



Data Strategy and Evaluation Seminar Series

DATA DASHBOARDS

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Kevin O'Connell

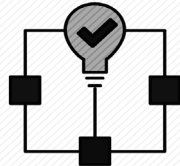
HOUSEKEEPING/ZOOM



STRATEGIC FRAMEWORK FOR DATA-DRIVEN AND EVIDENCE BASED PRACTICE



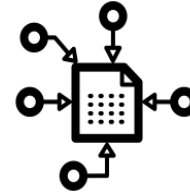
**Program
Inventory &
Literature Review**



**Logic Models &
Process Maps**



**Contracting
Practices**



**Data Strategy
& Dashboards**



**Program
Evaluation
& Cost Benefit
Analysis**

Seminar Series 1: Programming

Seminar Series 2: Data Strategy and Evaluation

Data Strategy, Part 1

- Accessing County Data (Nov 2020)

Data Strategy, Part 2

- Accessing State Data (Jan 2021)

Data Strategy, Part 3

- Integrating County and State Data (Mar 2021)

Data Dashboards

- Visualizing Data (May 2021)

Outcomes Evaluation

- Evaluating Program Outcomes (July 2021)

DATA & EVALUATION SERIES CORE COMPONENTS

DATA DASHBOARDS

- Introduction
 - What are data dashboards?
 - Why are they useful?
- Designing Data Dashboards
 - Goal setting
 - Design process
 - Tips on building effective data visualizations
- Case Studies from Probation and Jails

WHAT ARE DATA DASHBOARDS?

A data dashboard is a related set of data visualizations

- Builds on the data infrastructure you have developed

Static dashboards display multiple visualizations on one page

- They are often designed to tell a story

Dynamic dashboards allow users to explore data by visually navigating through the dashboard

- They are designed with key questions in mind
- But also allow flexibility for users to bring their own questions to the data

WHY ARE DASHBOARDS USEFUL?

Data dashboards:

- Track key characteristics, interventions, and outcomes
- Show the descriptive relationships between these variables

Importantly, data dashboards also:

- Expand access to data broader audiences (internal & external)
- Empower users to explore and investigate data
- Provide a shared, transparent basis for decision-making

EXAMPLE: PROGRAMMATIC INTERVENTIONS

Data Dashboard can help us to:

- Understand the **reach and targeting** of current programs
- Identify programmatic **gaps** overall and for subpopulations
- **Compare outcomes** for those receiving and not receiving programming
- Identify key programs or practices for **outcomes evaluation**



DESIGNING DATA DASHBOARDS

Poll Questions:

