Santa Cruz County has operated a robust pretrial program for nearly a decade. With Bail reform on the horizon, this report analyzes the process, outcomes, and cost effectiveness of its effort to assure defendants attend court and are crime free in the community instead of in jail.

Assessing Pretrial in Santa Cruz County

Santa Cruz Purchase Order No. (18B01162), Justice Reinvestment Award(Award #2015-ZB-BX-0006)

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Introduction

In support of Santa Cruz County's Justice Reinvestment Initiative, probation has undertaken a review and evaluation of one component of several local reforms, specifically to "improve pretrial strategies". [1] Supervising over 100 people at a given time in 2017 and assessing over 2,900 for pretrial release[2], the breadth and responsibility of providing pretrial services has increased in recent years as risk-based pretrial supervision has become an increasingly important part of Santa Cruz County's criminal justice strategy. In developing services that balance community safety through data-driven alternatives to incarceration while awaiting court disposition, Santa Cruz County has developed an assessment, release hearing, and supervision process designed to use risk assessment to inform decisions about who can be safely released to the community based on their likelihood to attend court events as well as being crime free while their cases are pending.

Further, Santa Cruz Pretrial Services' goal is to adhere to research-based principles by:

- ✓ Applying actuarial risk tools
- ✓ Using the least restrictive supervision necessary
- ✓ Reminding defendants of their court appearances
- ✓ Reporting Violations
- ✓ Using evidence-based techniques to increase compliance and engagement
- ✓ Using fidelity measures, data and evaluation

The presumption of pretrial release can be implemented in a number of ways. In Santa Cruz County nearly 3,000 people annually are released pretrial through a number of mechanisms, in addition to the 4,000 given a citation and released at booking.[3] In all, nearly 70% of the 10,000 bookings are released before or at arraignment.

Of those released pretrial, 400 were released to pretrial services in 2017 and of those, only 10% had new crimes during their pretrial period and 28% failed to appear for court. Considering these people may have remained in jail during their pending court case, this saved the county nearly 16,000 bed days in 2017, representing a pretrial release option with considerable impacts on the county. However, the saving of bed days needs to be weighed against the cost of new crimes and failures to appear for those released. This leads to policy questions of whether Santa Cruz County is releasing enough people pretrial, as well as whether the right people are getting released. Santa Cruz's use of the PSA (Public Safety Assessment) provides a validated Risk Assessment tool for pretrial decisions, specifically assessing the relative risk of failure to appear, commit a new crime, and commit a new violent crime[4]. The risk tool's results, after probation uses a structured decision tool, is incorporated into probation's report

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[1] https://www.urban.org/sites/default/files/alfresco/publication-pdfs/2000903-Local-Justice-Reinvestment-Strategies-Outcomes-and-Keys-to-Success.pdf

[2] Santa Cruz County Probation Adult Services Report, 2017

[3] MacDonald, S. & O'Connell, K. (2017). Santa Cruz Jail Utilization Study (JUS): Overview. Justice System Change Initiative: California Forward.
http://santacruzcountyca.iqm2.com/Citizens/FileOpen.aspx?Type=4&ID=8271&MeetingID=1580

[4] https://www.arnoldfoundation.org/wp-content/uploads/PSA-Risk-Factors-and-Formula.pdf

to the court on release appropriateness. This provides judges with more information inform their decision in choosing the least restrictive option, among a range of release options, for the defendant.

With nearly 70% of its jail made up of unsentenced inmates, the pretrial system is a key driver of public sector costs in the county, but the cost savings have to be weighed against the costs to victims and society associated with the risk of an defendant committing a new crime or failing to appear for court. Some of these costs can be monetized, allowing an analysis of this tradeoff between risks and cost, and providing another factor in developing a more complete view of pretrial policy in the county going forward.[5]

This report looks at 3 key areas of pretrial system performance:

1. Assessment and Release Process: By developing a workflow for the pretrial process, Santa Cruz can better assess steps in the process that create delay for processing or inefficiency. By using a "value stream map," probation and other stakeholders can better identify opportunities for system improvement that can drive cost efficiency for the pretrial program and taxpayers as well as speedier processing for those booked into jail.
2. Pretrial Outcome Analysis: By assessing the outcomes of those placed on pretrial supervision, Santa Cruz County will have a better sense of how effective their risk assessment tools are at predicting success for clients, as well as understanding the role technical violations play.
3. Cost Benefit Analysis of Pretrial Detention/Supervision: A cost benefit model helps policy makers make tradeoffs in their use of resources and to fully account, where possible, for the monetary impacts of their decisions. Too often pretrial detention is seen as a tradeoff of jail at a certain cost and supervision at a certain cost, with avoided jail bed days being the key metric. Through this project, a customized web-based cost benefit tool was developed for Santa Cruz and used in this report to take into account not only the avoided jail bed days and the cost of supervision, but also costs of non-compliance - the new crime rate and failure appear rate. By more fully accounting for risk-based pretrial decisions and tradeoffs, a more systemic view begins to emerge. This is now part of Santa Cruz's growing inventory of data-driven tools, and an ongoing resource for the county.

There are limitations to the breadth of this report, since its focus was on the work of Santa Cruz pretrial services, both in its assessment and supervision of people awaiting trial. To accurately project the impacts of pretrial policy, the full scope of pretrial criminal justice would need to be considered, as Santa Cruz probation currently assesses only 29% of all those booked into jail. This is by no means meant to imply that everyone should be assessed after booking or

[5] The cost benefit tool was initially developed by Mike Wilson of MW Consulting in 2013, with further enhancements and development coming in 2014 through a partnership with Kevin O'Connell of O'Connell research to be used in subsequent counties around the country. More information about Mr. Wilson's work can be found here: www.m-w-consulting.org.

supervised during pretrial proceedings, but it limits the generalizability of the report results to only those for which pretrial assessment and outcome data is available. A more accurate cost benefit model would include the costs of all forms of pretrial release to give a risk adjusted cost to all forms of OR releases, as well as supervised OR. For this, the cost benefit model can only be used to look at a more accurate view of the costs of supervised OR, by taking into account both jail costs and supervision costs.

During the report period, in August 2018, SB10[6] was signed into law, effectively ending cash bail and creating an increased need for risk-based pretrial release. Although not going into effect until sometime after October 2019, the information and process developed for this report allows for continuing analysis of systemic performance, estimation of bail reform impacts, as well as cost benefit analysis of the options available to Santa Cruz County. In a system that releases over 10,000 people in a year, with nearly 10% of those being released via cash bail, pretrial decisions will become even more important, both in who is assessed as well as who is released, as the nearly 1,000 people per year previously released through bail will need to a new alternative to incarceration[7]. Since those obtaining pretrial release through payment of a cash bail were not clearly differentiated from the 2900 people assessed, further research would have to be done to understand their risk patterns as well estimate the resources needed to support this new population.

Process Findings

- The Pretrial assessment process contains 47 steps from jail booking to the first detention hearing, and once granted Supervised Own Recognizance, 23 more steps.
- The assessment phase of the pretrial system takes nearly 3 hours of probation staff time on average. Since probation staff both assess as well as supervise, there is significant variability in day to day workflow. Using a weighted time accounting, each assessment costs approximately $180 in staff time, with all assessments costing around $500,000 per year.
- The PSA risk tool requires no interview of the client, and totals around 30 minutes of staff time to enter data into the tool, then check criminal justice databases. Compared to other risk assessment tools, this is far more efficient in the use of staff time in delivering risk assessment information and reports to judges in a timely way.
- The marginal cost to supervise a defendant is around $9 per day for standard OR, and around $29 for intensive OR. This difference comes largely from the increase in the cost of electronic monitoring. As the county looks toward bail reform, these costs could change with alternative methods of automated reminder systems or more efficient use of staff time between assessment and supervision responsibilities.

[6] Senate Bill SB10, https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180SB10
[7] MacDonald, S. & O'Connell, K. (2017).

Outputs and Outcomes

- Santa Cruz probation assessed over 2800 defendants in 2017, up nearly 30% since 2015. Further, 29% of all jail bookings were assessed by pretrial services in 2017, up from 18% in 2015.
- As the pool of defendants assessed and released has increased, so has the risk of FTA and new crimes, with pretrial services seeing a 20% increase in risk scores for FTA, and a 10% increase in the risk of new crime of those assessed since 2015. This implies that as the population being assessed expands, it is expanding to include more of those with elevated rates of risk.[8]
- The risk scores of those being placed on SOR and ISOR have increased as well, with SOR and ISOR supervision levels seeing a 15% and 10% increase in risk to FTA, respectively.
- The increased risk assessment scores for FTA have translated into a slightly higher rate of FTAs while on supervision, with 33% of those on SOR and 10% of those on ISOR ending pretrial unsuccessfully with an FTA in 2017. The overall FTA rate has increased by 10% since 2016.
- In 2017, 12% of SOR and 2% of ISOR had new crimes during pretrial supervision. This rate has stayed fairly constant since 2015, and only one of the new crimes was associated with violence.
- Fifteen percent of defendants ended pretrial supervision due to a technical violation (failed drug test, missed office visit, etc). Although not considered a new crime or failure to appear for court, the violation rate needs to be considered as ISOR rates were far higher than SOR, raising the possibility of a detection effect due to more intense monitoring. However, ISOR is reserved for those with an elevated risk, so this may not be unusual.

Cost Benefit Analysis

- The lack of generalizability of assessment findings limits the utility of the cost benefit analysis for the purposes of this report, meaning an analysis confirms that even when adjusting supervision costs for the risk of failure, releases still provide a cost effective alternative to jail.
- Including the cost of new crimes and FTAs, a day on pretrial costs $54.33 on SOR and $83.69 on ISOR. New Crimes while on pretrial generate the possibility of new victims, and criminal justice system resource use for processing of the new crime, while an FTA creates costs for processing of the warrant, etc. These costs are based on the pretrial failure rates in the county, as well as the marginal cost of a day on supervision for each level of supervision.
- As compared to jail, SOR generates $61.67 in avoided jail cost and ISOR generates $32.31 in avoided jail costs., less the cost of the pretrial program and risks. Using an estimated jail length of stay for those detained pretrial at 58 days, this gives a clearer estimate of the relative risk as compared to the benefit. For the average length of stay in the community versus staying in jail, SOR generates benefits of $1,959 while ISOR

[8] The PSA's algorithm assesses each defendant and develops a standard score, weighted on 9 risk factors shown to be associated with success on pretrial supervision.

generates $1,527. The difference in benefits mainly comes from the higher costs associated with electronic monitoring on ISOR.

