

Juvenile Justice Policy and Data Board

Data Subcommittee

Virtual Meeting
October 13, 2022
10:30am – 12:00pm

Agenda

1. Welcome and Introductions
2. Approval of September meeting minutes
3. Guest presentation by Dana Bernson, Special Analytic Projects

Director on the Department of Public Health's Public Health

Data Warehouse (PHD)

4. Review & Discuss: FY22 Annual Report Data



Massachusetts Department of Public Health

THE MASSACHUSETTS PUBLIC HEALTH DATA WAREHOUSE

October 13th, 2022

Dana Bernson, MPH
Director, Special Analytic Projects
Office of Population Health

Agenda

1. Overview
2. Benefits
3. Technical implementation
4. Analytics and data to action
5. Key success factors
6. Dissemination
7. Ongoing challenges and next steps

Overview

The PHD is a unique surveillance and research tool that provides access to timely, linked, multi-year data to enable analyses of priority population health trends with a focus on health and racial equity and the social determinants of health

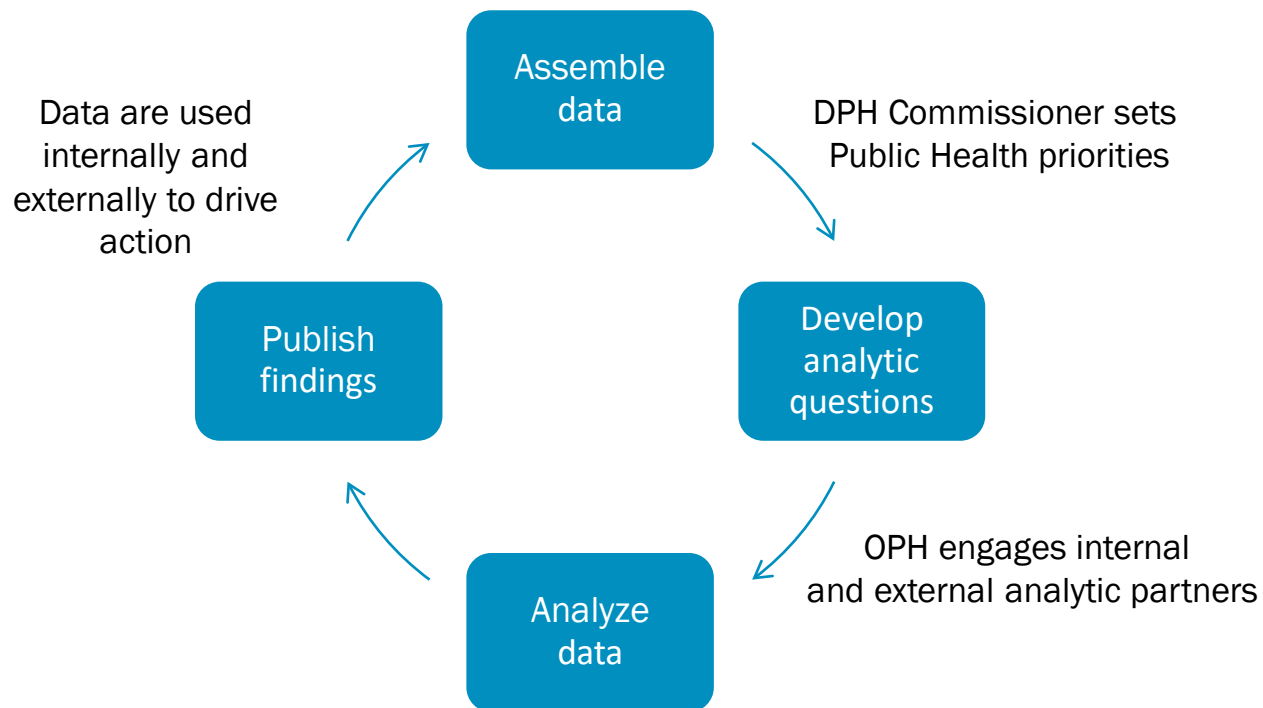
Overview

- Authorized in 2017 under M.G.L. c. 111, [§237](#)
- The commissioner shall collect, record and analyze data, and shall assemble and maintain data systems, necessary to **analyze population health trends**. The commissioner shall give **priority to analyzing fatal and nonfatal opiate overdoses**. The commissioner may identify and determine additional priorities for the **reduction of morbidity and mortality**.

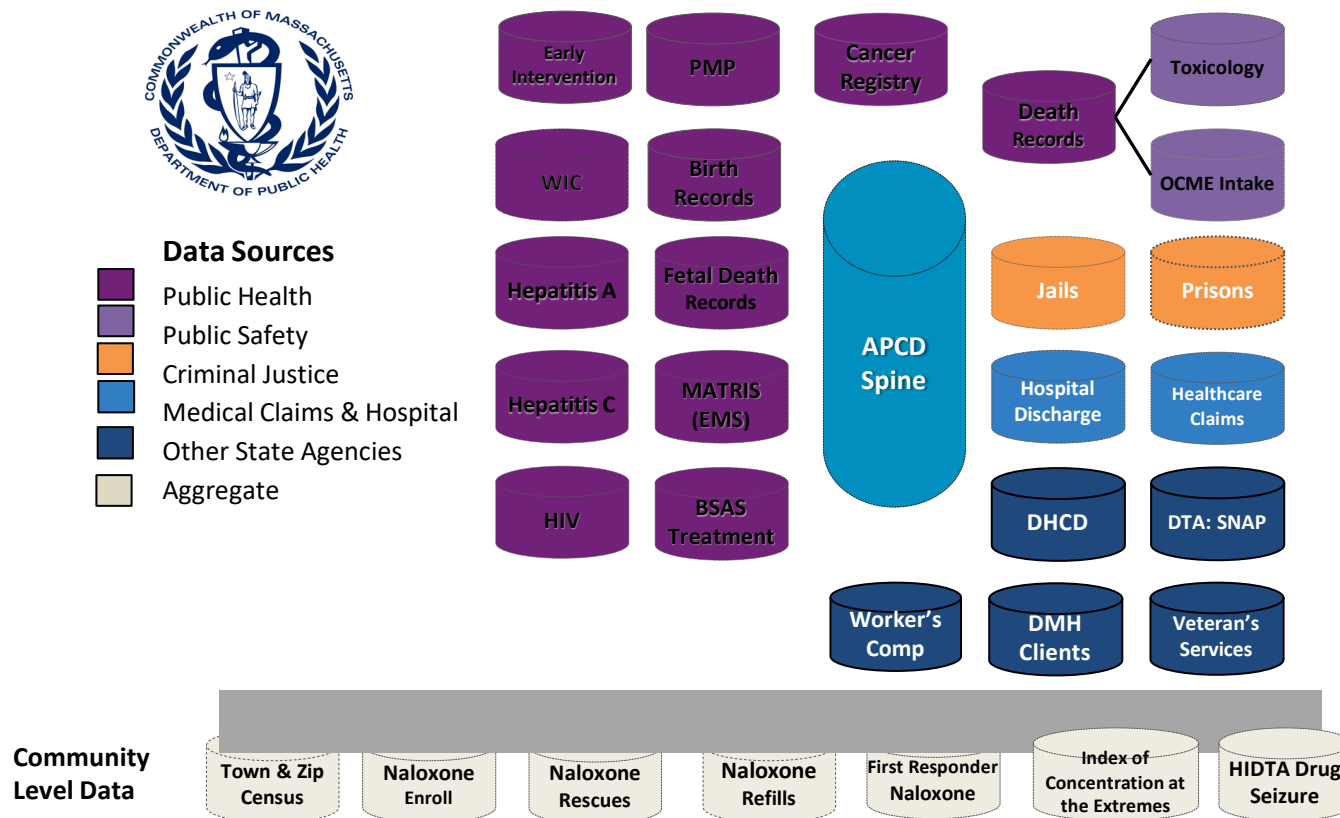
Overview

- Has roots in the “Chapter 55” legislation, that was initially signed in 2015 and re-authorized in 2016, which
 - Provided the legal basis for cross-agency collaboration to study the alarming trends in opioid-related deaths.
 - Specified some contributing data partners
 - Required MA DPH to examine data related to opioid overdose deaths and to submit report addressing 7 specific questions
 - DPH determined that questions could not be answered without linking the data sources

Overview



Overview



Benefits

- Linking data from across state government allowed us to turn data into actionable insight



- Results have led to ongoing commitment to tie analytics to data-driven legislation, policy, and program change and has informed clinical practice

Benefits

- Using data in such a way provided fresh insights – specifically about **disparities** and **high-risk populations** including:
 - communities of color
 - people with a history of incarceration
 - people experiencing homelessness or housing instability
 - people with co-occurring disorders
 - pregnant and post-partum people

Benefits

- Insights about these high-risk populations now **drive our programming** allowing us to tailor interventions to become more effective at eliminating such disparities
- We created this tool to help address the opioid crisis, but we designed it as a **scalable, sustainable, and flexible** model that positions us to address other priority issues.
- This tool has become a **national model** that other states can use to understand the opioid crisis and other public health priorities.