1. I have experienced data dashboards in the following ways...
2. I have encountered data dashboards built in...

1

Measure
government
services

2

Identify
communities in
need of better
assistance

3

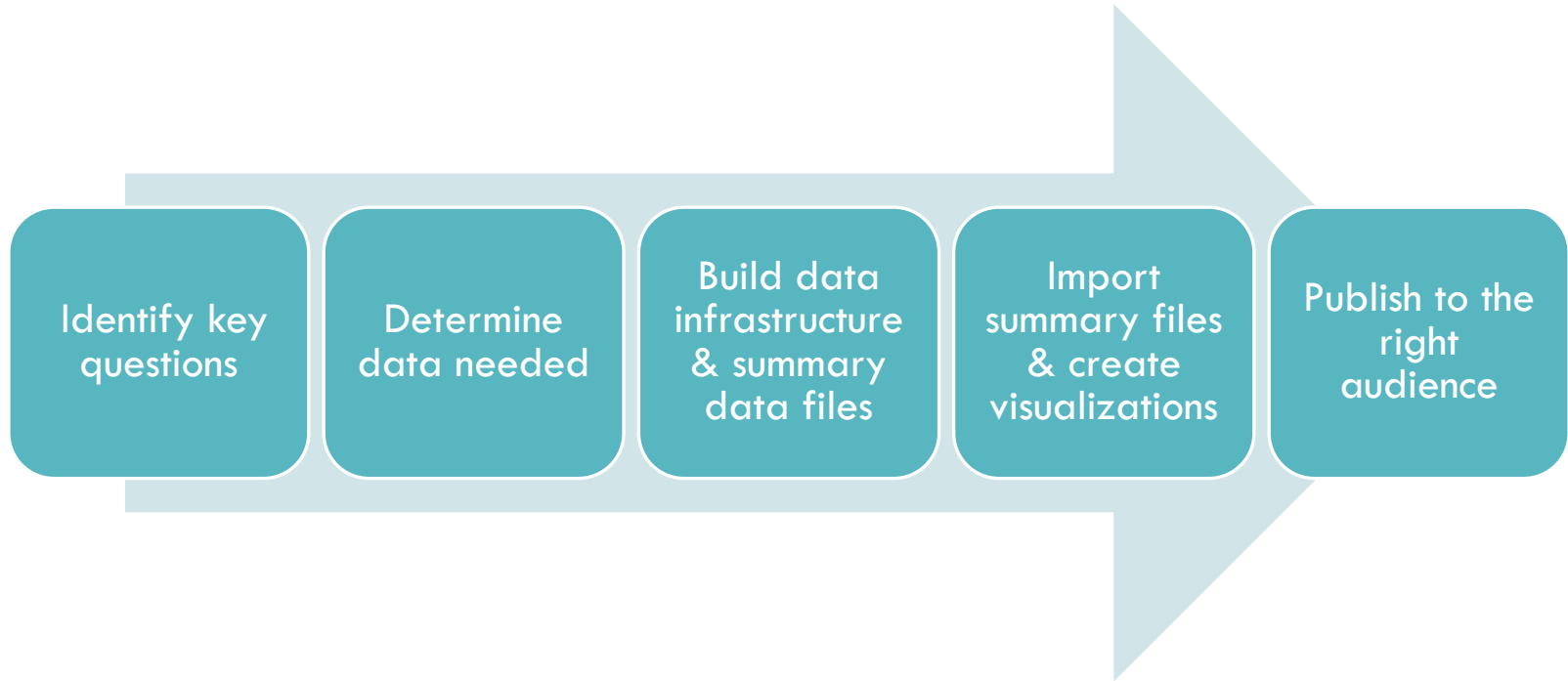
Use data to work
more efficiently
and effectively

4

Stimulate new
ideas and
innovations

START WITH VALUES: WHAT ARE OUR GOALS?

DASHBOARD DESIGN PROCESS



IDENTIFY KEY QUESTIONS

Question

Adult

What is the flow of people onto supervision? How has it changed over time?

What kind of reasons do probationers receive violations of probation?

How many sentencing reports are written and what is role of probation in serving the court?

Juvenile

What is the profile of youth in the juvenile hall?

What do juvenile crime and arrest trends look like?

How has probation adapted to Congregate Care reform?

Subtheme

Casotype

Gender

Race/Ethnicity

Age

Geography

Criminal History

Correctional History

Criminogenic Risk

Criminogenic Need

DETERMINE DATA NEEDED

Probation Example

Person ID (PFN)

- Gender
- Date of Birth
- Race/Ethnicity
- Zip Code (Last Known)

Docket ID

- Supervision type
- Start Date of Probation Grant
- End date of Probation Grant

BUILD DATA INFRASTRUCTURE & CREATE SUMMARY FILES

Develop a query of relevant fields



CMS developers sends secure files routinely



Dashboard developer creates views from event level data

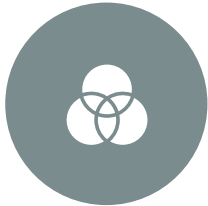
IMPORT SUMMARY FILES & CREATE VISUALIZATIONS



What **data** is important to show?



What do I want to **emphasize** in the data?



What **options** do I have for displaying this data?



Which option is most **effective** at communicating the data?

