Pretrial Supervision: Race and Revocation

Kristin Bechtel, Arnold Ventures
Tyrell Connor, Arnold Ventures
Christopher Lowenkamp, Administrative Office of the U.S. Courts

THE HARMS OF PRETRIAL detention are nearly irrefutable. Recent research indicates that, especially for extended periods, pretrial incarceration may negatively impact case outcomes and pretrial outcomes, and individuals may experience a variety of collateral consequences associated with detention (Lowenkamp, VanNostrand, & Holsinger, 2013; Heaton, Mayson, & Stevenson, 2017; Lowenkamp, 2022). Beyond this, racial disparities are often observed in release and detention decisions and appear to perpetuate with further downstream consequences (Martinez, Petersen, & Omori, 2020). Yet, racial disparities have been noted even before the release decision is made. One study found a 34 percent higher likelihood of a detention recommendation for Black individuals in comparison to Whites, and the source of racial bias was primarily attributed to pretrial policies centered on criminal history, and not personal bias (Skeem, Montoya, Lowenkamp, 2022).

Of course, there is nothing unique or surprising about courts and communities wanting reassurance that individuals who will be released pretrial will return to court, follow release conditions, and avoid arrest. Given the public and political discourse about bail reform, whether new policies are derived from local court orders or follow from community engagement and advocacy, legislative authority, or even litigation if an individual is released, judicial officers may choose to order release conditions to mitigate the risk of flight and rearrest. When subjected to release, defendants often are placed on pretrial supervision. Pretrial supervision might include other conditions (for example, location monitoring, testing for the use of illegal substances, obtaining and maintaining employment, and residency requirements). While being released on pretrial is preferable to being detained, the requirements of pretrial supervision are not negligible. Further, there is concern over the use of pretrial supervision and its associated conditions, since conditions expose defendants to revocation and a return to custody (as opposed to release with no conditions), and possible disparate outcomes.

The current study takes advantage of a large federal pretrial sample to describe the assignment of pretrial supervision and subsequent revocation rates. Given the concerns mentioned above about pretrial detention and supervision, this research seeks to determine if there is a racial disparity in revocation rates.

Background on Federal Pretrial Services

The Administrative Office of the U.S. Courts operates the United States Probation and Pretrial Services System across 94 federal districts. The judiciary provides pretrial services in 93 of those 94 districts. The districts follow policies intended to inform the court's release decision and assist in identifying appropriate release conditions.[1] Additionally, pretrial services provides supervision services and monitors the release conditions ordered by the court.

To assist the courts in making the release decision and setting release conditions, pretrial services officers will conduct a criminal record check, gather information on the current case and charges, and complete a voluntary interview with the defendant. Only authorized personnel are present for the interviews, such as defense counsel and interpreters, and interviews are completed in private locations outside the presence of law enforcement and government attorneys. While these interviews are voluntary, collateral investigations will be conducted if the interview is declined, which could delay the release decision. Pretrial services will also attempt to obtain information regarding employment history, credit history, prior supervision and system contact, and personal references.

Once these background steps are conducted, the officer will complete the pretrial

[1] Information describing the Federal Pretrial Services policies and report were obtained from the Pretrial Services Investigation and Report Procedures Manual (September, 2019). There are multiple volumes of supervision guides that provide additional information about supervision intensity, the PTRA and related supervision levels, as well as release conditions, such as drug testing and location monitoring. References to these guides and the related Federal Pretrial Services supervision protocol will be integrated throughout this article.

services report, which provides information relevant to the release decision, focusing on the risk of nonappearance in court and danger to another person and the community. Critical sections of the pretrial services report include information about the individual's background, residential and family ties; employment history and financial resources; health; prior record; Pretrial Risk Assessment (PTRA); and the recommendation to the court. Pretrial services officers may recommend release without conditions when there are no risks present, and if there are risks present, the officer may recommend release with conditions or detention. Along with the additional information collected for the pretrial services report, release recommendations and supervision intensity are based on the PTRA scores. Officers are expected to recommend the least restrictive conditions to mitigate risk and maximize success during the pretrial period. Category one is associated with release with no conditions, while the remaining four categories propose gradually increasing supervision intensity. Release conditions range from options intended to address needs, such as participation in treatment and programming for mental health or substance abuse, to those that are monitoring-based, such as drug testing, home confinement, and location monitoring. Ultimately, the court determines if an individual is released, released with conditions, or detained.

Based on the most recent information available, during fiscal years 2011 to 2018, the federal system released pretrial approximately 32 percent of their criminal cases, the majority of which were for property charges. Seventy-nine percent of those released had conditions applied to their release, and the reported violation rates were relatively low – 19 percent had at least one violation of a release condition, 17 percent were charged for a technical violation, 2 percent were rearrested for a new charge, and 1 percent had a failure to appear for a court hearing (Browne & Strong, 2022). These rates suggest that too few individuals are released pretrial in the federal system. For those who are, the success rates, such as avoiding a pretrial arrest (estimated to be 98 percent for the fiscal years 2011-2018 sample), are relatively high. While the pretrial supervision and release conditions evidence base is limited, there is research that can be drawn upon that speaks to the harms of pretrial detention, as well as what we can glean from county- and state-level research, which suggests that most individuals released pretrial are successful in attending scheduled court appearances and not experiencing pretrial arrest. The following sections summarize the research on pretrial detention, supervision, and release conditions.