- In aggregate, the pretrial system generates estimated net benefits of nearly $750,000 above its costs to operate and the costs to society for its risk of new crimes and FTAs.

Potential Impacts of SB10

- ✓ Each county must use a validated risk assessment instrument, selected and approved by the court, from a list of approved pretrial risk assessment tools maintained by the Judicial Council.

  The Public Safety Assessment has been validated in numerous jurisdictions and is based on data from over 750,000 pretrial defendants around the country. Santa Cruz should continue to refine and work with the foundation funded effort to assure the tool is still operating using best practices in how its applied.

- ✓ Those arrested for a misdemeanor not on the exception list (Section 1320.10), with or without a warrant, may be booked and released without being taken into custody. If taken into custody for a qualifying misdemeanor, the individual must be released without a risk assessment performed within 12 hours of booking

  Nearly 13% of Santa Cruz's jail ADP is made up of unsentenced misdemeanants. With nearly 25% of bookings made up of new crime misdemeanors, the impact of SB10 could be a further reduction in the misdemeanor jail population.

- ✓ Those arrested for felonies will need to be assessed within 24 hours, with case processing ramifications for each level of assessed risk. Although the low, medium, and high designations are not a perfect fit with the PSA or the Decision-Making Framework, what follows is a general mapping: Low risk will be granted OR, medium risk will be given the least restrictive level of supervision, and high risk will be bound over for arraignment and possibly granted ISOR.

  The current DMF scores skew toward a higher risk clientele, mainly because most lower risk defendants are released through other means. Implementation of SB10 will require estimates of different levels of risk to align services both in the assessment and the detention decision phase. The development of process maps will help Santa Cruz pretrial services as well as other operational partners to see if the current system can operate with a requirement of assessment within 24 hours. With a number of years of experience with the PSA and the fact that assessment takes, on average, 30 minutes, the upstream and downstream activities will be areas to look into and refine.

- ✓ Those preventatively detained will have the right to a next dentition hearing, but this will likely upend the current approach to supervision. Those wanted on felony warrants

will be detained, as well as those charged with some classes of offenses that are ineligible for release.

> *How many of those currently released pretrial are now ineligible under this new system, and how many overall will be deemed ineligible? Since pretrial only assesses 29% of those booked into jail, the pool of ineligible defendants is unknown since they weren't previously assessed, but now, due to more structured decision making under SB10, they will be.*

As this report has become very timely, it is hoped the blended approach of looking at processes, outcomes, and cost benefit will help Santa Cruz's criminal justice leaders better understand and anticipate the changes coming due to bail reform. It's also intended that the Cost Benefit tool be used by the county in an ongoing way to test hypotheses and impacts of a range of policy choices regarding its pretrial population.

Current State Santa Cruz Pretrial System

A mature pretrial program has developed norms and procedures, some written in policy and some evolved through managing workload and time constraints by staff in probation, courts and the jail. For this, any analysis of the system has to start with the bigger context of how defendants move through the system, from their initial entry into jail to the final disposition of their case. A system map works to focus the choices about operations and policy from multiple perspectives and can help in identifying opportunities for refinement and improvement.

A system map is especially useful for identifying opportunities for efficiencies in rapidly growing programs. Since 2015, Santa Cruz County's pretrial services program has grown from supervising around 30 people in 2015 to over 100 as of June 2017, as well as assessing nearly 800 more people in 2017 than in 2016.

System Map

Although many parts of the pretrial process are codified, or normed by state laws or local rules of court, many are not. A high-level system map shows which groups are "suppliers" of inputs which then go into a process and turn into outputs, as well as where the county has discretion or control over these inputs and processes. Ideally, a high-level map is then observed through the lens of multiple stakeholders.[9] By having a clear map, the Pretrial program can then assess advances the goals of due process and least restrictive pretrial supervision and what needs to be refined. In most criminal justice processes, non-value-added work is a source of delay, which is costly to everyone involved.

Figure 1 below shows the wide range of agencies that supply information or resources to the Pretrial process, that then become outputs of the system. This map shows significant decisions that occur before pretrial is involved, but in general the pretrial process starts with reviewing the jail's booking roster and ends with a judicial decision made regarding pretrial detention, unless the person will be continuing on to Supervised OR or Intensive Supervised OR. In the SIPOC framework, these break out into Suppliers, Inputs, Process, Outputs, and Customers (stakeholders), showing how a process for pretrial starts with a person booked into jail, and finishes with a court disposition of the case. Since this map is from the perspective of the pretrial assessment and supervision, it would need to be expanded to include other agency perspectives in order to fully capture the entire booking to trial process.

Looking across this map, it is helpful to think of the inputs as the parts of the process that help system actors reach a set of outcomes or outputs. Since the key activities, or inputs, of pretrial services is assessment and supervision, the outputs would need to be aligned to meet goals set forth by pretrial services. The stakeholders', or customers', perspective is important for

[9] Original conceived as way to measure input/output procedures, a SIPOC (Supplier/Input/Process/Output/Customer) helps to develop a clearer sense of what value a process is creating as someone moves through it. Since value depends on the perspective, diagrams like this are meant to be a starting point to bring more discussion and clarity to a complex process.

understanding if pretrial services are meeting the needs of what can be varied and divergent interests.

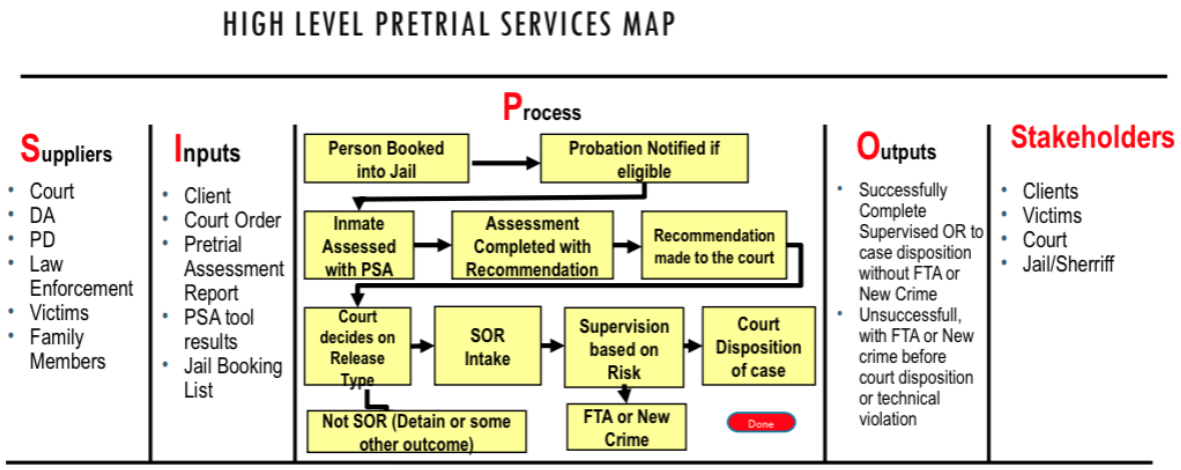


Figure 1: High Level System Map

Value Stream for Pretrial Assessment Release Decisions and Start of Supervision

Using a workgroup of Pretrial staff, the pretrial system map was augmented using a technique called Value Stream Mapping[10]. For a process like pretrial services, which involves multiple stakeholders and phases, this technique can be valuable for better understanding what each part of a process adds to the stated goals. This was added to the project as a way to help better understand the cost of pretrial supervision, but also to help the county in mapping out the processes and steps that drive the costs per day.

"Value-stream mapping is a lean-management method for analyzing the current state and designing a future state for the series of events that take a product or service from its beginning through to the customer with reduced lean wastes as compared to current map. A value stream focuses on areas of a firm that add value to a product or service, whereas a value chain refers to all of the activities within an organization."[11]

The process scoping and flow mapping exercise maps out essential program elements, and then works through a step by step mapping of the pretrial process. After the process is mapped, each part of the process is labeled with the amount of resources (staff time/effort) and latency

[10] The workgroup used a whiteboard exercise to map out the current system, which will be digitized ahead of the next meeting. The whiteboard was a collaborative exercise to bring in a range of officer and management staff, with subsequent steps including quantifying the amount of time (resources and latency) that each of these steps takes and identifying steps that could be eliminated in the event they don't add value to pretrial goals or to stakeholders.

[11] Rother, Mike; Shook, John (1999). Learning to See: value-stream mapping to create value and eliminate waste. Brookline, Massachusetts: Lean Enterprise Institute

(waiting time). This mapping is also the basis for developing strategies using the "voice of the customer".[12] Future work with these maps will take these approaches into account.

Shown in Figure 2 below, there were 47 process steps involving pretrial services to go from booking to release decision. The green boxes indicate the start of the review process with the yellow boxes being areas the workgroup intends to improve on. In addition, the workgroup identified steps in the process that will be impacted by SB10 or will take more study to understand.

Shown in Figure 3 below, there were 23 steps going from a judicial decision to release to finally be considered on supervision. The main opportunities seen in this value stream were in reducing delays due to a lack of address or to the wrong paperwork being associated with the individual. Fewer paper record transfers and more seamless movement of people after a release decision has been made would improve upon these identified delays.

[12] Gaskin, Stephen P. et. al. "Voice of the Customer". Massachusetts Institute of Technology. Massachusetts Institute of Technology.