PUBLISH TO THE RIGHT AUDIENCE

More Detail



Less Detail

Internal Agency

- All views
- Internal server
- Underlying data at event or individual levels
- Access based on role within agency

County Intranet

- Some views
- Internal server
- Underlying data at event or individual levels
- Access based on shared clients status

Public Website

- Restricted views
- Public-facing server
- Underlying data at summary level only
- Accompanied by fact sheets and overviews

KEY AUDIENCE CONSIDERATIONS



Educating the audience around terminology



Matching the dashboard measures to language of your organization

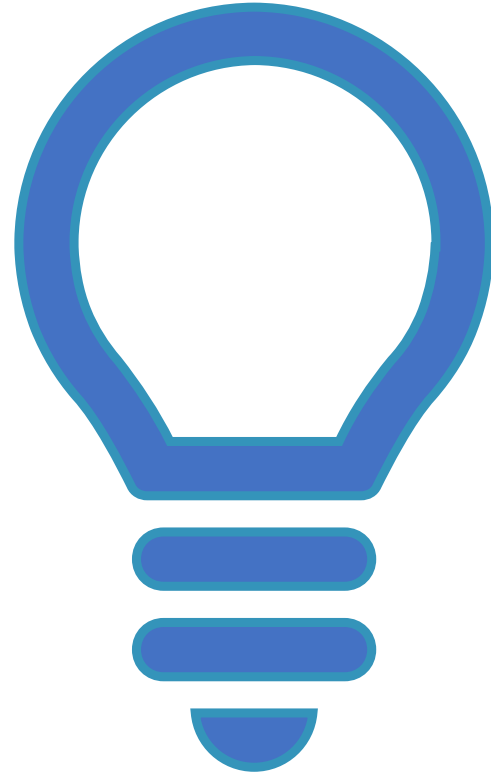


Planning for the way users will likely explore the data



Telling a story, or series of stories, by building a narrative

**TIPS FOR
BUILDING
EFFECTIVE
VISUALIZATIONS**



VISUAL PERCEPTION IS A HUGE PART OF SHARING INFORMATION

70% of sense receptors are in our eyes



30% is everything else



Information design is important even as software offers new possibilities and accessibility to more users

TO TABLE, OR TO CHART

Use a table:

Looking up individual values

Precision is required

Values have multiple units of measure

There is a summary and detail in the same view

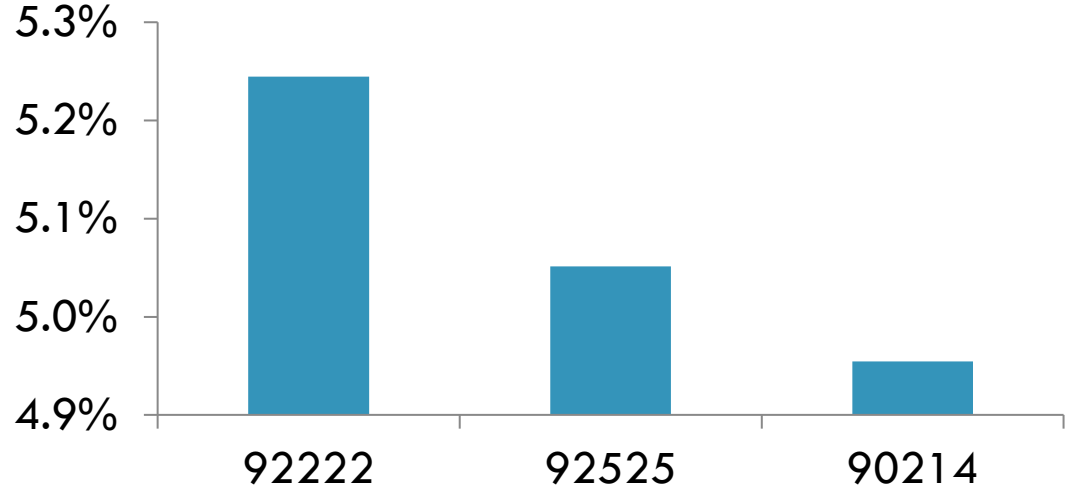
Use a chart:

The message is in the pattern or shape of trends, patterns, and exceptions

The goal is to reveal relationships among a whole set of values

WHAT'S WRONG WITH THIS CHART?

