CENTER FOR APPLIED RESEARCH & ANALYSIS

Evaluating the Costs and Benefits of Pretrial Detention and Release in Bernalillo County

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Introduction

Estimates of the United States jail population suggest that, on average, between 2020 and 2022, 60% to 70% of individuals being held in jails at any given time were being detained pretrial (Sawyer & Wagner, 2022; Minton & Zheng, 2021). Pretrial detention is often justified on the belief that detention is necessary to reduce risk (e.g., the risk that a detained individual would commit a new crime within the pretrial period or be a flight risk), which, it is reasoned, promotes community safety (Anderson et al., 2023; Smith, 2022). That is, some individuals who face criminal charges may be perceived as too dangerous to remain in the community during their case proceedings. In contrast, others might pose a significant risk of fleeing to avoid prosecution if released. Previous research suggests that pretrial detention effectively reduces criminal activity predisposition (Leslie & Pope, 2017; Dobbie et al., 2018).

Accordingly, a judge's choice to detain someone pretrial represents a positive assumption about a detained individual's risk and a valuation of community safety over the detained individual's liberty (Stevenson & Mayson, 2022). However, while pretrial detention might prevent detained individuals from participating in criminal activity before case resolution through incapacitation, some studies find evidence of longer-term criminogenic effects of detention once a case has been disposed of (Leslie & Pope, 2017; Dobbie et al., 2018). Moreover, survey research suggests mixed public support for pretrial detention within the United States (The Pew Charitable Trusts, 2018). Researchers have increasingly converged on evidence of downstream costs associated with lengthy pretrial detention, including detained individuals' exclusion from the labor market (Grau et al., 2023), family disruption (Wakefield & Andersen, 2020; Harding et al., 2018), the potential for increased recidivism, and worse health outcomes (Goulette & Wooldridge, 2019). Moreover, other research suggests these costs are unequally distributed across different groups along racial and class lines (Menefee, 2017). Given that research on the potential costs of pretrial detention is still in its early stages and that most of the existing research focuses exclusively on the costs of pretrial detention and not benefits (though see Baughman, 2017), it is important to evaluate the cost-benefit ratio of pretrial detention regimes.

In this paper, we explore the costs and benefits of pretrial detention and release decisions in Bernalillo County, New Mexico for a set of 16,500 felony cases filed between January 2017 and March 2022, following related work by Lowenkamp, VanNostrand, and Holsinger (2013), Baughman (2017), Dobbie and Yg (2021), and Holsinger, Lowenkamp, and Pratt, (2023). Specifically, we evaluate:

- The relationship between the length of pretrial detention and predisposition and postdisposition outcomes, including failure to appear (FTA), new criminal activity (NCA), and new violent criminal activity (NVCA), and whether this relationship varies by sex, race, age, risk-level, and felony class.
- The costs of pretrial detention – defined as jail costs – compared to the costs of pretrial supervision.

We begin by reviewing the literature on the relative costs of pretrial detention and release. We then summarize the pretrial system's process flow in Bernalillo County and review our data sources, research methods, and analytic strategy. We present descriptive statistics and regression results to address the research questions outlined above. Finally, we discuss our research's limitations and suggest avenues for future work within New Mexico.

Literature Review on the Costs of Pretrial Detention

The Costs of Pretrial Detention

Some research suggests that pretrial detention can promote short-term public safety and ensure appearance in court. For example, research in Philadelphia examining over 328,492 cases from 172,407 unique defendants between 2007 and 2014 found that defendants detained for more than three days had about a 12% FTA rate, compared to 18% for those initially released (Vera Institute of Justice, 2019). Moreover, Goldin and Yang (2018) present evidence that:

> *While pre-trial release (mechanically) increases the likelihood of rearrest prior to case disposition by 13.4 percentage points, a 68.4 percent change, it also decreases the likelihood of rearrest following case disposition by 15.0 percentage points, a 46.9 percent change. These short-run incapacitation and medium-run criminogenic effects nearly exactly offset each other for the marginal defendant, at least over the time horizons we observe in the data* (Golden and Yang, 2018, p. 3).

However, research has revealed several costs associated with pretrial detention, given the low base rates of pretrial FTA, NCA, and NVCA (Smith, 2022). A 2024 systematic review and meta-analysis on the topic reported:

> *Assessing 143 effect sizes across 57 studies that met the inclusion criteria, findings indicated that detained defendants face more severe outcomes, with the strongest effect on their likelihood of incarceration. Pretrial detention had a medium effect on convictions, guilty pleas, and dismissals, a more minor effect on sentence length, and a non-significant, small effect on charge reductions* (St. Louis, 2024, p. 347).

Several studies converge on evidence suggesting labor market costs associated with pretrial detention. For example, a 2010 report by the Pew Charitable Trusts presented evidence that hourly wages for men detained pretrial decreased by approximately 11%, and their annual earnings decreased by 40% following pretrial detention (Western & Pettit, 2010). Dobbie, Goldin, and Yang (2018) used a sample of detained individuals in Miami and Philadelphia and a judge-instrumental variables (IV) design and found evidence that pretrial detention reduced detained individuals' postdisposition employment three to four years after their bail hearings by 9%. The authors also reported that the earnings-reducing effects of pretrial detention were disproportionately borne by the lowest-income individuals who were detained.

Using data from the Bureau of Justice Statistics' State Court Processing Statistics from 1990 to 2009, Dobbie and Yang (2021) estimated that detained individuals lost, on average, $30,000 in earnings and social benefits when detained pretrial. Grau, Marivil, and Rivera (2023), using quasi-experimental difference-in-differences (DID) and IV estimation approaches, presented evidence that pretrial detention reduced the probability of employment by 39% in the six months following case disposition and reduced average monthly wages by 56% in the six months following case disposition. The authors presented evidence that employment and wage reduction effects were driven by a combination of firings during the pretrial period (e.g., the labor market hypothesis), discrimination in the hiring process associated with the pretrial detention (e.g., the social stigma hypothesis), and post-verdict incarceration (e.g., the labor incapacitation hypothesis). Moreover, other research suggests that the economic costs of pretrial detention are unequally distributed across different groups: specifically, low-income individuals (Liu et al., 2018; Dobbie et al., 2018) and Black detained individuals (Arnold et al., 2018; Smith, 2022) tended to experience worse employment and earnings outcomes following detention.

Pretrial detention might also impose non-economic costs on detained individuals, including loss of liberty and social standing and disrupted social relationships. For instance, using a revealed preference measure (i.e., the amount that detained individuals were willing to post for bail), Abrams and Rohlfs (2011) estimated that the value to detained individuals of their lost freedom was approximately $6,770 (Abrams & Rohfls, 2011). Wakefield and Andersen used Danish data from 1995 to 2010 and reported that pretrial detained individuals had higher risks of losing a familial attachment during their pretrial detention periods[1]. Wakefield and Andersen (2020) also noted, "the costs to the labor market and family attachments for pretrial detained individuals are associated with *no counterbalancing payoff in lower recidivism rates* [Emphasis Added]" (Wakefield & Andersen, 2020, p. 358).

Pretrial detention may also increase the likelihood of recidivism and subsequent criminal justice involvement, particularly among low to moderate-risk groups. To this end, Golden and Yang (2018) present evidence that pretrial detention increased the likelihood of rearrest following case disposition among low-risk defendants by 15 percentage points. A 2024 study examining data from 1.5 million jail bookings in Kentucky found that each additional day of pretrial detention increased the likelihood of rearrest within two years. The effect was most pronounced for low-risk individuals, suggesting that detention may have criminogenic effects within low—to moderate-risk groups for whom such detention is less necessary due to the low risk of pretrial failure (Nam-Sonenstein, 2024).

There are other costs associated with pretrial detention borne by broader society, inclusive of the costs of incarceration at the jail level (e.g., maintaining facilities and staffing and providing adequate housing) alongside macroeconomic reductions in economic productivity and tax revenue due to reductions in detained individuals' labor market participation (Loren, 1997). Moreover, other research suggests cascading network effects of pretrial detention: for instance, Amos (2008) presents evidence that the children of individuals who are detained pretrial have a higher risk of dropping out of school and engaging in criminal behavior themselves (Amos, 2008).

The Costs of Pretrial Release

It is also important to consider the costs associated with pretrial release. Compared to pretrial detention, the direct costs associated with pretrial release and supervision are generally lower and include expenses related to supervision (e.g., GPS monitoring, case management visits, staffing for pretrial services, and specimen collection for substance use testing), as well as costs incurred when released individuals recidivate during the pretrial period (Baughman, 2017; Smith, 2022). With respect to elements of supervision, some localities have estimated the average cost of pretrial GPS monitoring to be roughly $9 per day per defendant and alcohol monitoring to be roughly $10 per day per defendant (Green et al., 2019), though the total cost can vary based on factors like fee structures, caseload sizes, subsidization, and contractor selection.

When predisposition recidivation occurs within the release window [i.e., new criminal activity (NCA)], there is a suite of indirect costs associated with law enforcement (e.g., increased government expenditures on police protection), the court system, and victimization (e.g., the cost to recover damaged property; reductions in quality of life) (i.e., "but for" causality suggests that the individual would have otherwise not committed the crime but for the release) (Baughman, 2017). Additionally, there are downstream consequences of crime, including erosion in community trust and decreases in housing valuations.

[1] Wakefield and Andersen (2020) defined a familial attachment as, "as people who were living with a partner and/or living with their children."

However, these consequences may be more challenging to both empirically tie to one individual's recidivation and disentangle from other causal explanations (Baughman, 2017).

Pretrial Detention in Bernalillo County

The pretrial period consists of the time between when a case was filed and when a case was resolved. In many jurisdictions, including Bernalillo County, New Mexico, judges have substantial discretion in pretrial release decisions and typically consider factors like a detained individual's offense severity, evidence strength, and prior flight to inform their decision to detain or release pretrial.

In June 2017, Bernalillo County adopted Arnold Ventures' Public Safety Assessment (PSA) tool. This tool uses a set of evidence-based factors to estimate the likelihood that a detained individual will commit a new crime while on pretrial release. It estimates the likelihood that a detained individual will fail to return for a future court hearing while on pretrial release (i.e., FTA). In addition, the PSA flags detained individuals who present an elevated risk of committing a violent crime while on pretrial release (i.e., NVCA).

After assessing public safety risks, judges have various options for setting pretrial release conditions. Detained individuals with low flight or danger risk may be released on their own recognizance (ROR), pledging to attend court hearings and follow conditions of release. Alternatively, conditional release, with requirements like reporting to a pretrial officer, drug testing, no-victim-contact orders, or more intense measures like electronic monitoring or home confinement, may be imposed when deemed necessary by the judge.

In 2017, several changes in New Mexico and Bernalillo County's criminal justice system occurred that affected pretrial release, specifically among felony detained individuals. In January 2017, the option for filing preventive detention (PTD) motions began. PTD motions are filed by the District Attorney's office and are almost always filed in the Bernalillo County Metropolitan Court (BCMC). As a result of these motions, a no-bond hold is placed on the detained individual until the PTD is heard by a Second Judicial District Court (SJDC) judge. If the motion is granted, the detained individual remains in custody on the PTD motion until the case is tried or resolved.

Methods

Sample Data Sources for Analysis of Predisposition and Postdisposition Failure

As part of our ongoing research studying the implementation and use of the PSA in Bernalillo County, we have constructed a dataset of approximately 16,500 felony cases from BCMC and SJDC. These cases were opened between July 2017 and March 2022, had an assessment administered, the defendant was in custody for the felony first appearance (FFA) or felony arraignment (FA), were closed before the end of the study period, and spent time in the community during the pretrial phase of the case. The dataset includes electronic court and PSA data from the New Mexico Administrative Office of the Courts (AOC) and electronic data from the Bernalillo County Metropolitan Detention Center (MDC) offender management system. Our dataset includes demographic characteristics (e.g., sex, race, age), the risk of failure to appear for a court hearing (FTA), the actuarial risk of new criminal activity during the pretrial stage (NCA and NVCA) as given by the PSA, characteristics of the booking offense (e.g., felony class, whether the charge involved violence), and exposure time in the community. We extended the existing dataset for this study by adding new criminal activity postdisposition using court data. We used court data to measure new criminal activity postdisposition. Importantly, any criminal citation, criminal summons,

or arrest resulted in a court case being filed which means these data are an accurate proxy variable for new criminal activity. Citations, summons, and some arrests (i.e., some low-level misdemeanors and petty misdemeanors) did not result in bookings into the MDC.

