FINAL REPORT ON
PRETRIAL PROCESSES & SENTENCING OUTCOMES IN OREGON: INTEGRATING QUANTITATIVE & QUALITATIVE FINDINGS

Submitted to:
Oregon Criminal Justice Commission

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Executive Summary

Many jurisdictions in Oregon have been reevaluating their pretrial release systems in an effort to reduce pretrial detention rates and costs, reduce crimes committed while on pretrial supervision, and increase court appearance rates. Within the context of statutorily prescribed criteria of pretrial release, jurisdictions continue to weigh the utility of risk assessment-based release as opposed to financial-based release, and aim to decrease jail populations. In a wider effort to address these and other issues, this project builds on a prior quantitative assessment of pretrial detention in Oregon (Campbell et al., 2020) and a recent qualitative study (Campbell, Henderson, & Renauer, 2021). Via a sub-grant from Arnold Ventures, National Criminal Justice Association, and the National Criminal Justice Reform Project, researchers from Portland State University (PSU) set out to examine how release decisions, the associated processes, and differences in county structures all play a role in pretrial release and any associated pretrial and sentencing outcomes. Specifically, we conducted rigorous, quantitative analyses using 161,886 cases across all 36 counties and 27 circuit courts with an aim to answer the following research questions (RQ):

RQ 1. Which legal and extralegal factors best predict pretrial outcomes?
RQ 2. Does the relationship between pretrial detention and sentencing remain when using a more robust data set?
RQ 3. What are the differences between counties with and without pretrial resources?

For the purposes of this study, and consistent with other pretrial studies and practices, we define pretrial outcomes as measures that are reflective of courtroom actor decisions that impact the defendant's status. These include: Release prior to disposition, the type of release (e.g., with or without bail), failure to appear, rearrest during the pretrial period, and final disposition of the case.

Findings

RQ 1: Predictors of pretrial outcomes. In the life-course of a criminal court case, decisions are made by executive and judicial actors regarding a defendant's release, among other outcomes. The factors that influence these decisions are often referred to as one of two types – legal and extralegal factors. Legal factors are those that are defined and allowed to be considered according to law. When examining the importance of legal factors, we find that only two primary release criteria were significant predictors of pretrial outcomes: Defendant criminal history and the nature/type of the current charge. While many of the remaining primary release criteria were predictive, the magnitude of their influence was overshadowed by other factors. Common factors associated with an increase in the odds of release include if the county uses an actuarial pretrial risk tool of some kind, the county has limited jail capacity, and the nature of the current charge. Extralegal factors, are those that are often beyond the scope of statutes, or that ought not be a factor according to law. We find that extralegal factors that predict pretrial outcomes include if the defendant has a documented mental health issue, defendants' gender and race/ethnicity, if the defendant was represented by a private attorney, and also county-level variables such as the proportion of single parent households and high school graduates. The fact that many extralegal factors are predictive of pretrial outcomes suggest that certain groups of defendants are more likely to experience a certain outcome compared to defendants of other groups. While we are able to shed some light on these issues using what we have learned from the qualitative report, it is critical

that all counties/circuits periodically examine their own data to identify problematic patterns and possible disparity.

RQ 2: Relationship between pretrial detention and sentencing. After controlling for key case characteristics, including the nature and severity of the current offense and prior failure to appear records among other primary release criteria, we find that the relationship between pretrial detention and sentencing holds when examining more robust data from all counties. Specifically, those *defendants who are fully detained through their disposition have 4.1 times greater odds of receiving a prison sentence than probation upon conviction when compared to those who are released at some point prior to their disposition*. This is twice that found in the initial study of nine counties (Campbell et al., 2020). Interviews with practitioners revealed that the defendant's criminal history and crime severity would be used as the sole explanation for this outcome, however, we had to reemphasize these results arise after controlling for those factors. Interviews with Oregon judges highlighted in the qualitative report suggest that there are a few potential factors that may explain why such a relationship persists (Campbell et al., 2021): Defendants' having the opportunity to prove success on supervision when released pretrial, the psychological weight of jail pushing defendants to accept guilty pleas that include prison time, and that defendants in pretrial detention at time of disposition may be viewed as more dangerous than those released. Considering Oregon's constitution affords a right to release prior to trial sans certain qualifiers (e.g., on probation at time of arrest), many pretrial detainees are held through their disposition because they cannot afford bail. Thus, we encourage all counties and circuits to examine reasons behind setting bail thresholds in the range of affordability for defendants in a standard fashion and require justification for departures from the standard bail schedule.

In terms of dosage, the time spent in pretrial detention has a significant relationship with the probability of receiving a prison sentence. *For an otherwise average felony case, there is a significant increase of 0.7% in the odds of receiving a prison sentence for each day detained pretrial*. After controlling for all demographic, case characteristics, judge, and county information, we find evidence of a possible "first offer, best offer" practice whereby defendants may be receiving their best offer from the district attorney's office within the first 11-15 days with the "best offer" for those released most likely to include probation. In contrast, those who remain in detention through their disposition receive offers that are more likely to involve prison time. For those who are fully detained, there is a significant increase in the probability of prison after about day 20, with a steady rise thereafter. Finally, considering that of the 96.7% cases in Oregon with a conviction from 2017 through 2019 were resolved via plea-bargaining, we analyzed the time to plea based on the defendant's time spent in detention. Moreover, other studies have shown one of the strongest correlates of willingness to accept a guilty plea is pretrial detention (especially for plea offers including time served). Our time-to-plea analysis supports such findings as we show that those who are fully detained plead guilty significantly sooner than those who are released at some point. Given these findings, our recommendation is to further utilize systematic and evidence-based tools (e.g., risk assessments and pretrial services) to reduce the time spent in pretrial detention while minimizing the risk to the community and victims.

RQ 3: Differences between pretrial structures. In our qualitative report (Campbell et al., 2021), we identify three basic structures in which counties operate with regard to their pretrial population: Type A, B, and C structures. Briefly, Type A structures are housed in the executive branch and have no monitoring of pretrial releases and limited information gathering for the judge

to make release decisions. Type B structures are also housed in the executive branch but have some kind of pretrial release authority focused primarily on managing pretrial defendants and collecting information. Type C structures are housed in the judiciary, collect information for the judge, and also have monitoring of pretrial releasees. Upon identifying the key differences discussed above, we set out to determine if these differences were meaningful in certain pretrial outcomes. After controlling for case information regarding primary release criteria, defendant characteristics and county-based metrics, we find that Type C (judicial) pretrial structures increase the odds of release for all cases by 82.3% compared to Type A structures (executive, no monitoring). Similarly, Type B (executive, with monitoring) structures increases odds of release for all cases by 38.7% compared to Type A structures.

Within our investigation of RQ 3, we dove deeper into the possible quantitative effects of each pretrial structure and the use of a pretrial risk tool on several pretrial outcomes such as failure to appear (FTA) rates, rearrest rates, as well as disposition and sentencing. After controlling for all primary release criteria, defendant information, and county characteristics, we find the inclusion of *an actuarial risk tool increases the odds of being released by between 4 to 6 times* compared to when there was no tool used. For FTAs, we found that cases in Type A structures have a 17.3% chance of yielding an FTA at some point (from file date to disposition date), Type B structures have a 28.7% chance, and Type C have a 30.7% chance. While the difference between Type A (executive, no monitoring) and that of B (executive, with monitoring) and C (judiciary) is statistically significant, the difference between B and C, is not. When compared to rearrests in Type A structures, the odds of rearrest in Type B structures are 75% higher, while in Type C structures rearrest odds are lower than that of Type A by 78%, on average. This remarkable difference may be due in large part to the differences in partnerships and responsibilities between the executive branch structures (Type A and B) and the judicial branch structure (Type C). There were no differences found in disposition and sentencing outcomes across the structures.

Based on these findings, we recommend that if the overarching goal is to reduce the unnecessary use of carceral settings at pretrial and sentencing, counties and the state should work together to reestablish pretrial release authorities where there are none currently. Ideally, such an authority would be in the judiciary, but there are many benefits of it being housed in the executive branch as well. Additionally, the release authority should have some responsibilities regarding systematic information collection to ensure that all cases are treated the same way, with the same information. This may take the form of an actuarial risk assessment, which can also help with the overarching goal of using less pretrial detention in the county as a whole. It is critical that if counties use pretrial risk assessments, the primary aim should be to identify moderate/low risk defendants to be released on recognizance or with a bail that is within the realm of the defendant's economic feasibility (see Campbell et al., 2021 for more discussions and qualitative input on these areas). It is important to note that the recommendations here may be moot following the implementation of SB48. Critical to the spirit of this recommendation and SB48 is the fact that county level variation of these changes should be monitored going forward.

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Background

On any given day, two-thirds of adults in jail custody nationwide are awaiting trial, which equates to roughly half a million people housed in jails (Bureau of Justice Statistics, 2020). In 2018, jails in the United States reported 10.7 million admissions, with the average length of stay of 25 days (Zeng, 2020). Depending on the jurisdiction and the size of the jail population, these costs could be devastating for the local community and taxpayers. In fact, the Bureau of Justice Statistics estimates that local communities spend over $22 billion on jails annually (data from 2011; Vera Institute of Justice, 2015).

As such, the pretrial system is perceived as "ripe for reform" (Stevenson & Mayson, 2017, p. 20). This push to reform is driven largely by increased jail population and costs, documented disparities resulting from inability to pay cash bail (Stevenson & Mayson, 2017), and differences in sentencing outcomes correlated with pretrial detention status (e.g., Campbell et al., 2020). Some strategies for reform are suggested, such as increasing immediate release for low-risk defendants, utilizing an actuarial risk assessment in decisions, providing defendants with notice of upcoming court dates, and limiting the use of cash bail (Stevenson & Mayson, 2017). Oregon has been on the forefront of pretrial reform, both through Justice Reinvestment, coordinated groups of practitioners discussing reform efforts and challenges (e.g., Pretrial Justice Network), and contracted research projects on pretrial in the state (e.g., Phase 1 study, Campbell et al., 2020).

Generally, the fiscal and social costs of pretrial detention are high for the defendant, state, and taxpayers, respectively. Particularly given the changes during the COVID-19 pandemic, many jurisdictions are recognizing this and re-evaluating their pretrial release system in an effort to reduce pretrial detention rates and costs, reduce crimes committed while on pretrial supervision, and increase court appearance rates (National Association for Pretrial Services, 2020). Although policies and practices differ by jurisdiction, in general, defendants can be placed in pretrial detention if a judge believes that the defendant represents an imminent threat to public safety or poses a serious flight risk. In addition, some individuals may remain in pretrial detention because they do not have money to post bail (Gupta et al., 2016). With this in mind, jurisdictions continue to weigh the utility of risk-based release via risk assessment tools as opposed to financial-based release, all while aiming to decrease jail populations (e.g., Justice Reinvestment). In an effort to address these issues and more, we build from prior research (e.g., Campbell et al., 2020) to examine how release decisions are made locally, paying careful attention to variations between localities, the factors that influence decisions, and the role of risk assessment tools in formulating release decisions.

Reviewing the Literature: Factors Impacting Pretrial and Sentencing

Research on pretrial release has emphasized the importance of case-level (e.g., pending charge), defendant-level (e.g., criminal history), and jurisdiction-level factors (e.g., level of local resources such as substance abuse and mental health treatment), on recommendations and decisions to release or detain pretrial. Some of these factors would be construed as "legal factors" such as pending charge, while others would be construed as "extralegal factors" such as defendant race (Engen & Gainey, 2000; Kramer & Steffensmeir, 1993; Steffensmeier et al., 1998). This section reviews the relevant research on some of these factors and their relationship with pretrial release and decisions.

Pretrial Release: Legal Factors

Legal factors are those that are prescribed by law to be considered by courtroom officials, primarily the judge, for pretrial detention or sentencing. Such factors are expected to have a relationship with the outcome of interest because of the statutory guidelines, and can include a defendant's criminal history, as well as the severity and type of the current offense. Importantly, many of these legal factors are captured on a risk assessment tool (e.g., Virginia Pretrial Risk Assessment Tool). Nearly all states across the country have laws that warrant using defendants' risk[1] in pretrial release and bail decisions (Baradaran & McIntyre, 2012; Viljoen et al., 2019). Many jurisdictions use risk tools, which take an actuarial approach using "numeric item ratings [to weight and combine] into a total score" categorizing the defendants' level of risk, ultimately informing the decision to release and conditions imposed (Desmarais et al., 2020, p. 3). There is emerging evidence that risk tools provide "good to excellent predictive validity" across a range of outcomes (e.g., new criminal activity, failure to appear (FTA); Desmarais et al., 2020, p. 16). And it may be unsurprising then that evidence is mounting that judges rely on the defendant's level of risk based on a risk assessment tool in informing their release decision (Barno et al., 2019; DeMichele et al., 2018).

Importantly, the absence of risk tools does not mean defendants' risk is not evaluated. Rather, it is more likely that judges and legal professionals are making subjective judgements based on their own calculations, which may be subject to biases and inaccuracies (Hanson, & Morton-Bourgon, 2009). For example, in a sample of 171 individuals involved in pretrial release (judges, prosecutors, defenders, and pretrial staff), 76% rated 'current charge(s)' as *extremely* or *very* important in the decision to detain or release, 91% rated 'criminal history' as *important* and 90% rated 'pending charge(s)' as *important*. Also, important to judges, past FTAs and any indication that the defendant may not return for court dates should they be released pretrial (DeMichele et al., 2018). This research demonstrates that variables related to community safety and risk of flight are *extremely* or *very* important in the decision to detain (DeMichele et al., 2018). Risk assessment tools may provide a more objective evaluation of these legal factors and their relationship to defendants' risk, otherwise, judges will likely perform their own calculation in in the absence of a tool (Gottfredson, 1999).

Pretrial Release: Extralegal Factors

Scholars posit that risk tools enhance the accuracy of decisions and can also lead to more appropriate use of existing jail beds (see Viljoen et al., 2019). However, others caution that risk tools may exacerbate racial and ethnic disparities in the criminal justice system (see Monahan et al., 2017), particularly as many calculate risk using past criminal history and juvenile arrests which may be correlated with defendant race, an extralegal factor. *Extralegal factors* are those that are still considered by a court official, but are not prescribed (or may be prohibited) by statute. While some extralegal factors may act as "protective factors", decreasing the defendants' risk level and mitigating their likelihood of pretrial failure (e.g., housing, employment; Monahan & Skeem, 2016), these factors may also be associated with race and socio-economic status and may disadvantage some defendants more than others (see Skeem et al., 2020). Importantly, pretrial risk

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[1] Importantly, discussions of risk related to pretrial release are often conceptualized as risk to the community (i.e., risk of recidivism). However, others would include risk to failure to appear as a secondary concern when considering "risk."

tools include case information (e.g., crime type; legal factors), but can also collect defendant information (e.g., stable housing), which can be considered extralegal factors.

Pretrial Risk Tools. More recent attention has focused on potential inherent biases in risk assessment tools (both legal and extralegal factors) as there is a growing focus on how upstream decisions early in the pretrial stage can have accumulative impacts on downstream sentencing stages. Although the overarching goal at every stage of the justice system ought to be (and often is) to maximize accuracy and fairness when using risk assessments, this is not always the result. In order to address and reduce bias, risk tools must be tested and retested for issues in accuracy and misclassification. Ideally, if a risk tool is validated and accurate for all race/ethnic populations, the tool is expected to be between roughly 64% to 70% accurate, minimizing the potential for misclassification. Misclassification arguably occurs when an individual is identified as "high risk" but is actually "low risk" to recidivate. This can be best understood in Table 1. Table 1 provides an example of what misclassification can look like, characterized by the percentages of the High-risk group, but were successful (i.e., did not recidivate), and those in the Low-risk group, but who did recidivate. We see that the hypothetical tool appears to perform decently for White defendants. White defendants who did not recidivate could be understood as being misclassified as "high risk" about 25% of the time. However, it performs rather poorly for Black defendants who were misclassified as "high risk" 42% of the time.

Table 1. Example matrix demonstrating misclassification by defendant race/ethnicity

		Reality (observed)			
		Successful		Recidivated	
Misclassification		White	Black	White	Black
Prediction by risk tool	Low-risk	75% [a]	58%	41%	35%
	High-risk	25%	42%	59%	65%

[a] Percentages are for each race/ethnic column (e.g., 75% of White defendants who were not rearrested were classified as low-risk).

Defendants classified as "high risk" can experience higher bail and longer pretrial detention which could lead to an increased chance of a prison sentence. If people of color are unnecessarily/erroneously classified into the "high risk" group at a disproportionately higher rate than White defendants, and therefore are experiencing disproportionate and unnecessary punitive outcomes, then the hypothetical tool has increased misclassification. In other words, people of color may be misclassified into high-risk categories when they are in fact low-risk to be arrested for a new crime during the pretrial period. In this example, we can see the difference in the hypothetical tool's ability to predict when a White defendant is successful compared to when a Black defendant is successful. Here, the tool has erroneously placed more Black defendants in the high-risk category when they were not actually rearrested than it did White. Moreover, it was more accurate in its placement of White defendants than Black defendants. To date, there is little scientific evidence of bias among the use of actuarial risk assessments. Only 10 studies since 2000, with nonoverlapping samples, evaluated risk tool differences in predictive accuracy by race or culture (Freeman et al., 2021). Eight studies tested actuarial instruments (all since 2016) and one

tested a pretrial risk instrument (Cohen & Lowenkamp, 2018). Overall, four studies found significant racial differences in predictive accuracy and three found differences in predictive accuracy across race (Freeman et al., 2021). Only one study found an overprediction for Hispanic adults (Cohen & Lowenkamp, 2018), and one found overprediction for Black youth due to criminal history items (Schwalbe, 2007). Finally, only one study (Dressel & Farid, 2018) found greater misclassification among people of color compared to White.