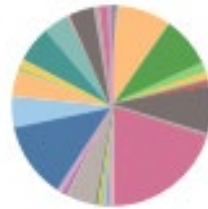
Success rate, by Zip Code



The visual doesn't match the scale of change

WHAT'S WRONG WITH THIS CHART?

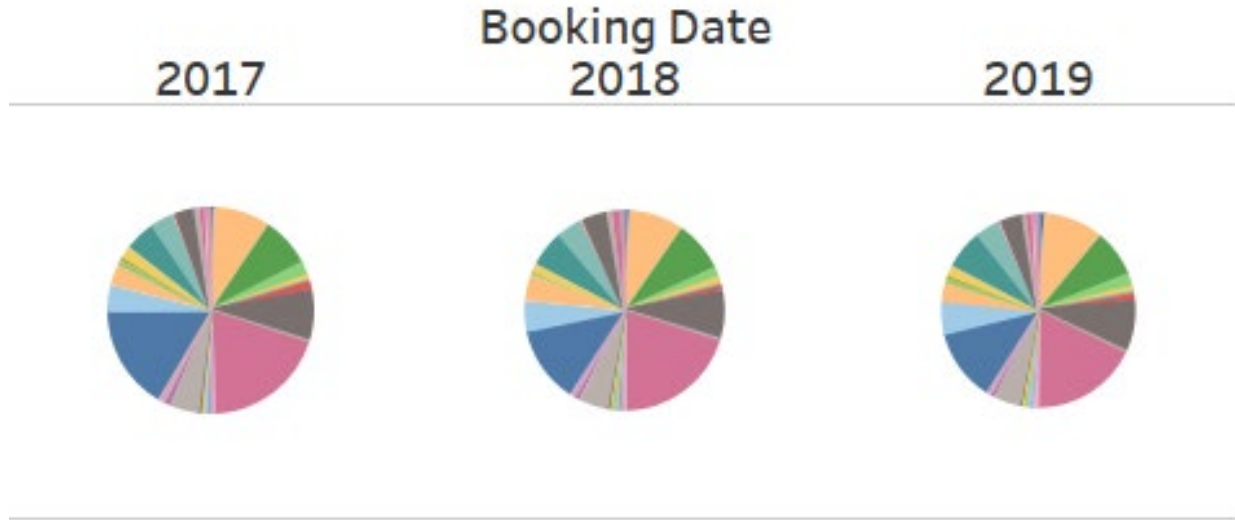
2018



More than 5 categories make it hard to discern relative differences.

- Offtype
- Annoying Child
 - Arson
 - Assault
 - Assault And Battery
 - Burglary
 - Burglary Tools
 - Burglary-misdemeanor
 - Checks And Access Cards
 - Contributing To The Delinque..
 - Dangerous Drugs
 - Detainer
 - Disorderly Conduct
 - Disturbing The Peace
 - Drive Under The Influence
 - Enhancement
 - Escape
 - Failure to Appear/non Traffic
 - Federal Offense
 - Forcible Rape
 - Forgery, Checks, Access Cards
 - Hit And Run
 - Homicide
 - Indecent Exposure
 - Joy Riding
 - Kidnapping
 - Lewd Conduct
 - Lewd or Lascivious

WHAT'S WRONG WITH THIS CHART?