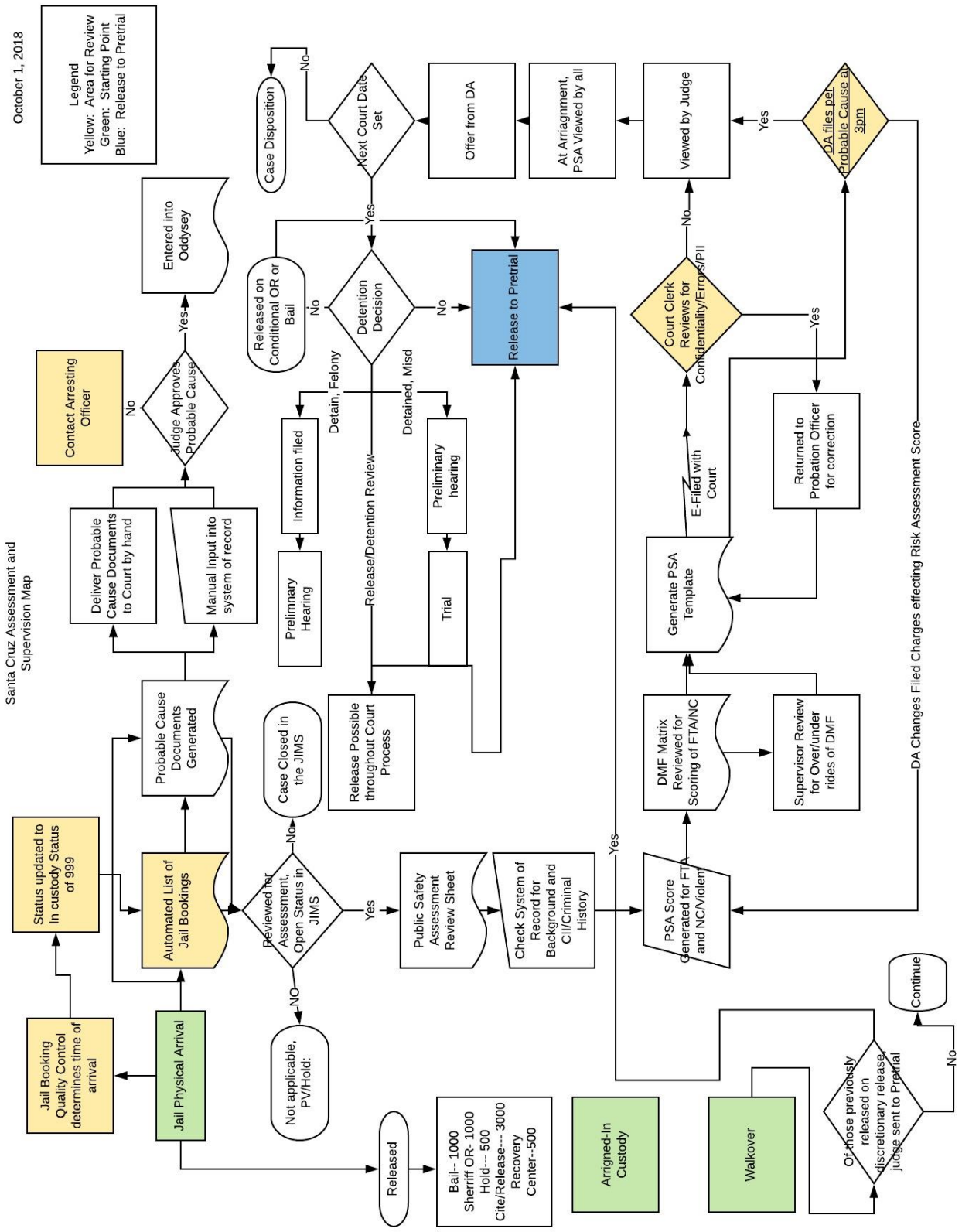


Figure 2: Value Stream Map for Assessment and Detention Decisions

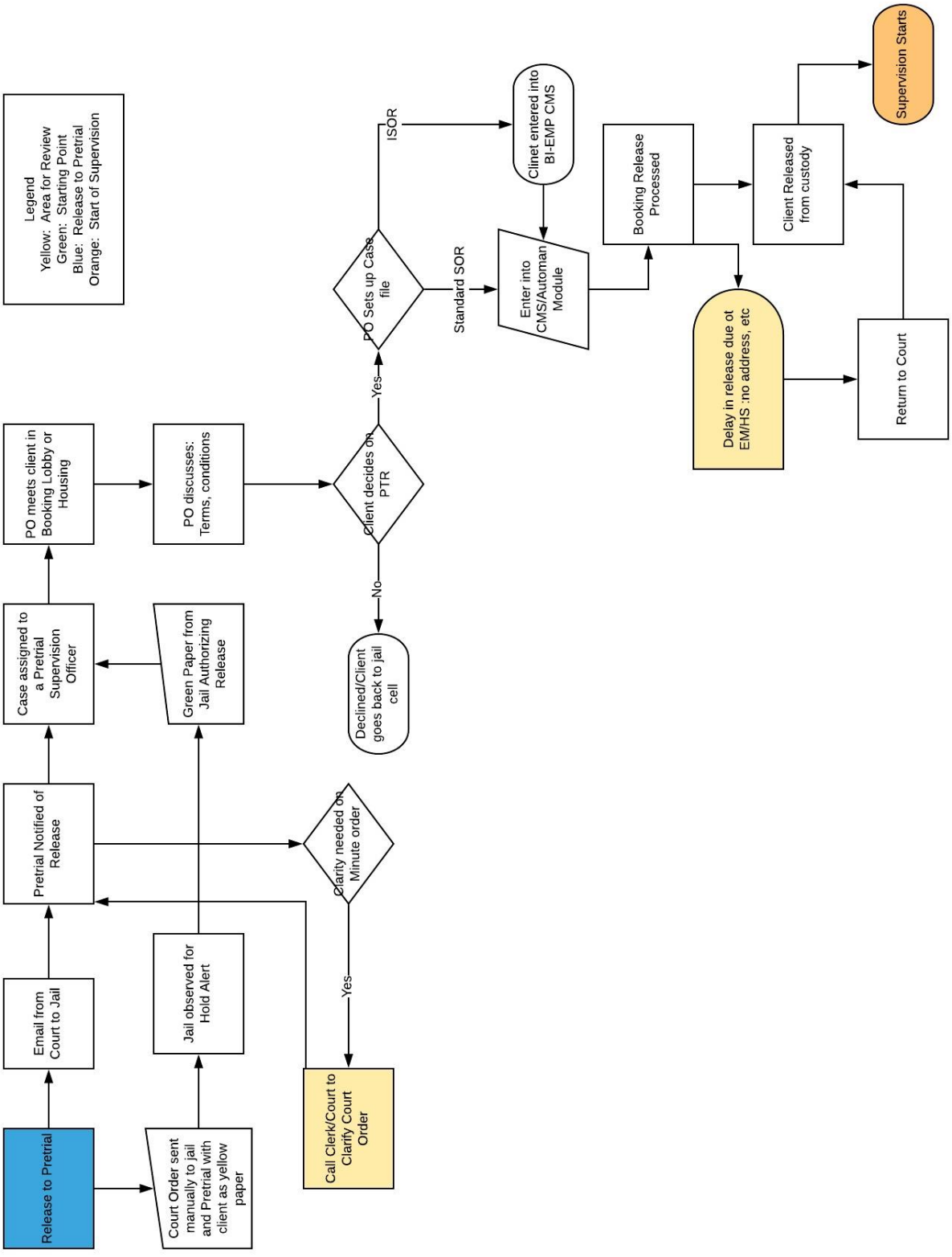
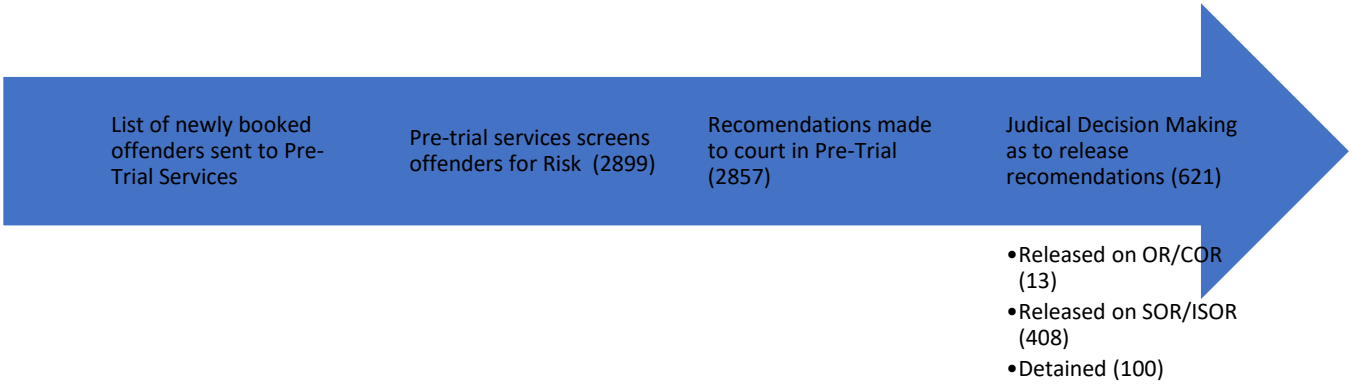


Figure 3: Value Stream Map of Releases to Pretrial Process (Post Detention Hearing)

System Overview

In 2017, 2900 defendants were assessed by pretrial services using the PSA tool. Since multiple agencies may be looking at ways to release a defendant, only around 20% of assessment and detention reports are used at the time of arraignment. The other 80% are assumed to be released in other ways.



Since 2015, there has been a 15% increase in the number of assessments since 2015. Based on current trends, assessments will be well over 3000 in 2018.