Pretrial Detention

As previously noted, pretrial detention length is associated with poor pretrial and case outcomes, destabilization, and racial disparities.

Two studies from Kentucky, one from 2013 and one from 2022, revealed that lengthy stays in pretrial detention were associated with worse case outcomes (2022), pretrial outcomes (2013 and 2022), and post-disposition recidivism (2013). The 2013 study sample (N=153,407) found that the likelihood of failure to appear (FTA) increased with lengthy pretrial detention—especially for individuals assessed as low risk. Relatedly, new criminal arrests for low risk were also associated with longer stays in pretrial detention, and the odds of failure are 1.39 times more likely for those detained 2 to 3 days compared to those detained one day. Post-disposition recidivism at 12 and 24 months was also observed when individuals were detained for two or more days (Lowenkamp, VanNostrand, & Holsinger, 2013). There were a few limitations with the 2013 study that the 2022 follow-up study attempted to address, including calculating the time in pretrial detention using timestamp admission and release data to get a more accurate estimate of detention length and estimating causal impact by applying a regression discontinuity design looking at the length of pretrial detention cutoffs in hours and days. The 2022 analysis (N=1,487,107) found similar results: pretrial detention for any length of time is associated with a higher likelihood of pretrial arrest, is not consistently associated with court appearance, and is associated with a higher likelihood of conviction and a sentence to incarceration even when compared to those who experienced pretrial failure (FTA or pretrial arrest) (Lowenkamp, 2022).

Similar findings have been observed in other jurisdictions. For example, results from a study in Harris County, Texas, examining the impact of pretrial detention for misdemeanor cases on case outcomes and future crime, revealed that when comparing similarly situated detained and released individuals, those who are detained are 25 percent more likely to plead guilty, and are 43 percent more likely to have a jail sentence and one that is nearly double in length. There was also a higher likelihood for future crime (Heaton, Mayson, & Stevenson, 2017). In two large urban jurisdictions, Dobbie, Goldin, and Yang (2018) leveraged quasi-random assignment of judges to examine the impact of pretrial detention and found that pretrial detention increases the likelihood of conviction, primarily through guilty pleas (which some argue is a primary mechanism for release, especially for those unable to afford cash bail), had no net effect on future crime, and decreased formal sector employment opportunities and government benefits. Finally, in a landmark qualitative study that included interviews with over 1500 individuals in New York City, pretrial detention was associated with multiple collateral consequences that suggest the rapid destabilization of individuals who cannot be quickly released from detention. Responses indicated higher rates of negative experiences with employment, finances, residential stability, and family disruption (Bergin et al., 2022).

Collectively, the consequences that follow pretrial detention appear to be quite substantial. While court appearance and community safety are paramount and understandable concerns, importantly, this population's constitutional rights must not be overlooked. While the literature on the impact of pretrial detention is growing, perhaps the field can reflect on what was observed in a recent meta-analysis focusing on the harms of mass incarceration, one which revealed that across 116 studies, custodial sanctions—being incarcerated—had either a null effect or slightly increased recidivism when compared with non-custodial sanctions (Petrich et al., 2021).

Pretrial Supervision and Release Conditions

If pretrial detention suggests greater negative impacts on case and pretrial outcomes, post-disposition recidivism, and individual and family stability, it will be important to understand what, if any, benefits there are to pretrial supervision and release conditions. However, the research base is limited on the effectiveness of pretrial supervision and its equitable application. Is pretrial supervision needed for all individuals and, if not, whom is it needed for, and what supervision characteristics are essential to ensure pretrial success? There is minimal evidence to suggest if supervision contacts or dosage, as well as the number and type (focusing on monitoring or addressing needs) of release conditions are associated with reducing the likelihood of revocation during the pretrial stage. Further, it is unknown if the assignment to pretrial

supervision, application of release conditions, and outcomes vary by race. Overall, the field needs answers to these questions because, if most individuals are successful when released pretrial, what are the benefits of supervision and release conditions?

Most of the evidence, beyond a few RCTs demonstrating the consistent effectiveness of court reminders and the inconsistent results of drug testing, are descriptive and lack methodological rigor, conducted on relatively small samples in a limited number of jurisdictions, and the policies and practices previously examined are now outdated (Bechtel et al., 2016). A review of the most recent research indicates that with release conditions and supervision models (monitoring or needs-focused)—following a "less may be more" approach may be more effective for pretrial populations in terms of increasing community safety and court appearance outcomes. The information below highlights the evidence on pretrial supervision and two primary forms of release conditions—drug testing and electronic monitoring.