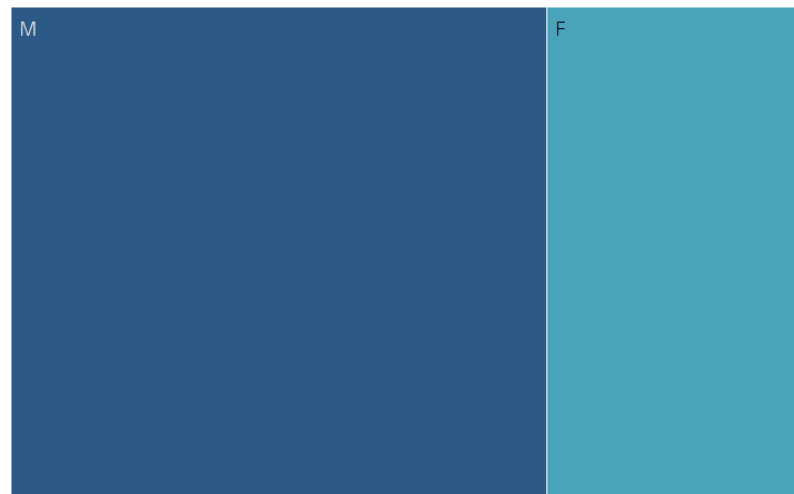


Make comparison useful and perceptible.

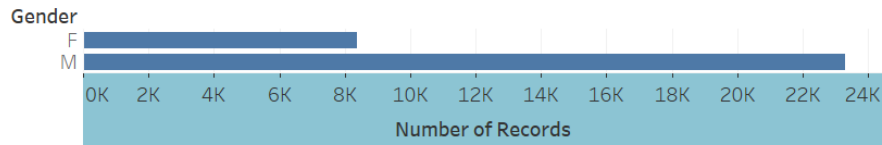
WHAT'S WRONG WITH THIS CHART?

Use color with care.

Bookings by Severity



Bookings by Gender



CHOOSING EFFECTIVE CHARTS

Composition

- pie charts
- stacked column or bar charts

Comparisons

- column or bar charts
- line charts

Distributions & Relationships

- scatter plots
- line charts

CASE STUDIES IN DASHBOARD DESIGN



1

Create a visual display that helps to show who probation serves across divisions and supervision types

2

Use a point in time to show a basic view across different factors

3

Allow for user queries into specific demographics, including age, race, and gender

DASHBOARD 1: ALAMEDA COUNTY POPULATION DASHBOARD BETTER UNDERSTAND THE CHARACTERISTICS OF OUR POPULATION

Active clients as of: (select one / scroll down)

- 2020 Q3
- 2020 Q2
- 2020 Q1
- 2019 Q4
- 2019 Q3

Alameda County Probation Department Adult Field Services

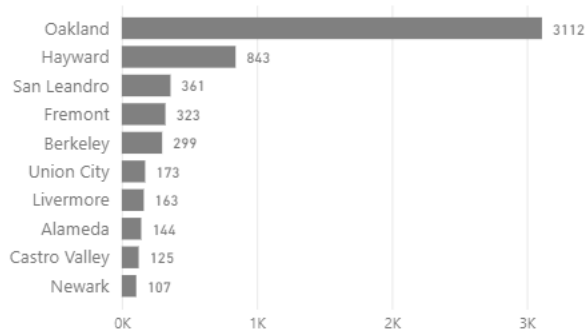
Adult Probation Clients by Quarter



Adult Probationers by Supervision Type

Formal Probation - Felony	6863
PRCS	657
Formal Probation - Misdemeanor	580
Mandatory Supervision	30
Total	8130

Adult Probationers by City

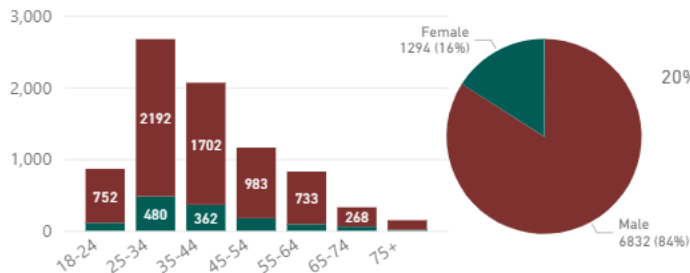


Adult Probationers by Board of Supervisor District*



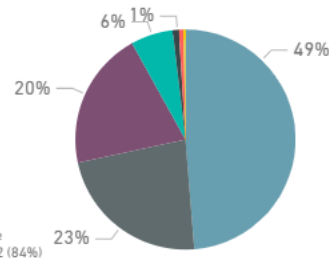
Adult Probationers by Age and Gender

● Female ● Male



Adult Probationers by Race

- Black
- Hispanic
- White
- Asian/PI
- Unknown
- Other
- Amer. Indian



* BOS District information available beginning in Q3 2020

Number of adult probationers living out of county: **1498**



1

Display basic information about bookings and disaggregate by booking circumstance and MH status