Although there is little scientific evidence of risk tools exacerbating disparities or *introducing* bias not already present, concerns of biases in early decision-making points are warranted. Much of the reasoning for why there is little evidence of either bias-source is because when risk tools are made, assuming it is constructed and validated properly, they are tested for these potential biases. If bias is detected (e.g., clear misclassification for one subgroup compared to another) then statistical changes are made to correct them before the tool is used to help make decisions. Of particular concern is the presence of racial/ethnic bias in early subjective decisions (such as pretrial release), even if slight or "non-significant" in research findings, may have "cumulative disadvantages" across the justice system decisions and over time for defendants (Kramer & Wang, 2019; Stolzenberg et al., 2013; Wooldredge et al., 2015; Zatz, 2000). Stolzenberg, D' Alessio, & Eitle (2013) in a study of the 65 of the 75 largest counties in the U.S. found that the increased odds of Black defendants being denied bail, given larger bail amounts, and being held pretrial, although exhibiting small and insignificant results in distinct analyses, had a cumulative impact that increased their odds of a severe sanction (e.g., incarceration and larger sentence) by 42%. Kutateladze and colleagues (2014) in a study of NYC cases found the predicted probability of experiencing the most severe cumulative disadvantages (detained pretrial, no case dismissal, and incarceration outcome) was 5 percent greater for Black felony defendants and 2 percent greater for Latinos, compared with Whites. Overall, this research demonstrates that concerns about racial and ethnic disparities in pretrial decision-making are warranted, especially as these decisions have long-term impacts. This is particularly the case when pretrial risk tools have not been validated, and tested or corrected for potential bias towards a particular subgroup.

Impact of Pretrial Release on Sentencing

Recent meta-analytic findings highlight that risk assessment tools result in decreased restrictive placements (i.e., incarceration and detention; see Viljoen et al., 2019). This is important given findings that defendants detained pretrial were significantly more likely than those who were released to be sentenced to jail or prison and also to receive longer sentences (Lowenkamp & VanNostrand, 2013). This negative effect of pretrial detention on sentencing outcomes has also been documented in several other jurisdictions, including New Jersey (Sacks & Ackerman, 2012, Pennsylvania (Gupta et al., 2016), Philadelphia and Miami (Dobbie et al., 2018), New York (Leslie & Pope, 2017), Texas (Heaton et al., 2017), in the federal court system (Oleson et al., 2016; Wooldredge et al., 2017), and here in Oregon (Campbell et al., 2020). These evaluations controlled for the influence of demographic, offense, and criminal history information through the use of multivariate regression analyses.

Focusing on Oregon specifically, Campbell and colleagues used a sample of 3,390 defendants in nine Oregon counties to examine the relationship between pretrial release and sentencing outcomes. Their findings suggest that with all else being equal, defendants detained during their pretrial period were more than twice as likely to be incarcerated as part of their sentence (Campbell et al., 2020). Furthermore, drawing on the discussion of "cumulative

disadvantage" above, Wooldredge and colleagues (2015) found that Black defendants were 40% more likely than White defendants to be convicted and sent to prison as a result of the cumulative effects of pretrial detention, prior prison sentences, and non-hired attorneys. Focusing on Black women in the 70 largest counties, Kramer & Wang (2019) found there was a significant indirect effect of pretrial detention on the decision to incarcerate in jail and prison, and a longer sentence length. In their totality, these studies underscore the importance of examining decisions to detain, and the relationship between that decision and defendant outcomes.

Current Study

Considering findings from an earlier examination in Oregon ("Phase I"; Campbell et al., 2020), as well as the qualitative analyses of the complexities and informal decision-making that occurs across courtroom agents (i.e., judges and prosecutors in particular; see Campbell et al., 2021), we set out to accomplish three objectives: (1) investigate the degree to which there is a relationship between county pretrial structures and detention practices, (2) identify quantifiable differences between counties in their practices (e.g., using pretrial risk tools, or having a pretrial release officer), and (3) use the qualitative findings to unpack the quantified relationships. Subsequently, we set out to examine the pre-COVID decision-making processes of pretrial detention in Oregon counties. Via a sub-grant from Arnold Ventures, National Criminal Justice Association, and the National Criminal Justice Reform Project, we aimed to answer the following research questions (RQ) based on data currently available:

> RQ 1. Which legal and extralegal factors best predict the odds of pretrial outcomes such as…
>   a. Pretrial detention?
>   b. Failure to appear?
>   c. Failing pretrial release supervision (e.g., arrest for new charge)?
>   d. Defendants' race/ethnicity
>   e. Proportion of jail forced releases to bookings in a county
> RQ 2. Does the relationship between pretrial detention and sentencing remain using a more robust data set?
> RQ 3. What are the quantifiable differences between counties with and without pretrial resources?

Methodology

Data

The data used in this quantitative analysis is comprised of administrative information collected from the Oregon Judicial Department (OJD), Department of Corrections (DOC), and the Criminal Justice Commission (CJC). Contrary to the Phase I analysis (Campbell et al., 2020) that only used criminal defendants convicted of a felony offense between 2016 and 2017 from nine counties, this analysis involves all felony and misdemeanor cases filed and disposed of in Oregon circuit courts from all 36 counties and 27 circuits between January 1, 2017 and February 29, 2020. As shown in Figure 1, while most counties make up their own circuit, several rural counties are combined to create a joined circuit.
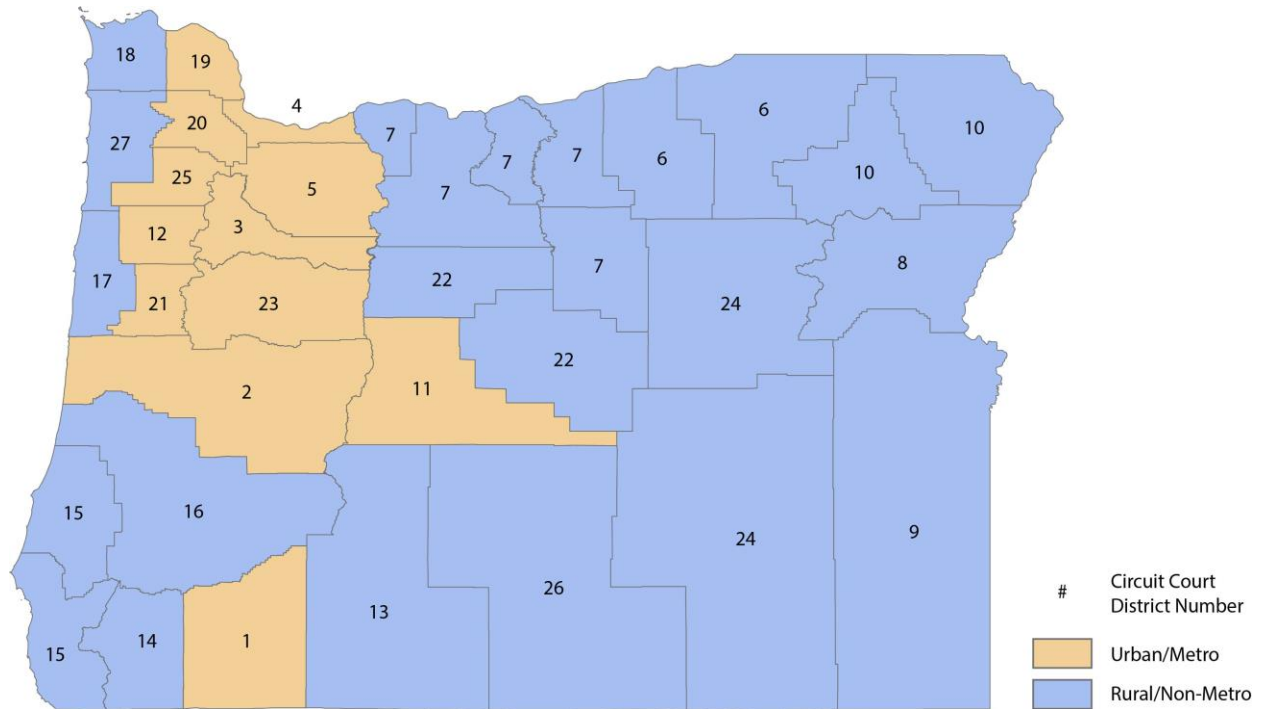
Figure 1. Oregon circuit court districts by census category

Sample

Although the data was collected at the hearing level, our unit of analysis is the case level. Thus, an individual defendant may be represented more than once in the dataset. We justify this by recognizing that the nature of our questions emphasizes the decision to release or detain pretrial as either an outcome of interest, or its effect on sentencing decisions. In either of these situations, the dichotomous or duration of pretrial status can be captured at one point – the disposition hearing. Consequently, we opted to collapse hearing information to the case level and report information available at the disposition date. The initial dataset consisted of 1,266,978 hearings from which we collapsed to 226,623 cases and cleaned, pruning out cases due to issues or types (e.g., missing disposition information). Figure 2 provides a breakdown of each step in the data pruning process, which removed cases for eligibility (no cite-and-releases [14,013], and must be a felony or misdemeanor case), problem data (e.g., mis-aligned dates), and missing data issues (e.g., missing demographics or disposition). The final sample we used to examine all pretrial detention related questions is 161,886 cases and 51,119 cases for all sentencing related questions.
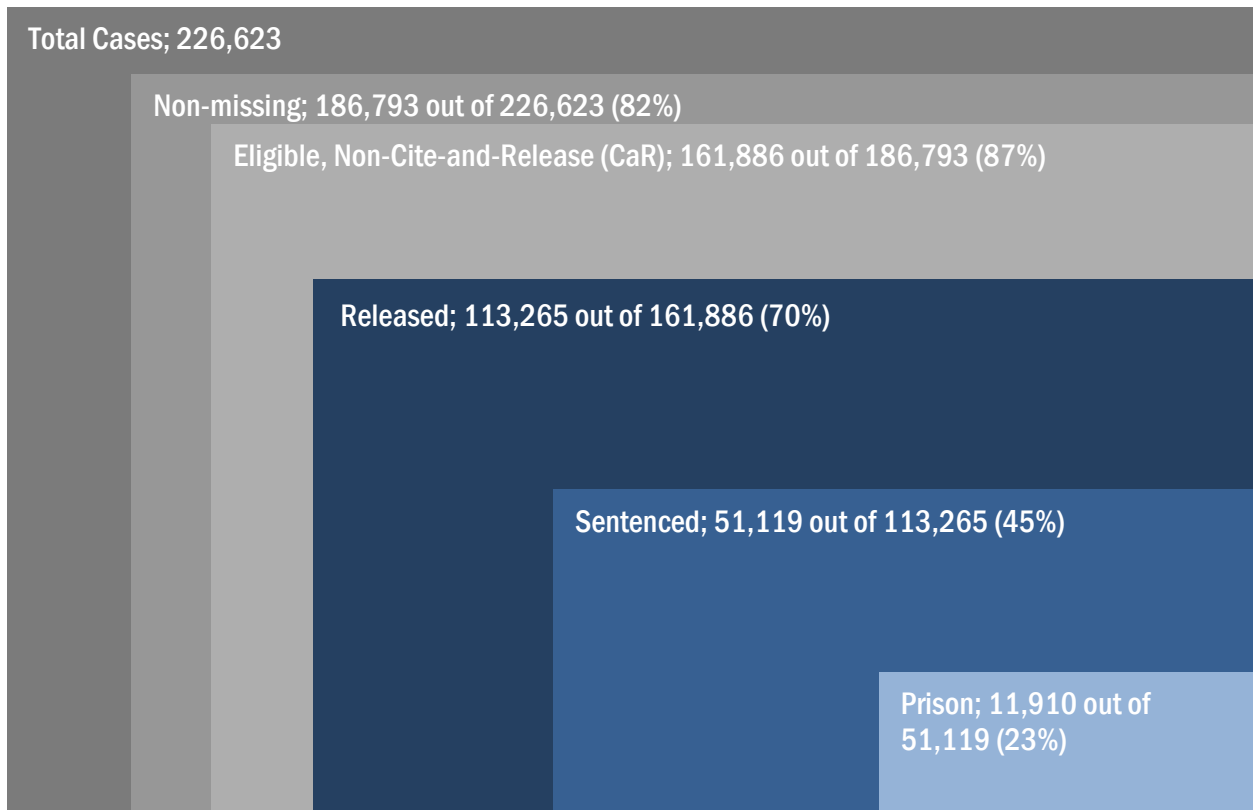
Figure 2. Sample used (blue shades) derived from initial data draw (grey).

Measures

Each of the measures used were captured at various levels but recoded to employ in examinations at the case level. Although we used different quantitative analyses to explore the research questions noted above, each of the analyses rely on similar measures to test, balance, and estimate depending on the outcome of interest. For each analysis, we examine the importance of legal factors and extralegal factors that have been shown to have a clear relationship with the outcome of interest in prior research (including defendant's sex, age, and race/ethnicity). Table 1 provides a list of measures examined by research question and level. Additional information on the definitions, calculations/coding, and source of the data are provided in the Appendix Table A.

Table 1. Measures used, and sample descriptives

Outcomes	Level 1 – Case information	Level 2 – County/Circuit

- Release Decision
- Fully Detained
- Plea
- Time to plea
- Failure to appear (FTA)
- Disposition
- Sentence
	- Defendant demographics
	- Prior FTAs
	- Index FTA count
	- Domestic violence flag
	- Case type
	- UCR offense type
	- Charge/Conviction type
	- Quartile count of total charges/convictions
	- Criminal history
	- Case severity
	- Prior supervision status
	- Trial flag
	- Hearing count
	- Legal representation
	- Age at first arrest
		- Judge
		- Pretrial Program
		- OJD Circuit
		- Proportion of Force Releases to Booking
		
		- County
		  o Population
		  o Age-truncated County Population
		  o Proportion Non-White
		  o Region Type
		  o Percent High School Graduates
		  o Unemployment Rate

For specific definitions and measure details, see Appendix Table A.

Quantitative Analyses by Research Question

To ensure that that counties with larger populations and therefore more cases did not dominate the analyses, we weighted all models with the county's proportion of the Oregon population. Before discussing any effects of pretrial practices in Oregon, it is important to note the statutory expectations regarding how release decisions are made. According to state law (ORS 135.230 to 135.290), there are two sets of criteria judges use to decide which defendants to release on recognizance, release with conditions, or set security (bail). The criteria are labeled as primary and secondary release criteria, in accordance with their importance according to the statute.

Primary release criteria
- Protection of victim or public
- Nature of current charge
    o Type and severity
- Prior criminal record
- Prior pretrial releases
- Prior failure to appear
- Any indication defendant might
    o Violate release conditions
    o Fail to appear
    o Commit new crime

Secondary release criteria
- Employment & financial status
- Nature of family relationships
- Stable residence
- Third party willing to assist defendant to appear in court
- Possesses strong ties to the community

Many of the differences between counties related to pretrial practices exist in how the jurisdiction processes defendants prior to the arraignment, whether there is any monitoring of defendants if released conditionally or on bail, and how the primary and secondary release information is relayed

to the judge. Unfortunately, we could not account for any secondary release criteria in this analysis as such information is not collected by any agency, with exception given to counties collecting dynamic risk information on pretrial tools (e.g., the Virginia Pretrial Risk Assessment Instrument, or VPRAI). Such information is not accessible by the OJD or CJC, and therefore was not included in this study. Nevertheless, our qualitative report provided evidence that the majority of release decisions rely most heavily on the primary release criteria (see Campbell et al., 2021). We controlled for all primary release factors in the subsequent analyses.

RQ 1. Which legal and extralegal factors best predict the odds of pretrial outcomes? The analytical approach used to examine RQ1 involves various forms of regression to ensure that all possible relationships are tested. We tested binary and multinomial logistic regression modeling for pretrial outcomes. The results presented here provide a summary of the best fitting models for the outcome of interest: Pretrial detention. All models are weighted by the county's proportion of the state's population.

RQ 2. Does the relationship between pretrial detention and sentencing remain using a more robust data set? The analytical approach used to examine RQ2 involves propensity score modeling (or entropy weighting) to match cases that were not detained to those that were fully detained through their disposition. Following a successful match, a double-robust regression was used with the matched sample to predict sentence outcome. This approach allows us to isolate the effects of pretrial detention as best as possible given the observed measures.

RQ 3. What are the quantifiable differences between counties with and without pretrial resources? The analytical approach used to examine RQ3 involves bivariate statistics to deconstruct the differences between counties with: a pretrial release structure and resources, a risk assessment for pretrial purposes, and an overcrowded jail. Upon identifying differences at this level, we set out to determine if these differences impacted pretrial outcomes such as pretrial detention/release, failure to appears rates, rearrest while on pretrial release, and sentencing. We employed propensity score modeling to balance cases across the county pretrial structure types identified in the qualitative report (Types A, B, and C, more below). Similar to RQ2, we use a double-robust method, we identified the degree to which similarly-situated defendants from different pretrial structures receive a similar detention outcome and sentence.

Results

The results of the quantitative examinations are combined below with contextual discussion from the qualitative report. Results are provided in accordance with the research questions

RQ 1: Predicting the odds of pretrial outcomes

Due to the complex nature of the models employed, we provide tables and graphs to highlight our findings in a more digestible, consolidated manner. Accordingly, Table 2 displays the top legal factors and Table 3[2] the top extralegal factors that were found to increase the odds of paying bail, being released without bail (release on recognizance), and being fully detained through one's

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[2] Both Table 2 and 3 are generated using weighted multinomial and binary logistic regressions.

disposition (versus being released at some point).[3] The increase or decrease in the odds of each factor on the respective outcome are displayed as either percentages or factors (e.g., 2X = two times the odds of occurrence). To read the tables appropriately, we recommend reading the table's title along with the row being interpreted. For instance, if we want to interpret the importance of a charge of driving under the influence (DUI) in Table 2 we would read it this way: Being charged with a motor vehicle (DWI/DUI) offense increases odds of being released without paying bail (vs being fully detained) by 3.4 times. We highlight a few noteworthy factors in the subsections below.