Technical implementation: challenges



HIPAA

42 CFR Part 2

Medicaid rules

State laws not addressed by CH 55

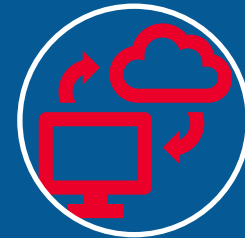


Inconsistent structures

Variable quality of documentation

Volume of data

Turning raw data into analytic files



Linkage

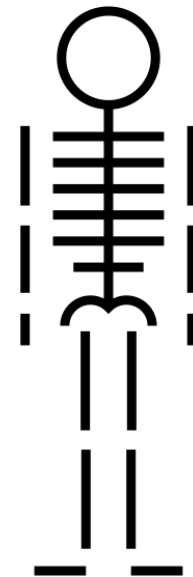
Access

Secure Storage

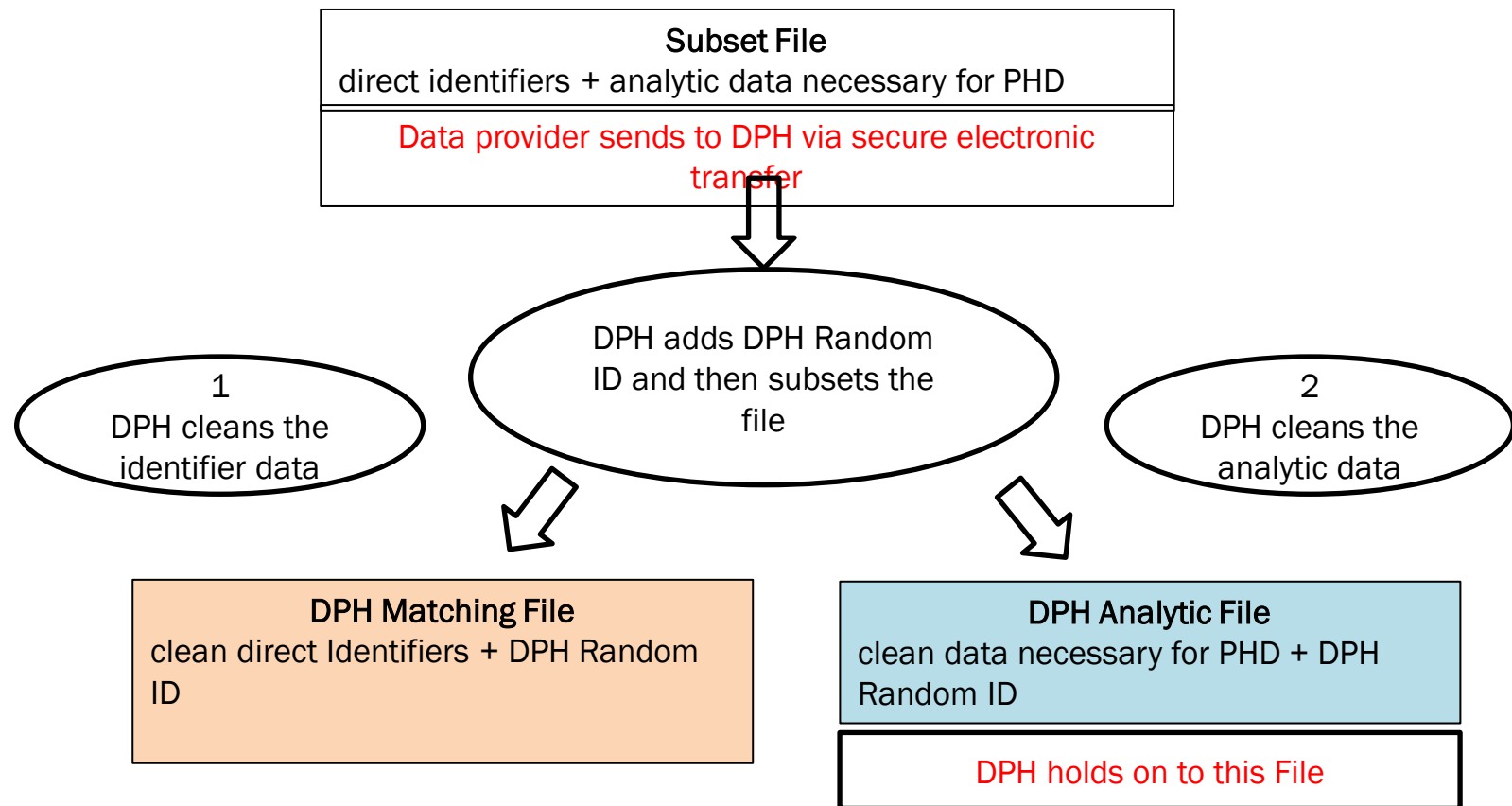


Technical implementation: modified spine & limb structure

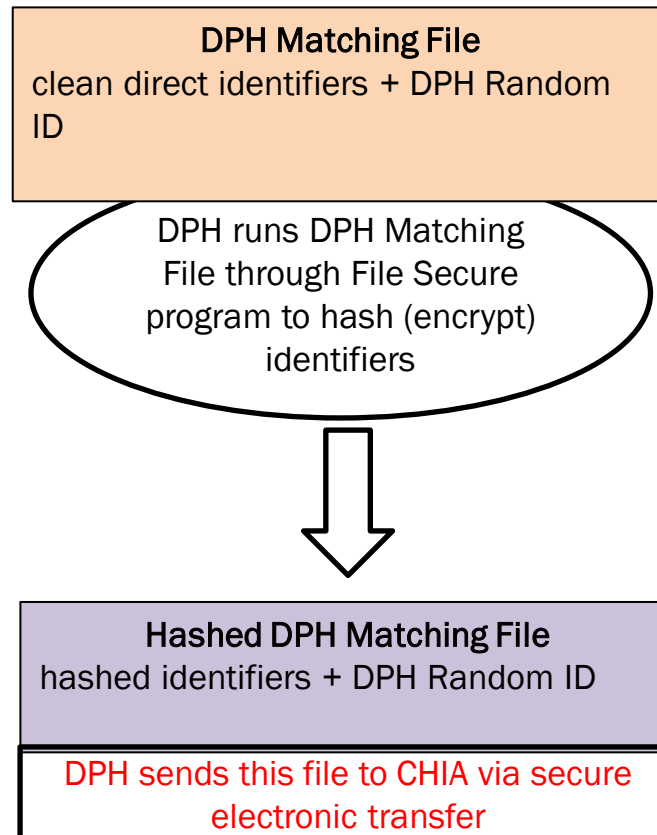
- “Spine” = MA All Payer Claims Database (APCD)
- “Limb” = Dataset to be linked
- Match identifiers from the “limb” to the “spine” and get back a random project specific ID for matched records
- Use these project specific IDs to link data at the time of analysis



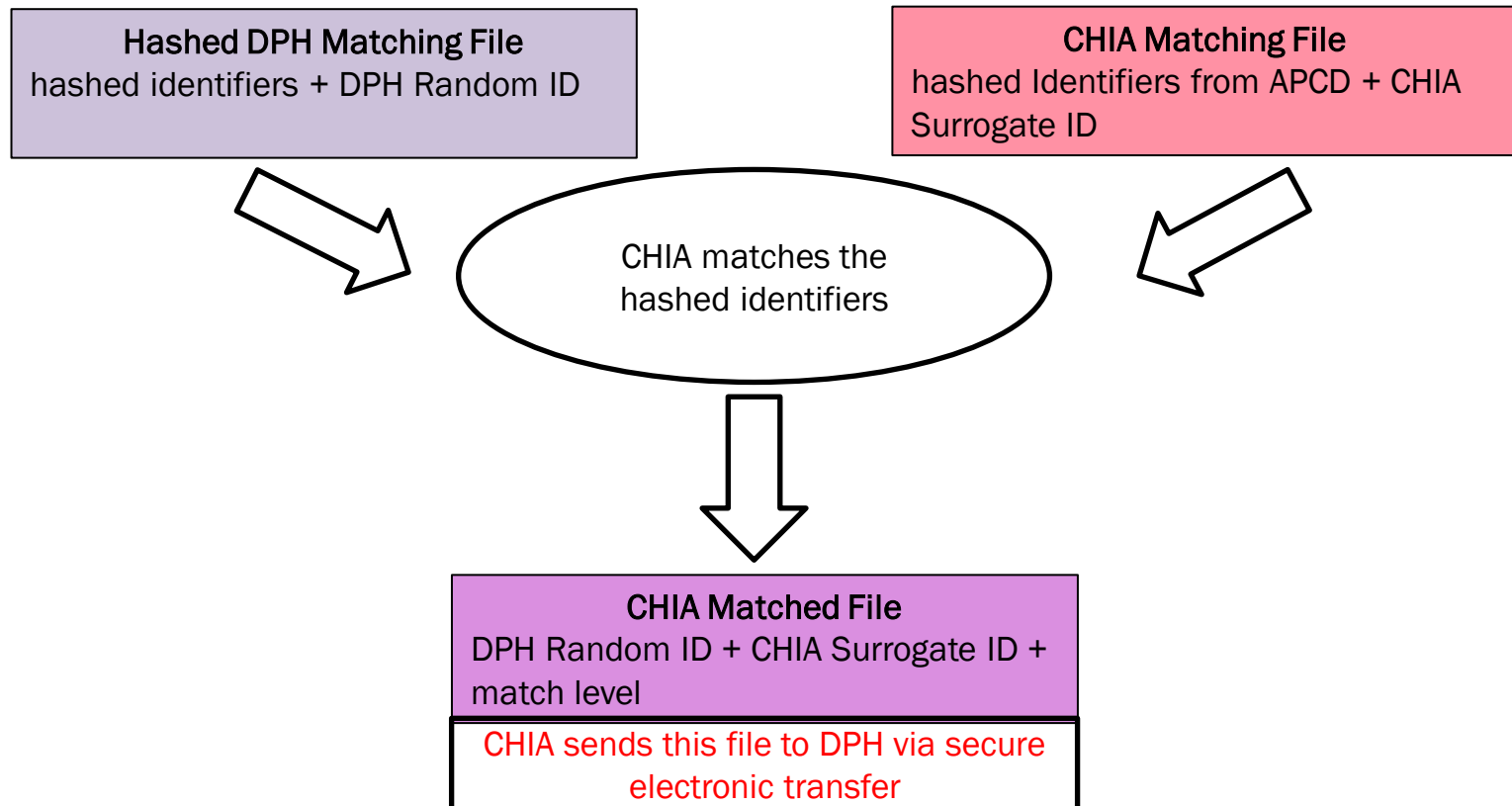
Technical implementation: data matching



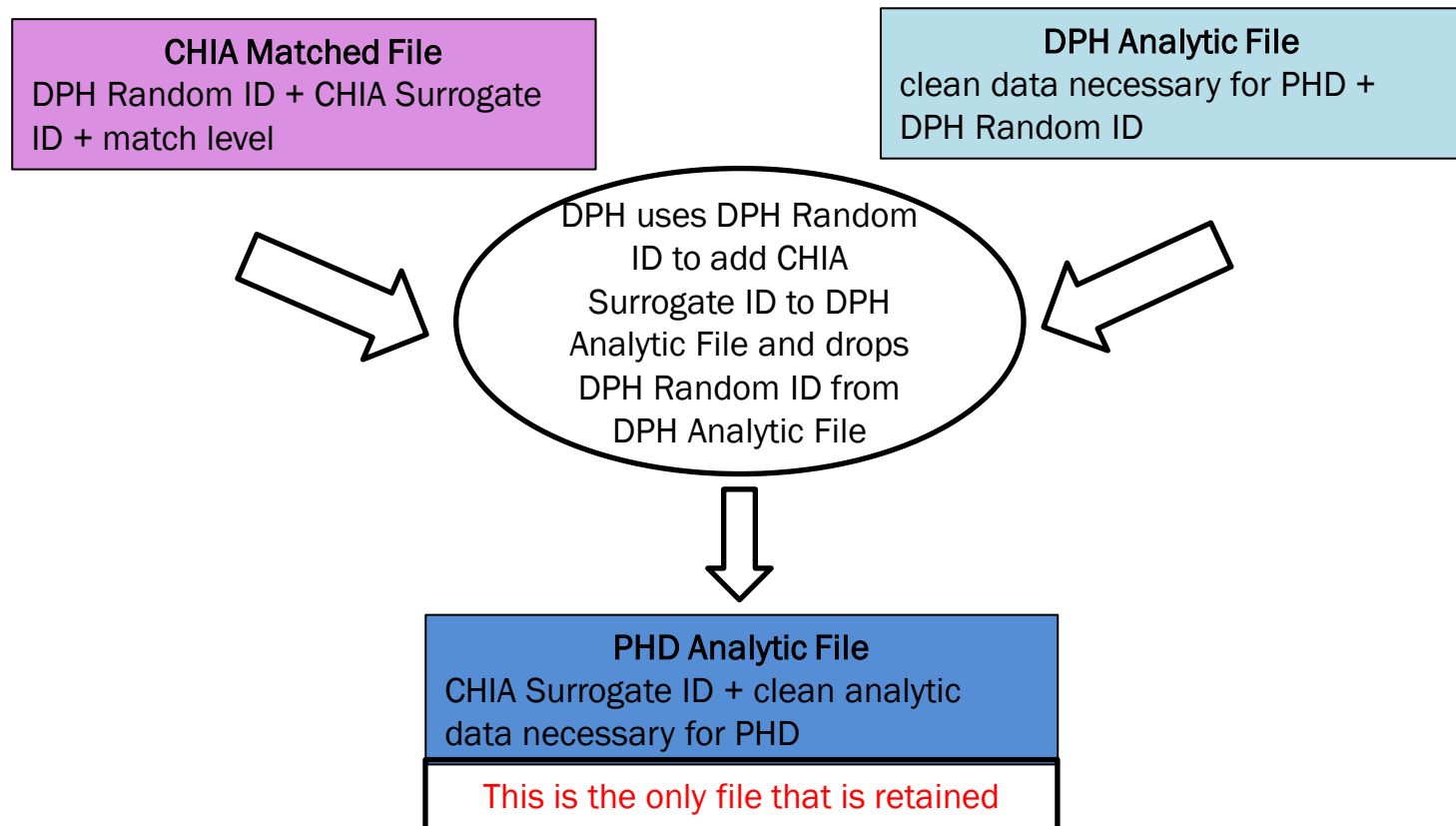
Technical implementation: data matching



Technical implementation: data matching



Technical implementation: data matching



Technical implementation: system attributes

- SAS Studio (web-based SAS)
- Data encrypted in transit & at rest
- Analysts can't see the data
- Datasets unlinked at rest
- No residual files
- Automatic cell suppression



