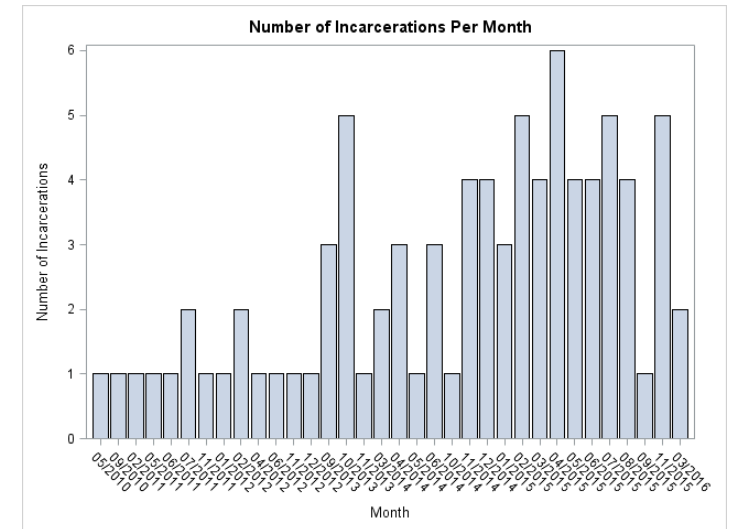
| Charge | Number of Times Charged |
|-----------------------------|-------------------------|
| Not Provided | 12 |
| ASSAULT AND BATTERY | 79 |
| DISORDERLY CONDUCT | 4 |
| FTA OR FAILURE TO APPEAR | 5 |
| INJURING A HOUSE OF WORSHIP | 39 |
| INDECENT EXPOSURE | 39 |
| LITTERING | 1 |
| OBSTRUCTING ROADWAY | 24 |
| PAROLE VIOLATION | 1 |
| PUBLIC INTOXICATION | 222 |
| THEFT | 1 |
| TRESPASSING | 54 |



| Information Provided at Booking | | | | |
|---------------------------------|---------------|-------|--------------------|---|
| Address | City | State | Number of Bookings | Notes |
| | | OK | 48 | |
| 5 N ON HWY 81 1 W | ANADARKO | OK | 1 | Address was not found in Google maps |
| HOMELESS | OKLA CITY | OK | 36 | |
| N/A | OKLAHOMA CTY | OK | 1 | |
| TRANSIANT | OKC | OK | 83 | |
| TRANSIENT | OKLAHOMA CITY | OK | 11 | |
| W 800 CALIFORNIA | OKLAHOMA CITY | OK | 5 | This is the address of a rescue mission |

Example 2 – Homeless in Iowa

- 85 bookings total between 2010 and 2016
- 36 bookings in 2015
- Repeatedly used address that is not on Google Maps



| Charge | Number of Times Charged |
|-----------------------------------|-------------------------|
| | 18 |
| ASSAULT AND BATTERY | 2 |
| INDECENT EXPOSURE | 4 |
| MALICIOUS MISCHIEF | 1 |
| PROBATION VIOLATION OR REVOCATION | 1 |
| PUBLIC INTOXICATION | 62 |
| THEFT | 2 |
| TRESPASSING | 9 |

| Information Provided at Booking | | | | |
|---------------------------------|--------------|-------|--------------------|--------------------------------------|
| Address | City | State | Number of Bookings | Notes |
| | | | 17 | |
| 1236 13 ST SE#1 | CEDAR RAPIDS | IA | 1 | Address was not found in Google maps |
| 1236 13 ST SE#2 | CEDAR RAPIDS | IA | 1 | Address was not found in Google maps |
| 1236 13TH ST SE | CEDAR RAPIDS | IA | 1 | Address was not found in Google maps |
| 1236 13TH ST SE #1 | CEDAR RAPIDS | IA | 1 | Address was not found in Google maps |
| 1236 13TH ST SE#1 | CEDAR RAPIDS | IA | 5 | Address was not found in Google maps |
| 1236 3RD AVE SE | CEDAR RAPIDS | IA | 23 | Address was not found in Google maps |
| 1236 3RD AVE SE#4 | CEDAR RAPIDS | IA | 4 | Address was not found in Google maps |
| 1326 13 ST SW#1 | CEDAR RAPIDS | IA | 1 | Address was not found in Google maps |
| 13TH ST SE | CEDAR RAPIDS | IA | 1 | Address was not found in Google maps |
| AT LARGE | | IA | 22 | |
| AT LARGE | CEDAR RAPIDS | IA | 7 | |
| AT LARGE 13TH ST SE | CEDAR RAPIDS | IA | 1 | |