Our variable set includes demographic characteristics (e.g., sex, race, age), the risk of failure to appear for a court hearing (FTA), and the actuarial risk of new criminal activity during the pretrial stage (NCA; NVCA) as given by the PSA, characteristics of the booking offense (e.g., felony class, whether the charge involved violence), and exposure time in the community.

Sample Data Sources for Analysis of Costs of Pretrial Detention and Release

Our analysis of the costs of pretrial detention examined the relationship between the length of pretrial detention, pretrial failure outcomes, and postdisposition new criminal activity in relation to the costs of detention (i.e., jail costs per day) and pretrial release (i.e., monitoring and supervision costs). In what follows, we describe the sources of this data.

First, we used direct cost data from the Bernalillo County Metropolitan Detention Center (MDC), including the average cost per day per inmate for FY 2023. This estimated average cost included salary and benefits of jail staff, overtime payroll, operational expenditures, medical expenditures, meals, and laundry expenditures. These data were provided with the total average daily cost per bed and daily cost per bed by housing unit. Costs varied by housing unit based on security level and housing type (i.e., single cell, double cell, dormitory) and service level (i.e., psychiatric care, infirmary, detoxification, and addiction treatment). Using jail cell location data, we originally intended to calculate the cost of individual stays by calculating the cost by housing unit and summing various average costs for each jail stay. However, because individuals moved within the jail frequently among housing units and data on day-to-day housing locations was not provided, we could not estimate housing unit costs to individuals by matching individuals' cell locations to housing unit costs. We adjusted the estimated average cost benchmarking the FY 2023 data with the federal Bureau of Labor Statistics (BLS) consumer price index inflation calculator (https://data.bls.gov/cgi-bin/cpicalc.pl) by month for the entire reporting period.

Second, we used expenditure data from various sources to measure pretrial services costs per day. Two courts in Bernalillo County provided pretrial services data. The Metropolitan Court provided pretrial services while defendants were under this court's jurisdiction, which could last from when the initial case was filed to when the felony District Court indicted the defendant. By rule, this period can be 60 days for individuals released to the community. Once the case was indicted, the District Court provided pretrial services for the remainder of the time the case was open until it was disposed of. Bernalillo County funded Metropolitan Court pretrial services, and District Court services were funded predominately by Bernalillo County, with a minority of the budget funded by the NM Administrative Office of the Courts. Electronic monitoring services that include active electronic monitoring devices using GPS technology and active electronic GPS monitoring devices with alcohol sensing were funded by Bernalillo County. Bernalillo County also funded drug testing.

Unfortunately, we could not acquire the Metropolitan Court pretrial supervision expenditures from either Bernalillo County, which funds the program, or the Metropolitan Court, which administers the program. From the District Court, we acquired expenditures for 21 months (July 2020 through March 2022) of the 57-month study period (July 2017 through March 2022). The expenditures included salary and benefit costs for pretrial services staff and operational costs, including professional services, communications, training and education, rental equipment, and monthly printing and photography. The District Court also provided daily counts of individuals actively being supervised and the number being electronically monitored. Using the actual expenditure data, we calculated the daily cost of pretrial supervision for July

2020 through March 2022. For the period of July 2017 through June 2020, we used the BLS consumer price index inflation calculator mentioned earlier to inflation-adjust average daily cost by month.

We acquired some expenditures for the AOC's Electronic Monitoring Unit from the New Mexico Administrative Office of the Courts (AOC). For our study period, this included three months out of the 57-month study period. Unfortunately, this period was too small to generate estimates for the entire study period. For this reason, we do not report on the costs of electronic monitoring staff.

We also acquired Bernalillo County electronic monitoring contracts that provided the daily cost per unit for active electronic monitoring GPS devices and remote alcohol testing GPS devices for the Metropolitan Court and District Court for the entire study period. During the study period, the daily unit cost for an active GPS tracker was one amount, while the daily unit cost for the device with alcohol sensing fluctuated by about 10%. While we know the number of defendants being supervised and the number being electronically monitored, we could not distinguish between the use of an active GPS device and the active GPS device with alcohol sensing. We know that most of the units in use were active GPS devices, not those with alcohol sensing. We used the GPS tracker daily unit cost for all defendants electronically monitored in our calculations.

Using the data described above, we calculated a daily cost for pretrial services. This includes a cost for defendants under regular supervision and defendants under supervision with an electronic monitoring device. Because we did not have the Metropolitan Court pretrial supervision expenditures, we used the calculated District Court daily cost for the Metropolitan Court portion of the pretrial supervision period. This is a reasonable approach given that both Metropolitan Court and District Court pretrial staff are on similar pay scales. As noted above, because we did not know which defendants were being monitored by either a GPS tracker or a GPS tracker with alcohol sensing, we used the lower GPS tracker daily unit cost to calculate the daily cost for electronic monitoring. We also did not have drug testing expenditures, so we were unable to include this cost in our calculations. We could not estimate the daily monitoring cost for the study period without sufficient GPS Electronic Monitoring Unit expenditure data.

While lacking precision, the daily jail cost and daily pretrial service cost provide a useful estimate regarding the cost of a day in jail compared to the cost of a day on pretrial supervision. To our knowledge, this information has not been reported elsewhere and serves as a useful starting point for understanding the cost of each. In the future, we believe we can improve the estimates, including the quantity and quality of data and the methods used to calculate the costs.

These data can be used to study our proposed research questions. Jail daily cost data will be used to report on the cost for pretrial detention, including the average cost per day, average cost by jail length of stay in days, and average costs per person. Daily pretrial services cost data can be used to measure the cost of pretrial release. Our data can be used to partly measure the cost of pretrial when that supervision involves electronic monitoring. We have daily electronic monitoring equipment cost data but do not have sufficient data to measure the daily staffing costs associated with electronic monitoring. We do not have drug testing cost data.

Sample Description

For most cases in the sample, the defendant was male (74%; n = 12,229), and 46% were Hispanic (n = 7,555). The average age was 33.7 years. The risk profile of the sample for FTA was 20%, 17%, 25%, 16%, 15%, and 8% for PSA risk categories I through VI, respectively [PSA Risk Category I = Lowest Risk; PSA Risk Category VI = Highest Risk]. For NCA, the distribution of actuarial risk was 15%, 21%,

21%, 23%, 11%, and 8%. Given the unique use of the PSA in Bernalillo County exclusively for felony-only cases, all detained individuals within our sample had been arrested and booked for a felony, most commonly fourth-degree felonies [F4] (69%; *n* = 11,443). Most individuals were detained for more than 24 hours (84%; *n* = 13,857), with an average detention length of 10.1 days and a median detention length of two days. Eighty percent of individuals were detained for a week or less (*n* = 13,209).

Table 1.
Descriptive Statistics, Entire Sample

Variable	**N**	**%**
Sex		
Male	12,229	74%
Female	4,271	26%
Race-Ethnicity		
Hispanic	7,555	46%
White	5,354	32%
Indian	1,296	8%
Black	1,203	7%
Other	1.092	7%
Age Groups		
18-24	2,686	16%
25-34	7,082	43%
35-44	4,120	25%
45-54	1,764	11%
54-64	701	4%
65+	116	1%
Risk of FTA (PSA)		
I	3,237	20%
II	2,766	17%
III	4,105	25%
IV	2,550	16%
V	2,499	15%
VI	1,343	8%
Risk of NCA (PSA)		
I	2,423	15%
II	3,537	21%
III	3,457	21%
IV	3,837	23%
V	1,885	11%
VI	1,361	8%
Booking Offense		
Felony: First Degree (F1)	148	1%
Felony: Second Degree (F2)	1,185	7%
Felony: Third Degree (F3)	3,713	23%
Felony: Fourth Degree (F4)	11,443	69%
Booking Offense		
Non-Violent	9,818	60%
Violent	6,629	40%
Pretrial Detention Length		
Under 24 hours	2,643	16%

24 hours +	13,857	84%
Predisposition Failure to Appear		
No	13,156	80%
Yes	3,344	20%
Predisposition New Criminal Activity		
No	13,300	81%
Yes	3,200	19%
Predisposition New Violent Criminal Activity		
No	15,640	95%
Yes	860	5%
Postdisposition New Criminal Activity (18 Months)		
No	8,766	56%
Yes	6,758	44%
Postdisposition New Violent Criminal Activity (18 Months)		
No	12,572	81%
Yes	2,952	19%

Which Factors Predicted Pretrial Detention Length?

We present average and median detention length by PTD motion filing status and by race and sex in Tables 2 - 4. Tables 2 through 4 suggest a few things about the relationship between pretrial detention length and PTD motion status. First, the length of pretrial detention was conditional on filing a PTD motion, which makes intuitive sense. That is, since a PTD motion is a legal request made by prosecutors asking a court to detain a defendant pending trial, cases in which PTD motions were either filed and dismissed or granted, relative to cases where a PTD motion was not filed, were cases where we would naturally anticipate more extended detention periods given additional administrative time to adjudicate the PTD motion. Cases, where PTD motions were granted, had significantly higher detention lengths than cases where PTD motions were filed and subsequently dismissed. Additionally, cases where PTD motions were filed and subsequently dismissed had significantly higher detention lengths than most where PTD motions were not filed.

Table 2.
Average and Median Detention Length of Stay in Days by PTD Status (n = 16,500)

	Count	**Average**	**Median**
No PTD Motions Filed	14,510	8	2
PTD Motion Filed: Granted	186	129	100
PTD Motion Filed: Dismissed	1,611	15	8

Table 3.
Average and Median Detention Length of Stay in Days by Race and PTD Status (n = 16,500)

	Average	**Median**
Hispanic (*n* = 7,555)	9.0	2
No PTD Motions Filed	6.5	2
PTD Motion Filed: Granted	135.6	97
PTD Motion Filed: Dismissed	14.1	8
White (*n* = 5,354)	9.6	2
No PTD Motions Filed	7.6	2
PTD Motion Filed: Granted	119.6	84.5
PTD Motion Filed: Dismissed	16.1	8
Indian (*n* = 1,296)	10.0	2
No PTD Motions Filed	7.5	2
PTD Motion Filed: Granted	134.4	119.5
PTD Motion Filed: Dismissed	15.1	8
Black (*n* = 1,203)	11.4	3
No PTD Motions Filed	9.3	2
PTD Motion Filed: Granted	132.9	151
PTD Motion Filed: Dismissed	16.5	8
Unknown (*n* = 1,092)	19.0	3
No PTD Motions Filed	18.7	2
PTD Motion Filed: Granted	109.7	119
PTD Motion Filed: Dismissed	16.1	7

Table 4.
Average and Median Detention Length of Stay in Days by Sex and PTD Status (n = 16,500)

	Average	**Median**
Male (*n* = 12,229)	11.0	3
No PTD Motion Filed	8.6	2
PTD Motion Filed: Granted	130.4	120
PTD Motion Filed: Dismissed	15.4	8
Female (*n* = 4,271)	7.5	2
No PTD Motion Filed	6.2	2
PTD Motion Filed: Granted	124.5	95
PTD Motion Filed: Dismissed	14.1	8

In Table 5, we evaluated which factors predicted pretrial detention length. We operationalized our dependent variable as the rounded number of days a detained individual was held in pretrial detention at the MDC (Average: 10.1 days; Median: 2 days). Given the positive skew of the detention length variable and the results of overdispersion tests indicating a departure from Poisson assumptions, we used a

negative binomial model.[2] To predict the number of days an individual was detained as a function of whether a PTD motion was filed, felony class, whether the primary charge involved violence (0 = Nonviolent; 1 = Violent), PSA risk score, and the detained individual's race, age, and sex. We also included year-fixed effects within the model to adjust for seasonality and unobserved heterogeneit

Table 5.
Negative Binomial Model Predicting Days Detained (n = 16,421)[3]

	Days Detained (1)
PTD Motion: Filed	1.36*** (0.03)
PSA Risk Score	0.08*** (0.00)
Source Charge: Violent	0.04*** (0.02)
Felony Class: Second Degree Felony	-0.78*** (0.1)
Felony Class: Third Degree Felony	-1.05*** (0.1)
Felony Class: Fourth Degree Felony	-1.07*** (0.1)
Sex: Male	0.20*** (0.02)
Age	-0.01*** (0.00)
Race: Black	0.27*** (0.04)
Race: Indian	0.05 (0.04)
Race: Unknown	0.89*** (0.04)
Race: White	0.17*** (0.02)
Fixed Effects (Year)	YES
Constant	1.8*** (0.1)
Observations	16,421
Log Likelihood	-49,577.0
theta	0.9*** (0.01)
Akaike Inf. Crit.	99,190.1

Note: * indicates a p-value <0.10. ** indicates a p-value < 0.05. *** indicates a p-value < 0.01.