Before unpacking the factors, it is important to know the base rate and basic information of each outcome we examined – released without a release agreement, paid bail, or detained. Cases involving defendants who were released without a release agreement accounted for the majority of cases in the data. Of the 161,886 cases, 61.0% (98,718) were released without bail. Those who paid bail made up 10.2% (16,568) of the sample, among whom the largest proportion paid a range between $1 and $500 (33.1%), followed closely by those who paid between $501 and $1,000 (29.3%). Another third made up the remaining cases with defendants who paid bail, with 37.6% (6,234) paying over $1,000 with the highest category being more than $25,000 (0.7%, 107 cases). Finally, 28.8% (46,600) of the sample were fully detained through their disposition.

Legal factors. Importantly, only two primary release criteria were top significant predictors of pretrial outcomes: Criminal history and the nature/type of the current charge. While many of the remaining primary release criteria were indeed predictive, they were overshadowed by the factors listed in Table 2. Common factors associated with an increase in the odds of release (with bail or release agreement without bail) versus being detained include if the county uses a pretrial risk tool, the county has a decreased jail capacity, and the nature of the current charge. As will be discussed below, holding all other observed factors constant, when counties use pretrial risk tools, the odds of defendants being released substantially increase. This may be due to the trust placed in both the pretrial release officer applying the assessment and the tool itself:

> *I believe, given that they are validated tools that they are useful. But I don't, again because I trust [the release officer] to do [their] job, I don't spend a lot of my energy. I definitely don't second-guess them. I also don't think that they're, you know, infallible. I just look at them as what we've all decided to use. And there was a lot of discussion about this at the [judicial] conference years ago, because they're what we've decided to use, I just sort of accept that it's relevant information. But my inquiries are more about, you know, the factual circumstances surrounding the defendant's environment or proposed environment, you know? I'm not going to second-guess the outcome of the validated tool.* Judge, 25 years in criminal justice, urban/metro

A key theme from our qualitative interviews was the impact of jail capacity on pretrial outcomes (e.g., decision-making related to security and release agreements). As such, we examined the impact of jail capacity; our findings show that when holding all other factors constant, as counties must force release a greater proportion of their bookings, or in other words the county has "reduced jail capacity", the odds of release increase by 301 times compared to when counties have more jail capacity. An increase of odds by this magnitude essentially indicates that, when compared to defendants who experience less crowded facilities, those who are in

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[3] Importantly, "released at some point" throughout this report is noted to mean released for any reason, which could include jail forced release.
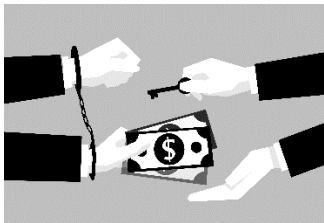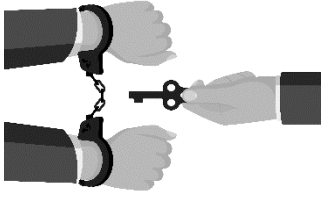
overcrowded facilities are almost guaranteed release. We take up a greater discussion of the impacts of jail capacity below (RQ3). The following quotes from our qualitative study illustrate how jail capacity is weighed in pretrial decisions:

> *Well, when we don't have jail space it weighs in more. When we do have jail space it's, you know, it's a luxury to keep people that might otherwise get released because of no jail space. So, I mean, it's an important piece of it, obviously.* Judge, 31 years in criminal justice, rural/non-metro

> *But, you know, typically a lot of these people that I put even low bail on are going to get kicked out due to overcrowding, so. And I tell them that, you know, that's a conversation I basically have with every single defendant on the lower bail situations. I'll say, hey your bail is not very high, you're probably going to get kicked out, here's what you need to do when you get out to get ahold of your attorney. You've got to show up for your court dates, etc. etc. You know, that's like a broken record conversation that I have with defendants in afternoon, in custody arraignments.* Judge, 22 years in criminal justice, urban/metro

Table 2. Top *legal* factors that influence the odds of …

Release by paying bail (vs being fully detained)	
1. County uses pretrial risk tool	**+ by 3.8X**
2. Domestic violence charge	**+ by 2.2X**
3. Lengthy criminal history	**− by 90.7%**
4. Less jail capacity (as county force releases increase)	**− by 88.6%**
5. Public order charge	**+ by 57.1%**
Release without bail (vs being fully detained)	
1. Less jail capacity (as county force releases increase)	**+ by 301X**
2. Charged with a motor vehicle (DWI/DUI) offense	**+ by 3.4X**
3. Lengthy criminal history	**− by 83.6%**
4. County uses pretrial risk tool	**+ by 68.9%**
5. Most serious charge is property related	**+ by 73.7%**
Being fully detained (vs released before disposition)	
1. Lengthy criminal history	**+ by 6.6X**
2. On supervision at time of arrest	**+ by 2.1X**
3. More jail capacity (as county force releases decrease)	**− by 98.8%**
4. County uses pretrial risk tool	**− by 51.9%**
5. Charged with 2 or more sex offenses	**+ by 41.3%**

Note: "−" = decrease in odds; "+" = increase in odds. An "X" denotes differences of factors when a measure increases the odds of the listed outcome by more than 100%. For example, the odds of a defendant being released by paying bail is 3.8 times greater when a county uses a pretrial risk tool, compared to when a county does not use a risk tool.

One aspect from Table 2 that is worth highlighting is that defendants charged with a domestic violence crime possess twice the odds of being released by paying bail than non-domestic violence charges. This may be due to a number of reasons. Two likely explanations involve bail costs and affordability; both of which intersect with the complicated situations that contextualize domestic violence cases.

Apart from a few statutes that specify a minimum bail amount (e.g., mandatory minimum Measure 11 offenses), there is no set structure of bail in Oregon. Many counties have some type of "bail schedule" that helps judges determine common security amounts set for certain crime type (see Campbell et al., 2021 for a discussion of security-setting practices across the state). Ultimately, the bail amount (which may or may not be affordable for the defendant) is subject to the judge. Unfortunately, this dataset only allows us to identify those defendants who paid bail to be released, and those who did not, but were still released. While it is rare to hold a defendant without bail in Oregon, we are not able to identify how "unaffordable" bail was for the detained defendants. There is one notable caveat to security release for a defendant already on supervision (probation, parole, or post-prison supervision) who gets arrested and charged with an offense, bail is not guaranteed and is often not offered.

These issues intersect with the complexities of domestic violence cases in ways that are difficult to untangle with the current dataset. It is possible that life circumstances of defendants charged with domestic violence crimes reduce their level of perceived risk and/or lead to decreased bail amounts offered by the judge. For example, these defendants may have steady employment, strong ties to the community, and/or family support networks that could weigh favorably in pretrial release decisions (of note, these are all secondary release criteria in Oregon). It may also be the case that domestic violence defendants, on average, have greater monetary resources compared to other offense categories allowing them to post bail. As we note, domestic violence crimes are a complicated issue, and future research should untangle these relationships we observe here. Related to affordability, it may be the case that domestic violence defendants, on average, have greater monetary resources and are more likely to be employed compared to other offense categories allowing them to post bail.

Extralegal factors. With this analysis, we were also able to include various other extralegal factors that may predict pretrial outcomes such as documented mental health issue,[4] defendants' gender and race/ethnicity, if the defendant was represented by a private attorney, and also county-level variables such as the proportion of single parent households and high school graduates. Similar to legal factors, we highlight the top extralegal factors that predicted pretrial outcomes in Table 3. One finding is specifically important to note; in both release mechanisms, being represented by a private attorney increased the odds of release by between 1.5 and 4.5 times that of being represented by public counsel. Our qualitative interviews provide some context. That is, private attorneys may have more notice to represent their clients (e.g., receiving word of the case immediately after booking), and/or have access to additional information about the nuanced situation of their clients. Public attorneys may meet their clients mere minutes before their arraignment. It is also important to note the relationship between being able to hire one's attorney and being able to pay bail is likely impacting this outcome.

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[4] It is important to note that the indicator of a mental health issue is not defined using health records as those data were not available for our analyses. Instead, this measure is created by the DOC and therefore only includes people who have been in the system before and for whom a mental health disorder was documented.

Table 3. Top *extralegal* factors that influence the odds of…

	Release by paying bail (vs being fully detained)	
	1. Represented by a private attorney	**+ by 4.5X**
	2. Documented mental health issue	**− by 48.9%**
	3. Def. race/ethnicity: Native Amer./Pacific Isl.	**− by 41.4%**
	4. Prop. of county pop.: Living below poverty line	**− by 33.1%**
	5. Def. race/ethnicity: Black	**− by 8.0%**
	Release without bail (vs being fully detained)	
	1. Prop. of county pop.: Living below poverty line	**− by 37.4%**
	2. Def. race/ethnicity: Native Amer./Pacific Isl.	**− by 19.0%**
	3. Documented mental health issue	**− by 18.2%**
	4. Female defendant	**+ by 7.1%**
	5. Prop. of county pop.: Single parent households	**− by 1.9%**
	Being fully detained (vs released before disposition)	
	1. Prop. of county pop.: Living below poverty line	**− by 56.3%**
	2. Documented mental health issue	**+ by 31.4%**
	3. Def. race/ethnicity: Native Amer./Pacific Isl.	**+ by 30.5%**
	4. Percent of county pop.: High school graduates	**− by 5.0%**
	5. Prop. of county pop.: Single parent households	**+ by 2.0%**

Note: "−" = decrease in odds; "+" = increase in odds. An "X" denotes differences of factors when a measure increases the odds of the listed outcome by more than 100%.

Finally, we also examined the difference in odds of paying bail versus being released without bail – excluding those who are fully detained through their disposition – shown in Table 4. Similar to some of the legal factors that increase the odds of being fully detained, many of the factors that increase the odds of paying bail involve more severe, person charges. Only one involved the most serious charge being drug related. The extralegal factors that increase the odds of being released by posting bail includes when a defendant is represented by a private attorney, has a known mental health issue, is Native American or Pacific Islander, is older, or comes from a county with a higher proportion of single parent households.

Table 4. Top factors that influence the odds of paying bail vs release without bail

	Legal factors	
	1. Charged with one or more sex offenses	**+ by 3.0X**
	2. Charged with domestic violence offense	**+ by 2.9X**
	3. Most serious charge is drug related	**− by 48.3%**
	4. Charged with felony weapon offense	**+ by 41.0%**
	5. Charged with violent offense	**+ by 22.1%**
	Extralegal factors	
	1. Represented by a private attorney	**+ by 2.7X**
	2. Defendants with a mental health issue	**− by 32.9%**
	3. Defendant's race/ethnicity: Native Amer./Pac. Isl.	**− by 26.7%**
	4. For every year older, the odds of paying bail	**+ by 4.1%**
	5. Higher proportion of county pop. single parent household	**− by 2.6%**

RQ 2: Examining the relationship between pretrial detention and sentencing

Critical to RQ2 is balance between cases characteristics between those defendants who were released at some point and those who are fully detained. One of the best ways to isolate the effects of an intervention and conclude any degree of causality is to use experimental design. Experimental designs allow for causal conclusions because random assignment to different conditions ensure that the groups being compared only differ on the intervention, and thus it should be the only reason for any change in the outcome. Due to the unethical nature of randomly assigning defendants to pretrial detention or not, a randomized controlled trial is not possible. Instead, a common approach in many fields (e.g., education, medicine, and criminal justice) to simulate the random assignment found in an experiment is propensity score modeling (PSM) (Austin, 2008; Campbell & Labrecque, 2018; Dong & Lipsey, 2018). PSM is a statistical technique used to balance observed measures between the groups of interest, in this case fully detained and released, as if the defendants had been randomly assigned to the groups. Entropy weighting is an extension of PSM that uses the same principles and focus to balance the groups. Entropy weighting, however, often yields a stronger balance because it is an iterative process designed specifically for balancing groups (Hainmueller, 2012). We employ this model here, and it has been used to isolate the effects of pretrial detention in other studies (Campbell et al., 2020).

Given that the balance between those who were released and fully detained is critical, we first assess the balance between the two groups. We do this using versions of the standardized percent bias statistic which demonstrate the degree to which the two groups are different, regardless of sample size (for an overview see Austin, 2011, and Campbell & Labrecque, 2018). Following a successful balance,[5] a double-robust regression was used with the balanced sample to predict sentence type. The analysis revealed that the effects of pretrial detention are stronger than previously found in Phase I which only included 9 counties. Our most recent analyses revealed that ***those defendants who are fully detained through their disposition possess 4.1 times greater odds of receiving a prison sentence than probation, upon conviction***, compared to defendants who are released at some point. This is twice that found in the initial study of nine counties (Campbell et al., 2020). While it has yet to be investigated as to reasons for the increase in odds of prison for those detained, we speculate that this is likely due to the more robust dataset used in this study, compared to that of the prior Campbell et al (2020) analysis. Specifically, with the additional measures in the new dataset, our ability to account for more measures that predict the decision to detain (i.e., better matching via PSM), and additional factors that predict prison may have provided a more robust and nuanced picture that was not available with the prior dataset. With more measures, including those related to the county-level (e.g., percent of the county population living below the poverty line), this analysis may have been able to introduce measures that highlight the explanatory strength of being fully detained by cancelling out confounding relationships that were related to detention (e.g., domestic violence flags) which took on a greater role in the previous study. Further, it could also be that the difference observed between the two studies is due to increased variability in jail space. Newly added counties may give greater variability in fully detained persons in pretrial detention.

These latest observed effects of pretrial detention are most striking when comparing those with different levels of the Public Safety Checklist (PSC) score (using only criminal history). Figure 3 shows how the increased odds translate into the marginal effect of being detained through the case disposition. As shown in Figure 3, given an otherwise average defendant who is of any

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[5] Appendix Figure A demonstrates the noted balance and provides an explanation of the metrics.

risk level according to their criminal history, the probability of receiving prison is substantially, and significantly increased by being fully detained. In fact, the probability of prison for both the otherwise average low- and medium-risk defendants who are fully detained far exceeds the probability of high-risk defendants who were released. It is important to keep in mind that due to the balancing of cases in the data, our analyses control for key case characteristics like the nature and severity of the current offense and prior failure to appear. Yet being detained pretrial (versus released) remains a critical factor related to a carceral sentence. Similar to Phase I (Campbell et al., 2020), but using a more robust data set, we find a strong relationship between pretrial detention and prison, even after accounting for a multitude of statewide factors, including the primary release criteria.

Interviews with Oregon judges highlighted the following as potential factors in the pretrial to prison relationship (Campbell et al., 2021):

- When afforded pretrial release, the defendant's opportunity to prove success on supervision may be a key factor in a probation disposition (see Williams, 2003; Sacks & Ackerman, 2012).

- The psychological weight of jail pushes defendants to accept guilty pleas that include prison time the longer someone stays in jail pretrial detention.

- The fact that a defendant is in pretrial detention at time of disposition may be meaningful in how judges view the dangerousness of a defendant (see Williams, 2003).

- Cases deemed "prison presumptive" according to the sentencing guidelines appear to weigh heavily on some judges in making dispositional decisions.

Figure 3. Marginal probability of prison vs probation by detention status and risk level.
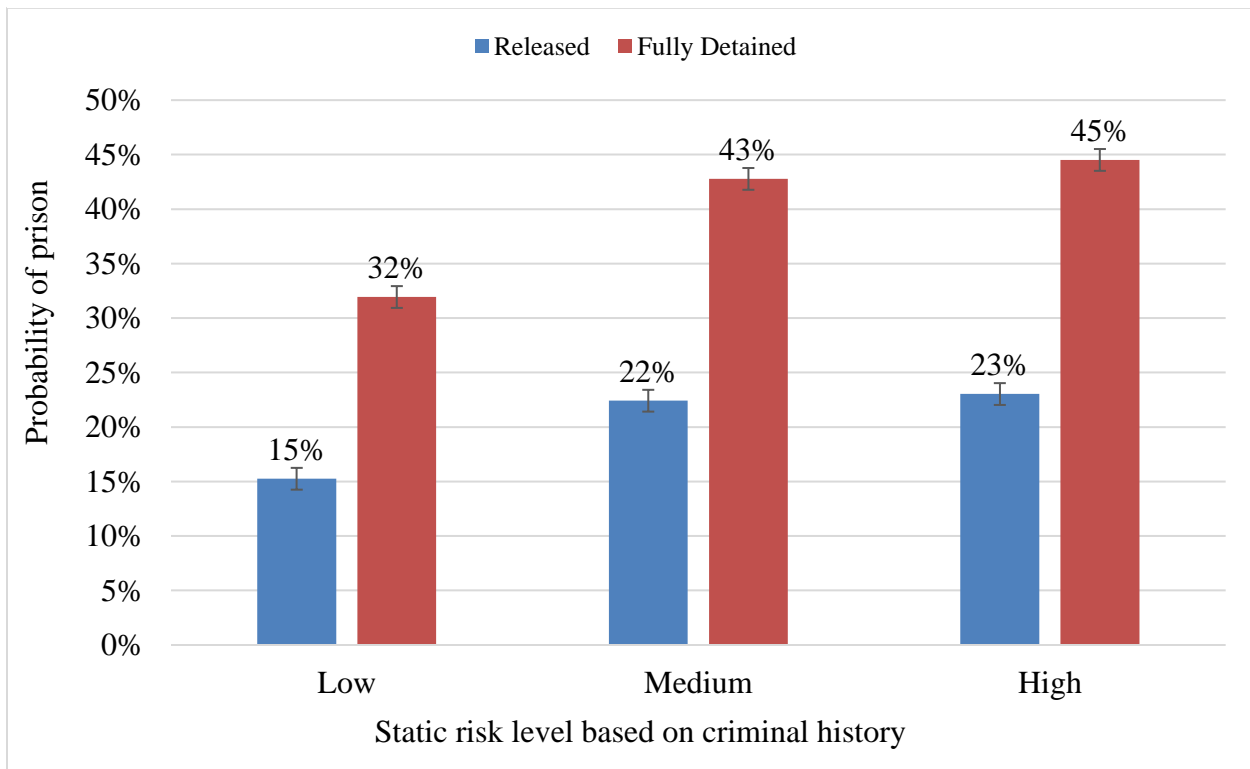
To complete the investigation into the relationship between pretrial detention and receiving a prison sentence, we expanded on the analysis above by examining how long a defendant remained in pretrial detention before the disposition of their case. We followed the same procedure used in the prior study on the time spent in pretrial detention (Campbell et al., 2020), otherwise understood as estimating the "dose-response curve" of pretrial detention. Figure 4 provides the marginal effect of days detained pretrial broken out by case type. Expectedly, the probability of most misdemeanor cases receiving prison upon conviction is virtually non-existent, while felony cases display wide variation across the days spent in detention. Figure 4 shows that there are three distinct patterns in the likelihood of prison as it relates to the dosage of pretrial detention. The first pattern to note is the stability in the likelihood of a prison sentence from booking (Day 0) up to the third day in detention. This pattern demonstrates that there are little changes in case status until this point. The second pattern begins on Days 3 - 5 where a decrease in the likelihood of prison begins and persists until roughly Day 15. The third pattern is the consistent increase of the likelihood of prison as time spent in detention increases past 15 days. This translates into a rather impactful relationship for those in pretrial detention. ***For an otherwise average felony case, there is a significant increase of 0.7% in the odds of receiving a prison sentence for each day detained pretrial***.