Technical implementation: data access

Internal: Application Process

- Proposed projects must align with the analytic grid approved by the DPH commissioner
- Teams must identify their own SAS programmer & will need to be onboarded into the DPH AWS SAS environment
- Train the trainer model led by Special Analytic Projects epidemiologists

External: Notice of Opportunity

- Opportunity to work on behalf of DPH
- Special Analytic Projects epidemiologist embedded on analytic teams
- We may require them to include another DPH SME on team as well
- Deliverable to DPH = data brief
- Can pursue further publication after submitting an approved data brief and must follow our review process

Technical implementation

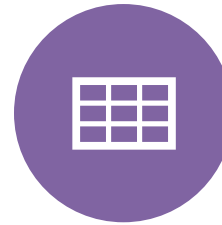
Improvements



MORE DATASETS



**BETTER
PROBABILISTIC
MATCHING
ALGORITHM**



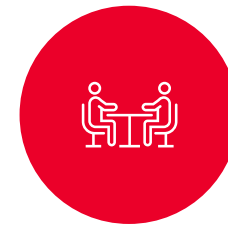
**UPDATED DATA
STRUCTURE
(LONG VS. WIDE)**



**NEW AWS
ENVIRONMENT**



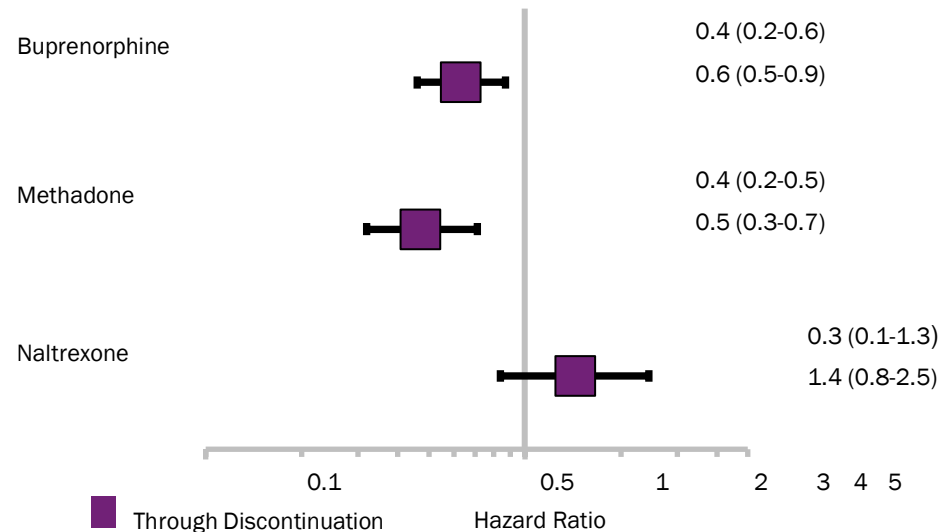
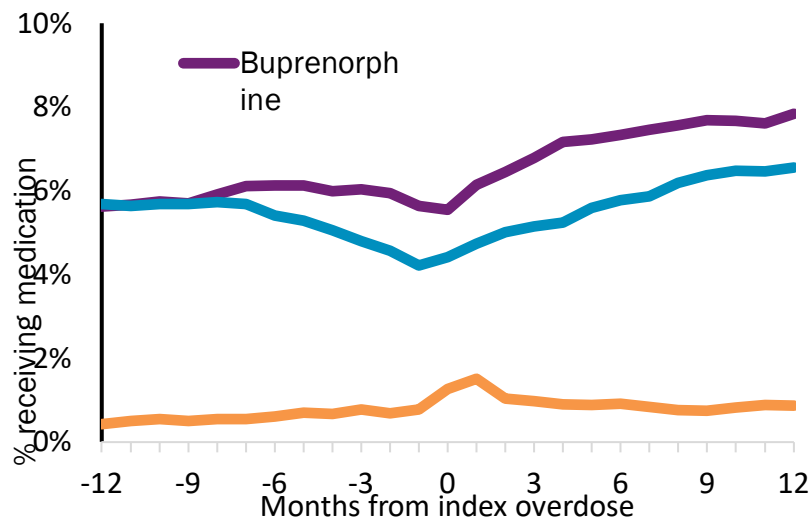
**IMPROVED
DEMOGRAPHICS**



**EXPANDED
PARTNERSHIPS**

Analytics and data to action

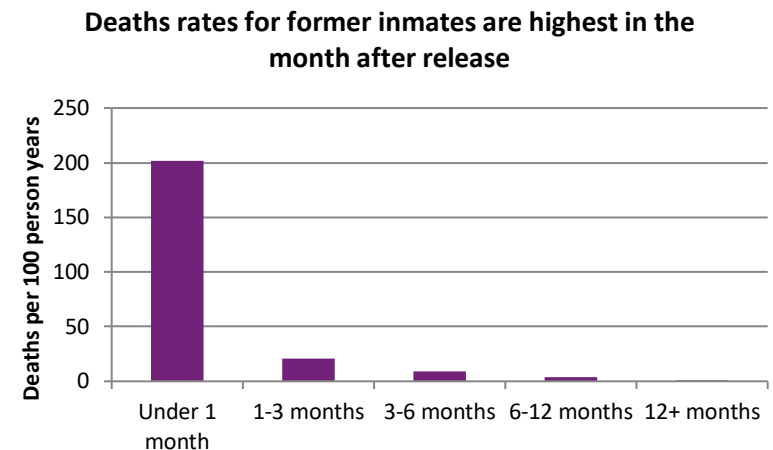
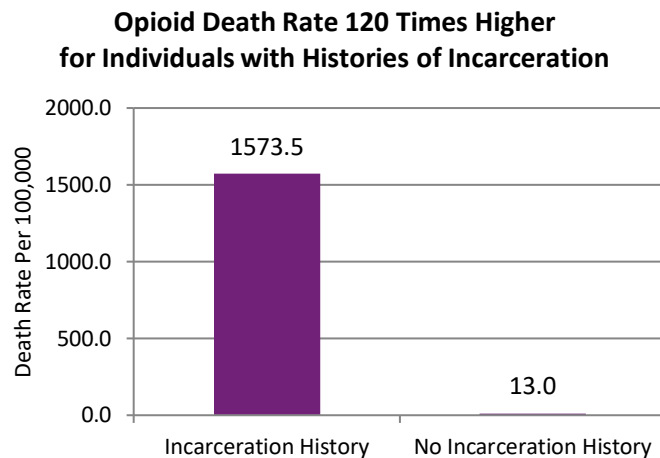
Key Finding: few individuals received medication for opioid use disorder (MOUD) after a nonfatal overdose. However, those that did had a significant reduction in mortality



Action: Funding for clinicians to provide such treatment; changes to medical school curriculum; commission to study impact and outcomes of MOUD

Analytics and data to action

Key Finding: individuals with a history of incarceration are at very high risk of opioid related overdose death



Action: Legislation requiring 7 of the county jails and several prison facilities to provide MOUD. DPH along with the Justice Community Opioid Innovation Network team is currently evaluating the impact of this legislation.

Key successes factors

- Public/private partnerships



17

local, state,
and federal
agencies



9

healthcare
delivery
systems



26

academic
institutions



11

consulting agencies,
foundations, private
companies, & think
tanks

Images: Flaticon.com

Key success factors



Recognizing the need and creating urgency



Generating early wins



Attorneys, technologists, and data professionals working together



Designing a system that is scalable and agile



Highlighting importance of social context

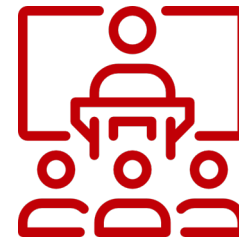
Dissemination



[Data briefs & legislative reports](#)



[Peer reviewed publications](#)



Conferences



Webinars



Podcasts



Peer to peer technical assistance

Ongoing challenges and next steps

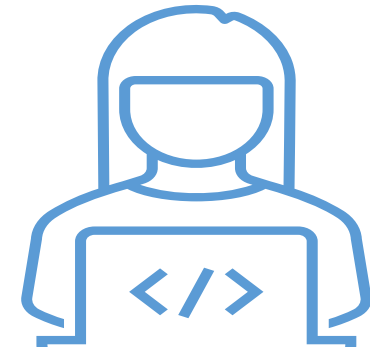
Ongoing challenges



How to handle
conflicting values
(within and across
datasets)



Impact of Gobeille v.
Liberty Mutual
Insurance Company



Reliance on SAS as
an analytic tool



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Images: Flaticon.com

Ongoing challenges and next steps

Next Steps

- Targeting new datasets for inclusion
- Developing Community Advisory Board
- Continue executing analytic agenda
- Understand intersection with Section 138 of the [FY23 budget](#)

Agenda

1. Review & Discuss: FY22 Annual Report Data

Administrative data centers study timeline

June

- Fundamentals of an Administrative Data Center re: data matching, data sharing, and privacy
- Other state examples

September

- Operations and research conducted within Administrative Data Centers in Michigan and Minnesota

October

- Operations and research conducted within Massachusetts' Department of Public Health's Public Health Data Warehouse

November

- Final questions & write up on our research

For today and our next meeting:



Do you have any remaining questions re: our charge to **“study the feasibility of creating an administrative data center in Massachusetts to serve as the state’s central coordinator of record-level data for child-serving entities?”**

**JJPAD BOARD FY22 ANNUAL REPORT:
HIGH LEVEL OVERVIEW OF THE DATA TO
DATE**

Data notes & summary

- This presentation looks at FY22 admissions data, and the changes in admissions since FY21, FY19 (pre-COVID) and FY18 (pre-CJRA)
- Next meeting, we will share the remaining process points and breakdowns by:
 - Offense Type
 - Offense Severity
 - Demographics (race/ethnicity, gender, age)
 - County

Data notes & summary



- The data analysis presented here is preliminary and should be used for Data Subcommittee discussion purposes only. Juvenile Court data was pulled from the Trial Court's public dashboards in September and may have or will change.
- Similarly, data may change as the OCA does future QC checks. The final FY22 data analysis will be provided in the JJPAD Board's FY22 Annual Report.