Results from Table 5 indicate that (1) detained individuals with filed PTD motions, (2) detained individuals with higher estimated risk as given by higher PSA scores, (3) detained individuals with violent booking charges relative to non-violent booking charges, (4) detained individuals with more severe felonies, (5) males relative to females, (6) younger detained individuals relative to older detained individuals, and (5) White and Black detained individuals – relative to Hispanic detained individuals – were statistically significantly more likely to be detained pretrial for longer durations all else equal.

Which Factors Predicted Predisposition FTA, NCA, and NVCA Outcomes?

Our three predisposition outcome measures included failure to appear for at least one court hearing during the pretrial release period (FTA: 0 = No; 1 = Yes), rearrest for a new offense during the period of pretrial

[2] In the context of count data analysis, overdispersion suggests that the observed variation in the data is larger than what can be explained by a Poisson distribution, which assumes that the mean and variance of the data are equal.
[3] Reference category for PTD Motion is No Motion Filed. Reference category for Source Charge is Non-Violent. Reference category for Felony Class is First Degree Felony. Reference category for Judge Adherence is Judge Adhered to Conditions of Release recommended by the PSA. Reference category for Sex is Female. Reference category for Race is Hispanic.

release (NCA: 0 = No; 1 = Yes), and rearrest for a new violent crime during the period of pretrial release (NVCA: 0 = No; 1 = Yes). Predisposition base rates of FTA, NCA, and NVCA outcomes were 20%, 19%, and 5%, respectively. As we were primarily interested in exploring the relationship between detention length and failure rates, we present empirical failure rates by the number of days detained in Table 6. We follow Lowenkamp, VanNostrand, and Holsinger's (2013) binning template for detention length categories. From Table 6, we observe that as detention length increased, through the first four weeks of detention, failure rates across FTA, NCA, and NVCA increased before decreasing following a month or more of detention.

Table 6.
Predisposition FTA, NCA, and NVCA Rates by Detention Length

Detention Length	Count	FTA	NCA	NVCA	Median Time at Risk
1 Day	2,221	15%	14%	4%	49 days
2-3 Days	6,788	16%	17%	4%	49 days
4-7 Days	1,983	22%	22%	7%	60 days
8-14 Days	981	26%	25%	8%	85 days
15-30 Days	789	41%	34%	9%	119 days
31+ Days	626	31%	28%	7%	123 days

We used logistic regression to predict predisposition FTA, NCA, and NVCA odds as a function of detention length category, whether a preventative detention motion was filed, PSA risk score, length of pretrial exposure, whether a judge deviated from PSA COR recommendations, whether a charge was violent or non-violent, felony class, race, age, sex, and year fixed effects. We follow Holsinger et al. (2023) and exclude cases where an individual's exposure time was less than three weeks and more than 365 days. We exclude individuals who were detained 90% or more of their pretrial period given a lack of meaningful exposure time to fail. We present results in Table 7 as odds ratios (ORs)[4][5].

From Table 7, we observe that the odds ratios for some detention periods were significantly elevated for FTA compared to the reference group of one day detained for the first month of detention, after which failure odds declined[6]. Individuals detained for 8-14 days, relative to those detained for one day, had a 47% increase in the odds of FTA. Individuals detained for 15 – 30 days, relative to those detained one day or less, had a 63% increase in the odds of FTA. These findings are consistent with the bivariate failure rates identified in Table 6, even after accounting for variance in exposure length. We also observed that relative to individuals who were detained one day, individuals detained for 4 – 30 days had significantly higher odds of NCA.

[4] In Appendix A, we include a pair plot which shows correlations between all predictor variables with one another in relation to our outcome variable of interest (i.e., FTA) where black dots represent individuals who did not FTA in the pretrial period and red dot represent individuals who did FTA in the pretrial period.
[5] In Appendix B, we present results of Variance Inflation Factor (VIF) tests designed to evaluate whether multicollinearity was present within the model. Results suggest acceptable levels of multicollinearity (i.e., all VIFs were < 5).
[6] Note, the finding of a reduced effect of 31+ day detention lengths on FTA, NCA, and NVCA outcomes is consistent with a pattern observed in Lowenkamp et al., (2013) who reported: "Every category in ascending order (2 to 3 days through 31 or more days) was associated with a significant increase in the likelihood of NCA; however, the impact of 31 or more days was not as large as the impact of other detention time periods" (pg., 15).

Table 7.
ORs of Logistic Model Results Predicting Predisposition FTA, NCA, and NVCA Outcomes (n = 16,422)[7]

	FTA	**NCA_YN**	**NVCA_YN**
	(2)	**(3)**	**(4)**
Detention Length: 2-3 Days	1.01 (0.08)	1.12 (0.08)	1.08 (0.14)
Detention Length: 4-7 Days	1.04 (0.11)	**1.25** ** **(0.11)**	**1.40** ** **(0.22)**
Detention Length: 8-14 Days	**1.47** *** **(0.19)**	**1.31** ** **(0.15)**	**1.38** * **(0.27)**
Detention Length: 15-30 Days	**1.62** *** **(0.22)**	**1.46** *** **(0.18)**	1.22 (0.25)
Detention Length: 31+ Days	1.21 (0.22)	1.18 (0.19)	0.80 (0.23)
PTD Motion: Filed	0.41*** (0.05)	1.24** (0.12)	1.06 (0.16)
Days of Pretrial Exposure	1.02*** (0.000)	1.00*** (0.000)	1.00*** (0.000)
Percent of Pretrial Period Detained: 25 – 50%	0.77 (0.12)	0.98 (0.14)	1.42 (0.32)
Percent of Pretrial Period Detained: 51 – 75%	0.83 (0.25)	0.54** (0.15)	1.09 (0.50)
Percent of Pretrial Period Detained: 76 -90%	0.35 (0.26)	0.28** (0.17)	1.18 (0.95)
PSA Score	1.08*** (0.004)	1.06*** (0.004)	1.05*** (0.01)
Judge Adhered to PSA COR Recommendations	1.32*** (0.10)	1.10 (0.07)	1.02 (0.11)
Source Case: Violent	0.52*** (0.04)	0.71*** (0.04)	2.20*** (0.20)
Felony Class: Second Degree Felony	0.79 (0.29)	1.64 (0.59)	1.41 (0.85)
Felony Class: Third Degree Felony	0.92 (0.32)	1.67 (0.58)	2.20 (1.31)
Felony Class: Fourth Degree Felony	1.12 (0.39)	1.99** (0.69)	2.86* (1.70)
Sex: Male	0.99 (0.06)	1.44*** (0.08)	1.46*** (0.15)
Age (Years)	0.99*** (0.003)	0.97*** (0.002)	0.98*** (0.004)
Race: Black	1.18 (0.13)	1.07 (0.10)	1.21 (0.17)
Race: Indian	1.29** (0.13)	0.77*** (0.07)	1.09 (0.16)
Race: White	0.96 (0.06)	1.01 (0.05)	0.88 (0.08)
Year (Fixed Effects)	Yes	Yes	Yes
Constant	0.01*** (0.003)	0.07*** (0.03)	0.02*** (0.01)
Observations	12,489	12,489	12,489
Log Likelihood	-4,396.77	-5,608.66	-2,431.68
Akaike Inf. Crit.	8,847.55	11,271.32	4,917.37

Note: * indicates a p-value <0.10. ** indicates a p-value < 0.05. *** indicates a p-value < 0.01.

Using random forest modeling, we also explored which factors were most predictive of FTA, NCA, and NVCA rates. Random forests are an ensemble learning method[8] that involves the creation of multiple

[7] Reference category for Detention Length is one day of detention. Reference category for Percent Pretrial Period Detained is 0 – 25%. Reference category PTD Motion is No Motion Filed. Reference category for Source Charge is Non-Violent. Reference category for Felony Class is First Degree Felony. Reference category for Judge Adherence is Judge Adhered to Conditions of Release recommended by the PSA. Reference category for Sex is Female. Reference category for Race is Hispanic.

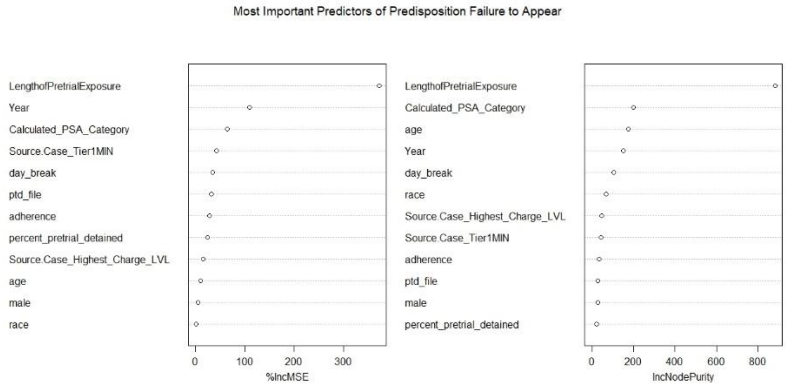
[8] Ensemble learning is a machine learning technique that combines multiple models or algorithms to obtain better predictive performance than any single model could achieve alone. The main principle behind ensemble methods is to combine the predictions of several base estimators built with a given learning algorithm to improve robustness over a single estimator.

decision trees during training and outputs the mean prediction of the individual trees. They help reduce overfitting and improve prediction accuracy by aggregating the results of many trees, each trained on a random subset of the data with replacement. We created a series of variable importance plots (VIPs) from these random forest models, which rank regression predictors based on their contribution to the model's performance. Variables with higher importance values have a more substantial impact on improving the model's predictive accuracy.

We present the results of the VIPs predicting predisposition FTA, NCA, and NVCA in Figures 1 – 3. For Figures 1 – 3, the relevant portion of the visualization is the visualization on the left side, which shows the percentage change in mean squared error (MSE) conditional on removing a specific predictor from the model. A higher "%IncMSE" value for a particular predictor variable indicates that when that variable is permuted randomly (i.e., its values are shuffled), it increases the model's MSE compared to other variables. This suggests that the variable is more important in predicting the relevant outcomes.

Figure 1.

Most Important Predictors of Predisposition FTA from Random Forest Models[9]



[9] Variables retained their original naming for these visualizations. Calculated_PSA_Category represents an individual's PSA scores. LengthofPretrialExposure represents the number of days an individual was at risk in the community. Source.Case_Tier1MIN represents whether the source case involved violence or not. Source.Case_Highest_Charge_LVL represents the felony class. age represents Age. Year represents year fixed effects. ptd_file represents whether a preventative detention motion was filed. day_break represents the specific day categories used. adherence represents whether the judge adhered to the COR recommendations of the PSA or deviated.