Interpreting these patterns provides insight into likely scenarios related to plea negotiations practices and defendants' decision-making. Overall, there is little research on prosecutorial plea offer practices, but there is evidence to suggest that prosecutors in some jurisdictions often operate using a "first offer, best offer" approach (see DANY practices; Kutateladze et al., 2015). Meaning that the first offer (near arraignment) will be the state's best offer, and offers will increase (i.e., become more punitive) after subsequent proceedings. Many of these offers could also be considered "exploding offers", meaning that defendants have little time to make a plea decision (Zottoli et al., 2016). Peterson's research on pretrial detention and plea decision-making suggests defendants held in pretrial detention for greater periods of time will be more willing to accept plea offers (2019; 2020), and the longer a defendant is detained the more severe their sentence is (Sacks & Ackerman, 2012).

A probable scenario depicted by Figure 4 is one that involves the defendant accepting a plea offer in the first 5 to 15 days of pretrial detention (it is possible given past research that this is the "best offer"). Before Day 5, it is unlikely that the District Attorney would have offered a plea (e.g., need to "staff" the decision; grand jury proceedings) or that the defendant would be in a position to accept any offer (e.g., has not been appointed counsel or met with their attorney). As such, we see defendants accepting guilty plea offers in the first 5 – 15 days, which is likely a combination of a few factors. One- defendants' ability to plead at that point (whereas they were not able to procedurally prior to that). Two- defendants' increased desire to leave custody (e.g., to return to work and family life with little disruption). Our qualitative data suggest this is an important, observable process:

> *I think a lot of it is the offender simply giving up. They don't see any way to get out of detention or out of custody and so I think for them, I see too often they just accept a plea offer that has a prison sentence.* Judge, 28 years in criminal justice, rural/non-metro

It is possible "first offer, best offer" practices result in decreased plea quality over time. Correspondingly, defendants that plead guilty during this time period receive the greatest benefits for avoiding a trial (i.e., probation as opposed to prison). Important to note is that due to grand jury

processes, felony defendants likely will not see an offer until at least a few days after booking. The significant drop in the likelihood of a prison sentence after spending 6 to 15 days in pretrial detention is indicative of defendants giving into the weight of being detained. By this point, it is unlikely that the defendant still has their job, and although family social and emotional support may stay strong, most justice-involved families' financial support is likely depleted. Combined with "first offer, best offer" of probation, these issues may be enough to push defendants to accept a plea. As observed by Malcolm Feeley in the 1970s, it still appears to be the case that the process is indeed the punishment for many defendants experiencing pretrial detention (Feeley, 1979). Following the substantial and significant increase in the probability of prison after 15 days, the probability of prison peaks at about 2 months (60 days) and remains elevated although plateauing near 30%.

Figure 4. Probability of prison vs probation by days in pretrial detention for felony cases.
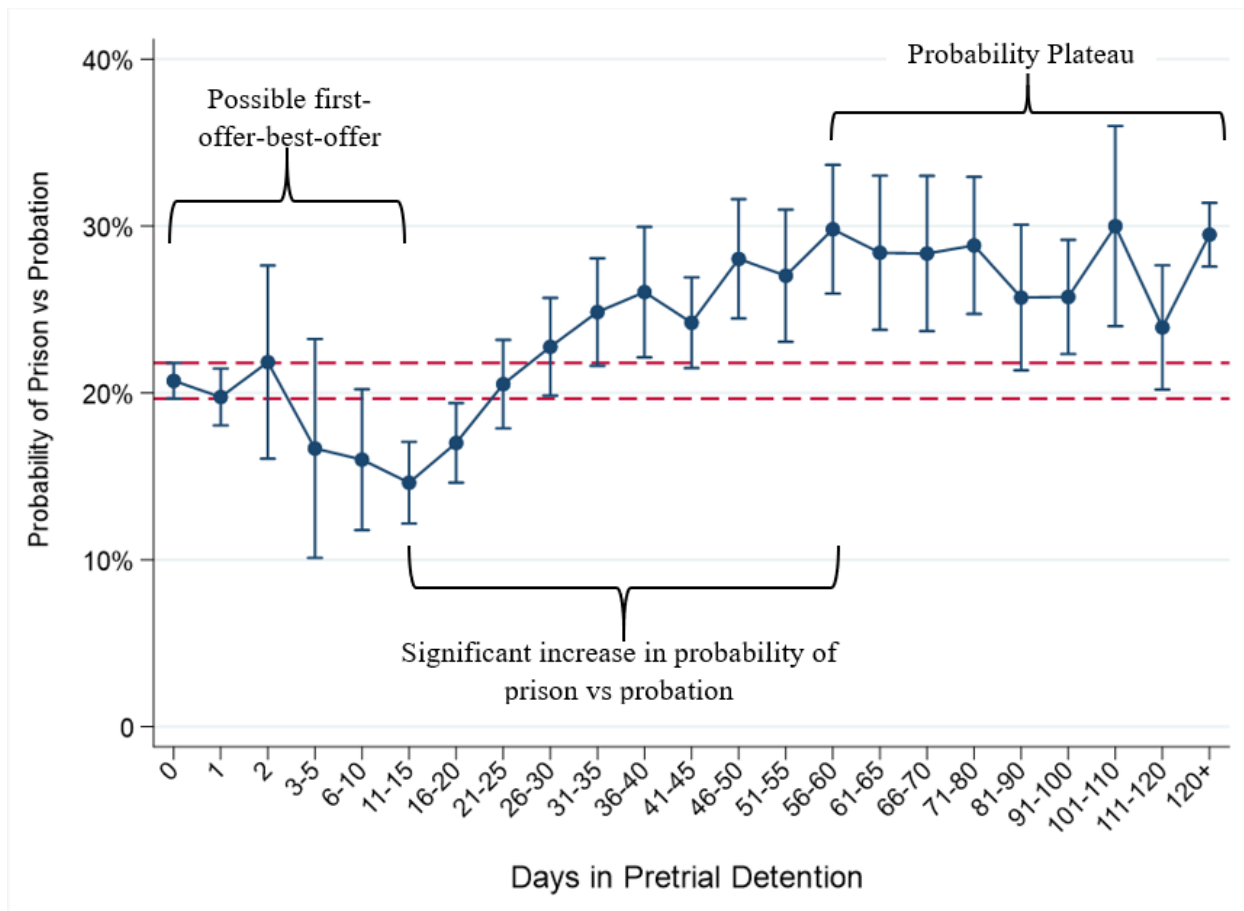
Note. The presented dots are the average likelihood of prison for the associated days spent in detention. The bars going above and below the dots represent the upper and lower confidence intervals. Considering that the reference dosage is being released on the same day as booking (Day 0), red dotted lines have been placed over the upper and lower confidence intervals of this day to show relative importance across the days detained. Any bars of dosage point estimates that cross over the red lines indicate a difference that is not statistically significant. If the bars do not cross any part of the red line, then the difference is statistically significant.

The time spent in pretrial detention appears exacerbated when we breakout the effects by those who were fully detained through their disposition and those who were released at some point before their disposition. Figure 5 provides the dose-response curves of these two groups as it related to their ultimate sentence and the time spent in pretrial detention. After controlling for all demographic, case characteristics, judge, and county information, Figure 5 shows that a possible "first offer, best offer" practice is apparent for both groups, but it has greater clarity for those who were released at some point. The significant decrease between 2 and 15 days suggest that following release from pretrial detention, the "best offer" for those released is most likely to include probation. In contrast, those who remain in detention through their disposition receive offers that are more likely to involve prison time. For those who are fully detained, there is a significant increase in the probability of prison after about day 20, with a steady rise thereafter.

Figure 5. Probability of prison vs probation by days in pretrial detention for felony cases.
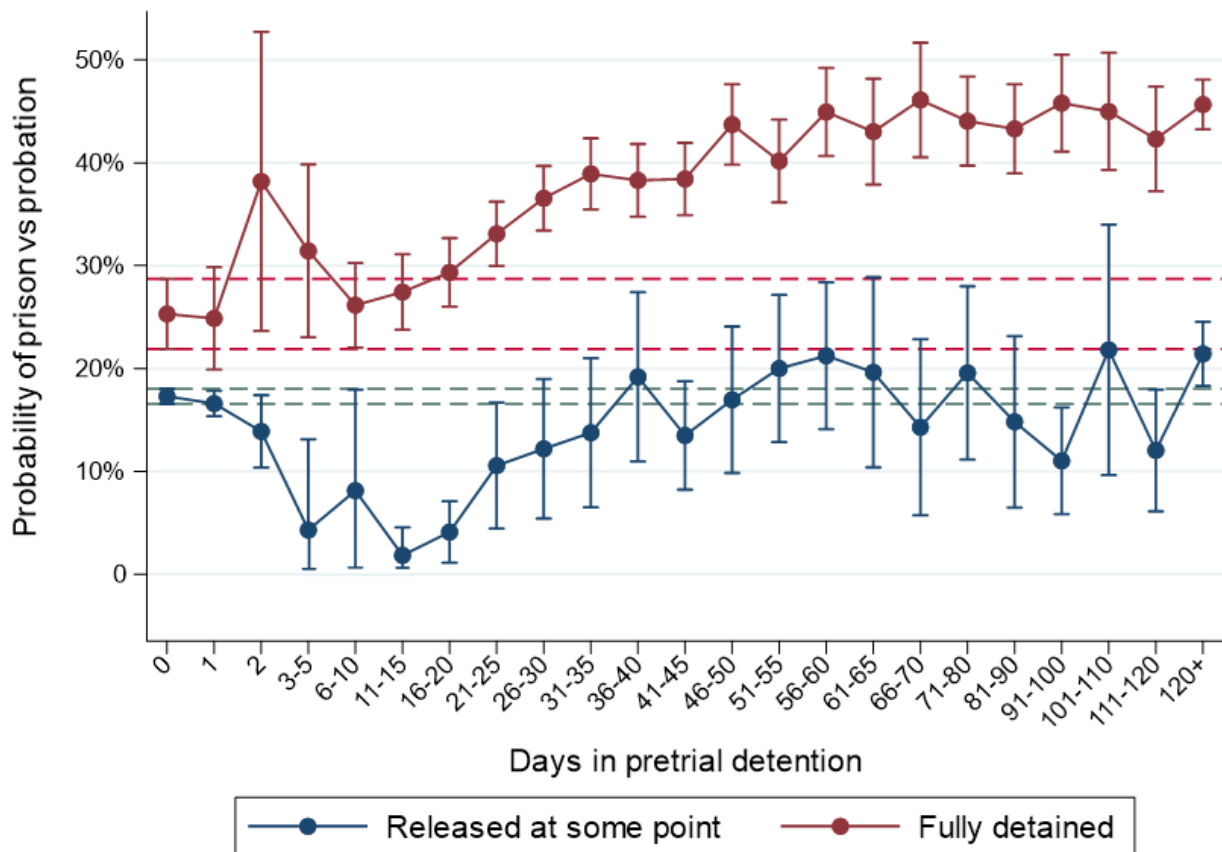
Note. The dotted lines represent the threshold of statistical significance for each trend of the corresponding color.

To round out the analysis of the relationship between pretrial detention and sentencing, we examined the time between the day a case is filed to the day in which the defendant pleaded guilty. In U.S state courts, over 95% of all cases are resolved via plea agreement, as opposed to trial (Durose & Langan, 2007). Oregon is no exception to this. Of the 100,271 cases with a conviction from 2017 through 2019, 96.7% were resolved via plea-bargaining. As alluded to above, one of the strongest correlates of willingness to accept a guilty plea is pretrial detention (especially for plea offers including time served). Similarly, prosecutors may leverage the fact that a defendant cannot afford bail to pressure a defendant into accepting the deal (Petersen, 2019). The results of each of these probable scenarios is that defendants who are fully detained plead guilty earlier than those released.

Figure 6 provides a visual depiction of the time it takes for defendants to plead guilty. We see that at day zero (i.e., the day the case was filed), only a couple cases had been resolved and therefore are present in the graphs as a slight deviation from zero. Among the cases that ultimately received a prison sentence (the left graph of the two shown in Figure 6), by Day 30, only 1.2% of released defendants pleaded guilty, while 15.8% of those fully detained had plead guilty by that same time. This gap widens considerably as time goes on. By the fourth month (Day 122), only 10.4% of released defendants had pleaded guilty, while 57.4% of those fully detained had plead out. A similar pattern is seen among cases that ultimately end in probation, although less pronounced. By Day 30, 11.9% of defendants who were released had pleaded guilty, while 38.8% of those fully detained had pleaded guilty by that same time. The difference reaches its peak among probation-bound cases just 10 days later where 28.8% fewer released defendants released had pleaded guilty compared to those fully detained. These two graphs suggest that those who are fully detained plead guilty significantly sooner than those who are released at some point. Although the trend is far more pronounced among prison-bound cases than probation-bound cases, the significant difference is observed regardless of the outcome.

Figure 6. Time to plea by detention status within the first 190 days.
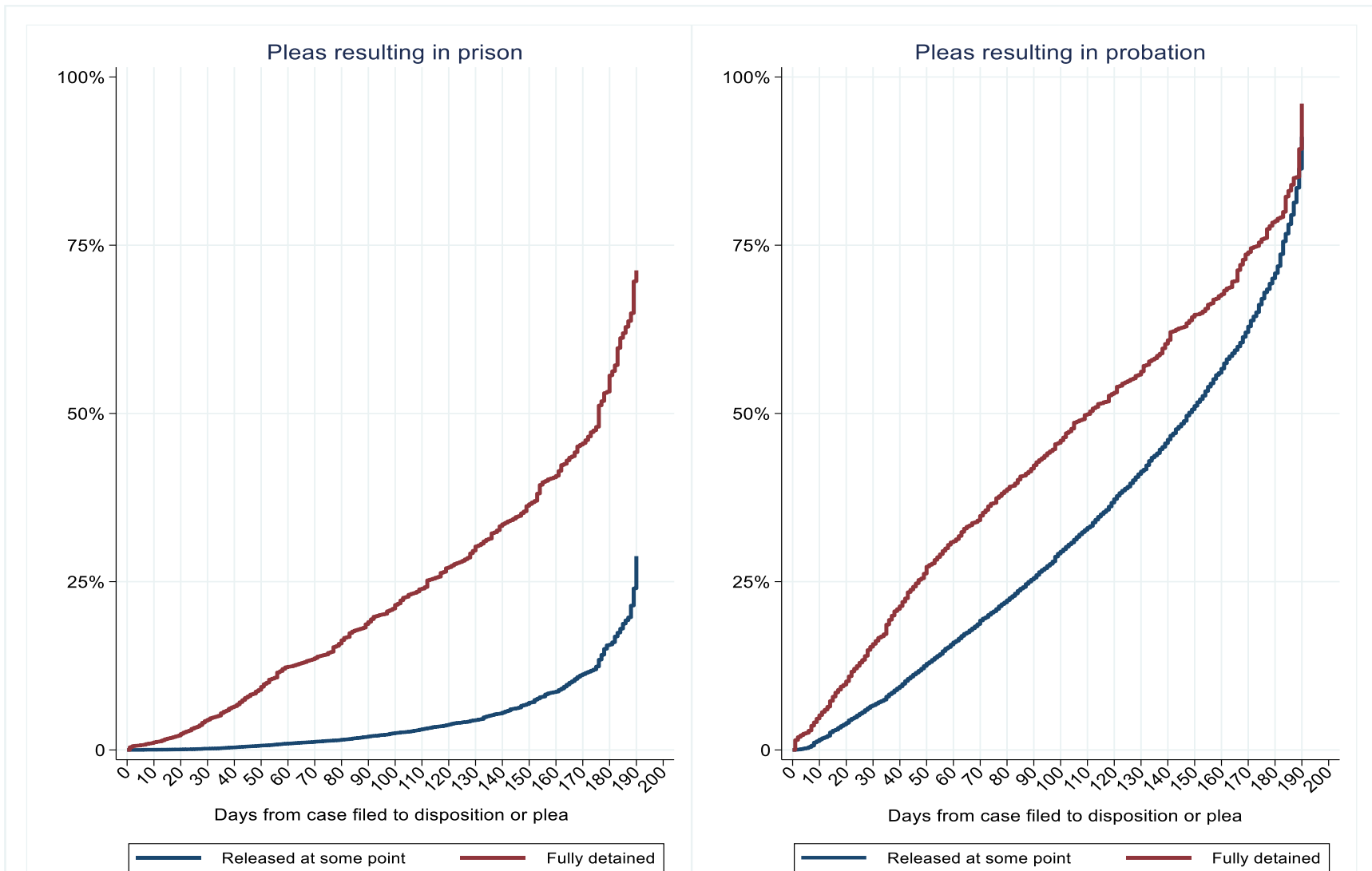
Note. Figure 6 depicts the first 190 days between the case filing date and the disposition or plea (which ever came first) among all cases that ended in a conviction by plea (i.e., excluding those that went to trial) by detention status (fully detained versus released), and separated out by the case's ultimate sentence (prison versus probation). The lines represent the percent of cases that remain without a plea bargain at a given point in time (x-axis).