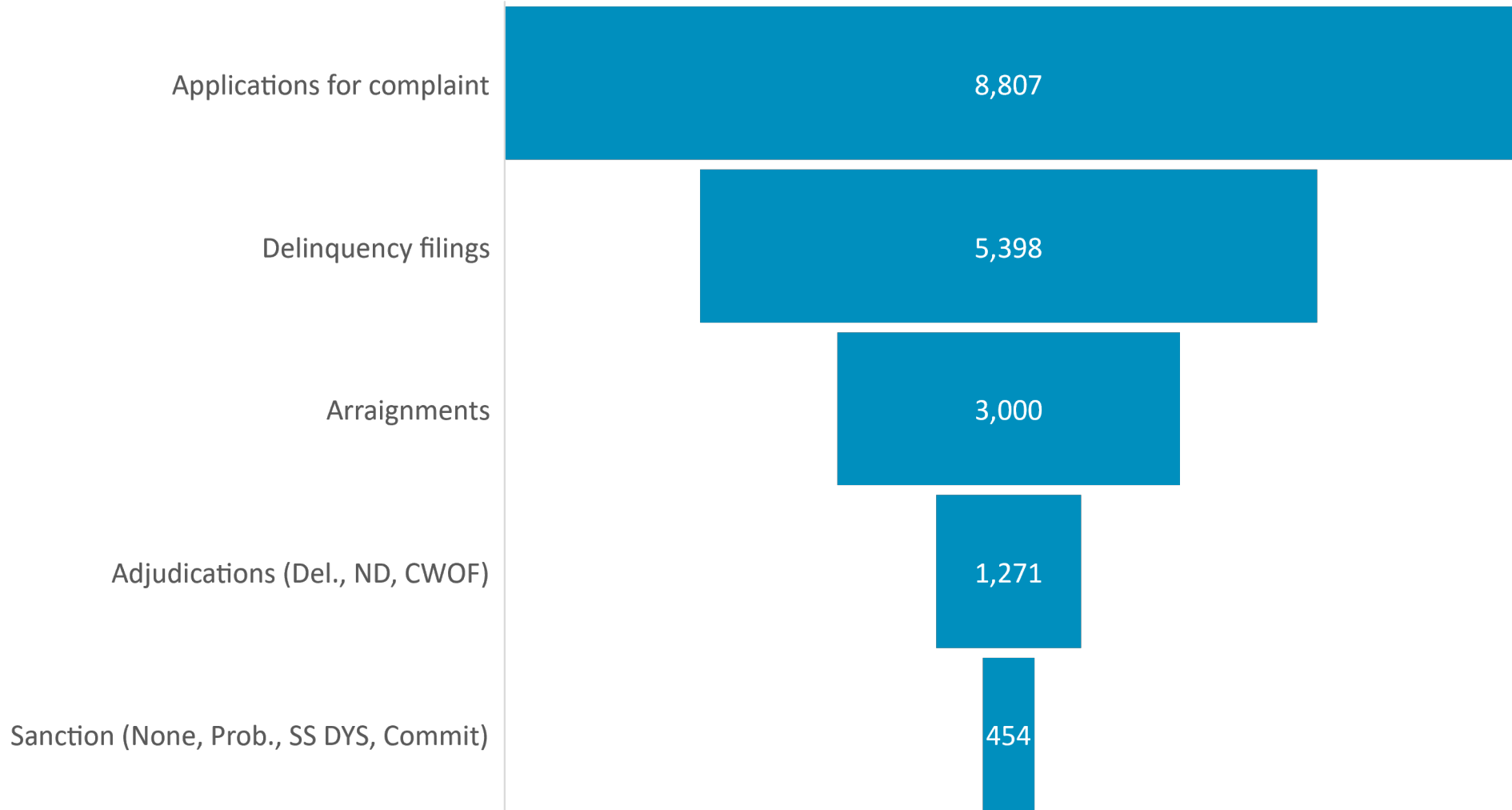
JUVENILE JUSTICE SYSTEM USE (FY22) & TRENDS OVER TIME

Data to date...

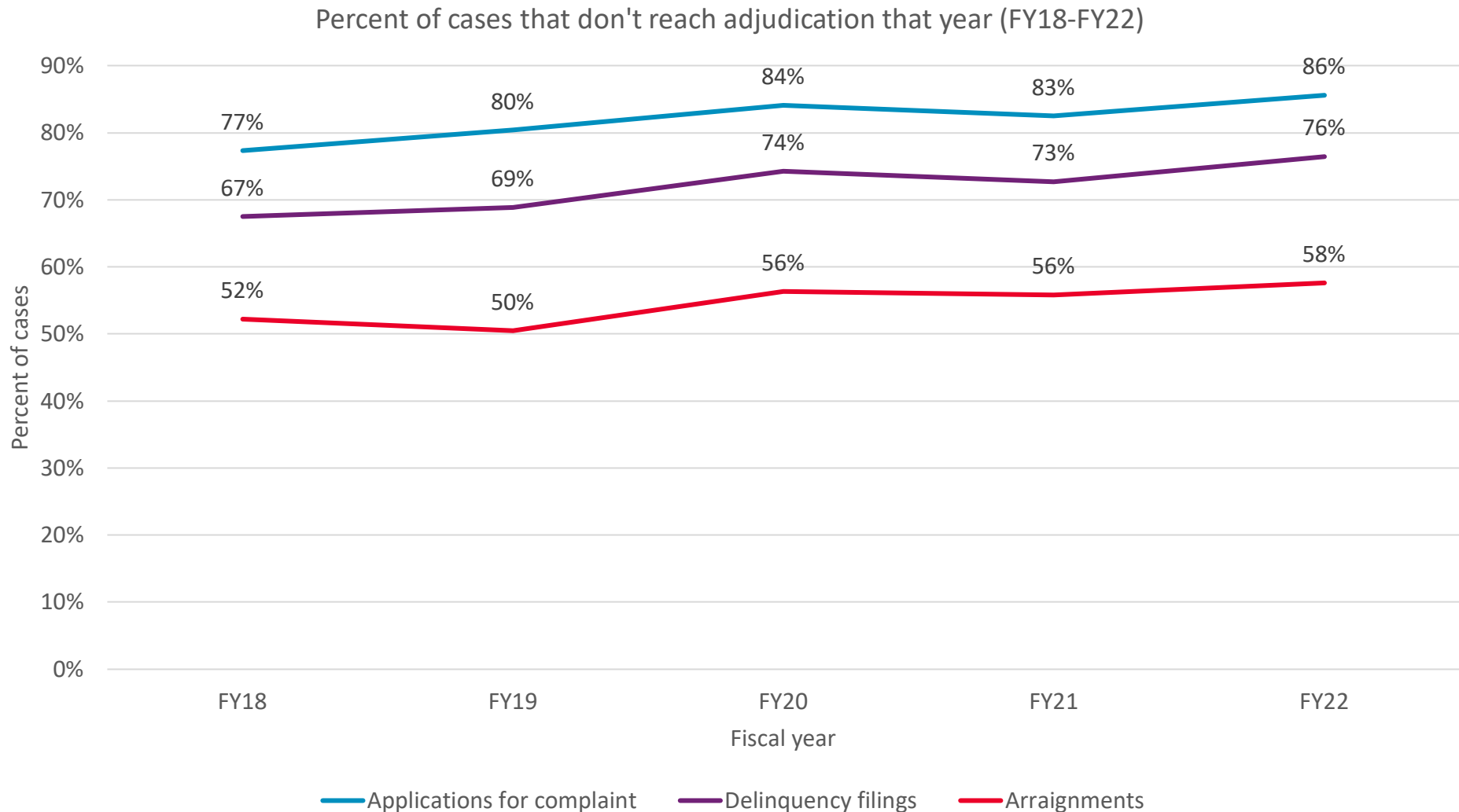
Custodial arrest
Court summons
Overnight arrest
Application for complaint
Delinquency filing
Arraignment
Pretrial supervision
Pretrial detention
Adjudication
Sanction
Probation caseload
First- time commitment to DYS
YES Transitions
Transfer to adult court
Dismissed delinquency cases (post- delinquency filing, pre-adjudication)
Other systems: CRA, DMH, DPH

Juvenile Court process data (FY22)