Figure 2.
Most Important Predictors of Predisposition NCA from Random Forest Models

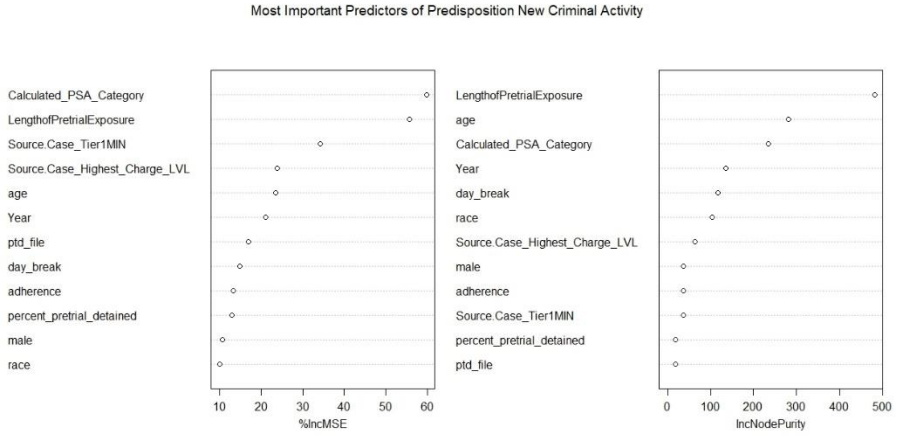
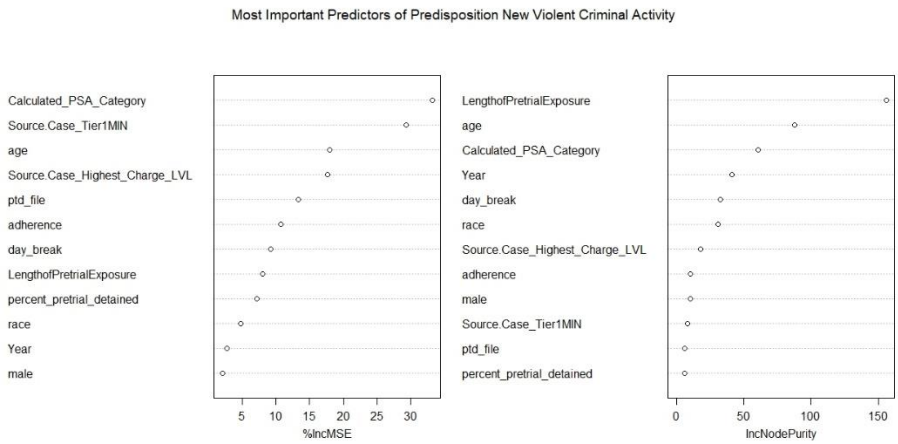


Figure 3.
Most Important Predictors of Predisposition NVCA from Random Forest Models



Results of Figures 1 – 3 suggest a few interesting things about the relationship between the predictor set and predisposition FTA, NCA, and NVCA outcomes. First, detention length, represented by the *day_break* variable, was a more important predictor of FTA, NCA, and NVCA outcomes than sex, race, and the percentage of time an individual was detained in the pretrial period across all three models. Out of 12 predictors, detention length was the fifth most important predictor of FTA, the eighth most important predictor of NCA, and the seventh most important predictor of NVCA. An individual's score on the PSA was within the top three predictors across all three models, and exposure time was within the top three most important predictors for the FTA and NCA models.

To explore variation in the relationship between detention length, individual characteristics (e.g., race, sex, age, PSA risk level), and FTA, NCA, and NVCA predisposition outcomes, we report the main parameter results of several additional logistic regression models calculated for the following subgroups in Table 8: Hispanics, Whites, Indians, Blacks, males, females, and PSA risk levels I—VI.

Table 8.

Parameter Estimates for Logistic Regression Analyses Predicting Predisposition FTA, NCA, and NVCA[10]

Group	Detention Length (Reference = 1 Day)	OR - FTA	OR - NCA	OR - NVCA
Hispanic	2-3 Days	0.91	1.08	1.09
6,124	4-7 Days	1.00	1.22	1.77**
	8-14 Days	1.47**	1.30	1.43
	15-30 Days	1.93***	1.44**	1.38
	31+ Days	1.53	0.91	0.76
White	2-3 Days	1.34*	1.20	1.19
4,349	4-7 Days	1.17	1.40**	1.58
	8-14 Days	1.56*	1.54**	2.17**
	15-30 Days	1.25	1.46*	1.50
	31+ Days	0.93	1.78**	1.74
Indian	2-3 Days	0.76	1.58	1.59
1,065	4-7 Days	1.17	1.66	1.03
	8-14 Days	0.82	1.09	0.99
	15-30 Days	1.56	1.35	0.79
	31+ Days	1.60	0.79	0.23
Black	2-3 Days	0.98	0.80	0.55
952	4-7 Days	0.88	0.77	0.33**
	8-14 Days	1.84	1.10	0.39
	15-30 Days	2.62**	1.76	0.43
	31+ Days	1.04	0.74	0.15**
Male	2-3 Days	0.99	1.08	1.06
9,895	4-7 Days	1.00	1.21*	1.13
	8-14 Days	1.53**	1.27*	1.26
	15-30 Days	1.75***	1.46***	1.12
	31+ Days	1.28	1.19	0.73
Female	2-3 Days	1.03	1.27	1.15
3,460	4-7 Days	1.18	1.42*	2.86***
	8-14 Days	1.21	1.47	1.81
	15-30 Days	1.30	1.49	1.40
	31+ Days	1.06	1.07	0.70
Age: 18-24	2-3 Days	1.21	1.36*	1.72
2,029	4-7 Days	0.84	1.40	2.32*
	8-14 Days	1.94*	1.60	2.08
	15-30 Days	3.19***	1.53	2.33
	31+ Days	2.05	1.39	1.48
Age: 25-34	2-3 Days	0.98	0.96	1.10
5,363	4-7 Days	1.02	1.04	1.57*
	8-14 Days	1.38*	1.10	1.80**
	15-30 Days	1.37	1.45**	1.61
	31+ Days	1.10	1.04	1.06
Age: 35-44	2-3 Days	0.78	1.14	0.59**
3,126	4-7 Days	1.02	1.30	0.81

[10]Results of logistic models which include same set of controls as before. Note * indicates a p-value <0.10. ** indicates a p-value < 0.05. *** indicates a p-value < 0.01.

	8-14 Days	1.12	1.22	0.70
	15-30 Days	1.26	1.28	0.45*
	31+ Days	0.86	0.92	0.32*
Age: 45-54	2-3 Days	1.61*	1.56*	1.61
1,342	4-7 Days	1.58	1.87**	1.28
	8-14 Days	2.45**	2.53**	1.15
	15-30 Days	3.26***	2.19*	0.89
	31+ Days	2.13	4.24**	1.09
Age: 55-64	2-3 Days	1.08	1.44	3.84
539	4-7 Days	0.73	2.54	4.88
	8-14 Days	1.85	1.14	3.53
	15-30 Days	1.91	0.68	2.36
	31+ Days	0.79	0.55	0.00
PSA - Level I	2-3 Days	1.15	1.24	1.46
3,894	4-7 Days	1.58	1.49	2.67**
	8-14 Days	4.15***	2.32**	3.57**
	15-30 Days	7.58***	1.21	0.66
	31+ Days	1.77	0.60	0.41
PSA - Level II	2-3 Days	0.90	1.16	1.42
1,804	4-7 Days	1.12	1.08	2.95**
	8-14 Days	2.42**	1.53	6.15**
	15-30 Days	0.39	2.02	7.44***
	31+ Days	0.56	0.99	4.68
PSA - Level III	2-3 Days	0.87	1.02	0.78
2,063	4-7 Days	0.94	0.87	0.54
	8-14 Days	1.37	0.71	0.21***
	15-30 Days	1.91*	0.96	0.45
	31+ Days	0.38	0.86	0.13**
PSA - Level IV	2-3 Days	1.09	1.08	1.24
2,896	4-7 Days	0.86	1.45**	1.13
	8-14 Days	0.91	1.30	1.13
	15-30 Days	1.18	1.34	0.83
	31+ Days	0.83	1.32	0.96
PSA - Level V	2-3 Days	1.41	0.84	0.38*
579	4-7 Days	1.58	1.23	1.38
	8-14 Days	2.16	1.06	1.38
	15-30 Days	3.97**	1.26	1.39
	31+ Days	1.58	1.00	0.57
PSA - Level VI	2-3 Days	0.93	1.24	1.14
2,119	4-7 Days	1.20	1.31	1.38
	8-14 Days	1.51	1.38	1.38
	15-30 Days	1.68**	1.64**	1.19
	31+ Days	1.88*	1.31	0.80

Table 8 reveals differences across groups with respect to the relationship between detention length and predisposition FTA, NCA, and NVCA outcomes. For example, the finding of a consistently positive relationship between detention length and increased FTA rates through the first four weeks of detention (i.e., relative to those detained for less than one week, those detained in each subsequent week experienced significantly increasing FTA rates through four weeks of detention) holds among the

Hispanic subpopulations. However, for other race-ethnicity groups, there is less of a consistent relationship between detention length and FTA (e.g., detention length was not a significant predictor among Native Americans). More strikingly, the relationship between detention length and predisposition FTA odds is strongly conditioned by sex. The risk of FTA significantly increased among detained males when detained between 8 and 30 days. In contrast, there was no statistically significant relationship between detention length and FTA rates for detained females at any level of detention length. While we identified variance across groups in the strength of the relationship between detention length and failure, we could not evaluate the causal mechanisms responsible for such variation.

More generally, when statistically significant results were observed, they tended to signal increased odds of failure for lengthier detentions until detention length reached 31 or more days. On balance, detention lengths between 8-14 days and 15-30 days tended to be most consistently associated with increased failure odds relative to individuals detained for only one day within and across groups. These findings are consistent with theoretical predictions that increased detention length may have detrimental effects on failure rates. However, they are at odds with recent findings (e.g., Holsinger et al., 2023, reported a null relationship between detention length and FTA).

Which Factors Predicted Postdisposition NCA and NVCA?

Our postdisposition outcome measures included rearrest for a new offense postdisposition (NCA: 0 = No; 1 = Yes) and rearrest for a new violent offense following case disposition (NVCA: 0 = No; 1 = Yes). We follow Holsinger et al. (2023) and exclude cases where an individual's exposure time was less than three weeks and more than 365 days. We exclude individuals who were detained 90% or more of their pretrial period given a lack of meaningful exposure time to fail. This reduces the sample by 18.9% (n = 3,111). We also excluded the analysis of cases where race was unknown. This further reduces the sample by 5.4% (n = 887).

We present postdisposition rates of NCA and NVCA outcomes by postdisposition period in Table 11.

Table 11.
NCA and NVCA Rates by Postdisposition Time Period

Postdisposition Time Period	Count	NCA-PD	NVCA-PD
Six months postdisposition	11,534	29.8%	10.1%
12 months postdisposition)	11,534	41.6%	15.7%
18 months postdisposition	11,534	48.4%	19.7%
24 months postdisposition*	10,681	53.0%	22.5%
30 months postdisposition*	9,774	56.5%	24.7%
36 months postdisposition*	8,383	56.6%	24.8%

Note: * All sampled individuals had at least 18 months of postdisposition data. Postdisposition NCA and NVCA rates from 24 months onwards are not directly comparable to rates before 18 months, given sample attrition (i.e., the dropping of individuals who did not have at least 24 or more months of post-disposition case data available).

As we are primarily interested in exploring the relationship between detention length and failure rates, we present empirical failure rates by the number of days detained in Table 12 below.