RQ 3: Examining differences between counties with and without pretrial resources

To address RQ3, we build directly from of our qualitative report (Campbell et al., 2021) where we examined pretrial resources by county type. Pretrial resources involve both the overall structure of how defendants are processed, the information available to the judge for making release/bail decisions, and the implementation of actuarial risk tools. Our qualitative analysis revealed that the majority of counties in rural/non-metro areas do not have a pretrial monitoring program or structure, but a little over half have a delegated release authority. In contrast, almost all urban/metro counties have a delegated release authority and some kind of monitoring. Identifying the nuanced differences allowed us to classify the counties into three broad pretrial structures – Type A, B, and C.[6] We highlight the important differences between these different structures here:

- Type A (executive, no monitoring) counties are those that have no pretrial program, relying largely on the executive branch (sheriff or jail commander) to process pretrial defendants with no release authority apart from the judge, except by way of forced release from jails at capacity. Additionally, these structures have no form of monitoring pretrial releasees, instead relying on unrelated law enforcement contact. Judges rely on information that comes from the prosecution, directly from the defendant, or the defense attorney. Interviews with judges in Type A structures suggested that the type and amount of information available was often inconsistent.

- Type B (executive, with monitoring) counties also rely on the executive branch for processing pretrial defendants, but typically have a release authority and some kind of monitoring. The release mechanism in these counties often use some form of risk tool to guide the release authority's decision-making, and can be coupled with monitoring along various intensities depending on the level of resources available. If Type B counties use a risk tool that gathers dynamic factors (e.g., employment status found in the Virginia Pretrial Risk Assessment Instrument [VPRAI]), then the judge is able to see factors that speak directly to primary and secondary release criteria.

- Type C (judicial) counties are those which have their pretrial processing integrated with an OJD release officer who is involved with many release decisions before the case arrives before the judge, and is the primary pretrial monitoring authority. With Type C counties involving an agent of the court, these counties have a direct line of systematically collected information regarding secondary release criteria from the defendant to the judge. Even in instances where a dynamic risk tool is not used, the judge typically has more information across all cases than in other structures.

Baseline relationships. To decipher the quantitative effects of each structure, we first analyzed the bivariate statistics to deconstruct the differences in cases and defendants within pretrial release structures. Table 5 provides case descriptives by pretrial structure, along with the *p* value of the statistical test and the average standardized percent bias across the three types.[7]

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[6] Appendix Figure B provides a visual depiction of these types from our qualitative report.
[7] The standardized percent difference or bias is a common metric used to determine how different two groups are in their proportions, means and standard deviations. For more on this metric and how it is used, we refer readers to Austin (2011).

Using case characteristics, the *p* values note if the differences between the pretrial types are statistically significant (any *p* value less than .05). Due to the fact that *p* values are heavily influenced by sample size, the standardized percent bias is used as a more accurate measure to highlight differences between two groups. We calculated bias metrics between each type combination of two groups and averaged them to identify the metric provided in the table.

Pretrial Structure Descriptive Findings. Key information to take away from Table 5 includes both areas of no observed differences, as well as differences between the pretrial types. Our initial analysis shows, that there are no major differences between the pretrial types on legal factors such as charge type, severity, and criminal history. This suggests that across the state, counties are generally experiencing similar proportions of certain types of cases and severities, with defendants who have similar criminal histories. The only exceptions to the crime types are drug offenses and general felonies, which occur at a higher rate in counties with Type B and C structures (often urban settings). Only one other legal factor was different across the county structures – FTAs, both prior and current. Drawing from our qualitative examination of these structures, the differences in FTAs may be due to the way different jurisdictions approach failures to appear for a hearing (i.e., formally charging FTAs).

Important differences to take from this table are the extralegal factors of the defendant such as gender and race, as well as how the pretrial structures differ on county-based metrics (bottom portion of the table), risk assessment use, and jail overcrowding. With regard to gender, Type A and B structures have significantly more cases with male defendants (72.8 and 74.5%, respectfully) than Type C structures (53.2%). This is particularly noteworthy considering Type A comprises primarily rural counties (78.2% of cases in Type A structures) and Type B and C are largely urban settings (consisting of 18.8 and 19.3%, respectfully). Unfortunately, there is little in the current analysis that would explain these differences. Structure compositions of defendant race/ethnicity were rather low (less than 8%) in every category except Hispanic (rather even between 12.7 to 16.1% of cases) and White defendants (between 69.9 and 75.1%). The structures differed, however, on the proportion of Black and Native American or Pacific Islander defendants. While Type B and C counties had a higher proportion of cases with Black defendants (7.0 and 4.5%, respectively) compared to Type A (1.9%), Type A counties had a higher proportion of Native American or Pacific Islander defendants (3.4%), compared to Type B (1.9%) and C counties (1.1%).

The largest differences between the pretrial structures were observed in county-based metrics, risk assessment use, and jail overcrowding. Unsurprisingly, Type B and C structures possessed the highest average populations over 10 years old. The largest proportion of Type B cases came from Multnomah County (17,348 cases), with Washington County (17,877) comprising the most Type C cases, and Umatilla County (5,112) the largest proportion of Type A cases. Type A structures also possess a larger percent of their population below the poverty line than Type B and C (16.5, 14.2, and 13.4%, respectively), as well as a higher unemployment rate (4.6, 4.2, and 4.0% respectively), all according to the U.S. Census Bureau. Both of these metrics are important to control for as they may serve as indicators of bail affordability.

Table 5. Case descriptives by pretrial structure

Variable [a]		Type A	Type B	Type C	χ^2 / F	p	Avg %Bias
Number of cases		32,057	95,823	34,006			
Male		72.8%	74.5%	53.2%	28449.3	<.001	30.4
Race/Ethnicity	*Asian*	0.8%	1.2%	1.2%	6422.2	<.001	3.0
	Black	1.9%	7.0%	4.5%			16.9
	Hispanic	15.6%	12.7%	16.1%			6.4
	Native/Pac Isl.	3.4%	1.9%	1.1%			10.7
	White	75.1%	75.1%	69.9%			7.8
Average (Avg) age at hearing		36.8	36.5	36.2	20.8	<.001	2.7
Case type: Felony		32.0%	38.0%	42.9%	832.7	<.001	15.1
On supervision at arrest		12.0%	14.3%	16.2%	230.6	<.001	7.9
Avg PSC general score		0.29	0.32	0.32	127.9	<.001	5.6
Charge type							
Domestic violence	*1 or more*	6.9%	7.5%	8.9%	105.4	<.001	5.0
JRI	*2 or more*	9.3%	13.1%	12.5%	886.2	<.001	8.0
Violent	*1 or more*	7.6%	7.9%	8.5%	20.7	<.001	2.3
Robbery	*2 or more*	0.2%	0.4%	0.4%	107.5	<.001	3.0
Sex offense	*2 or more*	1.1%	1.3%	1.8%	94.1	<.001	3.7
Total Charges	*2*	24.6%	26.9%	24.2%	776.6	<.001	4.0
	3	11.5%	12.2%	9.7%			5.4
	4 or more	13.8%	15.3%	12.3%			5.9
Charge severity	*8*	5.2%	5.3%	5.1%	277.5	<.001	0.6
	9	1.6%	1.7%	1.9%			1.6
	10	1.3%	2.0%	2.0%			3.5
	11	1.4%	1.5%	1.7%			1.6
UCR offense type	*Drugs*	12.6%	16.6%	18.7%	1810.4	<.001	11.2
	Person	15.3%	16.4%	16.8%			2.7
	Property	20.2%	22.6%	21.9%			3.9
Court appointed/Public Defender		79.1%	79.2%	76.3%	261.9	<.001	4.6
FTA during index case	*1*	12.4%	12.8%	11.3%	906.7	<.001	3.1
	2 or more	6.4%	10.2%	6.0%			10.3
FTA priors	*1 or more*	5.5%	2.4%	1.7%	1108.0	<.001	18.5
Rural/Non-Metro		78.2%	18.8%	19.3%	42561.1	<.001	98.4
Avg population 10 years old and older		44,894	287,969	370,233	26027.4	<.001	104.9
Avg percent below poverty		16.5	14.2	13.4	7617.7	<.001	46.0
Avg unemployment rate		4.6	4.2	4.0	4172.3	<.001	36.2
Pretrial risk assessment		14.6%	87.8%	47.4%	62083.0	<.001	128.8
Quartile of force releases to bookings	*less than 1%*	28.1%	40.2%	5.3%	35659.0	<.001	60.6
	1.6 to 6.5%	13.6%	10.7%	52.6%			66.9
	6.8 to 16.5%	31.7%	34.0%	22.9%			16.5
	17 to 100%	26.6%	15.2%	19.3%			18.9

[a] This table is truncated for space and therefore some columns may not add up to 100% within a given measure.

Other germane metrics related to pretrial release that harbor sizable differences between the structures are the use of pretrial risk assessments and jail capacity. As noted in our qualitative report, the use of actuarial pretrial risk tools varies widely across jurisdictions, with about half of Oregon counties not employing any form of pretrial risk assessment. When we break this out across pretrial structures, we see that cases in Type B structures (87.8%) are subjected to risk tool-assisted release decisions more than both Type A (14.6%) and C (47.4%). This could be explained by more closely examining the different structures. That is, Type B counties often have pretrial operations driven by their executive branch, which typically involves probation/parole officers. Considering the use of actuarial risk assessments is primarily focused in community corrections, such personnel are best equipped to understand and aptly deploy risk tools. While Type C counties employ pretrial-specific personnel who may contextualize the use of actuarial risk tools in the larger context of release decisions, and are more likely to use dynamic risk tools to further aid the decision-making process.

Recall that our jail capacity measure is the proportion of force releases compared to bookings for each county jail.[8] Because many jails do not have a capacity issue, the data were heavily skewed on this measure. Consequently, we used the quartiles of the proportion to capture those counties that have varying capacity issues within each pretrial structure. As shown in the table, we characterize these quartiles as the proportion of force releases to bookings being *less than 1%*, *1.6 to 6.5%*, *6.8 to 16.5%*, and *17 to 100%*. Type B counties yielded the highest proportion of cases coming from a jurisdiction in the lowest category of forced release rates (40.2%). All but 5.3% of cases from Type C counties and a little less than a third of the Type A counties include a jurisdiction with some degree of jail capacity issues.

Pretrial Structure Substantive Findings. Upon identifying the key differences discussed above, we set out to determine if these differences were meaningful to certain pretrial outcomes such as pretrial detention/release, FTAs, pretrial rearrest, and sentencing. We employed a form of propensity score modeling that balanced the cases across the county pretrial structure types. The critical goal for the PSM weighting scheme was to ensure balance among case/defendant characteristics (e.g., gender, race/ethnicity, and FTAs) and county-based metrics (particularly those factors from the U.S. Census Bureau) across the pretrial structures. Such balancing allows the analysis to examine how county pretrial structure (holding case characteristics constant) may influences outcomes. The results provide important information for discussing and weighing the pros and cons of different approaches to pretrial in relation to desired outcomes.

After successfully balancing the cases and county characteristics across the structure types,[9] and controlling for all major factors that influence the pretrial decisions, specifically all primary release criteria, ***Type C pretrial structures increase the odds of release for all cases by 82.3%, compared to Type A structures. Similarly, Type B structures increases odds of release for all cases by 38.7%.*** Figure 7 provides the marginal predicted probability of an average case/defendant being released in each pretrial structure, given their case type (felony or misdemeanor). For misdemeanor cases, the increase in odds of release translates into an otherwise average defendant possessing an 81% chance of being released in a county with a Type C pretrial structure, and 77% chance in a Type B structure. While Type A structures still yield a probability of being released that is 72%, this is notably lower than the other two structures considering the cases are statistically similar across the types. Similar differences in the probability of release are

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[8] It is important to note, that there are multiple counties that use Northern Oregon Regional Correctional (NORCOR) facilities, which were also represented in these metrics.

[9] Similar to RQ2, Appendix Figure C demonstrates the noted balance and provides an explanation of the metrics.

seen among felony cases as well, with cases in Type B and C counties having a higher probability of release than Type A, which that sit at chance levels (i.e., no better than a coin flip).

Figure 7. Probability of release by pretrial structure and case type
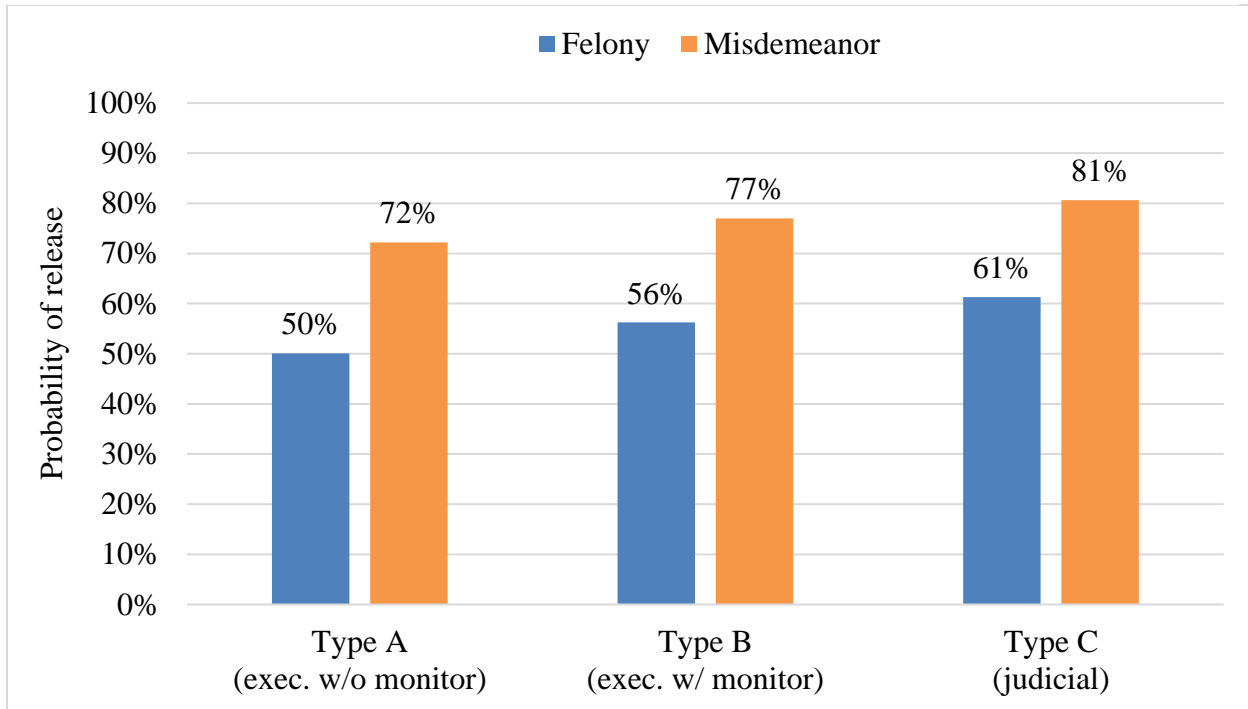
These findings largely hold when examining the effects of pretrial risk tools on outcomes as well. We find that an otherwise average case being adjudicated in jurisdictions using an actuarial risk tool has a 10% higher probability of being released, regardless of the pretrial structure. When examining how these effects play out within each type, we examined the interaction between using a pretrial risk tool and the structure type. Generally, the inclusion of ***an actuarial risk tool increases the odds of being released by between 4 to 6 times*** compared to when there was no tool used. This was most prominent among Type A structures, which translates into an increased chance of release, both by paying bail and without bail (ROR; i.e., receiving a release agreement and did not pay bail).

Figure 8 provides the marginal effects of using an actuarial risk assessment in Type A counties on the probability of being released with or without bail. The figure demonstrates that an otherwise average defendant charged with a misdemeanor as the most serious offense has a 2% greater chance of being released with bail, and an 11% greater chance of being released on recognizance than a defendant charged with a felony as their most serious offense. Similarly, an otherwise average defendant charged with a felony has a 4% greater chance for bail and a 16% greater chance for ROR than a defendant charged with a misdemeanor as the most serious offense. In contrast, using a risk tool does not necessarily increase the probability of release in Type B and C counties. This is could be because many Type B and C counties largely have this process embedded in their release authority protocols, who even in the absence of a risk tool may still emphasize the primary release criteria in their decision-making.