2

Use a single year of bookings to tell an annual composition story

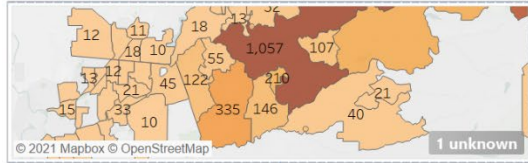
3

Allow for users to look at specific subpopulations and geographies

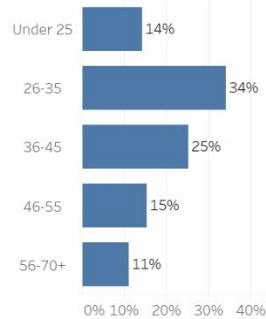
DASHBOARD 2: COUNTY JAIL UTILIZATION DASHBOARD BETTER UNDERSTAND WHO IS BEING BOOKED INTO JAIL

EXAMPLE: JAIL UTILIZATION TOOL

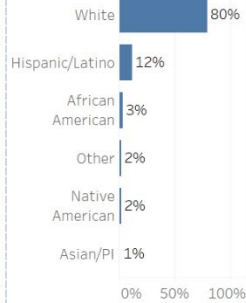
Measure 1: Bookings for those with Mental Health Concerns



Age



Race

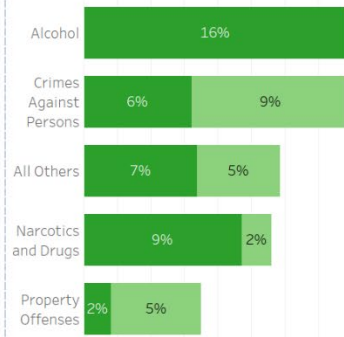


All Bookings in 2019
5,807

New Crimes

3,377

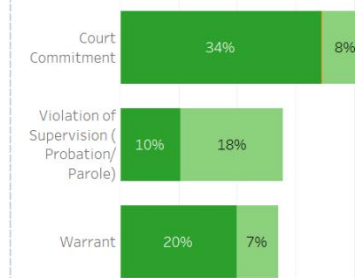
Percent of New Crime Bookings, by Crime Severity



Non New Crime

2,430

Percent of Non New Crime Bookings



Year of Booking Date

2019

Severity

- Felony
- Misdemeanor

MH Screen

- (All)
- Null
- Not Referred
- Referred

Booking Sequence

- (All)
- 1
- 2 & 3
- 4-7
- 8-10
- 11-20
- 21+

QUESTIONS AND DISCUSSION



MATERIALS, GUIDES, AND TEMPLATES

Materials available:

[Data Dashboard: Process Overview](#)

[Designing a Data Dashboard: Key Questions](#)

[Guide to Dashboard Design](#)

Data & Evaluation Series Info:

<https://www.counties.org/framework-seminar-series>

Support Hub Website:

<https://www.counties.org/csac-support-hub>



LOOKING AHEAD

PROGRAMMING SERIES, SEMINAR 1.5 (JUNE)

This final seminar in the programming series will be a presentation of CSAC team learnings from 10 California counties across various areas of cost benefit analysis. We will discuss how these findings can be interpreted and applied to local decision-making, particularly in resource-constrained environments.

DATA AND EVALUATION SERIES, SEMINAR 2.5 (JULY)

Our final seminar in this series will provide an overview of outcomes evaluation. We will explain the key differences between (1) using data to monitor outcomes and (2) conducting an evaluation that generates findings about the effects of a program on outcomes. We will explain the key methodological steps in conducting an evaluation and discuss how evaluation findings can be used to inform decision-making.



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