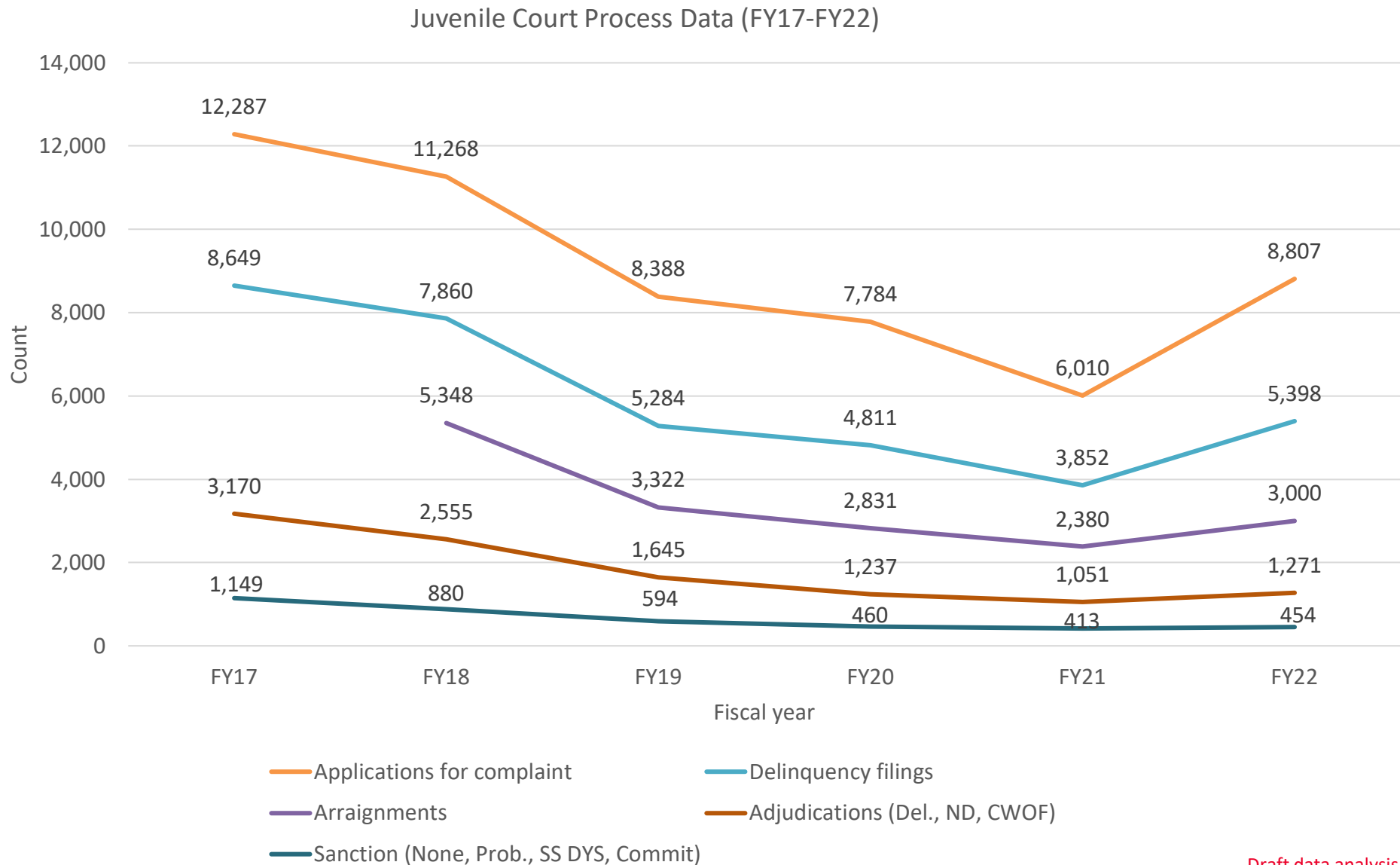
FY22 Juvenile Court Process Data



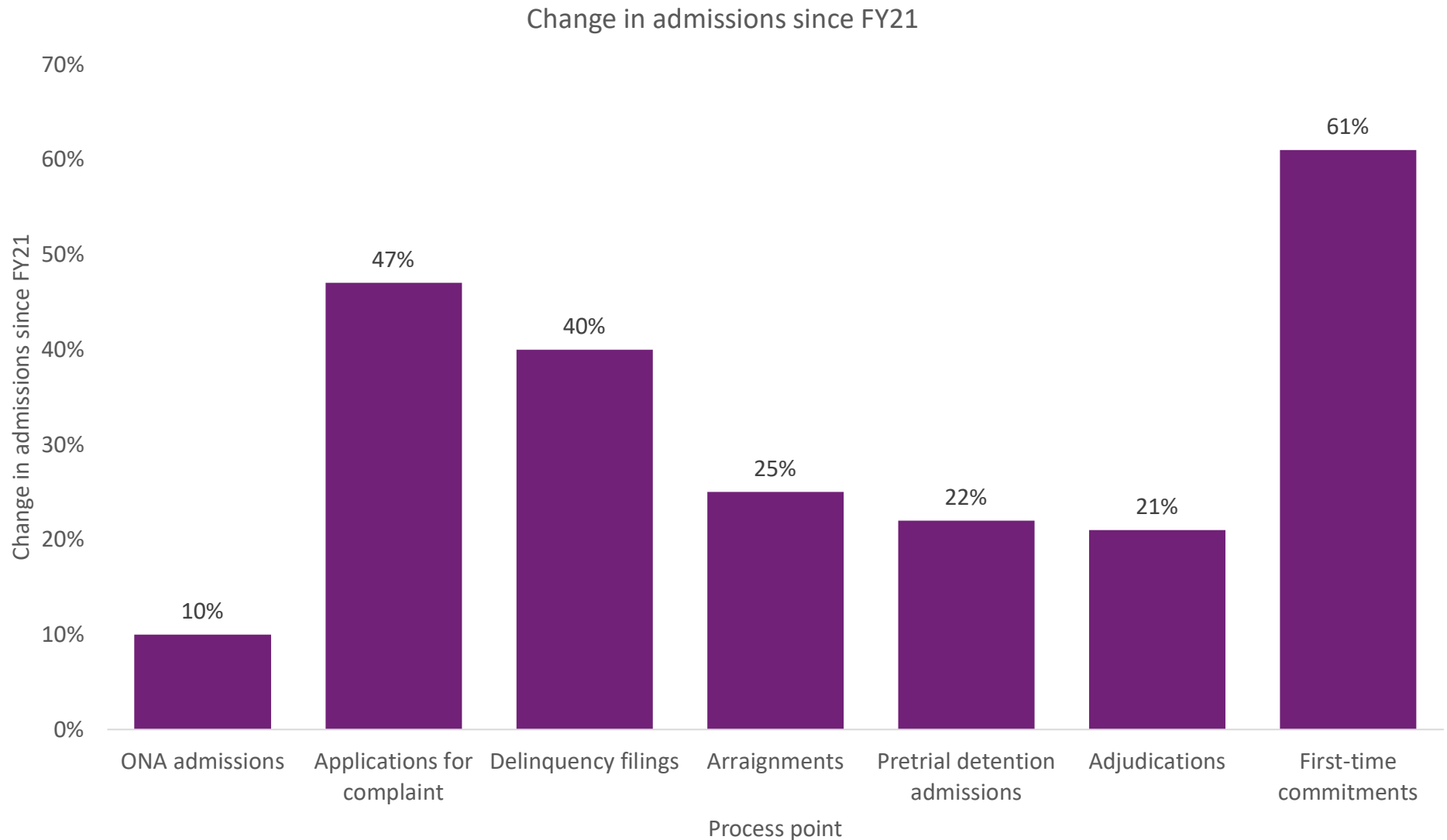
A higher percentage of cases don't reach an adjudication each year



FY17-FY22 Juvenile Court Data

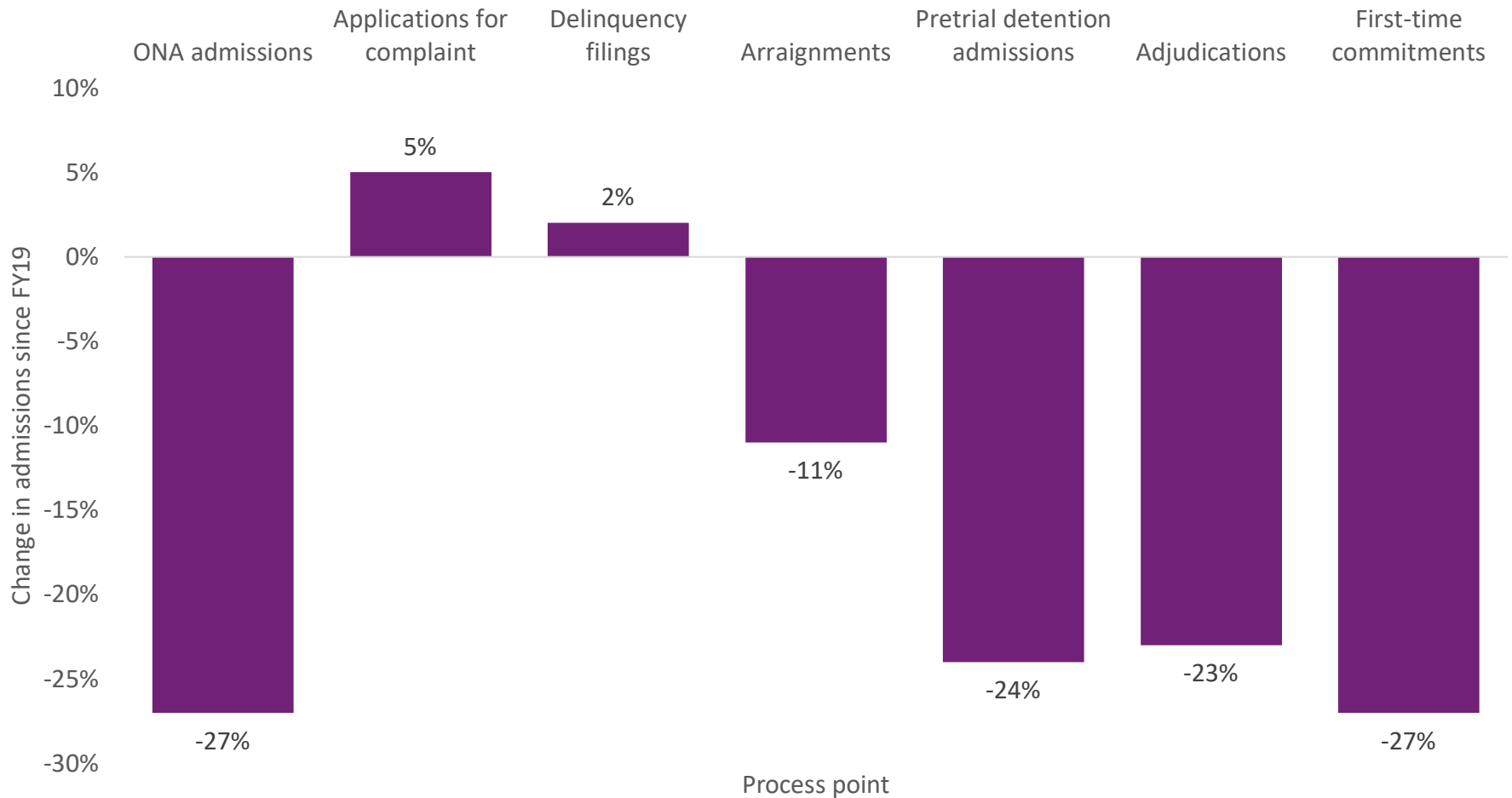


Percent change since FY21

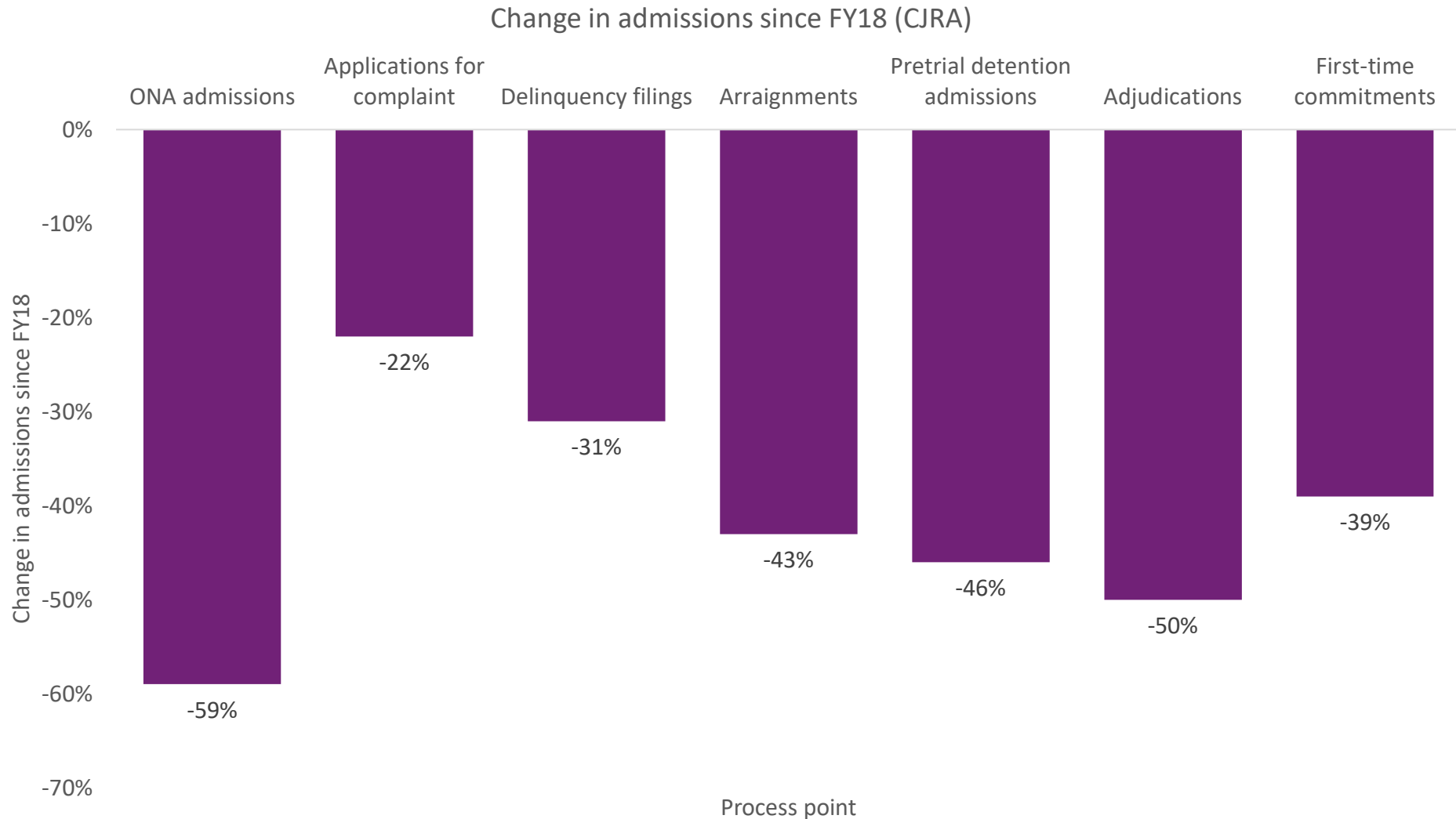


Percent change since FY19 (pre-pandemic)