Pretrial Supervision

If applied appropriately, pretrial supervision is perceived as a practice that may lead to increased court appearances and law-abiding behavior. However, one recent study used a regression discontinuity design to estimate the impact of supervision and supervision levels (e.g., intensity) on pretrial outcomes. The results suggest that supervision did not significantly impact court appearance and pretrial arrest. In other words, individuals who received no supervision were just as likely to appear to court and avoid arrest as those who were supervised. Further, when comparing supervision levels, there was no significant difference in these outcomes, regardless of the variation in supervision intensity (Valentine & Picard, 2023). Older studies have reached similar conclusions. One study with over 3,900 people released pretrial in Colorado and Virginia found that both those who were and were not supervised had the same arrest-free rate at 76 percent, indicating no difference between the groups (Lowenkamp & VanNostrand, 2013). Another study of 3,200 individuals released pretrial in Philadelphia found that both monitored and unmonitored groups had a similar arrest-free rate of 87 percent (Goldkamp & White, 2006). Research has also found an association between risk level and alternatives to detention (ATD). A study on people charged with a federal offense found that low-risk individuals who were released into an ATD program were more likely to experience pretrial failure than moderate- and higher-risk (VanNostrand & Keebler, 2009). These findings demonstrate that risk level must be considered when deciding who is eligible for pretrial supervision. If risk levels are not considered, then supervision may increase the likelihood of failure for low-risk individuals.

Drug Testing

Drug testing for individuals with substance use disorders has been used to improve pretrial outcomes for this population. However, studies have not found a clear association between drug testing and improved pretrial outcomes. For example, an RCT from 1992 conducted in two counties in Arizona produced mixed results when examining the impact of drug testing on court appearances. Specifically, drug testing did not decrease FTAs in one county and increased FTAs in the other (Britt, Gottfredson, & Goldkamp, 1992). Another 1992 report for the U.S. Department of Justice found that drug testing did not reduce arrests in three of the five sites evaluated (Washington, DC; Phoenix, AZ; Tucson, AZ; Milwaukee, WI; and Prince George's County, MD (Visher, 1992)).

Furthermore, a rigorous study exploring the use of sobriety monitoring found that those who were on sobriety monitoring avoided arrests and made court appearances at the same rates as those who were not (Golub, Valentine, & Holman, 2023). Similar to the research summarized on pretrial supervision, the risk principle has application when examining outcomes associated with drug testing. Risk levels are also associated with pretrial failure and drug testing. Individuals with a low- to moderate-risk level that were given a condition of drug testing were more likely to experience pretrial failure than those who were high-risk (VanNostrand & Keebler, 2009).

Electronic Monitoring

Electronic monitoring (EM) is another common strategy that is believed to lead to better pretrial outcomes. As a result of the lockdowns associated with COVID and public health mandates related to social distancing in congregate settings, such as jails, the assignment of EM has increased substantially across the U.S., especially in larger jurisdictions, such as Los Angeles, California, Harris County, Texas, and Cook County, IL. Despite this expansion, there is limited research on the effectiveness of EM on pretrial samples, as most of the studies have been conducted on probation and parole samples. Predominantly, the pretrial studies have yielded discouraging results regarding EM's efficacy. There has not been much rigorous evidence to suggest that EM leads to improved pretrial outcomes; at best, the research is mixed and fails to be conclusive given the limitations noted (Wolff et al., 2017; Sainju et al., 2018; Belur et al., 2020). Nevertheless, evidence suggests that individuals on EM are likely to have higher revocation rates, technical evaluations, and arrests.

Further, some evidence suggests that the racial disparities observed in jail populations and pretrial detention are also observed with electronic monitoring (Cross et al., 2020). For example, a recent MDRC study compared outcomes of individuals released on special conditions (electronic and sobriety monitoring) and those on "regular" forms of supervision in four large urban jurisdictions. The findings suggest that people who were not assigned to EM were more likely to avoid arrest (76 percent) than those who were assigned to EM (67 percent) after six months (Golub, Valentine, & Holman, 2023). EM has also been found not to have an association with reductions in recidivism for domestic violence cases (Grommon, Rydberg, & Carter, 2017).

Once again, the risk principle does apply to the application and efficacy of EM. Specifically, individuals with low-risk levels and who were released with an EM condition were more likely to experience pretrial failure than those who did not have EM ordered (VanNostrand & Keebler, 2009). This association is evidence that risk levels should be considered when mandating EM for individuals, and broad applications of this practice should be avoided.