Table 12.
NCA and NVCA Rates by Postdisposition Time Period and Detention Length

	NCA – 6 Months	NCA – 12 Months	NCA – 18 Months	NVCA – 6 Months	NVCA – 12 Months	NVCA – 18 Months
1 Day (n = 1,939)	27.7%	38.8%	45.9%	8.4%	13.3%	17.1%
2-3 Days (n = 5,898)	29.1%	40.9%	47.6%	9.2%	14.5%	18.1%
4-7 Days (n = 1,722)	30.5%	41.1%	47.2%	12.2%	18.1%	22.0%
8-14 Days (n = 843)	30.1%	42.1%	49.9%	13.0%	19.8%	24.0%
15-30 Days (n = 653)	40.9%	55.4%	61.3%	13.2%	21.3%	27.6%
31+ Days (n = 479)	28.8%	42.8%	50.7%	10.6%	17.3%	23.0%

Like predisposition outcomes for NCA and NVCA, as detention length increased through the first four weeks of detention, empirical failure rates for NCA and NVCA increased before decreasing following a month or more of detention.

We used logistic regression to predict postdisposition NCA and NVCA odds as a function of detention length, felony class, whether the source charge involved violence, PSA risk score, whether a judge deviated from PSA COR recommendations, detained individual race, age, and sex, adjusting for year fixed effects. We present the results of the NCA models in Table 13 and the NVCA models in Table 14.

From Table 13, we observe that six months post-disposition, a detention length of 15-30 days is associated with a significant increase in the odds of NCA (OR = 1.28, $p < 0.05$). In contrast, other detention length categories show no significant effects. At 12 months post-disposition, a detention length of 15-30 days continues to be associated with significantly higher odds of NCA (OR = 1.36, $p < 0.01$), whereas other detention length categories remain non-significant. At 18 months post-disposition, no detention length categories show significant effects on NCA odds at this time point.

Table 13.
ORs from Logistic Model Results Predicting Postdisposition NCA at Six, Twelve, and Eighteen Months (n = 11,516)[11]

	Dependent variable:		
	NCA6	**NCA12**	**NCA18**
	(5)	**(6)**	**(7)**
Detention Length: 2-3 Days	1.01 (0.06)	1.03 (0.06)	1.01 (0.06)
Detention Length: 4-7 Days	1.04 (0.08)	0.98 (0.07)	0.93 (0.07)
Detention Length: 8-14 Days	1.06 (0.11)	1.08 (0.11)	1.08 (0.11)
Detention Length: 15-30 Days	1.28** (0.15)	1.36*** (0.15)	1.16 (0.13)
Detention Length: 31+ Days	0.83 (0.14)	0.92 (0.14)	0.86 (0.13)
PTD Motion: Filed	0.86 (0.08)	0.88 (0.08)	0.81** (0.07)
Days of Pretrial Exposure	1.00*** (0.000)	1.00*** (0.000)	1.00*** (0.000)
Percent of Pretrial Period Detained: 25-50%	0.82 (0.11)	0.83 (0.11)	0.94 (0.12)
Percent of Pretrial Period Detained: 51-75%	1.17 (0.27)	0.97 (0.22)	0.89 (0.20)
Percent of Pretrial Period Detained: 76-90%	0.41* (0.20)	0.61 (0.25)	0.51* (0.21)
PSA Score	1.07*** (0.003)	1.07*** (0.003)	1.08*** (0.003)
PSA Adherence	1.10* (0.06)	1.16*** (0.06)	1.11* (0.06)
Source Case: Non-Violent	1.14** (0.06)	1.16*** (0.05)	1.16*** (0.05)
Felony Class: Second Degree Felony	0.63* (0.16)	0.69 (0.16)	0.73 (0.17)
Felony Class: Third Degree Felony	0.75 (0.18)	0.82 (0.19)	0.85 (0.19)
Felony Class: Fourth Degree Felony	0.83 (0.20)	0.93 (0.21)	0.98 (0.22)
Sex: Male	1.27*** (0.06)	1.27*** (0.06)	1.26*** (0.06)
Race: Black	1.03 (0.08)	1.01 (0.08)	1.01 (0.08)
Race: Indian	0.82** (0.07)	0.98 (0.07)	1.04 (0.08)
Race: White	0.84*** (0.04)	0.83*** (0.04)	0.86*** (0.04)
Age (Years)	0.97*** (0.002)	0.97*** (0.002)	0.97*** (0.002)
Year (Fixed Effects)	Yes	Yes	Yes
Constant	0.81 (0.21)	1.11 (0.28)	1.46 (0.36)
Observations	11,516	11,516	11,516
Log Likelihood	-6,601.57	-7,292.48	-7,374.64
Akaike Inf. Crit.	13,257.15	14,638.96	14,803.28
Note:			*p**p***p<0.01

From Table 14, in the six months following case resolution, we observe that detention lengths of 4-7 days (OR = 0.30, $p < 0.05$) and 8-14 days (OR = 0.30, $p < 0.05$) are associated with significantly lower odds of NVCA compared to shorter detentions. Detention length of 15-30 days shows a marginally significant decrease in NVCA odds (OR = 0.30, $p < 0.1$). In the 12 months following case resolution, detention

[11] Reference category for PTD Motion is No Motion Filed. Reference category for Source Charge is Non-Violent. Reference category for Felony Class is First Degree Felony. Reference category for Judge Adherence is Judge Adhered to Conditions of Release recommended by the PSA. Reference category for Sex is Female. Reference category for Race is Hispanic.

lengths of 4-7 days (OR = 0.30, $p < 0.01$), 8-14 days (OR = 0.30, $p < 0.01$), and 15-30 days (OR = 0.40, $p < 0.01$) are all associated with significantly lower odds of NVCA. In the 18 months following case resolution, the pattern remains similar, with detention lengths of 4-7 days (OR = 0.20, $p < 0.05$), 8-14 days (OR = 0.30, $p < 0.05$), and 15-30 days (OR = 0.40, $p < 0.01$) all associated with significantly lower odds of NVCA.

Table 14.
ORs from Logistic Model Results Predicting Postdisposition NVCA at Six, Twelve, and Eighteen Months (n = 11,516)[12]

Results

	Dependent variable:		
	NVCA6	**NVCA12**	**NVCA18**
	(8)	**(9)**	**(10)**
Detention Length: 2-3 Days	0.04 (0.1)	0.1 (0.1)	0.01 (0.1)
Detention Length: 4-7 Days	0.3** (0.1)	0.3*** (0.1)	0.2** (0.1)
Detention Length: 8-14 Days	0.3** (0.2)	0.3*** (0.1)	0.3** (0.1)
Detention Length: 15-30 Days	0.3* (0.2)	0.4*** (0.1)	0.4*** (0.1)
Detention Length: 31+ Days	0.1 (0.2)	0.3 (0.2)	0.3* (0.2)
PTD Motion: Filed	-0.1 (0.1)	-0.2* (0.1)	-0.2* (0.1)
Days of Pretrial Exposure	-0.00*** (0.00)	-0.00*** (0.00)	-0.00*** (0.00)
Percent of Pretrial Period Detained: 25-50%	-0.1 (0.2)	-0.2 (0.2)	-0.04 (0.1)
Percent of Pretrial Period Detained: 51-75%	0.2 (0.3)	0.1 (0.3)	-0.1 (0.3)
Percent of Pretrial Period Detained: 76-90%	-1.7 (1.0)	-2.3** (1.0)	-2.6** (1.0)
PSA Score	0.04*** (0.00)	0.04*** (0.00)	0.05*** (0.00)
Judge Adhered to PSA COR Recommendations	0.04 (0.1)	0.1 (0.1)	0.1 (0.1)
Source Case: Non-Violent	-0.8*** (0.1)	-0.8*** (0.1)	-0.8*** (0.1)
Felony Class: Second Degree Felony	-0.2 (0.3)	-0.2 (0.3)	-0.2 (0.3)
Felony Class: Third Degree Felony	-0.1 (0.3)	-0.1 (0.3)	-0.02 (0.3)
Felony Class: Fourth Degree Felony	0.04 (0.3)	0.1 (0.3)	0.1 (0.3)
Sex: Male	0.3*** (0.1)	0.3*** (0.1)	0.4*** (0.1)
Race: Black	0.3*** (0.1)	0.3*** (0.1)	0.2*** (0.1)
Race: Indian	-0.00 (0.1)	0.1 (0.1)	0.1 (0.1)
Race: White	-0.1 (0.1)	-0.1** (0.1)	-0.1** (0.1)
Age (Years)	-0.02*** (0.00)	-0.02*** (0.00)	-0.03*** (0.00)
Year (Fixed Effects)	Yes	Yes	Yes
Constant	-1.7*** (0.4)	-1.1*** (0.3)	-0.8*** (0.3)
Observations	11,516	11,516	11,516
Log Likelihood	-3,604.8	-4,772.1	-5,417.2
Akaike Inf. Crit.	7,263.7	9,598.2	10,888.4
Note:			*p**p***p<0.01

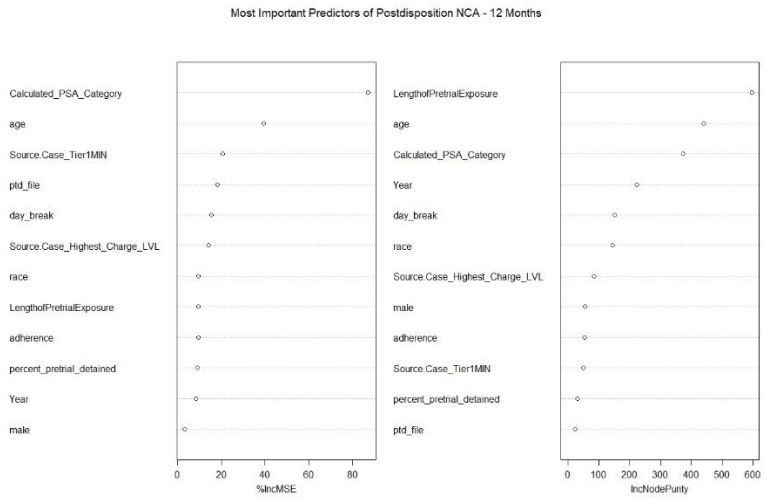
Using random forest modeling, we also explored which factors in Models 6 and 9 most predicted NCA and NVCA rates. We present the results of the VIPs predicting postdisposition NCA and NVCA at 12 months in Figures 4 – 5. Recall that for Figures 4 – 5, the relevant portion of the visualization is the

[12] Reference category for PTD Motion is No Motion Filed. Reference category for Source Charge is Non-Violent. Reference category for Felony Class is First Degree Felony. Reference category for Judge Adherence is Judge Adhered to Conditions of Release recommended by the PSA. Reference category for Sex is Female. Reference category for Race is Hispanic.

visualization on the left side, which shows the percentage change in mean squared error (MSE) conditional on removing a specific predictor from the model. A higher "%IncMSE" value for a particular predictor variable indicates that when that variable is permuted randomly (i.e., its values are shuffled), it increases the model's MSE compared to other variables. This suggests that the variable is more important in predicting the relevant outcomes.

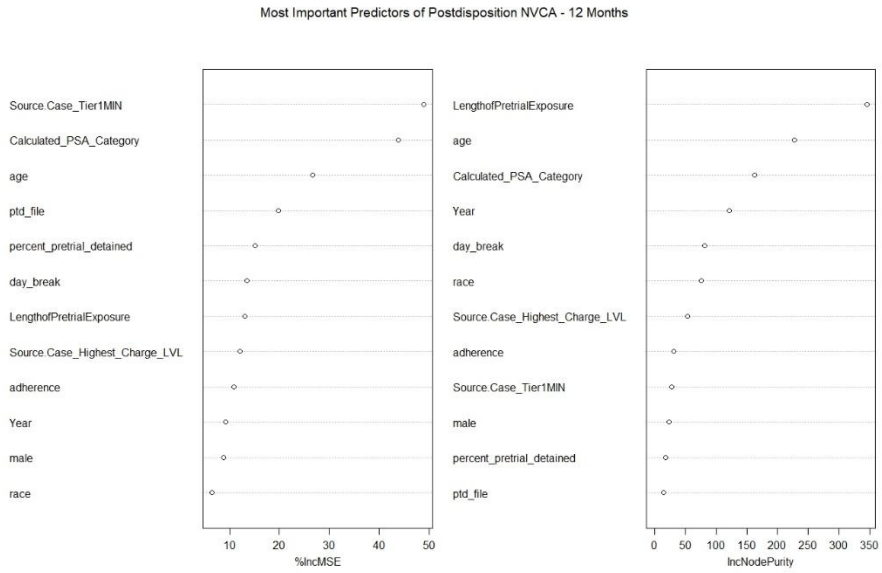
Figure 4.