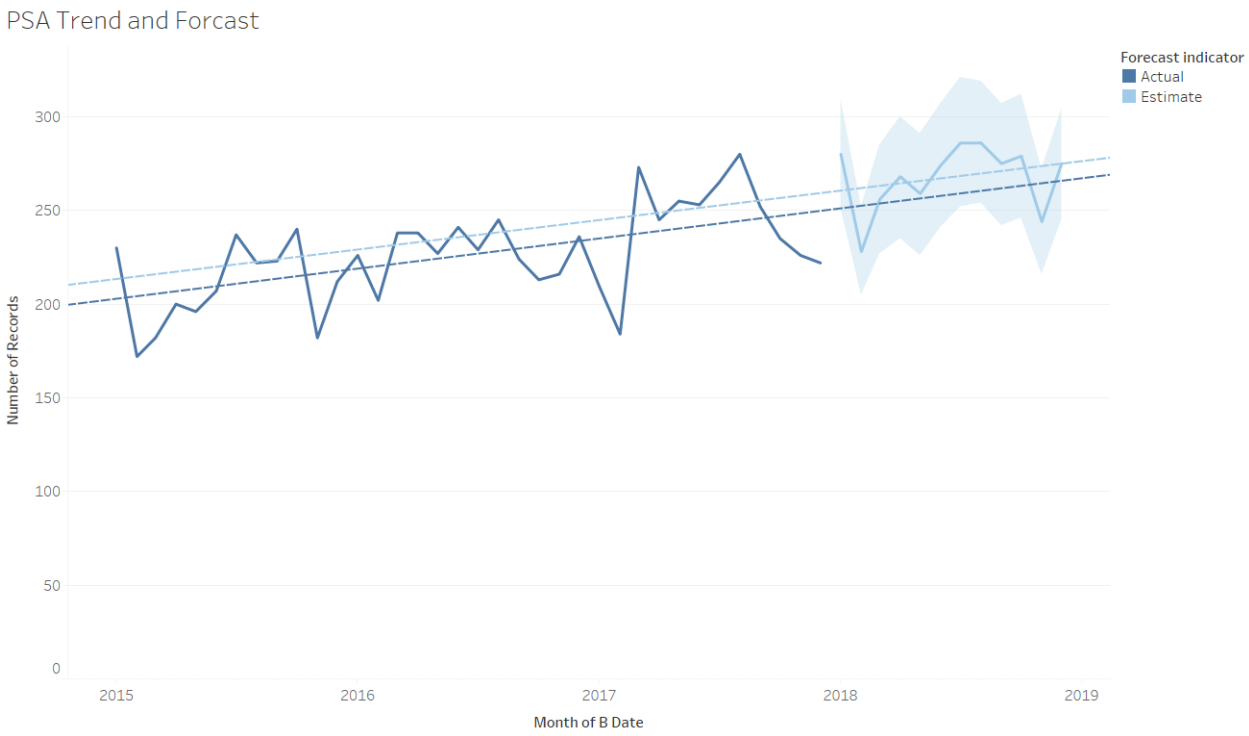


Figure 4: Trend of Assessments

2899 defendants were risk assessed in 2017 using the PSA tool. The universe of bookings is much higher (10,062 jail bookings in 2017), so the risk assessment is only given to a subset of the in-custody population based on pretrial services review of booking lists. Since 2015, this

percent has increased steadily, from 22% to 29% of those booked in 2017 being assessed using the PSA.

Year	Jail Bookings	Assessments	% of bookings Assessed
2015	11,562	2,503	22%
2016	11,506	2,735	24%
2017	10,062	2,899	29%

Figure 5: Proportion of Jail Bookings to Assessments

Over the same time, the average new crime risk assessment score has risen 10%, as has the FTA risk score. Combining the theme of an increasing number of assessments over the last three years with an increasing average risk score, it means the demographics of the pretrial pool of offenders is likely changing as the pool expands.

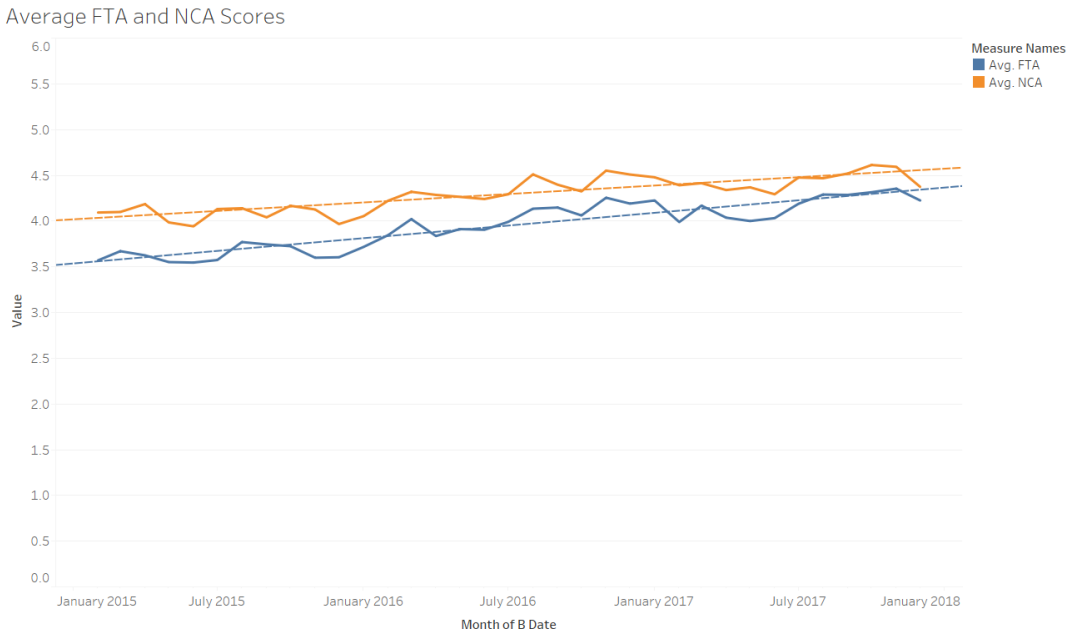


Figure 6: FTA and New Crime Scores over time

The matrix below of the risk for FTA and committing a new crime during pretrial shows that the tool's results, and likely the underlying population of those assessed, skews toward a higher risk of pretrial failure based on the questions in the Public Safety Assessment tool.

	NCA					
FTA	1	2	3	4	5	6
1	121	80				
2	4	47	183	123	14	
3		29	143	155	38	16
4		5	52	132	134	44
5		2	6	270	348	290
6				39	115	510

2017 Count: 2 – 510

Figure 7: Count of Decision-Making Framework Scores

Looked at a different way, the risk pool of those assed can be grouped into release recommendations per the decision-making framework. Only 15% (green boxes) are assessed as releasable via OR. Another 15% assessed as moderate risk (yellow), and 33% as high risk (orange). A further 36% are recommended as a detain (red).

	NCA1					
FTA1	1	2	3	4	5	6
1	4.1%	2.7%				
2	0.1%	1.6%	6.3%	4.2%	0.4%	
3		1.0%	4.9%	5.3%	1.3%	0.5%
4		0.1%	1.7%	4.5%	4.6%	1.5%
5		0.1%	0.2%	9.2%	12.0%	10.0%
6				1.3%	3.9%	17.5%

Figure 8: Percent of Scores in the Decision-Making Framework

For the Santa Cruz Population, the table below shows that scores of 5 and 6 for FTAs (most at risk for FTA) are the most common based on the distribution of 2017 scores.

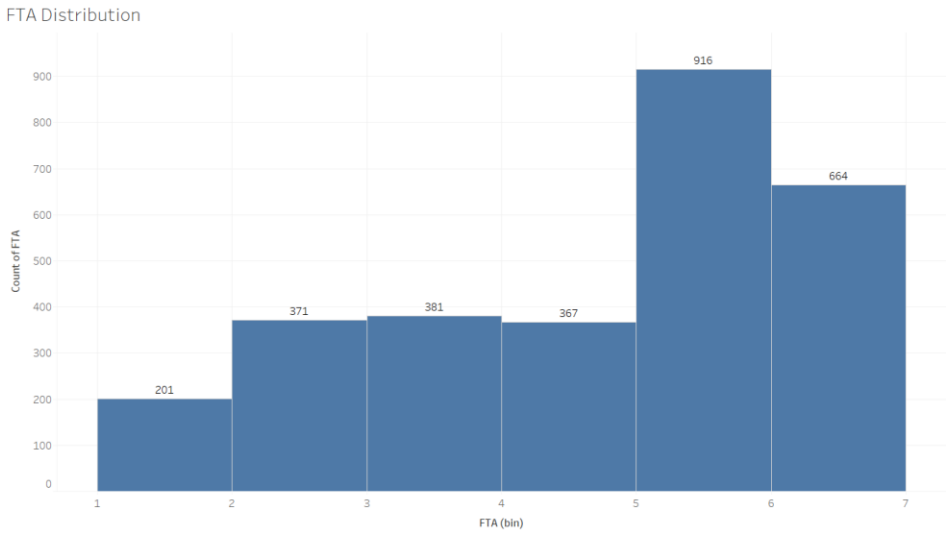


Figure 9: Histogram of FTA Scores

Similarly, the distribution of those at risk for new crimes skews higher, with scores of 4, 5, and 6 being relatively more common in 2017.

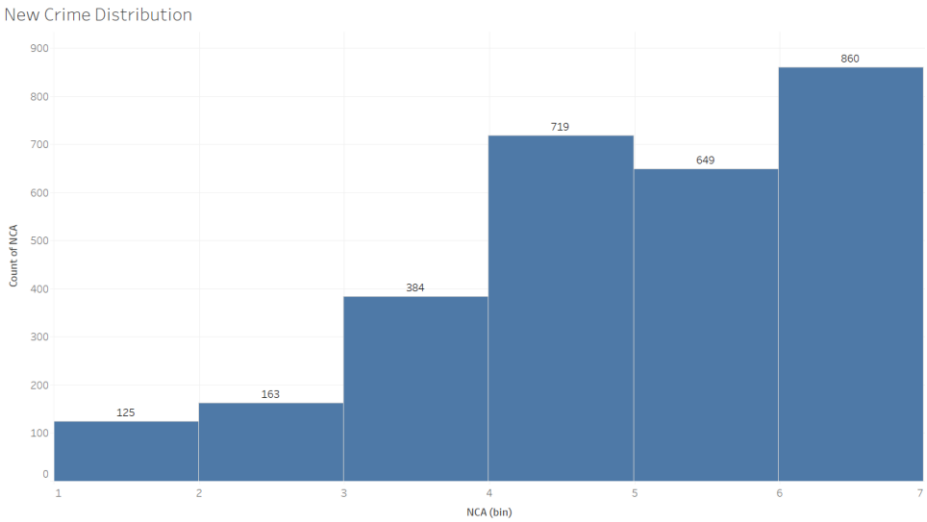


Figure 10: Histogram of New Crime Scores

However, the scores themselves, which are a different axis of the probation scoring matrix, are augmented by the risk for new violent crime while on pretrial supervision. Since the PSA is using both the presenting offense as well as criminal history to assess risk, although felonies tend to the be the most common level of crimes those assessed are charged with, those charged with misdemeanors appear to have higher levels of pretrial risk for new crimes as well as FTA, even when considering the risk of violent new crime. Therefore, it appears misdemeanors pose a somewhat elevated risk of failure on pretrial.