Lastly, a large-scale study from Cook County, Illinois, that used instrumental variables analysis by leveraging the quasi-random assignment of judicial officers compared the effectiveness of EM relative to release or detention on pretrial misconduct, case outcomes, and recidivism. Additionally, the analytical strategy included conducting a two-stage least squares analysis and estimating marginal treatment effects. Collectively, the results were mixed when examining the results relative to release or relative to detention and varied depending on the analytical approach. For example, when examining the impact of EM relative to release, the findings suggest that EM reduced failure to appear. However, when

comparing EM relative to detention, EM was found to increase failure to appear. When examining EM relative to release on new pretrial cases, mixed results were observed based on the analytical approach. The two-stage least square results indicated an increase in the likelihood of a new pretrial case, including for both low-level and serious cases and violations. However, these findings were not sustained when examining marginal treatment effects. These inconsistent and mixed findings were also observed when comparing the EM group relative to detention and varied based on the analytical approach (Rivera, 2022). Overall, EM's efficacy is questionable, and the research examining the effectiveness of EM on pretrial populations does not appear to suggest a consistent improvement in pretrial outcomes.

The current study aims to provide additional descriptive evidence on the assignment, effectiveness, and equity of pretrial supervision and release conditions.

Research Questions

The research questions for the current study are as follows:

- What is the profile of defendants placed on pretrial supervision?
- Does race-based disparity exist in revocation rates?
- What are the revocation rates by PTRA supervision level, and do these vary by race?
- Is there a relationship between the number of supervision contacts and revocation?
- Is there a relationship between the number of release conditions and revocation?
- Is there a relationship between release conditions type (location monitoring, drug testing and treatment, employment, and education) and revocation?

Data & Methods

The data for this study come from a larger study of the disparity in recommendations for detention between White and Black defendants in U.S. district courts (see Skeem, Montoya, & Lowenkamp, 2022). More specifically, the data for the current study include all cases that were released and granted pretrial supervision between 2015 and 2019. These criteria led to a sample size of 65,558 observations. Following the criteria used in previous research, the sample was limited to White and Black defendants (see Skeem & Lowenkamp, 2016; and Skeem, Montoya, & Lowenkamp, 2022).

Data on the total PTRA score and the associated PTRA categories were missing on 9 percent of the sample. To address this issue of missing data, we used multiple imputation using chained equations. This process addressed the issue of missing data on the PTRA and allowed us to use the complete sample in the multivariate analyses.

The measure of interest in this study is the race of the defendant. Because there are only two races in this study, the variable capturing this construct is labeled as "Black," with one indicating a Black defendant and a value of zero indicating a White defendant. Male is coded as one for males and zero for females. Age is the number of years old, and earned income is the average monthly dollar earned. The type of offense is captured through a series of dummy variables where a value of one represents the presence of that particular offense, and a value of zero indicates the defendant was not charged with that type of offense.

The PTRA category, rather than the PTRA score, is used in this study. The referent group is PTRA category I. The other categories are represented by dummy variables that are coded such that the risk category for each defendant is captured. The coding for the PTRA risk category is mutually exclusive.

The last block of variables used in this study captures some aspects of a defendant's experience on supervision. The number of conditions is measured as the number of conditions imposed at release. The average number of monthly contacts is the total number of contacts during the period of release divided by the total number of months a defendant was on release. Education, employment, drug testing and treatment, and location monitoring are all captured as dummy variables, with the presence of a condition represented by a value of one and the absence of a condition with a value of zero.

Analyses include bivariate and multivariate models to test the research questions listed in the previous section. Specifically, for categorical and dichotomous measures, bivariate tests and simple cross-tabulations were constructed. Significance was determined using chi-square values. For continuous measures, t-tests were used to determine each measure's significance and the average value by race. Multivariate models were constructed and estimated using an iterative process. This iterative process started as a bivariate model only containing whether the defendant is Black. A model was then constructed that included other demographics (age and sex), case characteristics (release recommendation and offense characteristics), risk (PTRA categories), and characteristics of supervision (frequency of contacts, the number of conditions, and type of conditions).

The results of the regression analyses are reported as risk ratios rather than coefficients. Risk ratios are somewhat easier to interpret and represent the relative increase or decrease in the likelihood of an event occurring. A risk ratio of one indicates that a measure does not impact the likelihood of an event occurring. A risk ratio over one indicates that a measure increases the likelihood of an event occurring, and a risk ratio less than one indicates that the measure decreases the likelihood of an event occurring. For example, if being male produces a risk ratio of 2.5, then males are 2.5 times more likely than females to experience an event (say, rearrest). Conversely, if being female produces a risk ratio of .5, that can be interpreted to mean that females are half as likely as males to experience an event (rearrest for a violent offense).[2]

Findings

Table 1 contains the statistics that provide a profile of those released pretrial (Research Question 1) and the revocation rates by race (Research Question 2). The typical defendant has a PTRA score of 5.88 (which equates to a PTRA category of I), is 40.29 years old, and has an earned monthly income of 2,098 dollars. In terms of education, the typical defendant has a high school diploma, has attended a vocational school, or has attended some college. Most defendants are unemployed and do not own their residences. Most defendants are charged with a financial offense, although those charged with a drug offense produce a percentage (31%) close to that for financial offenses. Finally, 9 percent of the sample is revoked from pretrial release.