Most Important Predictors of Postdisposition NCA 18 Months Following Case Disposition from Random Forest Models[13]



[13]Variables retained their original naming for these visualizations. Calculated_PSA_Category represents an individual's PSA score. LengthofPretrialExposure represents the number of days an individual was at risk in the community. Source.Case_Tier1MIN represents whether the source case involved violence or not. Source.Case_Highest_Charge_LVL represents the felony class. age represents Age. Year represents year fixed effects. ptd_file represents whether a preventative detention motion was filed. day_break represents the specific day categories used. adherence represents whether the judge adhered to the COR recommendations of the PSA or deviated.

Figure 5.
Most Important Predictors of Postdisposition NVCA 18 Months Following Case Disposition from Random Forest Models



To explore variation in the relationship between detention length, individual characteristics (i.e., race, sex, age, PSA risk level), and NCA and NVCA postdisposition outcomes, we report main parameter results of several additional logistic regression models calculated for the following subgroups in Table 15, specifically looking at NCA and NVCA rates 12 months (1 year) following case closure as a middle-point for our longer-term post-disposition estimates: Hispanics, Whites, Indians, Blacks, males, females, and PSA risk levels I - VI.

Table 15.
Parameter Estimates for Logistic Regression Analyses Predicting Postdisposition NCA and NVCA 18 Months Following Case Closure[14]

Group	Detention Length (Reference = 1 Day)	OR - NCA	OR - NVCA
Hispanic	2-3 Days	1.07	1.04
5,580	4-7 Days	1.13	1.41**
	8-14 Days	1.04	1.36*
	15-30 Days	1.51**	1.71***
	31+ Days	0.99	1.87**
White	2-3 Days	0.98	0.99
4,067	4-7 Days	0.83	1.25
	8-14 Days	1.05	1.28
	15-30 Days	1.09	1.47
	31+ Days	0.91	1.01
Indian	2-3 Days	0.97	1.05
1,002	4-7 Days	0.68	0.92
	8-14 Days	0.91	1.55
	15-30 Days	1.27	0.74
	31+ Days	0.78	0.94
Black	2-3 Days	1.28	1.55
875	4-7 Days	1.41	1.98*
	8-14 Days	2.47**	2.82**
	15-30 Days	2.21*	1.90
	31+ Days	0.70	1.18
Male	2-3 Days	1.01	1.00
8,519	4-7 Days	0.94	1.21*
	8-14 Days	1.05	1.37**
	15-30 Days	1.41***	1.41**
	31+ Days	0.99	1.27
Female	2-3 Days	1.11	1.28
2,997	4-7 Days	1.09	1.80**
	8-14 Days	1.18	1.53
	15-30 Days	1.25	1.97**
	31+ Days	0.66	1.59
Age: 18-24	2-3 Days	1.11	1.19
1,927	4-7 Days	1.11	1.59*
	8-14 Days	1.49	1.69*
	15-30 Days	1.21	1.38
	31+ Days	0.86	1.35
Age: 25-34	2-3 Days	1.04	1.08
4,948	4-7 Days	0.89	1.23
	8-14 Days	0.94	1.49**
	15-30 Days	1.34*	1.79***
	31+ Days	0.98	1.85**
Age: 35-44	2-3 Days	0.92	1.00

[14]Results of logistic models which include same set of controls as before. Note * indicates a p-value <0.10. ** indicates a p-value < 0.05. *** indicates a p-value < 0.01.

2,828	4-7 Days	0.96	1.26
	8-14 Days	1.04	1.21
	15-30 Days	1.57**	1.22
	31+ Days	0.77	0.80
Age: 45-54	2-3 Days	1.10	0.76
1,216	4-7 Days	1.05	1.10
	8-14 Days	0.84	1.04
	15-30 Days	1.11	0.74
	31+ Days	1.30	1.91
Age: 55-64	2-3 Days	1.16	1.06
507	4-7 Days	1.75	2.39
	8-14 Days	1.50	1.27
	15-30 Days	1.86	3.08
	31+ Days	0.56	NA
PSA - Level I	2-3 Days	1.05	0.87
3,392	4-7 Days	1.08	1.21
	8-14 Days	1.49	1.19
	15-30 Days	3.58***	2.00
	31+ Days	1.68	1.23
PSA - Level II	2-3 Days	0.97	0.89
1,570	4-7 Days	0.78	1.05
	8-14 Days	0.86	0.70
	15-30 Days	1.18	0.35
	31+ Days	0.34	0.66
PSA - Level III	2-3 Days	1.25*	1.50*
1,781	4-7 Days	0.89	1.78**
	8-14 Days	1.37	2.18**
	15-30 Days	1.48	1.71
	31+ Days	2.08	4.45***
PSA - Level IV	2-3 Days	0.79*	0.95
2,490	4-7 Days	0.89	1.01
	8-14 Days	0.95	1.14
	15-30 Days	1.08	1.45
	31+ Days	0.86	1.13
PSA - Level V	2-3 Days	1.50	2.00
502	4-7 Days	1.25	2.39*
	8-14 Days	1.44	2.17
	15-30 Days	1.82	2.46
	31+ Days	2.02	1.25
PSA - Level VI	2-3 Days	1.30	1.38
1,781	4-7 Days	1.20	1.75**
	8-14 Days	0.90	1.85**
	15-30 Days	1.41	1.76*
	31+ Days	0.81	1.51

As with Table 8, Table 15 reveals differences across groups with respect to the relationship between detention length and postdisposition NCA and NVCA outcomes. For example, the finding that being detained between 15-30 days significantly increases NCA odds holds for Hispanics (OR: 1.51) and

Blacks (OR: 2.21) but not for Whites or Native Americans. Additionally, the relationship between detention length and postdisposition NCA and NVCA is partially conditioned by sex. The risk of NCA significantly increased among detained males between 15 and 30 days. In contrast, there was no statistically significant relationship between detention length and NCA rates for detained females at any level of detention length. However, both males and females detained between 15 and 30 days had significantly elevated odds of NVCA relative to those detained for only one day. While we identified variance across groups in the strength of the relationship between detention length and failure, we could not evaluate the causal mechanisms responsible for such variation. We also note that the multiple comparisons problem may lead to over detection of false positives.

More generally, when statistically significant results were observed, they tended to signal increased odds of failure for lengthier detentions but uniquely for detention lengths between 15-30 days. On balance, detention lengths of 15-30 days tended to be most consistently associated with increased failure odds relative to individuals detained for only one day within and across groups. These findings are consistent with theoretical predictions that increased detention length may have detrimental effects on failure rates. However, they are at odds with recent findings (e.g., Holsinger et al., 2023, reported a null relationship between detention length and FTA). We also note a serious limitation to the postdisposition analyses: we cannot control for sentencing and subsequent incarceration, excluding defendants who were transferred to NMCD. The inability to control for postdisposition sentencing and incarceration may impact our estimates of the effects of detention length on outcomes if there is a theoretical reason to believe that sentencing outcomes (e.g., acquittal versus incarceration) covary with detention length categories predictably.

We also wanted to explore whether time to failure (i.e., time to first NCA post-disposition) varied as a function of detention length through 18 months post-disposition. To simplify the analysis, we created a dummy variable set equal to 0 if the detention length was one week or less and set equal to 1 if the detention length was one week or more. We used this as a threshold given that 80% of our sample had detention lengths of less than one week, and 20% had detention lengths longer than one week. Among the subset of non-censored data (i.e., cases where a failure was observed within 18 months), the average time to postdisposition NCA was 272 days, and the median amount to postdisposition NCA was 143 days.

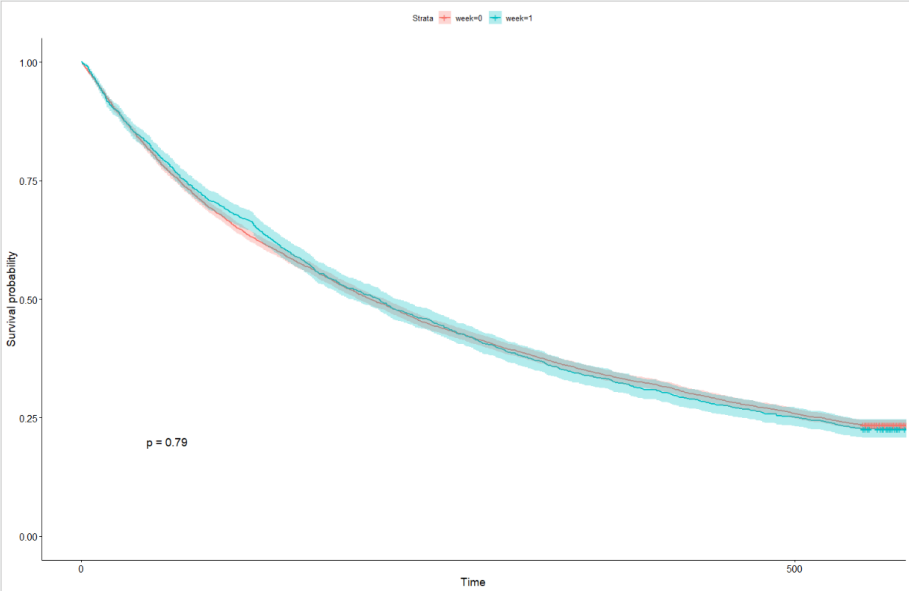
We used survival analysis to investigate the relationship between pretrial detention length and when a first postdisposition failure (i.e., NCA) occurred. We fitted a Cox proportional hazards model to the data with survival time specified as the dependent variable and detention length (0 = Less than or equal to one week; 1 = Longer than one week) as the independent variable.

The Cox proportional hazards model did not reveal a statistically significant relationship between survival time and detention length ($\chi^2 = 0.07$; $p = 0.80$). The coefficient for the detention length variable was estimated to be 0.01 (SE = 0.03, z = 0.27, p = 0.79), which indicates that the hazard (i.e., risk) of NCA occurring increased by a factor of 1.01 (95% CI: 0.95 - 1.07) when comparing those detained for less than a week to those detained for longer than a week, suggestive of a null effect of detention length. Similarly, we created Kaplan-Meier survival curves to visualize survival probabilities[15] through 18 months postdisposition. Figure 1 displays survival curves with 95% confidence intervals. Results suggest that pretrial detention length was not meaningfully associated with differences in survival probabilities, consistent with the main effects we observed in Tables 12 and 14, where detention length either had

[15] In this context, a survival probability refers to the likelihood that a detained individual will not have an NCA within 18 months following case disposition (i.e., remain event-free).

statistically significant but practically marginal effects on outcomes of interest or where outright null effects were observed.

Figure 1.
Survival Curves of NCA within 18 Months Postdisposition by Detention Length



Jail Costs Associated with Pretrial Detention

In October 2023, we obtained data from Bernalillo County that included the average cost of a jail bed day. The average direct cost of jail per day in fiscal year 2023 was $122.88 per day. Using the Bureau of Labor Statistics' inflation calculator and June 2022 as the reference point, we computed inflation-adjusted equivalent jail cost per day per detained individual between January 1, 2017, and March 1, 2022. We then multiplied the inflation-adjusted direct cost of jail per day by the number of days an individual was detained at the MDC for the whole sample period. The total estimated jail cost of pretrial detention between January 2017 and March 2022 for the subset of 16,500 detained individuals was $16,570,233. The average jail cost of pretrial detention per inmate was $1,004.32 per inmate, and the median jail cost of pretrial detention per inmate was $205.17. We provide the distribution of average and median jail costs across different subpopulations of detained individuals in Table 16 below. Note that average jail costs across groups represent differences in average detention length by group.