Change in admissions since FY19 (pre-COVID)



Percent change since FY18 (pre-Criminal Justice Reform Act- CJRA)



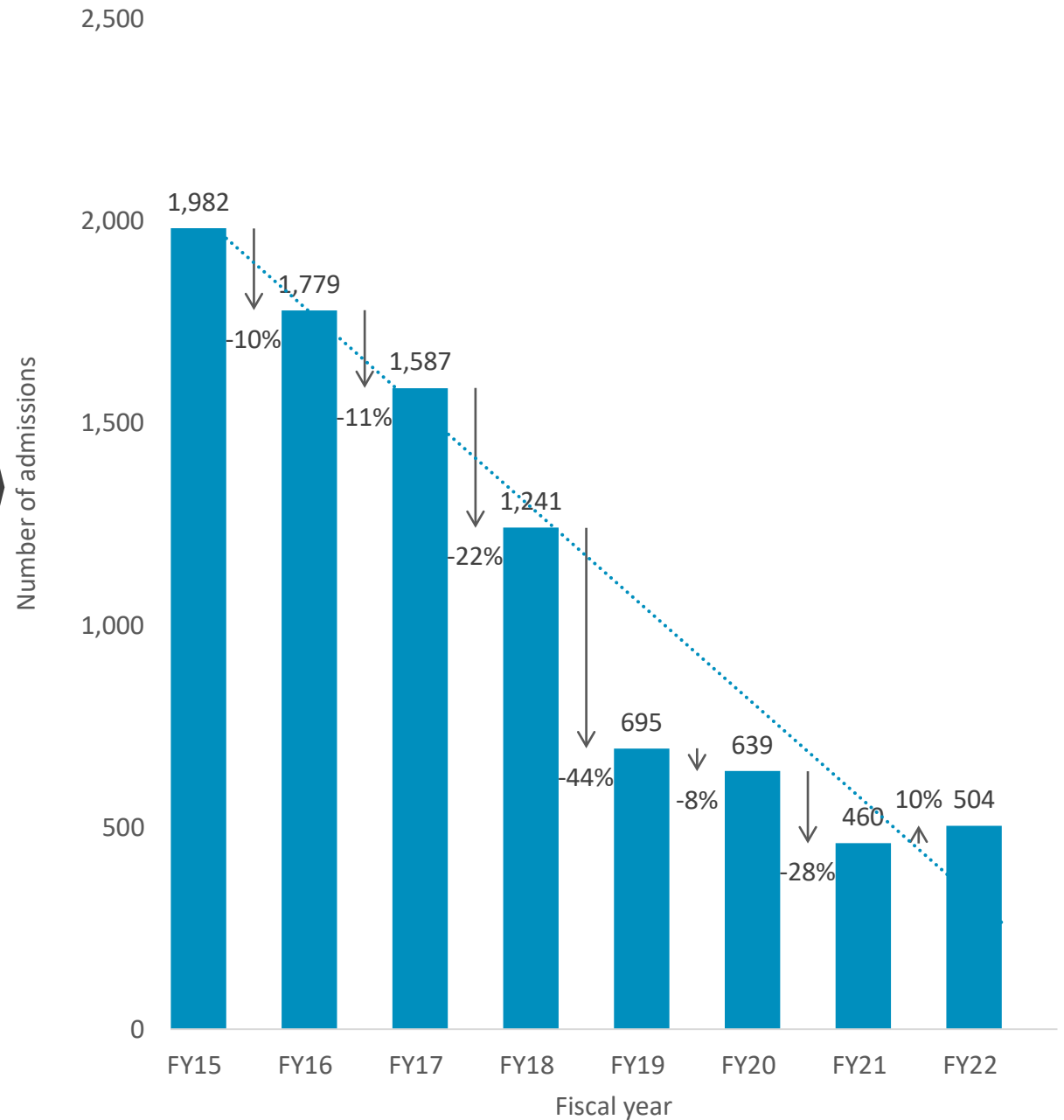


- Any questions on the high-level trends presented so far?
- Did anything surprise you?

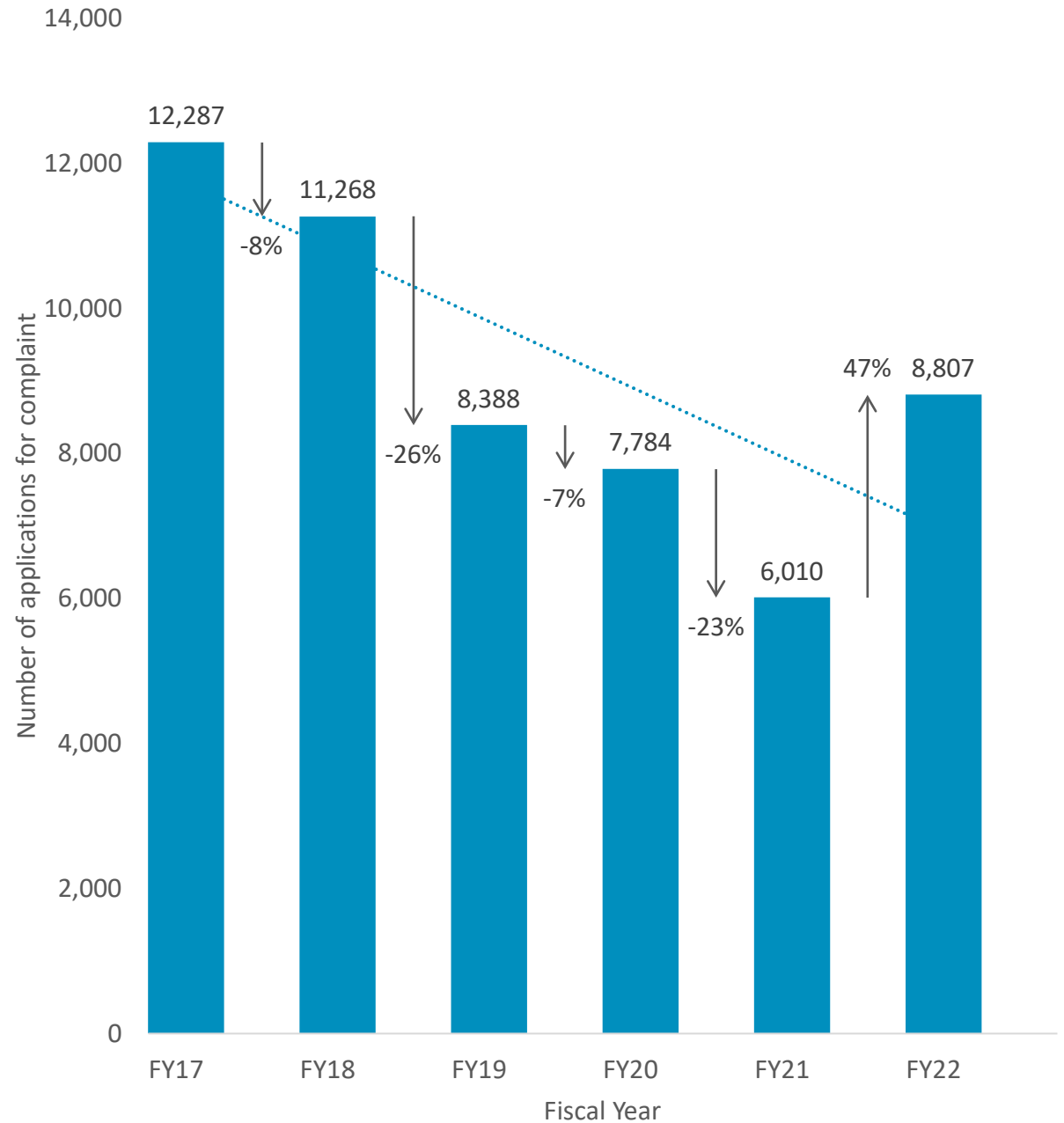
Overnight arrest admissions (FY15-FY22)

Overnight arrest admissions increased 10% since FY21

ONA admissions are down 27% since FY19



Applications for Complaint (FY17-FY22)



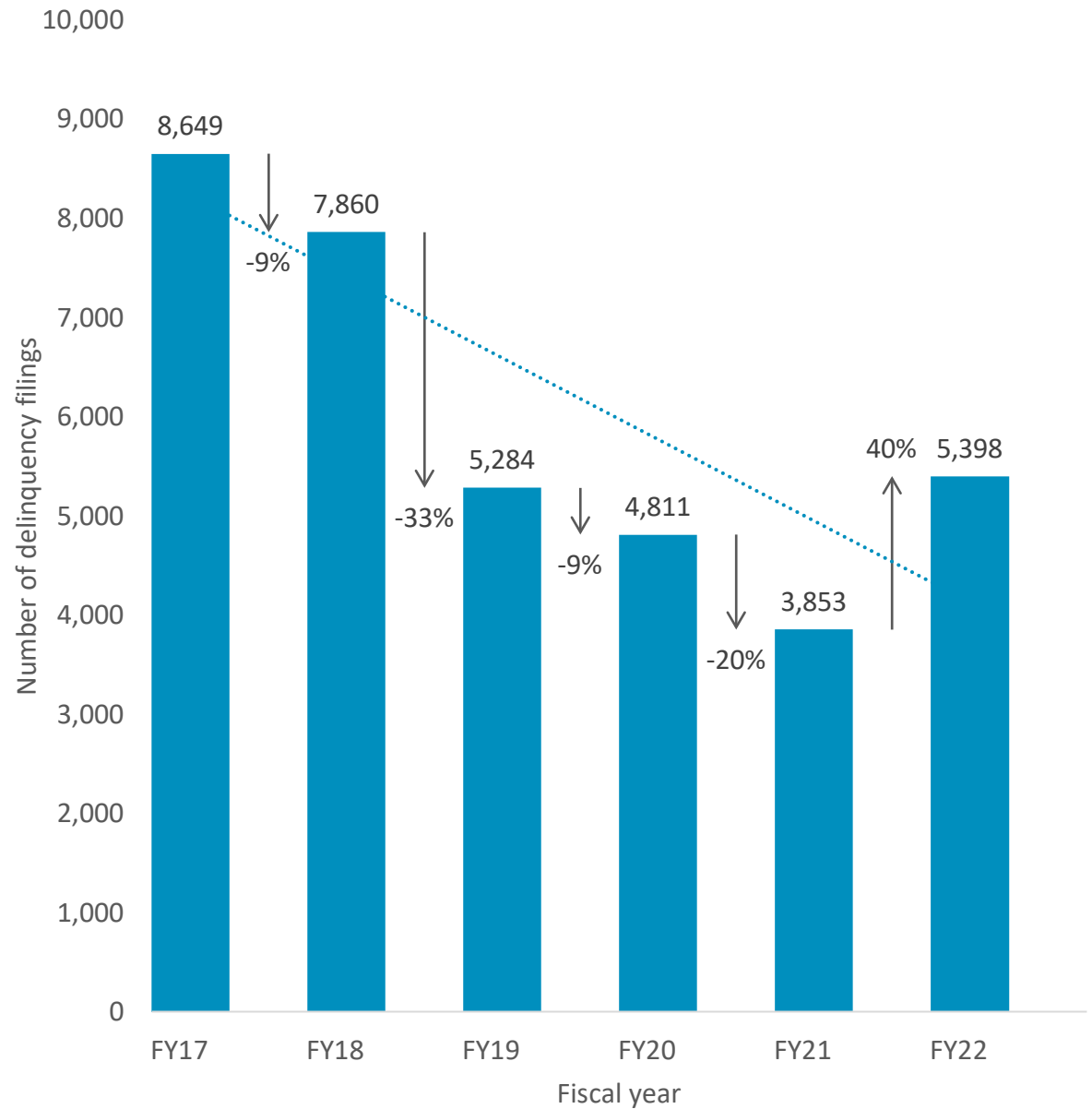
Applications for complaint increased 47% since FY21