Table 1 also clearly demonstrates that Black and White defendants differ along several important constructs. Black defendants have, on average, a significantly higher PTRA score than do White defendants (6.73 & 5.17 respectively). White defendants are older and have higher education attainment and a significantly higher income. White defendants are also more likely to own their residence. The two groups demonstrate equal levels of employment. This finding might be because the sample in this study includes

[2] These values are hypothetical.

TABLE 1.
Description of the Sample

	All		White		Black	
	N	Mean (SD)/%	N	Mean (SD)/%	N	Mean (SD)/%
PTRA Score*	59,656	5.88 (2.72)	32,590	5.17 (2.65)	27,066	6.73 (2.56)
Earned Income*	65,558	2,098 (28,821)	36,374	2,599 (24,007)	29,184	1,475 (33,868)
Age*	65,558	40.29 (13.24)	36,371	43.17 (13.66)	29,184	36.69 (11.75)
Education Attainment*						
Less than High School or GED	15,688	24.98	6,916	19.95	8,772	31.17
High School, Vocational, Some College	34,240	54.52	18,428	53.16	15,812	56.19
College Degree	12,879	20.51	9,324	26.90	3,555	12.63
Own Resident*						
No	42,483	71.86	20,247	61.67	22,236	84.57
Yes	16,640	28.14	12,583	38.33	4,057	15.43
Employed						
No	36,401	55.52	20,108	55.28	16,293	55.83
Yes	29,157	44.48	16,266	44.72	12,891	44.17
Financial Charge*						
No	41,798	63.76	22,303	61.32	19,495	66.80
Yes	23,760	36.24	14,071	38.68	9,689	33.20
Violent Charge*						
No	62,743	95.71	34,935	96.04	27,808	95.29
Yes	2,815	4.29	1,439	3.96	1,376	4.71
Firearms Charge*						
No	57,729	88.06	33,631	92.46	24,098	82.57
Yes	7,829	11.94	2,743	7.54	5,086	17.43
Sex						
Male	47,914	73.09	26,588	73.10	21,326	73.07
Female	17,644	26.91	9,786	26.90	7,858	26.93
Revocation						
No	59,599	90.91	33,018	90.77	26,581	91.08
Yes	5,959	9.09	3,356	9.23	2,603	8.92
PTRA Category*						
I	20,256	33.95	14,730	45.20	5,526	20.42
II	14,663	24.58	7,795	23.92	6,868	25.38
III	13,690	22.95	5,990	18.38	7,700	28.45
IV	8,234	13.80	3,142	9.64	5,092	18.81
V	2,813	4.72	933	2.86	1,880	6.95

*p-value ≤0.001

those defendants released pretrial. Having employment might be an influential factor in deciding who is released and who is detained.

The percentage of defendants charged with each type of offense listed in Table 1 also varies significantly by race. The differences observed for financial and violent offenses are small in magnitude. For firearms offenses the difference is considerably larger, with Black defendants on pretrial release being over twice as likely to have charges for firearms offense when compared to White defendants.

The distribution of PTRA categories differs by race. The most common PTRA category for Black defendants is PTRA category III. The most common PTRA category for White defendants is PTRA category I. Across the PTRA categories White defendants tend to be concentrated at the lower end of the scale. The distribution of Black defendants seems to be fairly even across the first three categories, with smaller percentages in the higher risk categories. However, the likelihood of being classified in PTRA category IV or V is higher for Black defendants compared to their White counterparts.

Of note, Table 1 provides a test of whether revocation varies by the defendant's race (Research Question 2). The chi-square testing indicates no statistical difference in revocation rates between White and Black defendants. The revocation rate for Black defendants is 8.92, and that for White defendants, 9.23, does not differ significantly ($\chi 2(1, 65{,}558) = 1.85$, $p = 0.174$).

The third research question focuses on the PTRA and whether revocation rates by the PTRA vary by race. Table 2 contains the results of these analyses. The overall failure rates, regardless of race, increase monotonically as one moves across risk categories. Revocation rates are roughly 2 percent, 7 percent, 13 percent, 21 percent, and 28 percent for PTRA I, II, III, IV, and V, respectively.

The revocation rates across races are similar for PTRA category I, as indicated by the values of the revocation rates (2.08 and 1.72 for White and Black defendants) and the non-significant chi-square test. The revocation rates for each of the other PTRA categories differ from a statistical standpoint. Some might question the practical meaning of the differences in revocation rates across subsamples of race. However, the revocation rates for the PTRA categories I through IV are between 1.4 and 1.8 times higher for White defendants compared to Black defendants.

Why exactly these differences exist requires

speculation. Even so, these differences might be meaningful for practical reasons. Since this article is not focused on the PTRA, exploring the potential causes of differing revocation rates across the races is beyond its scope.[3] The findings reported in Table 2 provide evidence that perhaps this factor should be considered when constructing and estimating multivariate models.

Research questions four through six focus on determining the impact of race on revocation while controlling for supervision-related activities. Again, we began with a bivariate regression model and added variables to each subsequent model. Those variables included defendant demographics, officers' recommendations for release, offense-related characteristics, risk, and supervision-related measures. The supervision-related measures can be thought of as dosage (frequency of contacts and the number of conditions) and content (types of conditions).