Table 16.
Average and Median Total Jail Costs of Detention and by Subpopulations in 2023 Dollars[16]

	Average Detention Length	Average Cost	Total Cost
Total		$1004.32	$16,570,233
Sex			
Male	11 days	$1,098	$13,432,384
Female	7 days	$734	$3,137,850
Race-Ethnicity			
Hispanic	9 days	$890	$6,728,928
White	9 days	$937	$5,016,832
Indian	10 days	$1,002	$1,298,946
Black	11 days	$1,161	$1,396,794
Age Group			
18-24	9 days	$867	$2,329,669
25-34	11 days	$1,066	$7,551,162
35-44	11 days	$1,093	$4,501,802
45-54	9 days	$870	$1,532,320
55-64	9 days	$837	$586,815
65+	4 days	$346	$40,135

It is important to analyze potential cost-avoidance among the subset of successful individuals detained in cases where success is defined as cases where predisposition FTA, NCA, and NVCA were not observed. Within the sample, 68% (n = 11,141) of individuals detained at MDC did not have a predisposition FTA, NCA, or NVCA event within the pretrial phase. Within this subset, we calculated the total number of detention days and multiplied detention days by inflation-adjusted jail costs. This analysis suggests that the MDC spent $10,598,752 over a five-and-a-quarter-year period, detaining individuals in the MDC who did not subsequently have a predisposition FTA, NCA, and NVCA event ($2,018,810 per year).

Table 17 reports the relationship between collapsed PSA scores, average and median detention lengths, and the percentages of individuals with FTA or NCA failures and no failure at each PSA risk level.

Table 17.
Detention Length and Pretrial Failure Frequencies by Collapsed PSA Score (n = 16,500)

PSA Score	Average (Median) Detention Length	% FTA	% NCA	% No Failure
1 (n = 4,613)	4.4 (2)	8.9%	9.2%	84.6%
2 (n = 2,216)	6.1 (2)	15.6%	15.0%	74.6%
3 (n = 2,588)	7.9 (2)	22.5%	19.8%	64.8%
4 (n = 3,584)	12.0 (3)	24.4%	24.1%	60.0%
5 (n = 750)	14.6 (4)	26.8%	29.1%	55.9%
6 (n = 2,749)	21.3 (5)	33.8%	30.9%	48.6%

It is important to stress that we cannot evaluate the counterfactual - whether success or failure would have been observed in the *absence of any detention time at all*. Thus, while these results may imply cost

[16] Note that there are minor differences between average cost and listed average detention length across groups due to rounding of detention days.

avoidance if detention length were reduced, these estimates likely overstate the scope of potential cost avoidance as for an unknown subset of the successful population, reductions in detention length may have increased FTA, NCA, or NVCA rates given the increased opportunity to fail (i.e., more exposure time). Having noted this, in Table 18, we present the estimated jail costs associated with defendants who were screened by the PSA as being the lowest failure risk (i.e., individuals who scored either a 1 or 2 on the PSA, respectively) who did not fail in the pretrial period by their detention length. In theory, these defendants represent the strongest candidates for earlier pretrial release given the intersection of low-risk levels with no observed pretrial failure and represent likely candidates for cost avoidance.

From Table 18, 33% of defendants who scored at the lowest risk on the PSA and did not fail in the pretrial period were detained for three or more days, costing the MDC $1,269,667 in inflation-adjusted jail costs. Approximately 9.2% of individuals who scored as the lowest risk on the PSA and did not fail in the pretrial period were detained for seven or more days, representing an overall jail cost of $946,361.80 in inflation-adjusted dollars. Similarly, Table 18 shows that 39.3% of defendants who scored at PSA level 2 and did not fail in the pretrial period were detained for three or more days, costing the MDC $827,326.30 in inflation-adjusted jail costs. Approximately 13.2% of defendants who scored at PSA level 2 and did not fail in the pretrial period were detained for seven or more days, representing an overall jail cost of $681,631.30 in inflation-adjusted dollars.

Table 18.

Of Those Who Did Not Fail in the Pretrial Period, the Percentage of Lowest Risk Individuals (Collapsed PSA Score = 1 or 2) Detained by Detention Length.

PSA Level	Detention Length	Percent	Total Jail Cost
1 (n = 3,903)	3+ Days (n = 1,287)	33.0%	$1,269,667.00
1 (n = 3,903)	7+ Days (n = 358)	9.2%	$946,361.80
2 (n = 1,653)	3+ Days (n = 649)	39.3%	$827,326.30
2 (n = 1,653)	7+ Days (n = 219)	13.2%	$681,641.30

However, it is important to note that this discussion overstates the true scope of cost avoidance as average since total average costs incorporate both fixed costs that do not fluctuate with prison population changes and variable costs that do. Average costs provide a simplified view, making it difficult to accurately forecast the financial impact of population shifts or assess the benefits of policies to reduce incarceration. In contrast, marginal costs focus on how total expenses change with variations in inmate numbers, which is a more accurate measure of the true per inmate cost-avoidance. In a 2021 scoping review, Wilson and Lemoine state:

> *If the policy and program changes and forecasts involve small-scale changes in prison populations when prisons are operating at less than full capacity, then the marginal cost estimates to be appropriately used will be much less than (at approximately 20% of) the average cost figures, and the use of average costs will significantly overstate cost savings or cost forecasts.* – Wilson and Lemoine 2021: 651.

Accordingly, we estimated the marginal costs of detention by applying the 20% short-run benchmark recommended by Wilson and Lemoine (2021). We present the average daily jail costs (total costs), average daily jail cost (marginal cost), and average PTS daily costs in Table 19. Note that average PTS costs are conservative, excluding electronic monitoring systems (EMS) costs.

Table 19.

Average Daily Costs of Jailing and PTS (Excluding EMS) in 2023 Dollars

Type of Cost	Cost
Average Daily Jail Cost (Total Costs)	$105.54
Average Daily Jail Cost (Marginal Costs)	$21.10
Average PTS Daily Costs (No EMS)	$8.17

Table 20 shows how the average and total pretrial service costs vary across sociodemographic groups in 2023 dollars, conditional on the average pretrial service length (i.e., the amount of time from booking to case disposition).

Table 20.

Average and Total Pretrial Services Cost and by Groups in 2023 Dollars

	Pretrial Service Length	Average Cost (No EMS)	Total Cost (No EMS)
Total		$1,195.60	$19,726,257
Sex			
Male	121.9 days	$1,184.24	$14,480,932
Female	118.3 days	$1,228.13	$5,245,325
Race-Ethnicity			
Hispanic	119.3 days	$1,179.35	$8,910,007
White	119.0 days	$1,192.64	$6,384,185
Indian	115.4 days	$1,177.39	$1,525,896
Black	128.1 days	$1,215.06	$1,461,715
Age Group			
18-24	119.9 days	$1,215.77	$3,265,554
25-34	120.9 days	$1,185.48	$8,395,591
35-44	122.7 days	$1,192.65	$4,913,714
45-54	121.5 days	$1,223.04	$2,156,224
55-64	115.2 days	$1,147.60	$804,472
65+	119.4 days	$1,330.75	$154,367

Table 21 shows how median and total pretrial service costs vary across sociodemographic groups in 2023 dollars, conditional on the average pretrial service length (i.e., the amount of time from booking to case disposition).

Table 21.

Median and Total Pretrial Services Cost and by Groups in 2023 Dollars

	Pretrial Service Length	Median Cost (No EMS)	Total Cost (No EMS)
Total	52.9 days	$773.56	$19,726,257
Sex			
Male	53.1 days	$765.57	$14,480,932
Female	52.2 days	$794.87	$5,245,325
Race-Ethnicity			
Hispanic	52.8 days	$780.00	$8,910,007
White	52.9 days	$771.84	$6,384,185
Indian	52.5 days	$769.89	$1,525,896
Black	52.2 days	$688.38	$1,461,715
Age Group			
18-24	52.9 days	$794.67	$3,265,554
25-34	52.9 days	$755.12	$8,395,591
35-44	53.2 days	$794.87	$4,913,714
45-54	53.1 days	$769.42	$2,156,224
55-64	52.0 days	$771.50	$804,472
65+	55.1 days	$844.11	$154,367

To estimate the potential cost-avoidance of reducing pretrial detention length, we explored the effect of reducing detention length among the subset of 11,141 sampled defendants who did not fail in the pretrial period. To account for booking and processing times, we assume a detention length of two days. Accordingly, we reduced the sample to the 4,953 defendants who did not fail during the pretrial period and had detention lengths greater than or equal to three days.[17]. We also assumed that defendants who did not fail within this window would not have failed with more exposure time.

We present a series of formulas for computing the projected cost-avoidance below and a tabular summary of mean, median, and total cost avoidance in Table 22.

Formula 1 generates the number of days on which jail costs would no longer accrue due to the detention length being reduced to two days.

Formula 1:

$$New\ Jail\ Detention\ Days = Number\ of\ Days\ Detained - 2$$

Formula 2 generates the number of new days of pretrial supervision. It adds reduced jail days to the observed number of exposure days.

Formula 2:

$$New\ PTS\ Days = Total\ Days\ of\ PTS\ (Observed) + New\ Jail\ Detention\ Days$$

[17] We excluded individuals who were detained for two or fewer days as reduction in detention length would not be possible.

Formula 3 generates the new per-person jail cost for the two-day detention period.

Formula 3:

$$Revised\ Jail\ Cost = 2\ x\ (\frac{Original\ Marginal\ Costs\ of\ Jail\ Detention}{Days\ Detained})$$

Formula 4 generates the revised total cost figure (i.e., the new total cost per person of reducing detention length to two days).

Formula 4:

$$Revised\ Total\ Cost =$$

$$Revised\ Jail\ Cost + (New\ PTS\ Days\ x\ \frac{Total\ Cost\ of\ PTS\ [No\ EMS/EMS]}{Total\ Days\ of\ PTS\ (Observed)})$$

Formula 5 generates the per-person cost savings of reducing detention length to two days by subtracting the revised total cost from the per-person sum of observed jail cost and PTS cost.

Formula 5:

$$Cost\ Savings = Total\ Cost - Revised\ Total\ Cost$$

Using this formula, the average per-person cost avoidance of reducing detention length to two days among detained individuals who did not fail in the pretrial phase and were detained for three or more days was $288.41. In contrast, the median per-person cost savings of reducing detention length to two days among detained individuals who did not fail in the pretrial phase was $35.19. In sum, estimated cost savings over the five-and-a-half-year period were $1,428,473.00 in 2023 dollars or approximately $259,722.36 per year.

For two reasons, these estimates are conservative estimates of cost avoidance and yet more accurate than the reliance on average total costs. First, marginal costs reflect the additional expenses incurred for each inmate, emphasizing costs that fluctuate with population changes. In contrast, average costs include fixed payments that do not provide an accurate picture of potential savings from policy changes, such as reducing detention length. Second, when prisons operate below full capacity – as MDC has operated during the sample period - marginal costs tend to be significantly lower than average costs, leading to overestimation of cost savings if average costs are used.

Discussion

This paper explored the costs and benefits of pretrial detention and release decisions in Bernalillo County, New Mexico, analyzing 16,500 felony cases filed between January 2017 and March 2022. Building on previous research, we explored the relationship between pretrial detention length and failure to appear, new criminal activity, and new violent criminal activity both in the pretrial and postdisposition phases. We also explored whether and how these relationships varied based on sex, race, age, PSA risk level, and felony class. Finally, we compared the jail costs of pretrial detention with the expenses associated with pretrial supervision to estimate potential cost avoidances associated with reducing pretrial detention length among the subset of defendants who did not fail in the pretrial period.