Applications for complaint have increased 5% since FY19

Delinquency Filings (FY17-FY22)

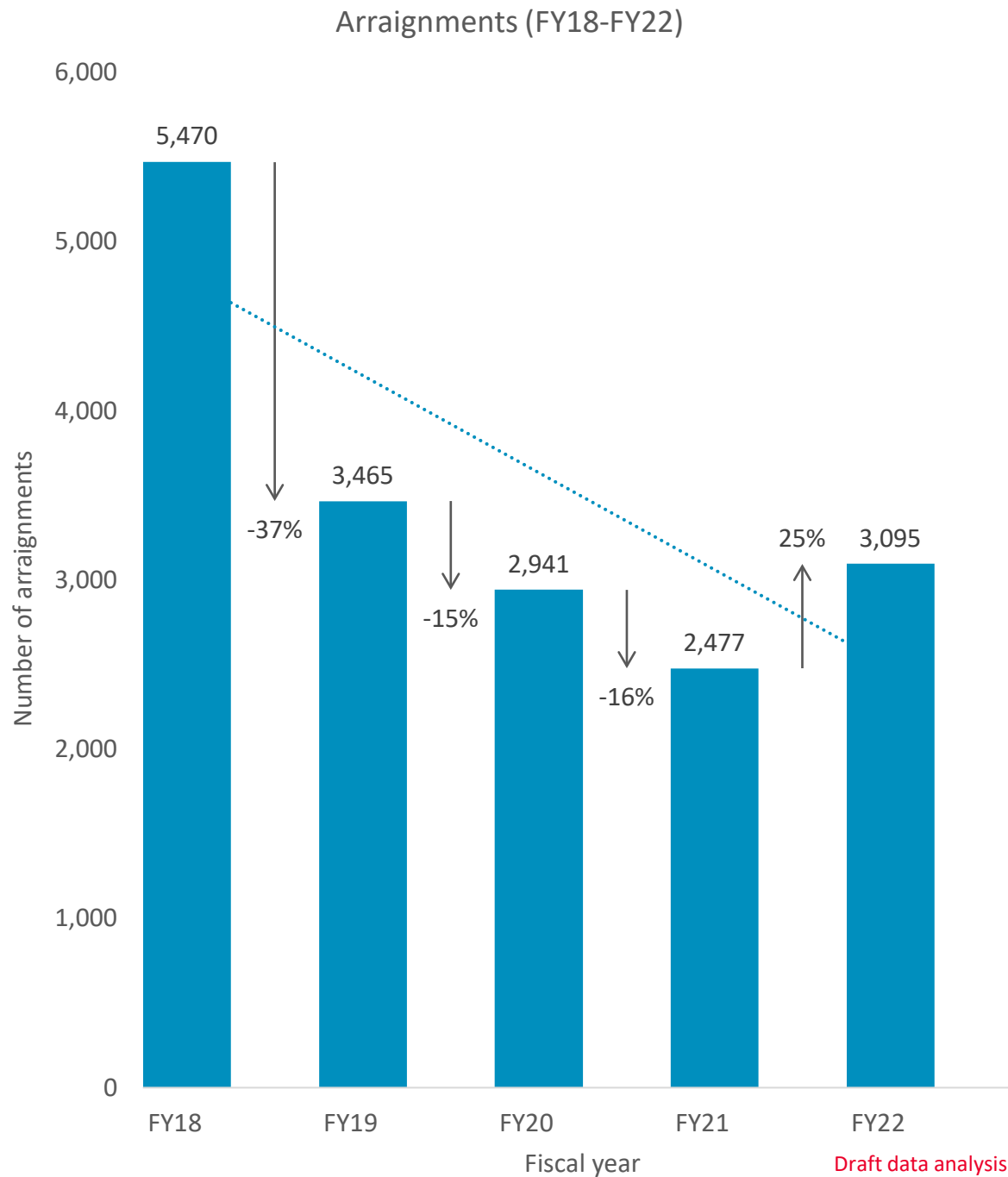
Delinquency filings have increased 40% since FY21

Delinquency filings have increased 2% since FY19



Arrestments
increased 25%
since FY21

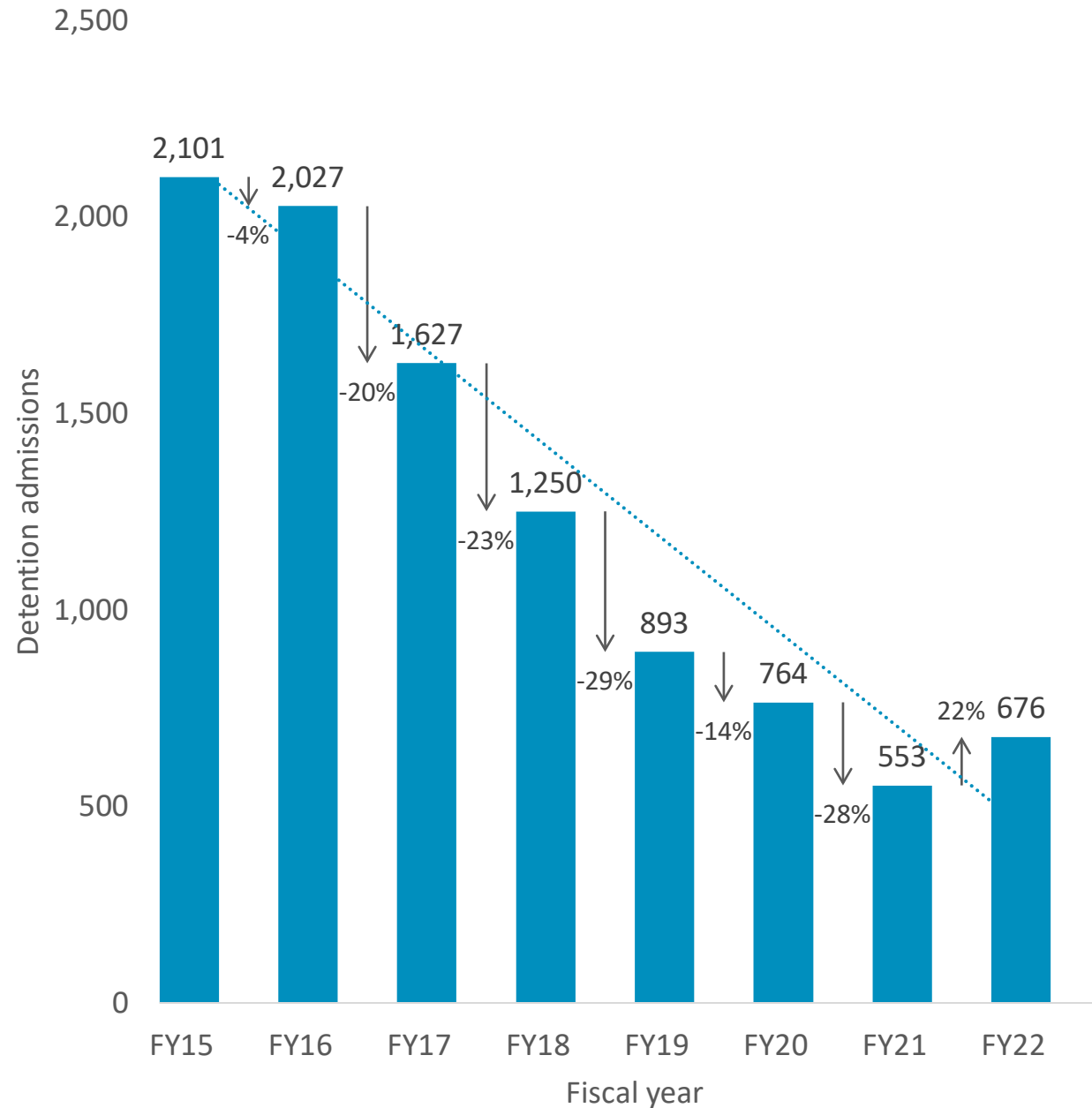
Arrestments
are down 11%
since FY19



Detention admissions (FY15-FY22)