Figure 8. Effect of risk tool use on probability of release in Type A structures
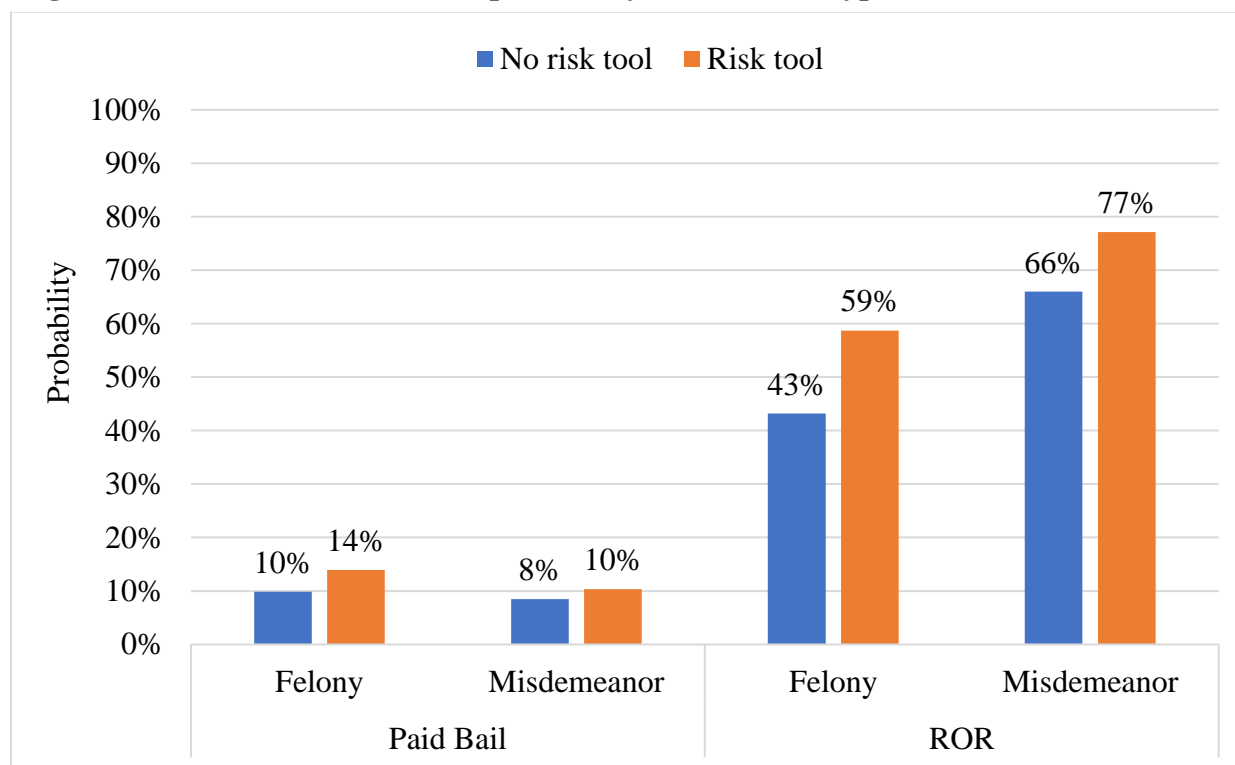
In addition to the use of pretrial risk tools, we also examined the influence of jail capacity on pretrial detention (versus release). Figure 9 provides the average effect of jail capacity in quartiles of the proportion of force releases to bookings by the pretrial structure among felony cases. Counties where there are 17 or more forced releases per 100 jail bookings (i.e., purple bar in Figure 9) are in the highest quartile and thus have a reduced jail capacity. Misdemeanor cases are not shown, but have a similar trend with felony cases. Upon inspecting the interaction between the quartiles shown in Figure 9, we see there is a clear effect that varies by type and quartile of jail capacity. Each structure appears to generally have a baseline probability of release that is over 50%, except in certain circumstances. For both Type A and Type B structures, those counties with jails in the second jail capacity quartile (1.6-6.5% force releases to bookings) possessed the lowest probability of release, when controlling for key factors. In contrast, in all situations except one (6.8-16.5% force releases to bookings), Type C structures significantly increase the probability of release compared to the other pretrial structure types.

The effects demonstrated by Figure 9 suggest that there is likely a difference in release selectivity employed by each pretrial structure that can be mitigated by the county's jail capacity situation. For Type A and B counties, the selective nature of holding felony-charged defendants is exhibited most in the middle two jail capacity quartiles, with the probability of release increasing to its peak only in situations where the jail is needing to force release defendants somewhat often. Such probabilities are flipped when it comes to Type C structures, which appear to increase the holding of felony defendants as the jail approaches or meets its capacity. The selectivity of the structures is bolstered by the use of pretrial risk tools. It is possible that Type C counties err first on the side of release when capacity is not an issue, and as jail space becomes scarcer, they rely

more on concerns of public safety to be more selective in determining who should be released on recognizance or bail (red and green bars). This can only be achieved if there is a clear and direct dialogue between judges and the jail commanders, for which Type C structures are well equipped. Ultimately, any discretion is overwhelmed when capacity is near zero (purple bars).

Coinciding with the probability of release is the days detained. While applying the PSM weights, the baseline, average days detained across all cases for the types were significantly different from one another. Type A structures have an average days-detained of 32.2 (standard deviation [sd]=88.9), for Type B it is 40.5 (sd=102.0), and for Type C it is 29.7 (sd=89.1). Using a negative binomial regression, we used the same predictors as in previous models to isolate the relationship between the days detained and the pretrial structure. Additionally, we used the duration of the case in days as an exposure variable to account for the differing lengths of cases. Ultimately, our analysis suggests that the only statistically significant differences were found in Type C (judicial) structures. An otherwise average case in which the defendant was fully detained spends approximately 5 to 10 fewer days in pretrial detention, after accounting for all relevant primary release criteria and county characteristics.

Figure 9. Effect of jail capacity on probability of release for felony cases by structure
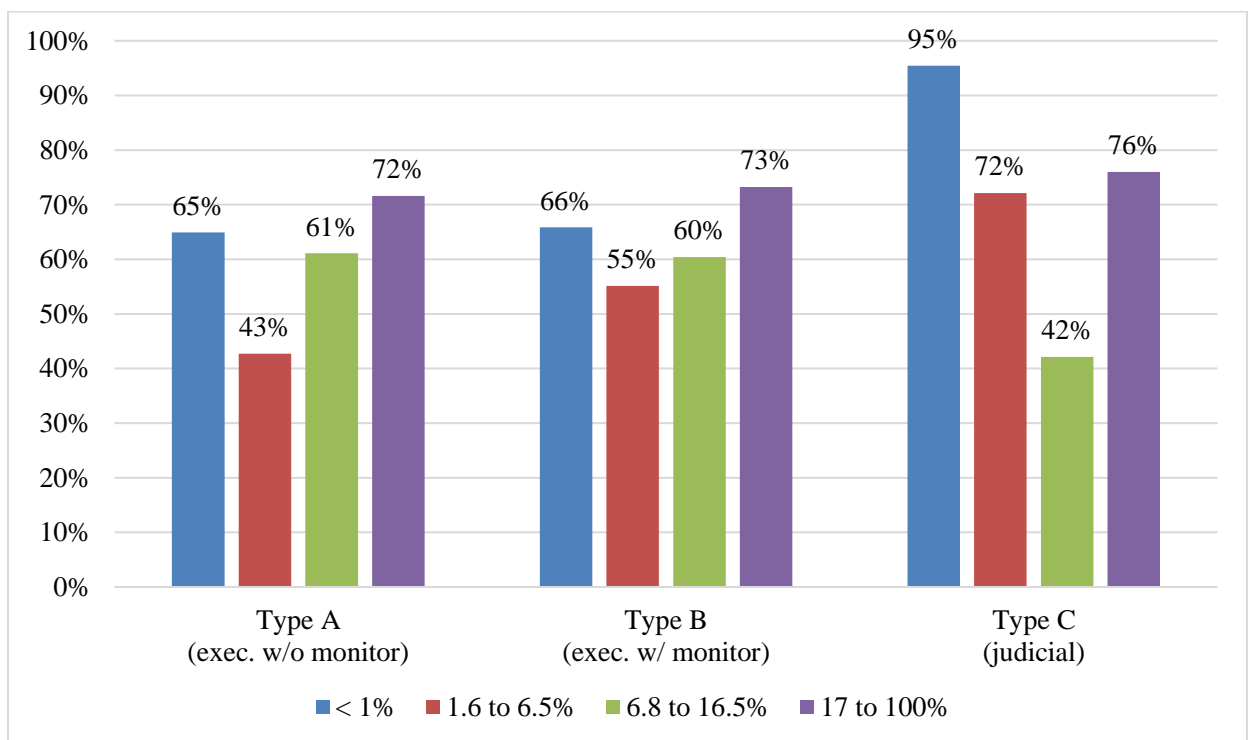
Pretrial outcomes – FTA & Rearrest. Investigating the effects of pretrial structures on pretrial outcomes, we examined if the structure reduced the odds of an FTA occurring during the current case duration, and the odds of rearrest during the pretrial period. For this analysis we only used cases that were released at some point to ensure that the defendant was at risk of an FTA or rearrest. We also controlled for additional metrics associated with FTAs including the days spent in detention, days in the community, the number of hearings experienced throughout the case, and the amount paid in bail if not released on recognizance. For this analysis, we operationalized FTA

by creating a dichotomized measure that captures any time a hearing was cancelled for, or resulted in, a failure to appear. If there was an FTA at any point during the case, then the case was identified as having failed to appear. This measure indicated that roughly 21% of the sample had at least one FTA during their case. We recognize that this is a rather liberal estimate of FTAs, and that it does not necessarily account for the nuanced differences between cases where a defendant forgets to show up, is unable to make it because they are detained in another county, or is an actual effort to flee the jurisdiction. Nevertheless, when investigating the prevalence of an occurrence such as FTAs, it is important to begin by casting a wider net; identifying nuanced areas over time to make the measure more conservative while maintaining reliability and validity.

Overall and on average, Type A structures are associated with significantly lower probability of defendants failing to appear. *After controlling for several critical factors, cases in Type A structures have a 17.3% chance of yielding an FTA at some point (from file date to disposition date). Type B structures have a 28.7% chance, and Type C have a 30.7% chance.* While the difference between Type A and that of B and C is statistically significant, the difference between B and C, is not.

The justification for the increased FTA probability is likely a mixture of three issues – selectivity in releasing defendants, differences between rural and urban settings, and jail capacity. Figure 10 shows the probability of FTA by pretrial structure and defendant PSC risk level when jail capacity is not an issue (i.e., when the jail has less than 1% force releases to bookings ratio). The figure demonstrates that Type B and C structures have higher probabilities of FTA, compared to Type A counties. It is important to note that as counties commit to reducing pretrial detention use with the aim of reducing the unconvicted detained population, there is an added risk of releasing individuals who are less likely to appear for their court date. Although our analysis strives to balance the cases in each pretrial structure, we do not have variables for certain needs and risk factors that are strongly associated with FTA like houselessness and/or addiction issues. Perhaps Type B and C structures are more willing to take release chances on defendants facing these issues, which are perceived as less a concern for community safety, than Type A counties. If an added risk of FTAs is a tradeoff to less jail bed usage, then it should be concentrated on the group that is lowest risk to commit a new crime, which is what we see in Type C structures.

Without a pretrial risk tool to help identify risk of FTA, it may be difficult to accurately make such release decisions while also reducing FTAs. These findings underscore the importance of accurately identifying those defendants who are most likely to FTA, which can be best aided through validating risk tools on the local population that provide needed guidance for release officers to make well informed decisions about how best to release, monitor and support the pretrial population.

Figure 10. Probability of failure to appear by pretrial structure and PSC risk level
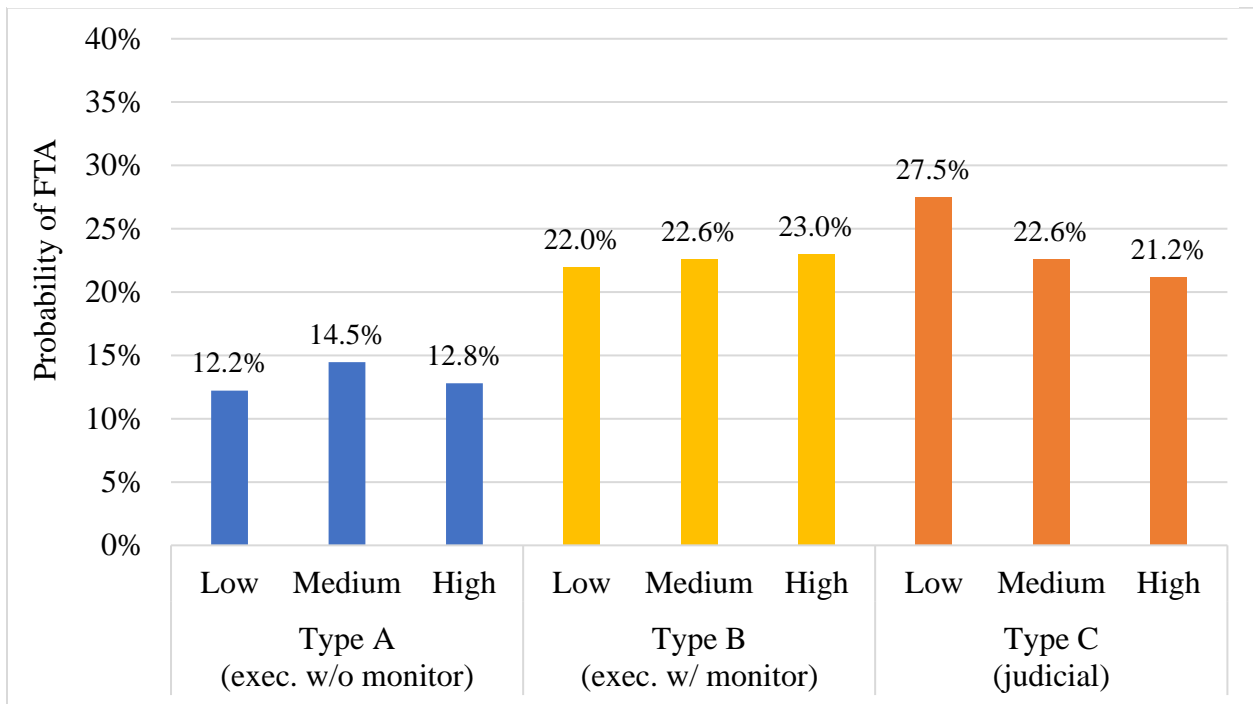
The importance of validating risk tools to identify low risk defendants can be exemplified when breaking out examples of the pretrial structures. Figure 11, below, shows the probability of FTA by PSC risk level in six counties representing rural and urban settings in each pretrial structure. In Figure 11 we see that urban settings have higher probabilities of FTA regardless of the pretrial structure, and the two rural counties representing Type B and C structures embody how FTA risk could be concentrated on groups of lowest risk to commit a crime during the pretrial period. Although the PSC was not created for or validated for pretrial decisions, it is still used regularly to determine pretrial release in many counties. Varying probabilities across the risk levels shown in the figure suggests that there are likely differing reasons for FTAs in each setting. Without adequate data on key causes and correlates of FTAs, that which can be collected through systematic data collection in risk tools, there is no way of properly targeting the reasons driving FTAs. The figure demonstrates that the counties of different regions may see differing justifications for defendant FTAs. If counties are interested in reducing FTA rates, while also reforming pretrial practices to reduce jail and prison use, then there needs to be a clear effort to identify key causes and correlates of FTAs in both rural and urban settings. Using information collected by the VPRAI or other dynamic data may help to shed light on who is most likely to appear for court.

Figure 11. Probability of FTA for example counties by pretrial structure and risk level
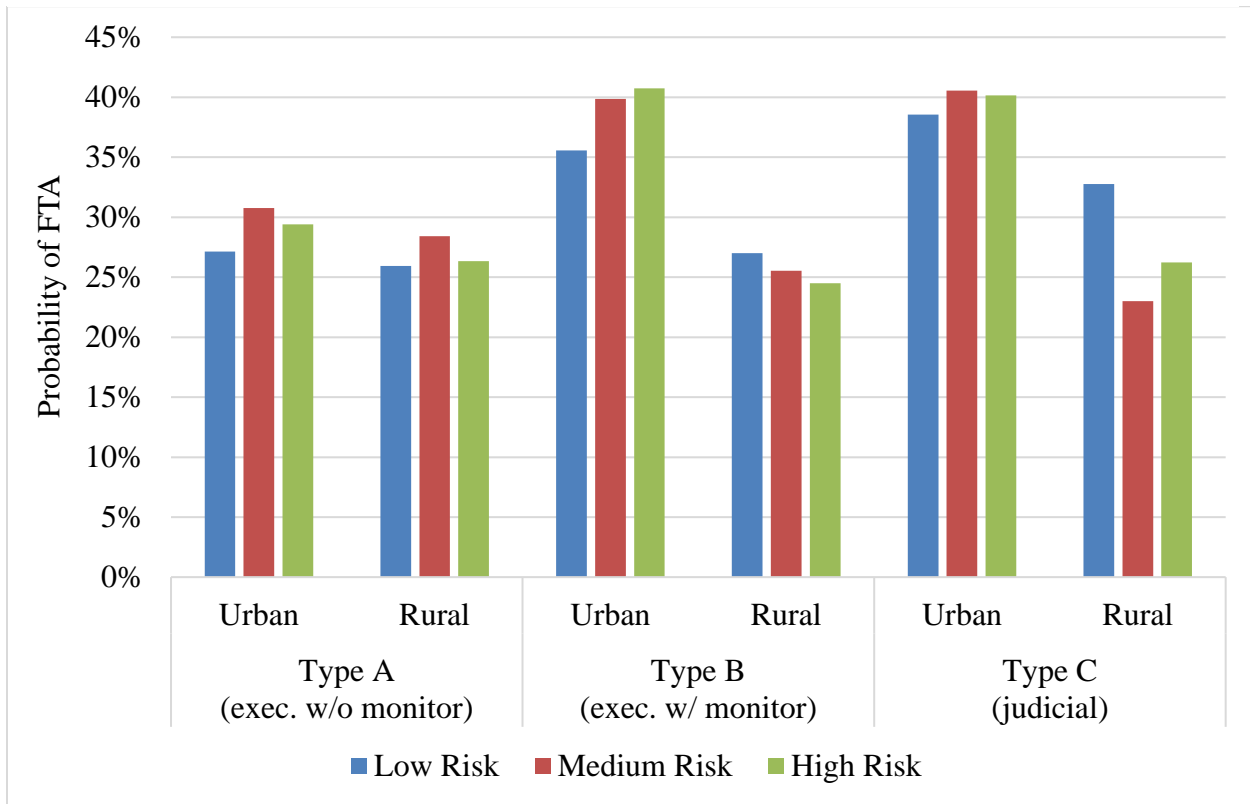
As one of the key findings from this project has been the importance of jail capacity on pretrial outcomes, we also examined its relation to FTAs. Below, Figure 12 depicts the probability of FTA by pretrial structure and the jail capacity ratio of average force releases to bookings. As discussed above, the three pretrial structure types are distinctly different on the average probability to FTA at the start of the graph, where jail capacity is not an issue for the county. As we move along the x-axis, however, these differences dissipate. Counties, regardless of the structure, are forced to make critical decisions of who to release as jail capacity decreases. As noted above, Type B and C counties, particularly when jail capacity is not a concern, may be willing to release less dangerous defendants, yet who remain risky in terms of FTA potential; whereas, Type A counties may be less willing to take such chances. Many if not most of these force release decisions are made using grids unrelated to pretrial release criteria and emphasize the severity of the crime and criminal history. Once the jail capacity ratio reaches 60% (.6) of bookings matched by force releases, the county's probability of FTAs converges. Using the qualitative interviews for context, it is possible that defendants who are familiar with the county's jail capacity situation may recognize that there is little physical consequence the county can impose for failing to appear.