Model 1 in Table 3 contains the results of the bivariate regression model predicting revocation with race only. As indicated and consistent with Table 1, Model 1 in Table 3 demonstrates no significant difference associated with race when predicting revocation. However, the effect of race changes when sex (male) and age are added to the model. The effect of race (black = 1) becomes significant and indicates that Black defendants are about 20 percent less likely to be revoked after controlling for age and sex.

In addition to controlling for age and sex, Model 3 in Table 3 includes whether the defendant was recommended for release. In this model sex is no longer a significant predictor of revocation; those recommended for release have a likelihood of revocation that is 50 percent of those not recommended for release, and Black defendants are about 25 percent less likely to experience a revocation.

As the number of variables added to the equation increases, it appears that the impact of race also increases (although the value for Black decreases in absolute value that indicates that the decrease in relative risk gets larger and larger). The addition of the PTRA categories, Model 4, demonstrates that risk has a large impact on whether a defendant is revoked. However, the impact of being a Black defendant also continues to play an important role in determining the likelihood of revocation.

Finally, Model 5 includes the measures mentioned above and the measures relating to a defendant's experience on supervision. In this model, the impact of the race measure indicates that net the effects of other variables, Black defendants have a likelihood of revocation that is 0.61 times that of White defendants. Sex continues to be a non-significant factor in predicting revocation, while age continues to be a significant predictor. Recommendation for release continues to be a strong predictor of revocation. Why this is the case is speculative; however, it could be that officers believe those recommended for release are less risky and, therefore, tolerance for violations is high. It could also be that officers add something to the prediction process beyond the PTRA, even within categories of the PTRA. Interestingly, firearms, violent, and sex offenses are now significantly and positively related to the likeliness of revocation. This relationship may be present, as supervision violations are tolerated to a lesser extent among those defendants on supervision for these categories of offense. Interestingly, the number of conditions is not a significant predictor of revocation, although the number of average monthly contacts, which is higher among Black defendants, is significantly related to a reduction in the likelihood of revocation. One might argue, however, that a relationship of such a small magnitude does not reach clinical or practical significance. Finally, Model 5 indicates that only drug testing and treatment, as a condition of pretrial supervision, is associated with

TABLE 2.
Revocation Rates for Entire Sample and by Race

PTRA Category	Percent Revoked		
	All	White	Black
I	1.98	2.08	1.72
II*	6.66	8.44	4.63
III*	13.23	17.31	10.05
IV*	21.05	27.40	17.12
V*	27.55	34.41	24.15

*p-value ≤0.001

TABLE 3.
Regression Analyses Predicting Revocation

Measures	Model 1	Model 2	Model 3	Model 4	Model 5
Black	0.967	0.798*	0.759*	0.603*	0.610*
Male		1.189*	1.095	1.011	1.018
Age		0.966*	0.968*	0.993*	0.993*
Recommended for release			0.479*	0.852*	0.820*
Financial				0.888	0.916
Sex offense				1.148	1.259*
Violent				1.100	1.164*
Firearms				1.183*	1.187*
PTRA					
II				3.172*	3.090*
III				6.195*	5.839*
IV				9.645*	9.163*
V				12.202*	11.842*
Number Conditions					1.000
Average monthly contacts					0.991*
Education					0.973
Employment					1.048
Drug testing & Tx					1.260*
Location monitoring					1.031
Constant	0.092*	0.322*	0.591	0.038*	0.038*

*p-value ≤0.001

[3] For additional information on the PTRA and testing bias, see Cohen & Lowenkamp, 2019.

an increase in the likelihood of revocation. This might be because monitoring substance use via testing provides concrete evidence of supervision violations.

Because of the interest in how revocation rates differ across races, we also wanted to determine if the impact of supervision activities on revocation differed by race. There are several variables in Table 4 where the effect varies across races. Sex, age, the offense categories, and the impact of the PTRA all vary across races. Except for age and PTRA category, the variables listed above have larger effects on revocation for Black defendants than White defendants. Age and the PTRA categories produce larger effects for White defendants than Black defendants. In some instances, these differences are sizeable (PTRA categories, sex offense, and defendant sex). In one measure, while statistically significant, the importance of that difference is questionable (age).

The effects of supervision-related variables across race categories are of greater importance and interest. As indicated in Table 4, none of the supervision-related variables differ in their impact on revocation between the races. This is a remarkable and important finding, as it indicates that, while the level of conditions, monthly contacts, and use of other conditions might differ by race, those factors mean the same thing in terms of impact on revocation. Further, most of the supervision-related factors have no impact on outcomes. The exceptions to this are the number of average monthly contacts, which is associated with a very small decrease in the likelihood of revocation and drug testing and treatment.