Pretrial
detention
admissions
increased 22%
since FY21

Pretrial
detention
admissions are
down 24% since
FY19

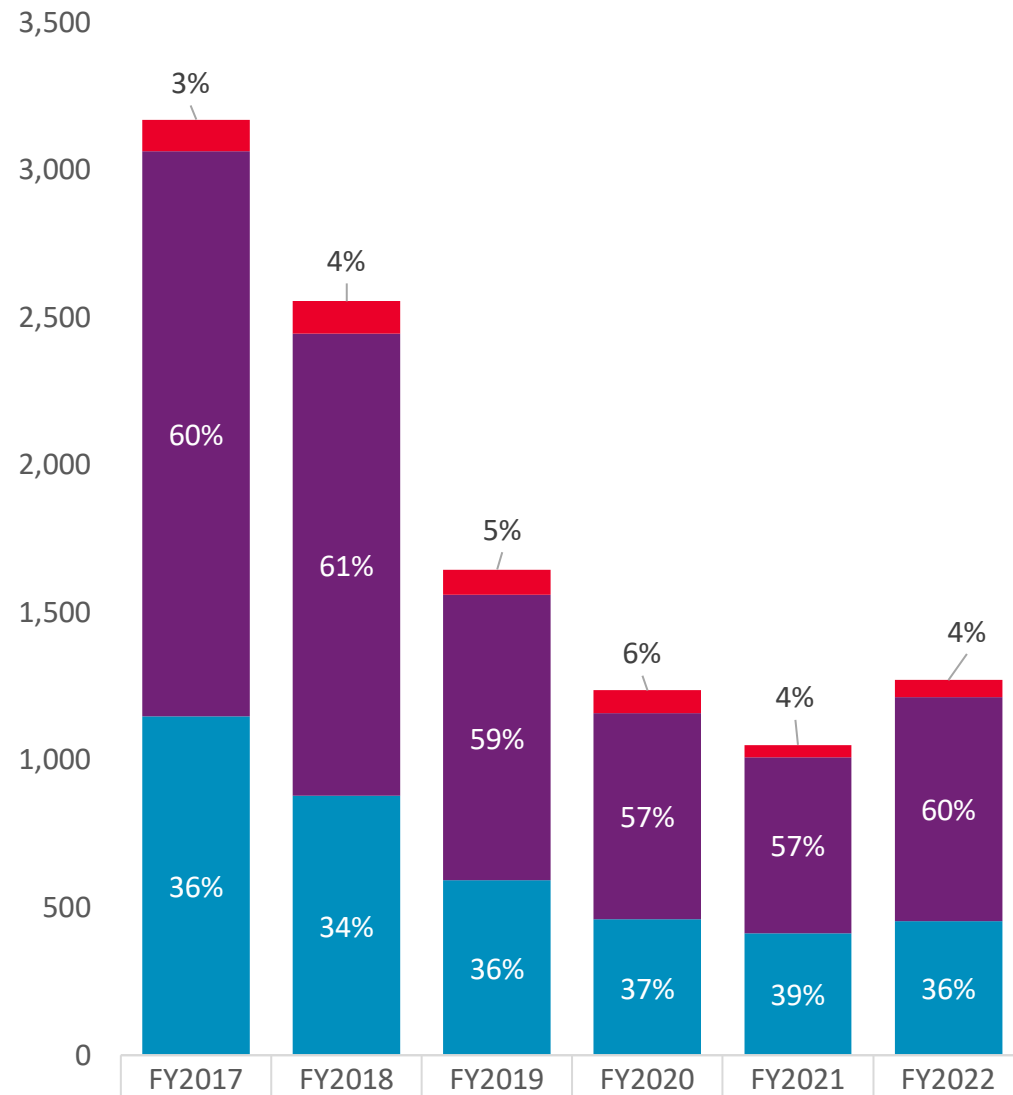


Adjudications increased 21% since FY21.

Since FY19, adjudications have decreased 23%

Number of cases adjudicated

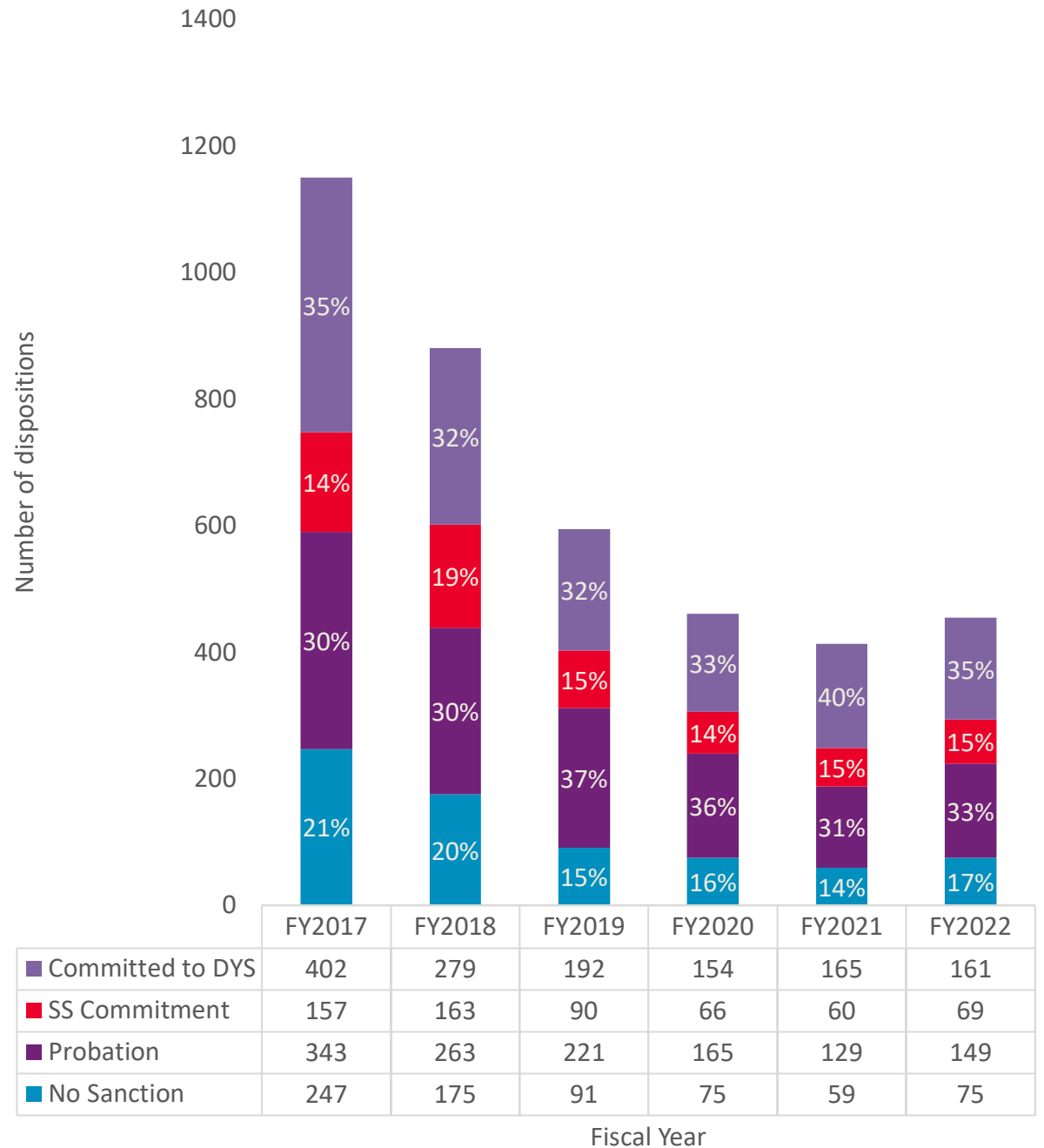
Adjudications by Finding (FY17-FY22)



	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022
Not Delinquent	106	111	85	77	41	57
CWO	1,915	1,564	966	700	597	760
Del. Adjudications	1,149	880	594	460	413	454

Fiscal year

Cases Adjudicated Delinquent by Sanction Type (FY17-FY22)



Cases
“adjudicated
delinquent”
increased by 10%
in FY22.

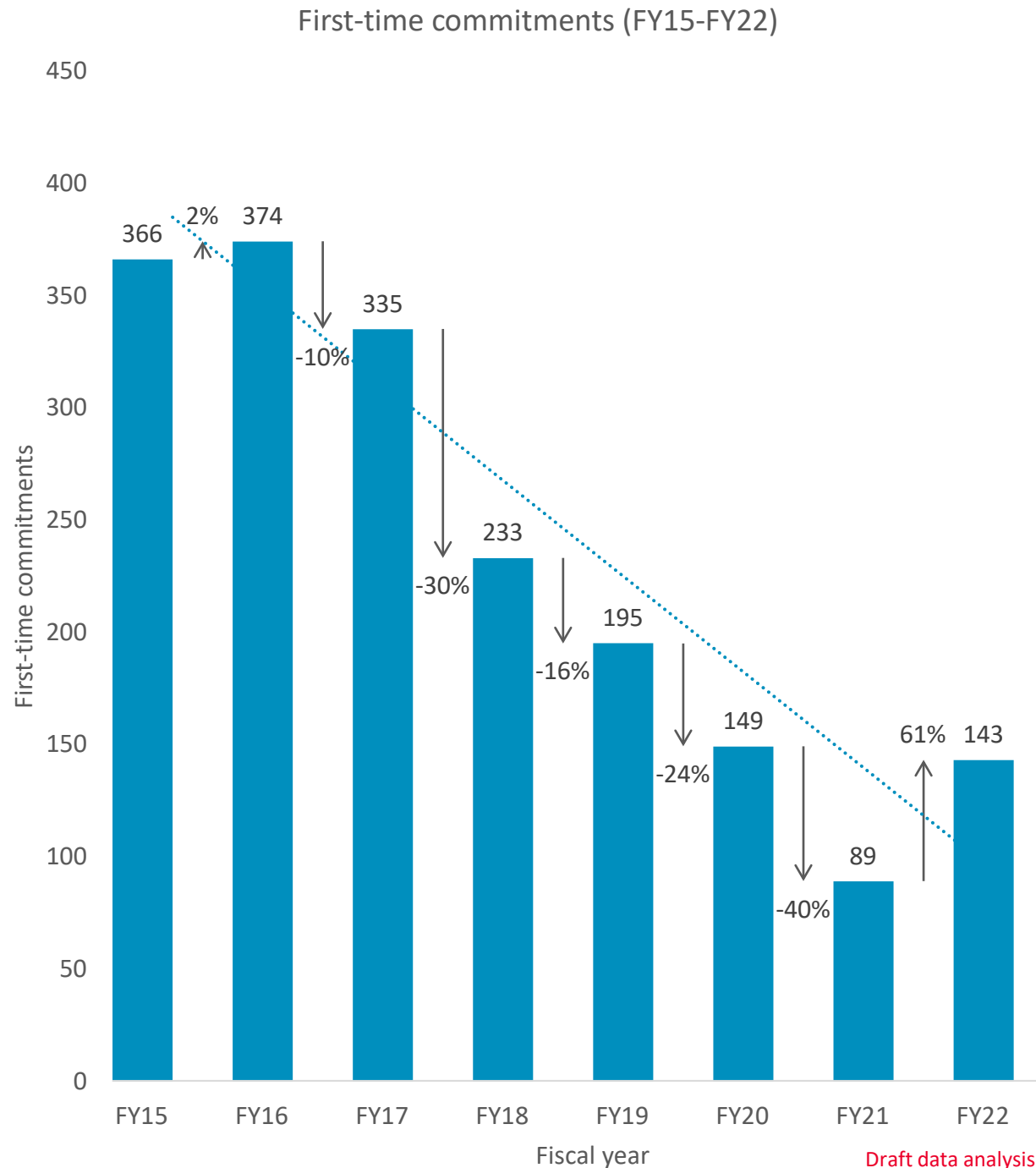
All sanction types
saw an increase in
use FY22, except
commitments to
DYS which
decreased 2%

First-time commitments to DYS increased 61% since FY21

First-time commitments to DYS are down 27% since FY19

NOTE: Youth can be committed multiple times to DYS.

The previous slide reports *all* commitments in FY22, this slide reports youth with *first-time* commitments to DYS.





- Any questions on the process-point data so far?
- Did anything surprise you?

Next Steps

- Once OCA receives the rest of the data, we will draft the data section of the annual report
- Data Subcommittee will review and provide feedback/edits
- JJPAD Board will review and vote to send the FY22 Annual Report to the Legislature

Next Meeting Date

November 10, 2022

Virtual Meeting

For virtual meeting information, email Morgan Byrnes at Morgan.Byrnes@mass.gov

*2022 Data Subcommittee meetings will be on the
2nd Thursday of the month 10:30am-12pm*

Contact

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