Figure 12. Probability of FTA by pretrial structure and jail capacity
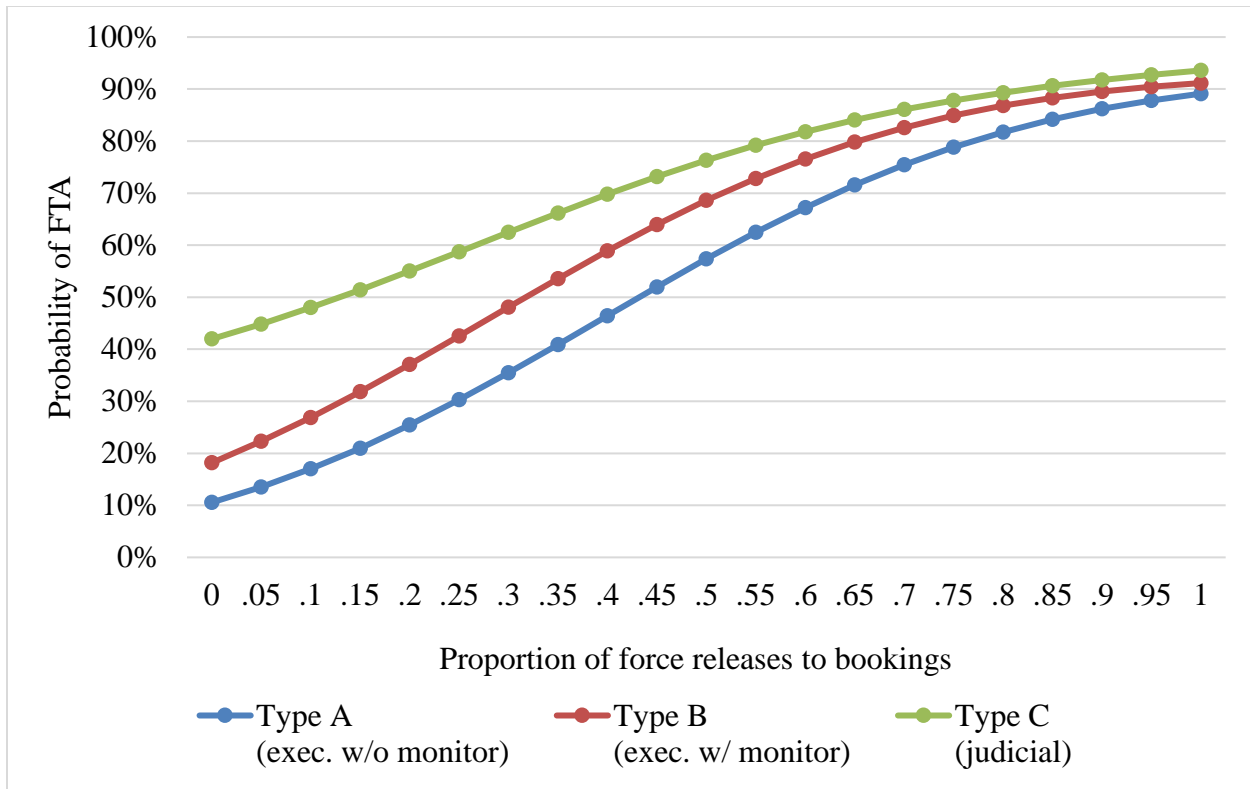
Compared to Type A structures, ***the odds of rearrest in Type B structures are 75% higher, while in Type C structures rearrest odds are lower than that of Type A by 78%, on average***. This remarkable difference may be due in large part to the differences in partnerships and responsibilities between the executive branch structures (Type A and B) and the judicial branch structure (Type C). For instance, in the executive branch structures that use supervision (Type B), the pretrial emphasis is on control and observation. Within many Type B counties, monitoring and supervision is outlined as a smaller version of probation with varying levels in expected check-ins, which could result in increased likelihood of rearrest. Some Type B counties do not rearrest for violations of pretrial conditions and work similarly to that of Type C counties where the release authority notes the violation and reports it to the judge at the next hearing. It is possible, though not clear in this analysis and data, that such a pretrial structure could increase the rate of arrest.

Disposition & Sentencing. To adequately assess if the structure type has a relationship with the odds of conviction, given the relationship between detention and sentencing, we must account for the noted relational strengths of the types as they pertain to releasing defendants. Thus, we examined the interaction between release type (detention, paid bail, or ROR) with the pretrial structure. The results indicated that there was no relationship detected between the structure and felony convictions. For misdemeanors, there was a significant increase in the odds of conviction for misdemeanor cases in Type B (exec. w/ monitoring) and C (judicial) structures compared to Type A (exec. w/o monitoring). Specifically, the probability of being convicted in Type B structures is 7.1% higher on average, and 6.4% higher in Type C, than Type A.

Unfortunately, the data does not allow us to determine why this might be the case. It is possible that the use of pretrial monitoring in Type B and C structures creates increased potential for what is described in the correctional literature as "supervision effects" (e.g., Hamilton, 2011). Supervision effects refer to the notion that as more supervision is applied to a population, the more violations will be found. In the case of Type B and C structures, it is possible that with more pretrial monitoring, the more violations will be brought before the court. More violations may lead to an increased pressure to accept a plea offer, resulting in a guilty conviction.

Much of the effect of pretrial structures is washed out by the interaction with the region type – rural versus urban, with urban settings substantially increasing the odds of conviction. This lends credence to another reason for the differences in conviction probabilities in Type B and C structures – policing and charge referral practices. In some urban areas, it is not uncommon for the district attorney offices to partner with law enforcement to craft a referral of charges that is more robust to court proceedings. In other words, prosecutors work with police officers to write reports that hold up better in court, favoring the state. Such efforts could result in a higher probability of convictions, especially for misdemeanors. Beyond conviction, we also examined the effect of pretrial structures on the odds of receiving prison versus probation upon conviction. Upon inspection of the models, we find no relationship between the type of pretrial structure and the sentence type.

Limitations

The findings presented here as well as their interpretations must be considered in the context of the limitations of each measure and metric we employ. First, with exception to county-level data pulled from other sources (e.g., Census Bureau), the data used in this report are from administrative records (e.g., OJD). It is important to keep in mind that no agency data is without its flaws and error. Although the data management systems used are statewide (e.g., OJD's Odyssey), there is likely to be some degree of data-input error. Some degree of error is to be expected in any system. Considering that at least two additional sets of data experts (CJC and OJD) procured and defined the dataset prior to our additional recoding and analyses, we are confident that most errors that existed within cases and measures were dropped by the time that we began our analyses.

Unfortunately, some errors are inherent to how a measure is collected. For instance, failure to appear is a rather difficult measure that is not always captured by each county in the same way, let alone treated the same across prosecutors. Similarly, there are a number of "blind spots" when it comes to the points of the system that are collected. For example, while we have a basic understanding as to how many people were released by paying bail, we do not have information on the bail being offered (i.e., degree of security set). That being said, OJD and the CJC have continued to work to unify data collection practices, which has strengthened the reliability and validity of court data used.

To a similar extent is the time spent in pretrial detention. Our metric of days-detained was triangulated from a few measures due to the fact that few jurisdictions flag when a person was booked and released compared to their case filing date. We rely heavily on the OJD's ability to identify when someone was released on a release agreement, paid bail, and that their case filing date is a decent metric of when a case begins to involve the physical person. Within this sample, the days-detained was calculated by counting the days between the case file date and the disposition (when there was no release event and the person was not identified as a cite-and-release). This may be flawed due to problems in arrest and courts data not matching up entirely.

Barring a state system of collecting data across agencies, we must keep this limitation in mind as a possible over estimate of the days spent in detention. With over 161,000 cases and our triangulation efforts, we are confident that the findings for each research question investigated here indeed capture an actual phenomenon and relationship observed among the pretrial population.

However, coupled with the host of observations examined and the fact that our unit of analysis is the case rather than the individual, individual defendants can be represented more than once. This holds the potential to influence the findings by bolstering the effects found among defendants who experience the justice system multiple times. While this is a limitation, we argue that by focusing on the case rather than the individual defendant, we are able to draw stronger conclusions about decision-making because the major factor influencing such a limitation is the repeated exposure of one defendant to the same judge. Considering that this is a higher likelihood among rural jurisdictions and we were able to control for both county, region, and individual judges in our models, we are confident that the observed effects are not impacted significantly by this limitation.

Finally, yet another measure that was quite impactful, but is also bounded by limitations is that of jail capacity. The jail capacity measure is a three-year average applied to counties in which the jail struggled with overcrowding at some point. Ideally, this measure would be a monthly average to help ensure that we could better pinpoint the impact of capacity on release practices. Unfortunately, there is no way to know definitively who was force released. It is county dependent. Some counties (Type A, typically) force release defendants without a release agreement. Others within the Type A structure avoid releasing defendants awaiting court and instead, only force release detainees who are toward the end of their sentence and serving time in local control. Type B and C counties put force releases on some kind of release agreement, but it is not consistent– some exceptions are given to places like Lane County, where the OJD pretrial release authority actually provides input into who gets force released. Much of the forced release status needed to be extrapolated by triangulating different measures. In spite of these limitations, the blunt measure of jail capacity and forced releases to bookings ratio is specific enough to establish the fact that the observed relationships exist.

Conclusion

Overall, this report, coupled with our qualitative report (Campbell et al., 2021) provide a comprehensive, in-depth examination of how pretrial release functions across the state of Oregon. Through a combination of survey, interview, and administrative dataset analyses, we are able to examine the impact of relevant case-level (e.g., pending charge), defendant-level (e.g., criminal history), and jurisdiction-level factors (e.g., jail capacity) on pretrial release decisions and outcomes. This report provides a wealth of information, but there a few findings that are worthy of re-emphasis.

In this report, we highlight that the relationship between pretrial detention and prison is stronger than observed in past analyses (Campbell et al., 2020). This analysis also revealed an interesting relationship between days in pretrial detention and willingness to accept a guilty plea offer that includes a carceral sentence. Given that pretrial detention (i.e., inability to post bail) and representation by private counsel, a factor that increases likelihood of release by 1.5 - 4.5 times, are often proxy measures of socio-economic status, these findings shed light on possible disparate pretrial and case outcomes for low-income Oregonians. It is important to note that an unavoidable aspect of risk tools is if the neighborhoods and crime types of people of color are over-policed and enforced relative to White individuals then those individuals will appear to recidivate more often,

whereas the true, partially undetected rate of recidivism may be different. Regardless of a tool's predictive bias, even a "non-biased" tool can still be used *inappropriately*, which is a subject that's not being examined or discussed much in the discipline. Most applications of risk tools still allow for user discretion and administrative overrides (see Cohen et al, 2020). Criminal justice practitioners can overrule what the tool says and go with their gut instinct or other factors (that could be biased) to make a final decision. Ultimately, to really understand the impact of a tool future research should examine how the tool is being used and applied.

In addition, the concerns raised over tool biases have much broader implications for the foundation of our sentencing structures based on sentencing guideline grids. There is concern about the over reliance of criminal history in one's risk score and that history may be impacted by historical racial/ethnic disparities and biases in the criminal justice system (and society). However, that same criminal history is already the foundation to all criminal justice decision-making. In the nature of the current system and prosecution practices, all criminal cases begin with the question – "where does this defendant fit in the sentencing grid?". Hence, we must be cognizant that concern about risk tools may overlook the potential that the entire decision-making foundation of sentencing could be biased.

Another theme worthy of re-emphasis is the variability in outcomes across county pretrial structures and resources. Related to ongoing discussions of pretrial release and bail reform, we find that using an actual risk tool increases the odds of being released by 4 – 6 times. In essence, being able to better identify defendants' risk for rearrest and failure to appear assists counties in making evidence-based decisions about who to release versus detain. These decisions become increasingly important as many counties in Oregon have jails that frequently reach capacity. However, the gains of pretrial release structure and resources (e.g., monitoring and risk tools) are muted as counties face capacity issues. Meaning that the best of intentions to create and invest in pretrial programming could be diminished in those counties who struggle with jail capacity issues. Conversations about pretrial release and bail reform cannot ignore the impact of county-level resources, especially jail capacity (Peterson, 2019), but also mental health and substance abuse treatment (as identified in our qualitative report) on pretrial release decisions and outcomes.

As Oregon moves forward with the implementation of Senate Bill 48, jurisdictions must juggle three key aspects of pretrial release. First, counties and circuits will need to identify the degree to which the findings of this report may continue to impact release decisions in a way that is informative and may need attention. Second, jurisdictions must also identify and ideally measure the degree to which current practices are impacted by the bill's passage. Third, all jurisdictions must measure the impact of the COVID-19 pandemic shutdown and identify how, if at all, changes and accommodations may be continued to improve the system efficiency, legitimacy, and fairness. Regardless of the ultimate influence of Senate Bill 48 or the COVID-19 pandemic, the findings of this report provide a long-lasting point from which all jurisdictions can begin discussing current practice, impact, and future improvements.

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Appendix

Table A. Measures used

Measure	Definition	Calculation / Code	Source
Outcomes			
Release Decision	Indicator for "Active Release Agreement" or "No Release Agreement"	Dichotomous 0 = no, 1 = yes	- Hearing > case level ○ CJC, OJD
Fully Detained	Indicator for being detained through disposition or released at some point	Dichotomous 0 = no, 1 = yes	
Plea	Defendant's answer to legal charges.	Dichotomous 1 = Guilty/no contest, 0 = Not guilty	
Time to plea	Days between the date the case was filed and the date of plea.	Continuous, count	
Failure to appear (FTA)	Indicator of any hearing during the case that resulted in FTA	Dichotomous 0 = no, 1 = yes	
Disposition (3)	Indicator for type of disposition	Trichotomous 0 = Acquit/Dismissed, 1 = Diverted, 2 = Convicted	
Disposition (2)	Indicator for type of disposition	Dichotomous 0 = Acquit/Dismissed, 1 = Diverted/Convicted	
Sentence	Indicator of sentence type	Dichotomous 0 = probation, 1 = prison	
Legal factors			
Prior failure to appears (FTA)	The number of cases with an FTA note or warrant prior to the case file date. This measure only goes as far back as 2017 due to changes in the data management system of OJD.	Ordinal 0=0, 1=1, 2=2 or more	- Hearing > case level ○ CJC, OJD
Index FTA	Count of FTAs in current case. This measure was created from the hearing-level information, in which there is a potential that data are still missing.	Ordinal 0=0, 1=1, 2=2 or more	
Domestic violence flag	Indicator of if the case is involving a domestic violence charge of some kind	Dichotomous 0 = no, 1 = yes	
Case type	Indicator of misdemeanor or felony	Dichotomous 0 = Misdemeanor, 1 = Felony	

Uniform Crime Report offense type	Indicator of type and severity according to the FBI Uniform Crime Report classification for the most serious charge and conviction.	Nominal 1 = Drugs, 2 = Felony – Weapon, 3 = Generic – Other, 4 = Motor Vehicle, (DWI/DUI) 5 = Motor Vehicle, (Other) 8 = Person, 9 = Property, 10 = Public Order	- Hearing > case level ○ CJC, OJD
Charge/Conviction type	Count of individual charge/conviction types per case that involves nonviolent (property or drug related), or violent. For each case, a count was tallied for each charge/conviction, which involved 16 different measures capturing different types. Any one person could have multiple types per case.	Count	
Quartered count of charges/convictions	Count of the total number of charges/convictions in the case	Count split into quartiles	
Criminal history	Type and length of criminal history according to measures in the Public Safety Checklist	Continuous, probability/score of risk level based on criminal history	
Prior status	Indicator of whether the defendant was on supervision prior to the index case arrest.	Dichotomous 0 = no, 1 = yes	
Case severity	Severity score of most serious charge according to the DOC. Severity scores are derived from statutory language.	Ordinal measure devised by collapsing DOC severity score into 11 categories coinciding with the sentencing grid. Specifically, there are 22 possible severity scores according to the DOC system. These scores attempt to capture the seriousness of the offense according to the statute. These values were used to create a percentile scale that matches the Oregon sentencing grid which has 11 ordinal categories where 11 is the highest, and 1 is the lowest severity. The percentiles were created to match the breakdown of most serious offense degree (e.g., felony class A, B, C, Life-eligible, as well as misdemeanors class). This measure was only used as a control to help the models fit the data better.	DOC

Extralegal factors			
Sex	Indicator capturing the defendant's sex	Nominal flag 1 = Female, 2 = Male, 3 = Unknown	- Hearing > case level ○ CJC, OJD, DOC
Age at hearing	Years between hearing date and defendant's date of birth	Continuous	
Race/ethnicity	Nominal indicator of the defendant's race/ethnicity, cross-referenced between OJD and DOC records. Any discrepancy was provided	Nominal, 1 = Asian 2 = Black 3 = Hispanic 4 = Native/Pac Isl 5 = Other/Multi 6 = Unknown 7 = White	
Mental health	Indicator of if a mental health note has been made on a case prior to the case file date	Dichotomous 0 = no, 1 = yes	
Control measures			
Trial flag	Indicator of whether the case went to trial.	Dichotomous 0 = no, 1 = yes	
Hearing count	Count of the total number of hearings that occurred over the course of a case, between case file date	Continuous	
Legal representation	Indicator of the type of representation the defendant received	Nominal 0 = Other, 1 = Private counsel, 2 = Court appointed / Public Defender	
Judge (Pr)	To capture any effects related to the specific judge, we calculated a predicted probability of being detained based the defendant's criminal history and charge-specific information. This information was placed into a boosted regression, which produced the predicted probability within each judge in each OJD circuit. The probability was then used as a control measure in subsequent regression.	Continuous, probability/score of being detained by a specific judge	- Hearing > case level ○ CJC, OJD
Judge (Nominal)	In multilevel models, we used a measure capturing the individual judge if the judge oversaw at least 100 cases in a specific circuit.	Nominal	