Severity	New Crime-Violence Risk	Avg. FTA Risk	Avg. New Crime Risk	Count
Felony	No	3.75	4.09	1,492
	Yes	4.22	4.97	350
Misdemeanor	No	4.71	4.65	899
	Yes	5.15	5.43	158

Figure 11: New Crime/Violence and FTA Risk, by Arrest Crime Severity

These scores then translate into probation recommendations, along with several other criteria beyond the PSA scores above. The table below shows that 1,603 of the assessments resulted in a detain recommendation, with 1,001 being recommended for some level for pretrial supervision (SOR or ISOR).

Prob Rec	
1_OR	57
2_OR w/cond	198
3_SOR	613
4_ISOR	388
5_Detain	1,603

Number of Records
57 1,603

Figure 12: Probation Report Recommendations

In terms of judicial decision making, many of the cases with assessments (82%) relate to people who have been released through bail, cite/release, or other OR programs. This leaves a much smaller pool of 524 people whose release decision is made by a judge using an assessment.

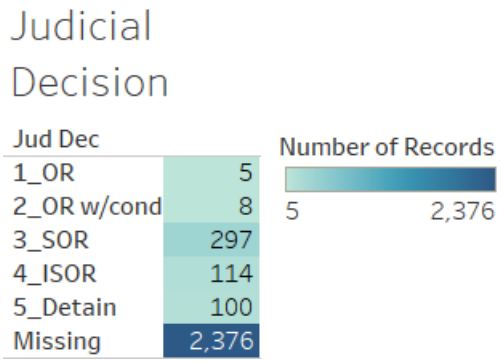


Figure 13: Judicial Decisions on Release

For the release decisions that are made, the judicial concurrence with probation varies, but overall, judges agreed with probation's recommendation 48% of the time. Judges decided on a lower intensity decision 37% of the time and increased the intensity 16% of time. This analysis will need more context to understand the types of overrides that occur and in what situations, as well as the pool of people screened.

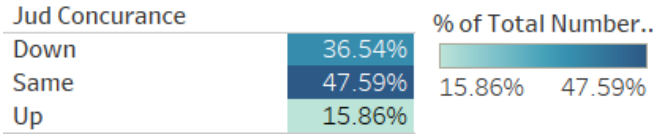


Figure 14: Judicial Concurrence Rates

Outcomes

In 2017, 412 people were granted Supervised OR or Intensive OR. This is a doubling in the number of people placed on pretrial supervision, as well as a doubling of the number of days supervised over the previous year, which has translated into a larger number of people on supervision on a given day as well as more risk and exposure time awaiting case disposition. Since the goals of pretrial supervision are to supervise people in the community during their case, and ensure that they show up for court dates and are crime free, the outcomes for success are straightforward:

1. What percent of people released on pretrial were crime free during their case?
2. What percent of people released on pretrial showed up for all court dates?
3. What percent of people were successful on supervision, and had no violation of supervision causing the termination of supervision?

However, there are additional key metrics that can help understand the success of the program such as those related to time in program and time in jail prior to release.

For those eventually released on pretrial, a key metric is how quickly these people are released. Figure 15 shows that 14% of SOR releases, but only 7% of ISOR releases, happen within 1 day. Further, by 10 days, 95% of those released on OR, but only 68% of those released to ISOR, have been released.

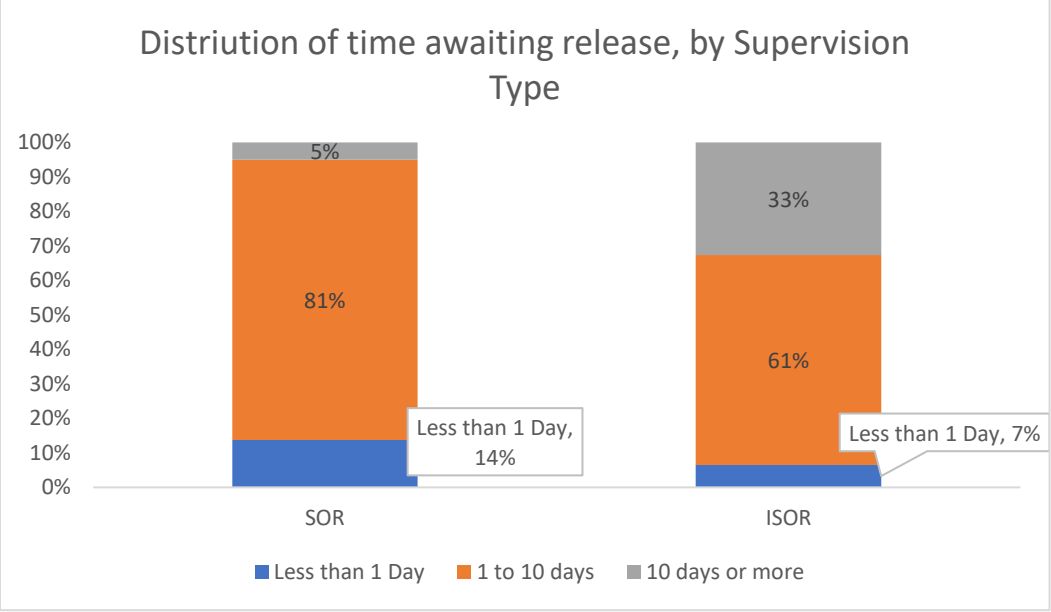


Figure 15: Distribution of Time Awaiting Release, by Supervision Type

Figure 16 shows the evolution of the Pretrial program as the program has expanded. The new crime rate has risen to around 10%, along with an increase in FTAs. Both of these are expected as the county expands its pretrial program and starts to take on risker defendants overall, and,

as evidenced by a declining violation rate, works with clients to maintain their pretrial supervision during their case.

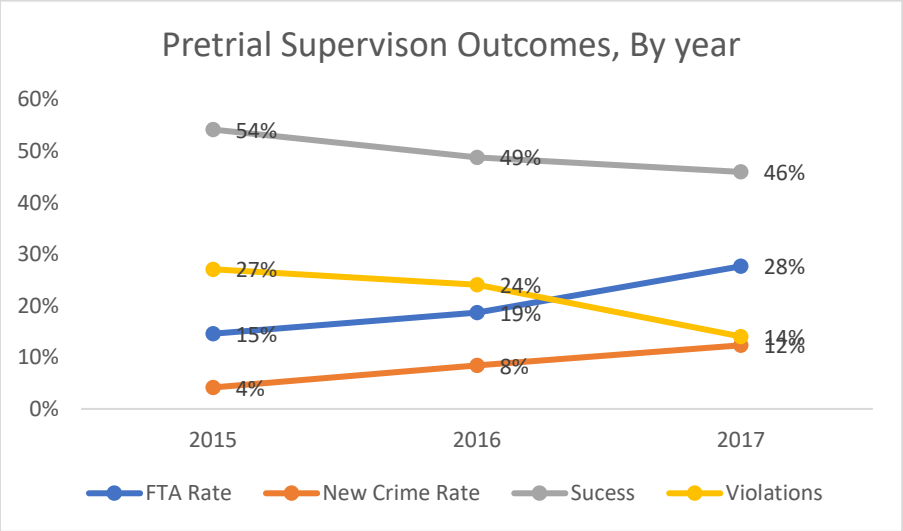


Figure 16: Pretrial Supervision Outcomes

However, the two levels of supervision have markedly different outcomes. The ISOR program, with its more intensive electronic monitoring, has a higher level of successful completion, but also a much higher rate of violation. Further exploration could look more in depth at these violations to better understand the reasons behind them, as well as the reasons for the higher FTA rates for SOR supervisees.

	SOR (N=298)	ISOR (N=113)
FTA	33%	11%
New Crime	15%	4%
Success	43%	56%
Violation	9%	30%

Figure 17: Comparison of SOR and ISOR Outcomes in CY 2017

	FTA	New Crime	Success	Violation
SOR	48	56	92	63
ISOR	17	80	93	46

Figure 18: Days in Program, ISOR and SOR by outcome

Another key outcome is days spent in the community, as this metric shows the average days from jail release to completion or termination. ISOR defendants tend to FTA quicker than SOR but have more days in the program until they commit new crimes. However, those that violate their terms do so quicker on ISOR, which may be due to higher levels of monitoring under which violations are responded to quicker, before they become FTAs, which could also explain the lower FTA rate for ISOR than SOR.

Cost Benefit Analysis

Cost benefit analysis gives justice system policy makers a clearer sense of the tradeoffs inherent in various policies between the release of defendants and the risks of new crimes pretrial, non-compliance, and failing to appear. A limitation of only using "avoided jail beds" in accounting for the efficacy of pretrial program is that not all defendants are successful. The model used in Santa Cruz county considers the marginal cost per day of jail and pretrial supervision, but also the additional costs to taxpayers and victims for subsequent pretrial failure.

By using a combination of local costs, criminal justice system usage for new crimes, and existing research on victimization costs, the cost benefit model will give probation both a retrospective look at how their system functioned in 2017, as well as a tool that can be further customized as state policies, county priorities, or fiscal realities change. The cost benefit model uses the following inputs:

1. Marginal Local Jail and Pretrial Supervision costs per day
2. Resource Use, Cost, and Likelihood for those Committing a new Crime on Supervision
3. Victimization Costs associated with different types of crimes

Economic impacts of pretrial policy can be assessed in 2 ways: as a comparison between the anticipated changes in outcomes with different policies or a comparison of the relative costs of two similar options that accounts for business as usual. Since Santa Cruz county only performs the PSA on 29% of the jail population, which skews toward a higher risk profile, and because the pretrial results of this portion of the population therefore cannot be generalized to a larger population, first option was not viable at this point in time.