We found that most individuals were detained for more than 24 hours (84%; n = 13,857), with an average detention length of 10.1 days and a median detention length of two days. Eighty percent of individuals

were detained for a week or less (n = 13,209). In terms of which factors significantly predicted the length of pretrial detention, we found that (1) detained individuals with filed PTD motions, (2) detained individuals with higher estimated risk as given by higher PSA scores, (3) detained individuals with violent booking charges relative to non-violent booking charges, (4) detained individuals with more severe felonies, (5) males relative to females, (6) younger detained individuals relative to older detained individuals, and (5) White and Black detained individuals – relative to Hispanic detained individuals – were statistically significantly more likely to be detained pretrial for longer durations, all else equal.

We also presented evidence that as the length of detention increased, predisposition failure rates for failure to appear (FTA), new criminal activity (NCA), and new violent criminal activity (NVCA) rose during the first four weeks before decreasing after a month or more of detention. Specifically, our models found that the likelihood of predisposition FTA was significantly higher than the reference group of individuals detained for one day during the first month; beyond that detention length, the odds of failure decreased. Those detained for 8-14 days had a 47% higher likelihood of FTA than individuals detained for one day or less, while those held for 15-30 days experienced a 63% increase in odds of FTA compared to individuals detained for one day or less. Additionally, we observed that individuals detained for 4-30 days had significantly higher odds of predisposition NCA than those detained for just one day.

We also found detention length was a more important predictor of predisposition FTA, NCA, and NVCA outcomes than sex, race, and the percentage of time an individual was detained in the pretrial period across all three failure models. Out of 12 predictors, detention length was the fifth most important predictor of FTA, the eighth most important predictor of NCA, and the seventh most important predictor of NVCA. An individual's score on the PSA was within the top three predictors across all three models, and exposure time was within the top three most important predictors for the FTA and NCA models.

In terms of demographic patterns, we found a consistent positive relationship between detention length and increased predisposition FTA rates for Hispanic subpopulations during the first four weeks of detention (relative to those detained for just one day), while other racial and ethnic groups, such as Native Americans, showed less consistent trends. Notably, the risk of FTA significantly rose for detained males between 8 and 30 days, whereas no significant relationship is found for females across detention lengths. Generally, longer detentions (8-14 days and 15-30 days) were linked to higher failure odds, supporting theories that extended detention may negatively impact predisposition failure rates.

For our postdisposition models, the most consistent effect for NCA was observed for detention lengths of 15-30 days, associated with significantly higher odds of new criminal activity at 6- and 12-months post-disposition. However, for postdisposition NVCA, detention length had a pronounced and consistent effect but in the opposite direction of NCA. Detention periods of 4-7 days, 8-14 days, and 15-30 days were generally associated with lower odds of new violent criminal activity. More extended detention periods (31+ days) do not significantly affect either NCA or NVCA odds, which may warrant further investigation.

The effects of detention length on postdisposition outcomes appeared to be more persistent for NVCA compared to NCA, with significant associations still present at 18 months for NVCA but not for NCA. Interestingly, while moderate detention lengths (4-30 days) were associated with an increased risk of general criminal activity (NCA), they were associated with a decreased risk of violent criminal activity (NVCA). These findings suggest a complex relationship between detention length and future criminal activity. Moderate lengths of detention (particularly 4-30 days) may increase the risk of general criminal activity but decrease the risk of violent criminal activity. However, it is important to note that these are

associations, not causal relationships. Other factors controlled for in the model (e.g., PSA score, case characteristics) also play important roles in predicting postdisposition criminal activity.

Using short-run marginal cost estimates instead of average total daily jail costs for a series of reasons we spotlight, our cost analysis revealed that the estimated cost avoidance of reducing detention length to two days among the subset of inmates who did not fail in the pretrial phase and yet who were detained for three or more days over the five-and-a-half-year study period was $1,428,473.00 in 2023 dollars or approximately $259,722.36 per year.

Our findings spotlight the complex interplay between pretrial detention length and failure outcomes, contributing to the ongoing debate in the literature regarding the costs and benefits of pretrial detention. By showing that longer detention periods were associated with increased predisposition failure rates, particularly for specific demographic groups, our findings align with existing research that raises questions about the efficacy of extended detention to ensure court appearance and public safety. The significant potential cost savings associated with reducing detention lengths further highlight the financial implications of pretrial policies, suggesting that reforming detention practices could improve individual outcomes and reduce overall system costs.

References

Abrams, D. S., & Rohlfs, C. (2011). Optimal bail and the value of freedom: Evidence from the Philadelphia bail experiment. *Economic Inquiry*, *49*(3), 750-770.

Anderson, C. N., Cochran, J. C., & Montes, A. N. (2023). How punitive is pretrial? Measuring the relative pains of pretrial detention. *Punishment & Society*, 14624745231218702.

Baughman, S. B. (2017). Costs of pretrial detention. BUL Rev., 97, 1.

Dobbie, W., & Yang, C. (2021). The economic costs of pretrial detention. *Brookings Papers on Economic Activity*, *2021*(1), 251-291.

Dobbie, W., Goldin, J., & Yang, C. S., "The effects of pretrial detention on conviction, future crime, and employment: Evidence from randomly assigned judges," American Economic Review, 108(2), 201–40, 2018

Grau, N., Marivil, G., & Rivera, J. (2023). The effect of pretrial detention on labor market outcomes. *Journal of Quantitative Criminology*, 39(2), 283-332.

Harding, David J., Jeffrey D. Morenoff, Anh P. Nguyen, and Shawn D. Bushway. 2018. "Imprisonment and Labor Market Outcomes: Evidence from a National Experiment." *American Journal of Sociology* 124(1):49–110. https://doi.org/10.1086/697507

Holsinger, A. M., Lowenkamp, C. T., & Pratt, T. C. (2023). Is Pretrial Detention an Effective Deterrent? An Analysis of Failure to Appear and Rearrest Says No. *Fed. Probation*, 87, 3.

Leslie, E., & Pope, N. G. (2017). The unintended impact of pretrial detention on case outcomes: Evidence from New York City arraignments. *The Journal of Law and Economics*, *60*(3), 529-557.

Martinez, B. P., Petersen, N., & Omori, M. (2020). Time, money, and punishment: Institutional racial-ethnic inequalities in pretrial detention and case outcomes. *Crime & Delinquency*, *66*(6-7), 837-863.

Minton, Todd, and Zhen Zeng. Jail Inmates in 2020 – Statistical Tables, bjs.ojp.gov/content/pub/pdf/ji20st.pdf. Accessed 6 Feb. 2024.

Nam-Sonenstein, B. (2024, August 6). Research roundup: Evidence that a single day in jail causes immediate and long-lasting harms. Prison Policy Initiative. https://www.prisonpolicy.org/blog/2024/08/06/short_jail_stays/[1]

Petersen, N. (2020). Do detained individuals plead guilty faster? A survival analysis of pretrial detention and the timing of guilty pleas. *Criminal Justice Policy Review*, *31*(7), 1015-1035.

The Pew Charitable Trusts (2018). "Americans Favor Expanded Pretrial Release, Limited Use of Jail" (2018), https://www.pewtrusts.org/research-and-analysis/issue-briefs/2018/11/americans-favorexpanded-pretrial-release-limited-use-of-jail.

Sawyer, W., & Wagner, P. (2022, March 14). Mass incarceration: The whole pie 2022. Prison Policy Initiative. https://www.prisonpolicy.org/reports/pie2022.html#lf-fnref:14

Smith, S. S. (2022). Pretrial detention, pretrial release, & public safety. Arnold Ventures.

Stevenson, M. T., & Mayson, S. G. (2022). Pretrial detention and the value of liberty. Va. L. Rev., 108, 709.

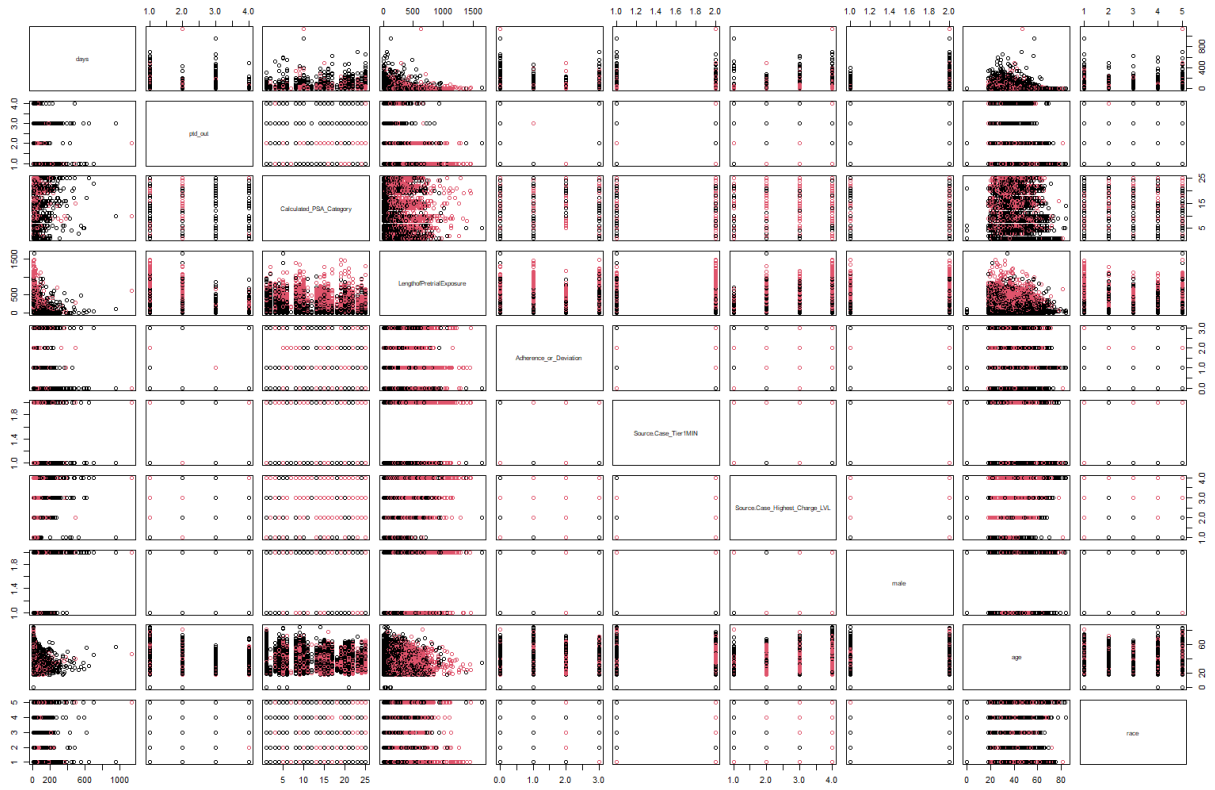
St. Louis, S. (2024). The pretrial detention penalty: A systematic review and meta-analysis of pretrial detention and case outcomes. *Justice Quarterly*, 347-370.

Vera Institute of Justice. (2019). Justice Denied: The Harmful and Lasting Effects of Pretrial Detention. https://vera-institute.files.svdcdn.com/production/downloads/publications/Justice-Denied-Evidence-Brief.pdf

Wakefield, S., & Andersen, L. H. (2020). Pretrial detention and the costs of system overreach for employment and family life. *Sociological Science*, *7*, 342–366.

Western, B., & Pettit, B. (2010). Incarceration & social inequality. *Daedalus*, *139*(3), 8-19.

Appendix A – Pair Plots of Predictors with Pretrial FTA



Appendix B – Variance Inflation Factor (VIF) Tests for Multicollinearity

Table 1.
VIF Scores Predicting Predisposition FTA

Variable	**VIF Score**
Detention Length (Days)	1.14
PTD Motion Status	1.88
Calculated PSA Score	1.13
Pretrial Exposure Length (Days)	1.29
Judge Adherence to PSA COR	1.53
Felony Class	1.29
Source: Case Violent	1.25
Sex: Male	1.03
Age	1.03
Race	1.08