Discussion and Policy, Practice, and Research Implications

First, we did observe significant differences in the defendant profile characteristics by race. Higher PTRA scores (and a subsequent increase in the likelihood of a higher PTRA classification) and the frequency of firearms offenses were significantly more prevalent for Black defendants than for White defendants. Nearly 55 percent of White defendants fell into PTRA categories II through V, but almost 80 percent of Black defendants fell into these same categories.

Second, revocation rates did not differ significantly by race in the bivariate analysis (9.23 for White defendants v. 8.92 for Black defendants), and this finding persisted in the multivariate analysis after controlling for demographic characteristics, offense-related characteristics, risk, supervision conditions, and officers' recommendations for release or detention.

Third, the PTRA performed as expected. There was a consistent increase in revocation rates from 2 percent to 28 percent that coincided with the PTRA risk categories. With the exception of PTRA category I (the lowest risk level), revocation rates significantly differed by race for PTRA categories II through V. Black defendants experienced significantly lower revocation rates than their White counterparts, despite nearly 45 percent of White defendants falling into Category 1 compared to 20 percent of Black defendants.

Finally, other than drug testing and treatment, supervision conditions and the frequency of contacts did not differ across the races.

The data from this sample likely only tell part of the story, and several questions promptly emerge as a result. Why is it that a group found to be higher risk on the PTRA and with greater needs experiences the same base rate for revocations as a lower risk group? This seems to defy the risk and need principles, unless what we are observing (without the data to confirm it) is precisely what officers are trained to do—identify and mitigate risk and address needs. Or perhaps this is just as simple as recognizing that the majority of people often fare quite well and are successful during the pretrial period.

While further rigorous research is needed to tease out and evaluate these potential confounders, we lift up the following recommendations for policy and practice:

1. The risk and need principles continue to have application—identifying, understanding, and addressing an individual's challenges during the pretrial period is essential if the individual is ordered to pretrial supervision.
2. A "less is more approach" may be applicable and beneficial for pretrial supervision policies and practices. Both

TABLE 4.
Comparison of Risk Ratios Across Race

	White			Black		
	Risk ratio	95% LL	95% UL	Risk ratio	95% LL	95% UL
Male*	0.929	0.868	0.993	1.305	1.173	1.452
Age*	0.999	0.996	1.002	0.984	0.980	0.988
Recommended for release	0.806	0.750	0.867	0.840	0.773	0.912
Financial*	0.775	0.704	0.852	1.151	1.035	1.279
Sex offense*	1.160	0.997	1.348	1.754	1.302	2.363
Violent*	1.010	0.848	1.203	1.344	1.144	1.579
Firearms*	1.114	1.020	1.216	1.273	1.169	1.386
PTRA category						
II*	3.446	3.019	3.934	2.132	1.722	2.639
III*	6.444	5.639	7.364	4.064	3.312	4.987
IV*	9.752	8.481	11.214	6.587	5.348	8.114
V *	12.039	10.275	14.106	8.827	7.076	11.010
Number conditions	1.003	0.996	1.011	0.995	0.986	1.005
Average monthly contacts	0.992	0.989	0.994	0.989	0.986	0.992
Education	0.867	0.695	1.081	1.050	0.871	1.266
Employment	1.042	0.968	1.122	1.053	0.967	1.147
Drug testing & Tx	1.275	1.173	1.386	1.230	1.123	1.347
Location monitoring	1.022	0.934	1.119	1.058	0.965	1.161
Constant	0.031	0.025	0.038	0.034	0.026	0.046

* p-value ≤0.05

prior and current research suggests that pretrial supervision intensity may not be as necessary as we originally considered. Further testing of this concept is imperative, as it is also unlikely that a one-size-fits-all approach will be universally beneficial.

3. The field should be cautious about the application, or perhaps over-application, of supervision conditions and should closely monitor the dosage of these conditions, as they may not be required or be effective for the full supervision period.
4. Education and training on the impact of pretrial detention—as well as supervision conditions and intensity—are needed to correct the negative and false narratives related to bail reform and to provide the most rigorous evidence available to inform pretrial decision-making. Widespread evidence dissemination will be important for multiple audiences—especially for individuals navigating the pretrial process, the public, judges, prosecutors, policy makers, and the media.

References

Bechtel, K., Holsinger, A., Lowenkamp, C., & Warren, M. (2016). A meta-analytic review of pretrial research: Risk assessment, bond type, and interventions. *American Journal of Criminal Justice, 42(2),* 443–467.

Belur, J., Thornton, A., Tompson, L., Manning, M., Sidebottom, A., & Bowers, K. (2020). A systematic review of the effectiveness of electronic monitoring of offenders. *Journal of Criminal Justice, 68*.

Bergin, T., Ropac, R., Randolph, I., & Joseph, H. (2022). The initial collateral consequences of pretrial detention: Employment, residential stability, and family relationships. New York City – Criminal Justice Authority. Retrieved from: http://dx.doi.org/10.2139/ssrn.4216882

Britt, C. L., III, Gottfredson, M. R., & Goldkamp, J. S. (1992). Drug testing and pretrial misconduct: An experiment on the specific deterrent effects of drug monitoring defendants on pretrial release. *Journal of Research in Crime and Delinquency, 29(1),* 62–78.