However, using jail costs as well as costs for SOR and ISOR supervision, the model can project the daily cost of each, and consider the risk of pretrial failure for each type of supervision. As seen in section 2, 12% of SOR defendants fail pretrial for a new crime, and 33% fail to appear for court. In term of ISOR, 2% have new crimes, while 10% fail to appear in court. By applying these failure rates to the number of days supervised in the community, the model is able to spread the cost of failure as a cost of supervision. By this math, on any given day, the risk of FTA or new crimes in less than 1%, however when these failures occur, they are accounted for, both in taxpayer costs as well as victimization costs.

In summary, SOR generates benefits of nearly $62 for every day someone is supervised rather than in jail, while ISOR generates $32 in benefits as compared to jail. Assuming the average length of stay of 88 days for SOR and 62 days for ISOR , the net savings is nearly $2,000 and $1,500 respectively. Although not all these benefits can be captured as savings to the system, this provides a relative comparison of monetary value.

Column1	SOR	ISOR
Cost Per day(including Risk of New Crime and FTA)	$ 54.33	$ 83.69
Days in program	88	62

Jail Cost Per Day	$ 116	$ 116
Average Length of Stay Awaiting Trial	58	58
Supervision Minus Jail Costs	$ 61.67	$ 32.31
Net Savings for Average Pretrial Grant	$ 1,959	$ 1,527

Figure 19: Cost Benefit Summary for Pretrial Supervision

These net benefits show that the current approach to pretrial release is a cost-effective alternative to jail. However, further analysis should be done to look at the complete system of release to take into account policy changes that would affect the proportion of people released, the speed at which they are released, and the level of supervision they receive.

Pretrial Supervision and Jail Costs

The optimal approach for assessing costs for Cost Benefit analysis is analyzing the marginal (or operating or direct) cost of a program or intervention. These are used to avoid including cost drivers that are not responsive to changes in workload. Generally, criminal justice and government costs are seen as medium-term costs as many changes in workload may not have immediate impacts, but over the medium term, these become aligned. This report used a "top down" costing method instead of a more complex time study (bottom up) approach to estimate the parts of the budget that were generally considered direct costs, and then only included costs that applied to the function analyzed.

Pretrial Assessment and Supervision Costs

Working with Santa Cruz Probation's fiscal unit, this analysis focused on developing a top-down costing estimate to come up with a consistent estimate for the cost of pretrial at various levels of risk. The top-down costing method resulting in a top-level division budget of $1.06 million in services possibly associated with Pretrial Services in FY 2016-2017. However, several costs needed to be re-allocated or better defined since contract amounts were shared by multiple divisions within probation. Further, the major program workloads around assessment and supervision required a more nuanced analysis since they administratively are costs borne by probation but are incurred by different parts of the county's pretrial system related to those assessed and supervised by probation while awaiting their case.

Based on input from pretrial staff, Santa Cruz does not apply differential levels of supervision dosage based on risk, so these top down costs are allocated to all 100 people on Pretrial programming through Supervised OR or ISOR on a given day. However, ISOR uses electronic monitoring in addition to standard probation supervision techniques, which adds nearly $20 a day in cost in addition to supervision.

Based on this analysis, the cost per day of supervision, less assessment, is $8.54 for SOR and $28.92 for ISOR. The cost per assessment is estimated at $188, based on 3 hours of staff time per assessment.

Top Down Costing Driver	Allocation	Notes
Wages and Benefits- Assessment	100%	This represents a cost per assessment allocation of the total wages and benefits. Since the staff doing assessment and supervision are interwoven operationally, a cost per assessment was developed at 3 hours in total staff time between various activities based on the staff cost per hour.
Wages and Benefits- Supervision	100%	This represents the wages and benefits left over from deducted assessment time. All staff hours (quantified as wages and benefits) are for direct services, 100% of the costs are used.
Duplication	100%	This is the cost for copying and duplicating documents.
Mileage and transportation Claims	100%	This is the cost for mileage and travel costs when applicable.
Training	100%	The cost of training for staff, be it conferences or booster training, etc
Drug Testing	10%	For those on Pretrial programming through Supervised OR or ISOR, the cost to provide drug testing for those with this as a term and condition of release. Santa Cruz Probation has a single contract for drug testing, with staff estimating 10% of this is allocated to pretrial populations.
EM and GPS	95%	For those on Pretrial programming through Supervised OR or ISOR , the cost to provide electronic and GPS monitoring. Santa Cruz Probation has a single contract for monitoring services, with staff estimating 95% of this is allocated to pretrial populations.

Jail Costs

Santa Cruz County began using a top down costing method during their Results First Initiative implementation, and this was updated for FY 15-16. The total cost of jails includes fixed costs for facility operations and administration; step-fixed costs for security, inmate rehabilitation, and health care; and variable costs for inmate needs such as food and clothing. The table below summarizes the methodology used for estimating the marginal cost per day, which comes to $116 per day.

Top Down Cost Driver	Notes
Salary/Benefits- Weighted Rate	Weighted direct staffing ratio of
Clothing/Personal Supplies	Cost to supply clothes and personal items for inmates
Food	Food services for inmates
Laundry Expenses	Costs for laundry and cleaning services for inmates
Pharmacy Supplies	Pharmacy costs for inmates

Medical Services	Medical and dental costs for inmates
Training	Training costs of officers

Figure 21: Jail Marginal Cost Weightings

Resource Use, Cost, and Likelihood for those Committing a new Crime on Supervision

Criminal Justice System Cost

Based on data from the Results First initiative in Santa Cruz county, a marginal cost was used for key system costs like prison, arrest, courts, jail, and probation (field supervision). [13] Since a new crime could result in the use of court and corrections resources, these costs help to place a dollar value on pretrial failures.

Resource Costs

	Felony	Misdemeanor	Year of $
Arrest	$1,247	$1,247	2013
Conviction	$4,355	$4,355	2013
Probation	$2,042	$2,042	2013
Jail	$42,343	$42,343	2016
Prison	$11,309	$11,309	2013
Parole	$8,827	$8,827	2013
Victimization	$14,239	$0	2010

Victimization costs used recent research (outside of Santa Cruz County) on the relative impact to victims of new crime.[14,15] Including the costs to victims of new crimes better estimates costs borne by society due to crimes where a victim suffers physically, has loss of property, or bears pain and suffering.
The table to the right is a summary of the cost data table.

Criminal Justice System Usage

The costs of various resources are combined with the probability of certain types of sentencing events happening to create an average victimization cost based on Santa Cruz County data.
Based on data from the Results First initiative in Santa Cruz County, a sentencing likelihood was developed, broken out by type of criminal justice resource as well crime type. Using the same data obtained through the Results First Initiative as well as a 2017 Jail Utilization Study[16], an average length of stay (amount of use) was calculated from various pieces of the criminal justice system including prison, jail, and probation. The number of crimes by type in Santa Cruz

Criminal Justice System Use

	Felony	Misdemeanor
Prison	17%	0%
Jail	8%	74%
Probation Only	16%	2%
Parole/PPS	76%	0%
Probation and Jail	56%	5%
Other	9%	19%

Length of Stay (Months)

	Felony	Misd.
Prison	104	0
Jail	5.0	3.0
Probation Only	36	33
Parole/PPS	44	0

Jurisdictional Felonies

Homicide	5
Sex	103
Robbery	209
Assault	767
Burglary	1221
MV Theft	1454
Theft	2659
Other	38

[13] http://www.pewtrusts.org/en/research-and-analysis/fact-sheets/2016/05/the-pew-macarthur-results-first-initiative-in-santa-cruz-county

[14] McCollister, K. E., French, M. T., & Fang, H. (2010). The cost of crime to society: new crime-specific estimates for policy and program evaluation. Drug and Alcohol Dependence, 108(1), 98-109.

[15] Cohen, M. A. & Piquero, A. R. (2009). New evidence on the monetary value of saving a high risk youth. *Journal of Quantitative Criminology, 25*, 25-49.

[16] MacDonald, S. & O'Connell, K. (2017).

County was calculated to estimate the crime impact when a person on pretrial commits a new crime from the California Department of Justice.[17]

[17] https://openjustice.doj.ca.gov/crime-statistics/

Conclusion

The goal of this project was to prevent Santa Cruz county with a new perspective on pretrial services, both in mapping out how people move through the pretrial assessment process as well as applying a perspective of costs benefit analysis. Although the program in Santa Cruz is mature, its assessments reach a minority of those booked. Further, subsequent research could focus on the success of those not placed on SOR or ISOR. By increasing the use of assessment in release decisions as well as tracking all pretrial outcomes, the county can then better assess the speed in which people are released(time in jail) as well as the application of risk-based supervision. Next steps for the county should be to focus on the full spectrum of pretrial services to better understand all types of pretrial releases, review the pretrial system maps with multiple stakeholders, and finally use the information found here to anticipate the impacts of Bail reform.

Appendix: Summary of Work

A: Data Dictionary

A data request was developed to cover both the needs of the cost benefit model as well as the quantitative review of the pretrial. The dataset contains all pretrial eligible bookings into jail to give the broadest possible perspective on pretrial decision making at the booking level. Each person's booking information included all counts/crimes in the booking entry.

The data request covered 5 key areas:

1. Booking data: This data contains information about the booking, as to types of charges, as well as dates of booking and release.
2. Pretrial assessment tool: Contains data used to compile the pretrial score, as well as the score itself.
3. Pretrial recommendations: The release recommendation by probation, along with any recommended conditions, as presented to the judiciary.
4. Judicial decisions: The final release decision by the judge, along with any conditions placed on the person at release.
5. Supervision outcomes: For those released to Supervised Own Recognizance, there are outcomes regarding new offenses, failures to appear, and new violent offenses. These create the outcome measures used in the model as well as for the analysis of pretrial supervision success rates.

A data request was developed to cover both the needs of the cost benefit model as well as the quantitative review of the pretrial system. The dataset contains all pretrial assessed bookings into jail to give the broadest possible perspective on pretrial decision making at the booking level. Each person's booking information included all counts/crimes in the booking entry.

Code was written in STATA to perform various data preparation steps to ready the data for analysis including:

1. Merging crime type and hierarchy to better assess the lead charge
2. Creating a scoring mechanism like the decision-making framework for 2016, to better map the raw data to decision making.
3. Cleaning up of dates and other data stored as strings (text) but that were dates or numbers (see appendix 1). This code will be made available to the county to integrate locally or develop with internal resources.