Examining the Effect of Pretrial Detention in Oregon

Pretrial Program	Dichotomous indicator designating when a county has at least one person designated to processing, interviewing, and/or supervising the pre-arraignment (and pre-adjudication) population.	No pretrial program = 0 Has pretrial program = 1	Prior study of Oregon pretrial processes reported to CJC – Campbell, Henderson, & Renauer, 2021.
OJD Circuit	Nominal measure that captures the county's OJD Circuit Court.	Nominal flag 1 to 27	OJD
Age at first arrest	Defendant's age at first arrest in lifetime.	Continuous	- Hearing > case level o CJC, OJD, DOC
Proportion of Force Releases to Booking	Proportion of a given jail's force releases from reaching capacity to the number of bookings, per year.	Number of force releases per year / Number of bookings per year	CJC survey of jail commanders
County Population	Total count of county population.	County count	Census
Age-truncated County Population	Age-truncated count of county population, including people 10 years old and older.	County count	OJJDP, Census
Proportion Non-White	Proportion of county population who are Black, Hispanic, Native American, or Asian.	County count of minority groups / County population	OJJDP, Census
Region Type	Dichotomous measure indicating if the county is deemed as Rural/Non-Metro or Urban/Metro according to the Census Bureau.	Rural/Non-Metro = 1 Urban/Metro = 1	Census Bureau
Percent High School Grad	Percent of county population who is a High School Graduate or Higher, includes GED.	Percent of whole county population	U.S. Census Bureau, High School Graduate or Higher (5-year estimate) FRED, Federal Reserve Bank of St. Louis
Unemployment Rate	Percent of county population receiving unemployment benefits in a given month.	Percent of whole county population, Seasonally Adjusted	U.S. Bureau of Labor Statistics, Unemployment Rate (Monthly) FRED, Federal Reserve Bank of St. Louis

Table B. Qualitative study participants (interview and/or survey, see Campbell et al., 2021)

County	Circuit	Jail/Sheriff or Probation/DCJ or Pretrial-Specific Staff	Judges	Defense Attorneys	Prosecutors
Baker	8	X			
Benton	21	X	X		
Clackamas	5	X	X		
Clatsop	18	X			
Columbia	19	X	X		X
Coos	15		X		
Crook	22		X	X	X
Curry	15		X		
Deschutes	11	X			X
Douglas	16		X	X	
Gillium	7				
Grant	24		X		
Harney	24		X		
Hood River	7				X
Jackson	1	X	X		
Jefferson	22		X	X	
Josephine	14		X		
Klamath	13	X	X		
Lake	26	X			
Lane	2		X		
Lincoln	17	X			
Linn	23		X		
Malheur	9		X		
Marion	3	X		X	
Morrow	6		X		
Multnomah	4	X	X	X	X
Polk	12	X	X		
Sherman	7				
Tillamook	27	X			
Umatilla	6	X			
Union	10	X			
Wallowa	10				
Wasco	7		X	X	
Washington	20		X	X	
Wheeler	7				
Yamhill	25	X	X		
Total	**26**	**29**	**27**	**9**	**5**

Table C. Qualitative focal concern codes from the qualitative report (Campbell et al., 2021)

Code		Definition (referencing any of the listed in relation to pretrial decisions)
Primary release criteria	Public/victim protection or safety	• Making pretrial decisions based on public or victim safety or protection • Concerns of re-victimization and violations while released to community • Nature of offense and defendant (e.g., weapons, injuries, dangerousness)
	Crime type	• Crime/charge type as factor in decision to release or set security • Mentions specific statutes (e.g., Measure 57 or Measure 11) • Mentions specific crimes (e.g., domestic violence) • General crime types (e.g., violent, property, or drug)
	Criminal history	• Criminal history or prior criminal record/arrests
	Failure to Appear (FTA)	• Prior failures on pretrial supervision or prior FTAs
Secondary release criteria	Employment/ financial status	• Reference to the defendant's employment or financial status • Defendant's ability to pay for bail • Job stability and prospects for jobs/education • References to family/friends paying for bail and financial support
	Social supports	• Defendant having family members, significant others, friends to support, monitor, or help ensure defendant shows up • Includes reference to third party release
	Stable residence (e.g., houseless) or lack of community ties	• Defendant's housing or lack thereof (e.g., houselessness) as being a factor • History of ties to community, knowing the person and can find them • Concerns about absconding and not living in the county
Responsibility / liability		• Reference to feeling responsible or liable for releasing individuals on pretrial release. Example: "It's on me if they commit a new crime." • May talk about prior experiences
Supervision history		• Concern over defendants currently (or formerly) on probation supervision, • Includes past probation violations or revocations
Bail and security		• Mentioning of how bail/security is set • Thoughts on bail reform
Risk assessment		• Mention of use (or little use), or interest in a risk assessment tool • Overriding risk scores • Not to include jail capacity/matrix decisions that might also use a risk tool
Jail capacity		• How jail capacity does or does not factor into the decision to set security • Mentions of "matrix releases" for emergency purposes when at capacity
Pretrial recommendations, supervision, and release conditions		• Mentions recommendations of pre-trial assessors • Trust in judgements of pre-trial staff • Importance of having the defendant under some level of monitoring • Mentions GPS or SCRAM monitoring, phone or text check-in/ reminders • Includes mention of setting release conditions
Substance abuse/ chemical dependency/ treatment/ resources		• Defendant has some issues related to drug abuse • Mentions drug courts, evaluations, or treatment availability • Not related to mentions of drug crimes
Mental health, resources, evaluation, treatment		• Defendant having some issues related to mental health • Mention mental health courts, evaluation, or treatment availability.
Very important		• Flag used in conjunction with anything the decision-maker focuses on most or identifies as a "big factor" or "very important"

Final models for RQ 1. Provided here are the models used to populate Table 2 and Table 3.

Model	Multinomial logit model						Binary logit model		
Outcome	Paying Bail vs Fully Detained			Release without Bail vs Fully Detained			Fully Detained vs Any Release		
	RRR	RSE	p	RRR	RSE	p	OR	SE	p
Female *(Male=Ref.)*	1.06	.04	.093	1.07	.03	.006	.93	.02	.004
Age at hearing	1.00	.01	.704	.97	.01	<.001	1.03	.01	<.001
Race/Ethnicity *(White=Ref.)*									
Asian	1.34	.14	.006	1.14	.08	.072	.85	.06	.021
Black	.92	.05	.121	.98	.03	.504	1.04	.03	.289
Hispanic / Latinx	1.20	.04	<.001	1.01	.03	.924	.96	.02	.100
Native Amer. / Pacific Islander	.59	.07	<.001	.81	.05	<.001	1.31	.09	<.001
Other / Multiple identity	1.75	.19	<.001	1.05	.09	.628	.86	.07	.091
Mental health issue known	.50	.09	<.001	.81	.08	.030	1.31	.12	.003
Misdemeanor *(Felony=Ref.)*	.84	.03	<.001	1.61	.04	<.001	.70	.02	<.001
Total number of charges *(One=Ref.)*									
Two	1.15	.04	<.001	1.03	.02	.220	.96	.02	.067
Three	1.15	.05	.003	1.01	.03	.813	.98	.03	.405
Four or more	1.02	.05	.613	.77	.02	<.001	1.21	.04	<.001
Charged with a sex offense	1.30	.15	.028	.82	.08	.035	1.07	.09	.426
Two or more sex offenses	1.27	.10	.004	.41	.03	<.001	1.41	.09	<.001
Most Serious Charge Type *(Person=Ref.)*									
Domestic Violence	2.23	.11	<.001	.82	.03	.030	.91	.03	.006
Drug related	.57	.04	<.001	1.13	.05	.007	.96	.04	.367
Felony weapon	1.46	.10	<.001	1.05	.05	.393	.87	.04	.003
Driving (DWI / DUI)	1.47	.11	<.001	3.35	.17	<.001	.33	.02	<.001
Property	.85	.05	.01	1.73	.06	<.001	.64	.02	<.001
Public order	1.57	.11	<.001	1.42	.07	<.001	.70	.03	<.001
Charged with FTA *(Zero=Ref.)*									
One	.60	.06	<.001	.68	.04	<.001	1.51	.09	<.001
Two or more	.45	.08	<.001	.48	.05	<.001	2.11	.21	<.001
Private attorney *(Public=Ref.)*	4.45	.20	<.001	1.54	.06	<.001	.49	.02	<.001
County uses pretrial risk tool	3.78	.41	<.001	1.69	.16	<.001	.48	.04	<.001
PSC General Recidivism Score	.09	.01	<.001	.16	.01	<.001	6.57	.34	<.001
Proportion of force rel. to bookings	.11	.06	<.001	301.0	93.57	<.001	.01	.01	<.001
Percent high school grad. in county	1.07	.02	<.001	1.04	.01	<.001	.95	.01	<.001
Percent below poverty in county	.67	.05	<.001	.63	.04	<.001	1.56	.09	<.001
Percent below poverty quadratic	1.02	.01	<.001	1.02	.01	<.001	.98	.01	<.001
Percent of single par. HH in county	1.00	.01	.103	1.00	.01	<.001	1.00	.01	<.001
Constant	3.89	5.41	.329	.02	.02	<.001	16.82	15.30	.002
Pseudo loglikelihood	-7797.82						-5081.20		
Chi-squared (χ²) value	277010.02						18173.42		
χ² degrees of freedom, *p*-value	137, *p* <.001						66, *p* <.001		
Pseudo *R*²	.219						.247		
N	161,846						161,846		

Note: RRR = Relative risk ratio; RSE = Robust standard error; SE = Standard error; Ref. = Reference category; HH = Household. A few measures are not shown in this table to save space. The measures include those that are biased (e.g., type of pretrial structure because it was not balanced in this model, see RQ2), and those that ought not be interpreted (e.g., charge severity due to its arbitrary nature).

Balance for RQ 2.

Generally, if the absolute value of the bias statistic for a given measure is over 20% bias, the groups are unbalanced on the measure being compared. Ideally, all measures should be below 10%. The different versions of the standardized percent bias we use include the mean and maximum standardized percent bias across all measures, as well as the percent of covariates over the threshold of 20% and 10% absolute bias. No metrics on their own should be used to determine if groups are balanced, rather it is the totality of the metrics that indicate balance between those who were released to those that were fully detained through their disposition. Figure A shows the various versions of bias across the measures, both before and after the application of the entropy technique. Here we see that the weight was successful in reducing every form of the bias statistic, suggesting the fully detained and released groups are statistically similar on all observed measures.[10]
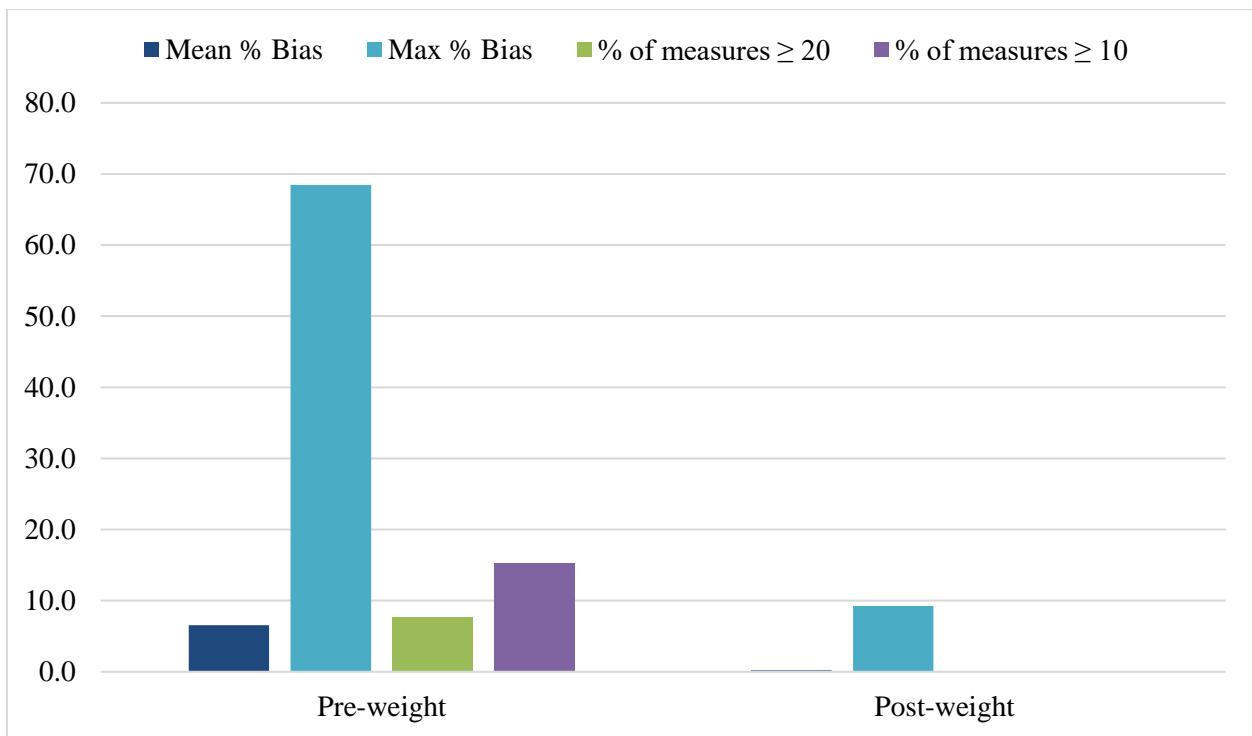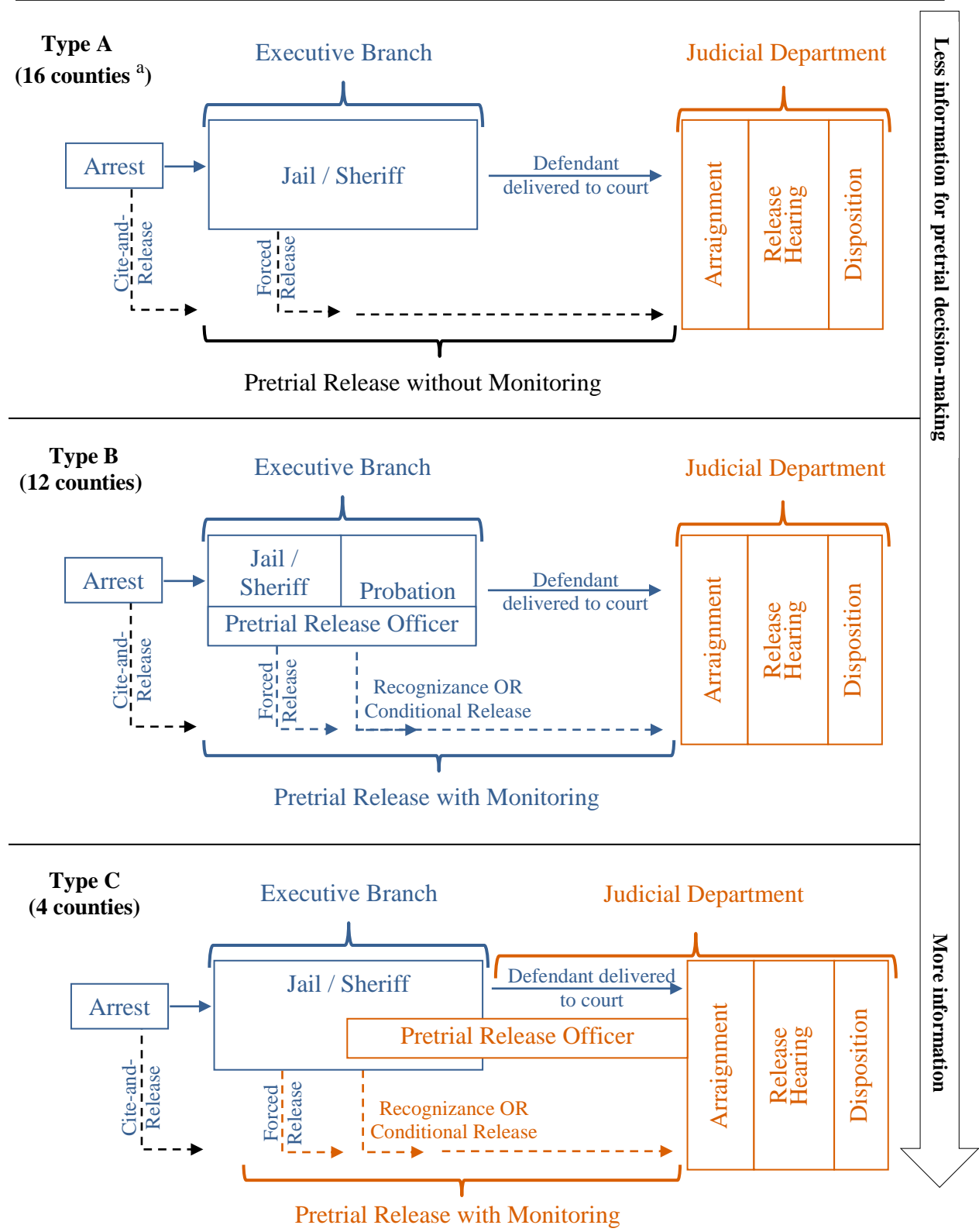

Figure A. Percent bias between released and detained groups pre- and post-weight.

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[10] The only measures that were close to 10% bias were the total number of charges/convictions in the case (9.2%), and the charge severity score of 2 (7.8%). Both of these were below the 10% threshold.

Figure B. General types of pretrial with associated oversight power and information provided

Balance for RQ 3.

Figure C shows the major bias statistics before and after the PSM weight is applied, and that the weighting technique was successful at substantially reducing the bias on these factors to below the 20% threshold. Only the percent of felony cases remained above the 10% (14.6%) after PSM was applied. Even with the remaining discrepancies between the structures, we deemed the weight to be a success, from which we can draw conclusions about the probable effect of the different structures. These remaining differences are controlled for in the following step which utilizes a double-robust method (see Stuart, 2010).

Figure C. Standardized percent bias across pretrial types, pre- and post-PSM weight