Browne, G. E., & Strong, S. (March 2022). Pretrial release and misconduct in federal district courts, fiscal years 2011–2018. U.S. Department of Justice, Office of Justice Programs, Bureau of Justice Statistics. Report: NCJ 252837. Retrieved from: https://bjs.ojp.gov/content/pub/pdf/prmfdcfy1118.pdf

Cross, A., Roberts, S., Roth, A., Washington II, M., Fishman, N., & Taylor, A., (2020, May). Wayne County Jail – Report and recommendations. Vera Institute for Justice. Retrieved from: https://www.vera.org/downloads/publications/wayne-county-jail%E2%80%93report-and-recommendations.pdf

Dobbie, W., Goldin, J., & Yang, C. (2018). The effects of pretrial detention on conviction, future crime, and employment: Evidence from randomly assigned judges. *American Economic Review, 108* (2): 201-40. Retrieved from: https://pubs.aeaweb.org/doi/pdfplus/10.1257/aer.20161503

Goldkamp, J. S., & White, M. D. (2006). Restoring accountability in pretrial release: The Philadelphia pretrial release supervision experiments. *Journal of Experimental Criminology, 2(2),* 143–181.

Golub, C., Valentine, E., & Holman, D. (2023). Effectiveness of pretrial special conditions. Retrieved from: https://www.mdrc.org/publication/effectiveness-pretrial-special-conditions

Grommon, E., Rydberg, J., & Carter, J. G. (2017). Does GPS supervision of intimate partner violence defendants reduce pretrial misconduct? Evidence from a quasi-experimental study. *Journal of Experimental Criminology, 13(4),* 483–504.

Heaton, P., Mayson, S., & Stevenson, M. (2017). The downstream consequences of misdemeanor pretrial detention. *Stanford Law Review, 69,* 711-794. Retrieved from: https://digitalcommons.law.uga.edu/cgi/viewcontent.cgi?article=2148&context=fac_artchop

Lowenkamp, C. (2022). The hidden costs of pretrial detention revisited. Core correctional solutions. Retrieved from: https://craftmediabucket.s3.amazonaws.com/uploads/HiddenCosts.pdf

Lowenkamp, C. T., & VanNostrand, M. (2013). Exploring the impact of supervision on pretrial outcomes. Laura and John Arnold Foundation. Retrieved from: https://craftmediabucket.s3.amazonaws.com/uploads/PDFs/ LJAF_Report_Supervision_FNL.pdf

Lowenkamp, C., VanNostrand, M., & Holsinger, A. (2013). The hidden costs of pretrial detention. Retrieved from: https://craftmediabucket.s3.amazonaws.com/uploads/PDFs/LJAF_Report_hidden-costs_FNL.pdf

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

Petrich, D., Pratt, T., Jonson, C., & Cullen, F. (2021). Custodial sanctions and reoffending: A meta-analytic review. *Crime and Justice, 50,* (1), 353-424.

Rivera, R. (2022, December). Release, detain, or surveil? The effect of electronic monitoring on defendant outcomes. *Unpublished Manuscript.* Retrieved from: http://www.columbia.edu/~rgr2122/romanrivera_jmp.pdf

Sainju, K. D., Fahy, S., Hamilton, B. A., Baggaley, K., Baker, A., Minassian, T., & Filippelli, V. (2018). Electronic monitoring for pretrial release: Assessing the impact. *Federal Probation, 82(3),* 3–10. Retrieved from: https://www.uscourts.gov/sites/default/files/82_3_1.pdf

Skeem, J. L., & Lowenkamp, C. T. (2016). Risk, race, and recidivism: Predictive bias and disparate impact. *Criminology: An Interdisciplinary Journal, 54*(4), 680–712. https://doi.org/10.1111/1745-9125.12123

Skeem, J., Montoya, L., & Lowenkamp, C. (2022). Understanding racial disparities in pretrial recommendation decisions to shape policy reform. Retrieved from: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4143498

Valentine, E., & Picard, S. (2023). Effectiveness of varying intensities of pretrial supervision. Retrieved from: https://www.mdrc.org/publication/effectiveness-varying-intensities-pretrial-supervision

VanNostrand, M., & Keebler, G. (2009). Pretrial risk assessment in the federal court. *Federal Probation, 73(2)*.

Visher, C. A. (1992, September). Pretrial drug testing. National Institute of Justice: Research in Brief. Retrieved from: https://digitalcommons.law.ggu.edu/cgi/viewcontent.cgi?article=1031&context=nij-rib

Wolff, K. T., Dozier, C. A., Muller, J. P., Mowry, M., & Hutchinson, B. (2017). The impact of location monitoring among U.S. pretrial defendants in the District of New Jersey. *Federal Probation, 81(3),* 8–14. Retrieved from: https://www.uscourts.gov/sites/default/files/81_3_2_0.pdf