The dataset covers calendar years 2015 to 2017 across a variety of phases of the pretrial system, from assessment of those booked to case disposition. This is the ideal perspective from a research and evaluation perspective since the pool of unsentenced people available for assessment defines the types of pretrial risk being assessed and recommendations for release/detention.

The data request covered 5 key areas:

6. Booking data: This data contains information about the booking, as to types of charges, as well as dates of booking and release.
    a. Sheriffs number
    b. Booking number
    c. Booking date
    d. Jail release date
    e. Arrest date
    f. Booked charge statute
    g. Booked charge severity
    h. Booked charge description
7. Pretrial assessment Tool: Contains data used to compile the pretrial score, as well as the score itself.
    a. PSA date
    b. PSA Failure to appear RISK score
    c. PSA New Crime RISK score
    d. PAA New Crime Violence Risk score
    e. PSA instrument scores
8. Pretrial recommendations: The release recommendation by probation, along with any recommended conditions, as presented to the judiciary.
    a. Pretrial Release recommendation
    b. Conditions of release
9. Judicial decisions: The final release decision by the judge, along with any conditions placed on the person at release.
    a. Judicial release decision
    b. Judicial release conditions
10. Supervision outcomes: For those released to Supervised Own Recognizance or Intensive Supervised Own Recognizance, the outcomes regarding new offenses, failures to appear, and new violent offenses. These create the outcome measures used in the model as well as the analysis of pretrial supervision success rates.
    a. New crime date of offense (if applicable)
    b. FTA Date (if applicable)
    c. Case disposition date
    d. Case disposition result

From the available data, several metrics were proposed to look at key outcomes around quality, speed, and cost.

B. Proposed Metrics

Proposed Metrics--Quality

Input Metrics	Process Metrics	Output Metrics

Count of assessments presented to the court	% of assessment overridden per the structured decision-making tool (SDM) by probation	% of SOR grants with a successful completion to court disposition
	% of assessment overridden per the structured decision-making tool (SDM) by the court	% of SOR grants with an FTA
	% of assessments released to the community overall	% of SOR grants with a new crime
	% of assessments released to SOR/ISOR	% of SOR grants with a technical violation
	% of assessment detained/not released	% of SOR grants with a successful completion to court disposition

Proposed metrics--Speed

Input Metrics	**Process Metrics**	**Output Metrics**
Time from booking to assessment (Hours/Days)	Time to assess client and generate report	% of SOR grants with a successful completion to court disposition
Total client time in custody	% of clients released at first court appearance who are ultimately released	% of SOR grants with an FTA
	Time to set up case file	% of SOR grants with a new crime
		% of SOR grants with a technical violation
		% of SOR grants with a successful completion to court disposition

Proposed metrics--Cost

Input Metrics	**Process Metrics**	**Output Metrics**
Cost of jail day		
Cost of an assessment		
Daily cost of supervision		
Cost of FTA		
Cost of new Crime		

C. Stata Code Base

```
*Author:  Kevin O'Connell
*Contact: kevin@oconnellresearch.com
*Title: Analysis of Pretrial Data
*Stata 15.1
*Date:  7 2 2018
*Summary:
*External Files:  DOJ Code Mapping.  DOJ provides a list of charges and hierarchy for discerning the most
serious crime.

*External Files:  PSA and PRetrial database from ISD.
clear
cd "C:\Users\kevocon2\Dropbox\Santa Cruz county\Data\"
use "Santa Cruz Pretrial Analysis.dta"
merge m:m BookNo using "Santa Cruz Pretrial Analysis_end events.dta", force
drop if BookNo==""
rename ViolationLevel Level
rename Charges Charge
rename ViolationDescription Charge_Description
*merge m:1 severity charge chargedescription using "Santa Cruz local charge codes.dta"
*merge m:1 Level CodeSection Charge using "C:\Users\kevocon2\Box Sync\CF - Project - PCE - JSCI\4 - Santa
Cruz\Data\Santa Cruz charge list_merged.dta", generate(_merge_charges)
*drop if _merge_charges==2
*replace Hierarchy=75000 if Level=="F" & _merge_charges==1
*replace Hierarchy=150000 if Level!="F" & _merge_charges==1
*replace Level="M" if Level=="Y"
*replace Level="F" if Level=="" | Level=="GF" | Level=="XF"
*replace Level="M" if Level==",M" | Level=="M`" | Level=="XM" | Level=="YM" | Level=="MF" | Level=="MN" |
Level==2 | Level=="A" | Level=="N" | Level=="A"
rename Bookingdate b_date
*gen b_date=date( Bookingdate , "YMD")
*format %tdNN/DD/CCYY b_date
*drop Bookingdate
gen r_date=date( DateOfRelease , "MDY")
format %tdNN/DD/CCYY r_date
drop DateOfRelease
rename DOB birthdate
*gen birthdate=date( DOB, "MDY")
*format %tdNN/DD/CCYY birthdate
*drop DOB
gen a_date=date( ArrestDate, "YMD")
format %tdNN/DD/CCYY a_date
drop ArrestDate
rename SACourtDate PSA_date
*gen PSA_date=date( PSACourtDate , "YMD")
*format %tdNN/DD/CCYY PSA_date
*drop PSACourtDate
encode Gender, gen(gender)
drop Gender
encode Race , gen(race)
drop Race

encode Level, gen(severity)
replace severity =6 if severity <3 | severity ==4
bys BookNo:  egen B_severity=min( severity)
keep if B_severity== severity
duplicates drop BookNo, force

gen recomendedDMF2016="1_OR" if FTA==1 & NCA==1
replace recomendedDMF2016="1_OR" if FTA==1 & NCA==2
replace recomendedDMF2016="1_OR" if FTA==2 & NCA==1
replace recomendedDMF2016="1_OR" if FTA==2 & NCA==2
replace recomendedDMF2016="2_OR w/cond" if FTA==2 & NCA==3
replace recomendedDMF2016="2_OR w/cond" if FTA==3 & NCA==2
replace recomendedDMF2016="3_SOR" if FTA==4 & NCA==2
replace recomendedDMF2016="3_SOR" if FTA==5 & NCA==2
replace recomendedDMF2016="3_SOR" if FTA==3 & NCA==3
replace recomendedDMF2016="3_SOR" if FTA==3 & NCA==4
replace recomendedDMF2016="3_SOR" if FTA==2 & NCA==4
replace recomendedDMF2016="3_SOR" if FTA==3 & NCA==4
replace recomendedDMF2016="4_ISOR" if FTA==5 & NCA==3
replace recomendedDMF2016="4_ISOR" if FTA==5 & NCA==4
replace recomendedDMF2016="4_ISOR" if FTA==4 & NCA==4
replace recomendedDMF2016="4_ISOR" if FTA==2 & NCA==5
replace recomendedDMF2016="4_ISOR" if FTA==3 & NCA==5
replace recomendedDMF2016="4_ISOR" if FTA==4 & NCA==5
replace recomendedDMF2016="4_ISOR" if FTA==5 & NCA==5
replace recomendedDMF2016="5_Detain" if FTA==6 & NCA==4
replace recomendedDMF2016="5_Detain" if FTA==6 & NCA==5
replace recomendedDMF2016="5_Detain" if FTA==3 & NCA==6
```

```
replace recomendedDMF2016="5_Detain" if FTA==4 & NCA==6
replace recomendedDMF2016="5_Detain" if FTA==5 & NCA==6
replace recomendedDMF2016="5_Detain" if FTA==6 & NCA==6
replace recomendedDMF2016="" if recomendedDMF2016==""
encode recomendedDMF2016, gen(dmfscore2016)
encode ReleaseRecommendation, gen(intial_rec)
gen prob_rec=1 if intial_rec==6 | intial_rec==4
replace prob_rec=2 if intial_rec==2
replace prob_rec=3 if intial_rec==8
replace prob_rec=4 if intial_rec==3
replace prob_rec=5 if intial_rec==5
label values prob_rec dmfscore2016

encode JudicialReleaseDecision, gen(jud_decision)
gen jud_dec=1 if jud_decision==5
replace jud_dec=2 if jud_decision==2
replace jud_dec=3 if jud_decision==6
replace jud_dec=4 if jud_decision==3
replace jud_dec=5 if jud_decision==4
replace jud_dec=99 if jud_decision==1 | jud_decision==7
label values jud_dec dmfscore2016

gen jud_concur="Up" if jud_dec>prob_rec & jud_dec!=99
replace jud_concur="Down" if jud_dec<prob_rec
replace jud_concur="Same" if jud_dec==prob_rec

gen pretrialsup=1 if jud_dec==3 | jud_dec==4
replace pretrialsup=0 if pretrialsup==.

*gen casedispo=trim( CaseDispositionDate )
*gen dispochar=("0"+ CaseDispositionDate) if (length( CaseDispositionDate)==7)
*replace dispochar= casedispo if dispochar==""
*gen dispo_date=date(dispochar, "MDY")
*format %tdNN/DD/CCYY dispo_date
*encode CaseDisposition, gen(dispotype)

*gen NCtrim=trim( NewCriminalActivityDate )
*gen NCchar=("0"+ NewCriminalActivityDate) if (length( NewCriminalActivityDate)==7)
*replace NCchar= NCtrim if NCchar==""
*gen NC_date=date(NCchar, "MDY")
*format %tdNN/DD/CCYY NC_date
*gen NCyes=1 if NCtrim!=""
*replace NCyes=0 if NCyes==.
encode EndingType, gen( EndingType2)
replace EndingType2=7 if BookNo=="B-550864"
replace EndingType2=1 if BookNo=="B-551896"

gen PT_outcome=1 if (EndingType2>=5 & EndingType2<=6)
replace PT_outcome=3 if EndingType2==3 | EndingType2==1
replace PT_outcome=2 if EndingType2==2
replace PT_outcome=4 if EndingType2==7

tostring Date_Ended, replace
gen endtrim=trim( Date_Ended )
gen endchar=("0"+ Date_Ended ) if (length( Date_Ended )==7)
gen end_date=date(endchar, "MDY")
format %tdNN/DD/CCYY end_date
gen P_time_days= end_date - b_date
drop Date_Ended EndingType _merge endtrim endchar
gen P_time_days_NC= end_date- r_date if PT_outcome==3
gen P_time_days_FTA= end_date- r_date if EndingType2==2
label define PT_outcome 1 "Sucess" 2 "FTA" 3 "New Crime" 4 "Violation"
label values PT_outcome
gen Jail_LOS=r_date-b_date
gen daystopretrial=1 if Jail_LOS<=1
replace daystopretrial=2 if Jail_LOS>1 & Jail_LOS<=10
replace daystopretrial=3 if Jail_LOS>10
label define Days_to_pretrial 1 "Quickly" 2 "Moderate" 3 "Slow" 4 "Not Released"
label values daystopretrial Days_to_pretrial
*create estimate daily populations
preserve
keep  BookNo b_date r_date dmfscore2016
replace  r_date=21365 if  r_date==.
gen diff=  (r_date- b_date)
expand diff
bysort  BookNo dmfscore2016: gen cnt = _n-1
gen dpop=  b_date + cnt
format %tdNN/DD/CCYY dpop
contract dpop dmfscore2016
gen quarter=quarter(dpop)
gen year=year(dpop)
```

D. Model Deployment

The cost benefit model was developed for use in Santa Cruz county and will be further enhanced using local data on pretrial usage, risk assessment, outcomes, and jail impacts. The model is developed using a web programming standard called Adobe Flash. This platform allows for the creation of a server-based or hard drive-based deployment

The model has 4 tabs:

1. Scenario Development
2. Pretrial System Data Entry
3. Criminal Justice System Entry
4. Summary Charts showing differences in scenarios

Tabs 1 and 2 are populated using default data but demonstrate the model's capabilities ahead of including Santa Cruz data. Tab 3 has been populated with Santa Cruz specific data as noted below. A Flash file (.swf) has been transferred to probation staff to begin training/familiarization, with future data analysis to come for localization on Tabs 1 and 2. The following are screen shots from the 3 tabs in the model transferred to Santa Cruz. The file is viewed in any modern web browser (Microsoft Explorer, Chrome, Firefox). There is no need for an internet connection when using the file, as it operates through a browser, but does not access internet resources.

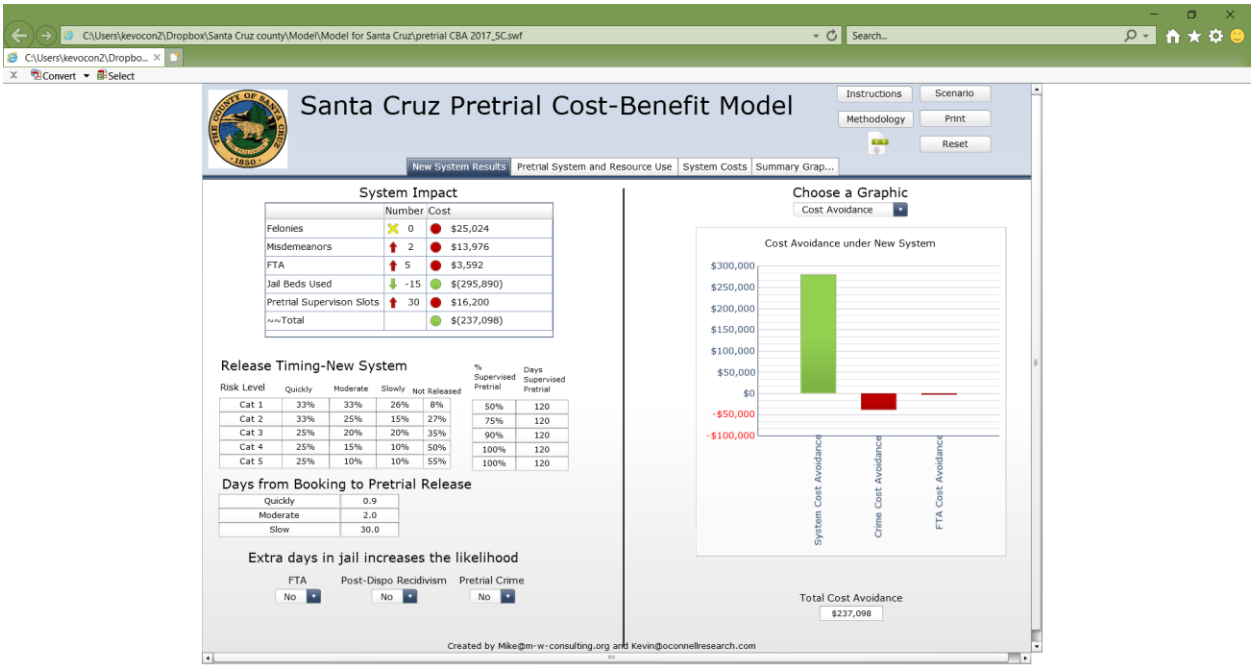


Figure 22: Pretrial Analysis Tab

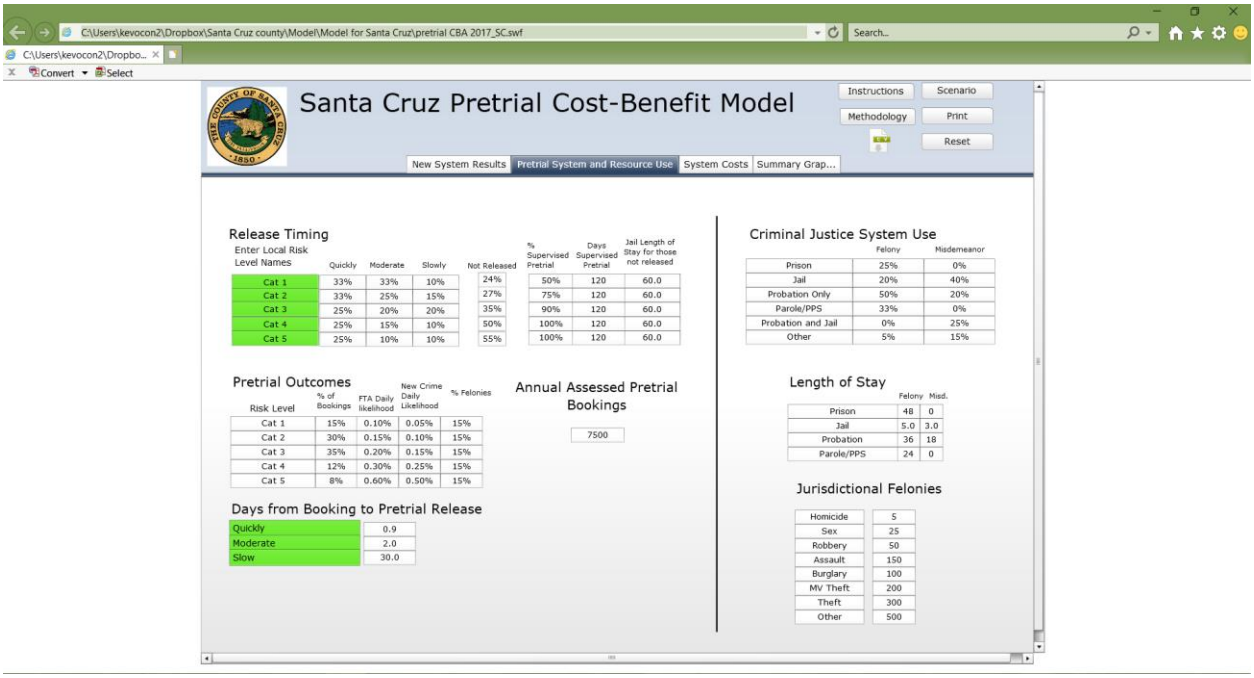


Figure 23: Current Pretrial System Use

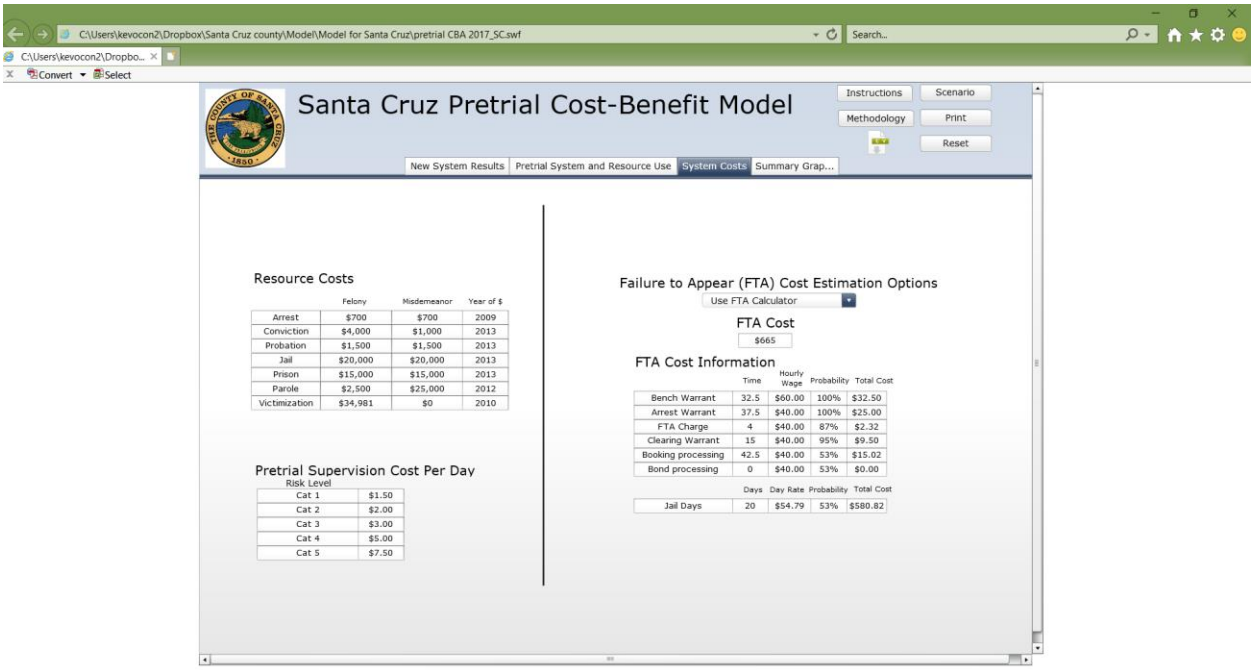


Figure 24: Criminal Justice System Costs