

Expanding the Analysis: Alternatives to Incarceration across 13 Federal Districts

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THOUGH ALTERNATIVES TO incarceration courts have existed in the state system for nearly 30 years, such courts are a relatively new phenomenon in the federal system. Alternatives to incarceration (ATI) courts, or “front-end” courts as they are sometimes known, are generally based on the “drug court” model first used in the state court in Miami-Dade County in 1989 (Scott-Hayward, 2017). Specialty courts that borrow from the drug court model and target other populations (such as justice-involved veterans, juveniles, and the mentally ill) have continued to proliferate and are nearly ubiquitous. As reported in the November 2020 version of the Drug Courts fact sheet, over 3,000 drug courts are operating throughout the United States, half of which are adult drug courts. Although these courts vary in target populations and resources, programs generally comprise a multidisciplinary team of judges, prosecutors, defense attorneys, community corrections officers, and treatment service professionals. These programs also frequently encourage prosocial support by engaging family and others in the community in the participants’ success.

Recognizing the potential for judge-involved programs to reduce recidivism, mitigate decades-long overincarceration, and direct resources where they are most impactful, the federal government provides considerable support for the drug court model through financial support of drug court

programs, research, and various drug court initiatives. For example, each year the Bureau of Justice Assistance (BJA) and Substance Abuse and Mental Health Administration (SAMHSA) distribute grants to states and localities to support the creation and enhancement of drug courts. In fiscal year 2017, over \$100 million in federal funding was appropriated for drug courts.¹

Until recently, alternatives to incarceration court programs in the federal system were few, with little variety in the populations targeted. Most targeted defendants were charged with offenses related to their substance abuse dependence or addiction. The popularity of “problem solving” courts in state systems led to experimentation in the federal system, especially for reentry courts, which focus on defendants who have returned to the community following incarceration. Concurrently, support for alternatives to incarceration court programs has gained momentum due to a confluence of factors (Baber et al., 2019):

- A growing body of empirical evidence that the “drug court” model—practiced with fidelity in other jurisdictions—is effective at reducing recidivism and provides financial return on investment by reducing recidivism.
- A change in the legal environment that resulted from the 2005 Supreme Court

decision *Booker v. United States* that rendered advisory the federal sentencing guidelines, and subsequently the Supreme Court’s decisions in *Gall v. United States* and *Pepper v. United States*, which generally approved downward variances based on defendants’ successful efforts at rehabilitation—allowed courts additional flexibility in sentencing.

- The crisis of over-incarceration, which led to widespread recognition among criminal justice professionals and policymakers that the policies and practices that have led to mass incarceration are not only extremely costly but ineffective at promoting public safety. Several publications by government entities called for swift action at the federal level and encouraged stakeholders to strongly consider alternatives to incarceration.
- Increasing awareness of empirically demonstrated evidence of the importance of defendants’ success on pretrial services supervision as a harbinger of improved outcomes in subsequent stages of the criminal justice system, including more favorable sentences and reduced failures during post-conviction supervision.

Over the last decade, problem-solving courts have continued to expand in the federal system. As of August 2021, there are 137 federal problem-solving courts. Of the total programs, 52 (40 percent) are “front end” or Alternatives to Incarceration programs.

¹ *Federal Support for Drug Courts: In Brief*, Congressional Research Service, Updated March 2018.

The remainder are post-conviction reentry programs. Of the 52 ATI programs, 39 (75 percent) adopt a deferred prosecution or diversion model, while the remaining programs follow a post-plea or pre-sentencing model. The current analysis is dedicated to a sample of purely ATI programs and does not include any reentry programs.

Recognizing the proliferation of ATI programs in the federal system, several districts that had been at the forefront of implementing these programs sought to contribute to the knowledge base about the effectiveness of such programs. In 2018, the pretrial services offices of the District of New Jersey (NJ), Southern District of New York (NY-S), Eastern District of New York (NY-E), Central District of California (CA-C), Northern District of California (CA-N), Eastern District of Missouri (MO-E), and the probation and pretrial services office of Illinois Central (IL-C) collaborated on a research effort that quantifies the association of ATI program participation with short-term outcomes. Specifically, the study quantified pretrial services' measures of new criminal arrests, failures-to-appear (FTAs), and other violations of court-ordered conditions of release, i.e., technical violations. In addition, the study quantified defendants' improvements in two supervision domains that are well-known correlates of criminal behavior: illicit drug use and employment. Finally, among the defendants whose cases have been disposed by the court, the study examined the sentences imposed (Wolff et al., 2019).

That study, based on data drawn from the probation and pretrial services case management system, Probation and Pretrial Services Case Tracking System (PACTS), comprised 13,924 defendants. Of the full sample of defendants drawn from the seven participating districts, 534 participated in an ATI program during their time under court-ordered pretrial supervision.

The results of the first study were encouraging. First, successful graduation rates, at 87 percent, were very high.² Though we would hesitate to make a direct comparison to state and local drug court graduation rates, as context, we note that according to a survey of drug courts across the country, the average graduation rate was 59 percent in 2014, with

most graduation rates falling between 50 and 75 percent (Marlowe, Hardin, & Fox, 2016).

Secondly, the results suggest that defendants who participated in an ATI program exhibit more favorable outcomes than their matched counterparts who did not participate. Findings suggest that defendants who successfully complete an ATI program are significantly less likely to be arrested during the period of pretrial supervision. Additionally, participants, regardless of whether they successfully completed the program, were employed a greater percentage of the days they were under supervision when compared to a group of statistically matched defendants. ATI participants also tested positive for illicit substances less frequently than the comparison group. Study results suggest that participation in an ATI program, successfully completed or not, does not impact the likelihood of the defendant failing to appear in court or violating conditions of pretrial release. Importantly, only defendants who successfully completed the ATI program were significantly less likely to be rearrested while under pretrial supervision than their matched counterparts. Though defendants who participated in a program (without regard to program completion) demonstrated improved outcomes compared to matched defendants who did not participate in a program, defendants who *completed* a program demonstrated outcomes superior to those who *participated but did not successfully complete*. Taken together, the results suggest that ATI program participation is associated with improved outcomes, such as increases in employment and fewer positive drug tests, and, among successful participants, a lower probability of rearrest. This suggests that completion of an ATI program has—albeit demonstrated (to date) as relatively short-term—a protective effect on participants.

Thirdly, participants who fulfill their commitments to the program and graduate from the program receive substantially more favorable dispositions of their cases.

Research Objectives

Encouraged by the results and armed with sustained commitment by the leadership of the participating districts, the original seven study districts enlisted the cooperation of six additional districts to extend and expand the study. These newly added districts joined the study group by agreeing to contribute their programs' data to the study cohort, and where possible, to contribute financial support

as well. The primary research goal of this expanded study was to determine if, using a more recently assembled dataset, the results of the first study are generalizable to a larger set of defendants in other programs in other districts. The study was conducted under contract with Dr. Kevin Wolff, who holds a faculty position at the John Jay College of Criminal Justice, part of the City University of New York.

Secondly, but equally as important, the research objectives included an empirical assessment of the demographics of ATI participants in the context of program entry and successful completion metrics. Given the recent attention to racial injustices in all aspects of the nation's criminal justice systems, close attention by problem-solving courts to the racial and ethnic composition of defendants who are *accepted* into programs, and who go on to *complete* those programs, is fundamental to the fair administration of justice. This is equally relevant for alternatives to incarceration courts in the federal system. Depending on the program's model, defendants who are accepted to an ATI program are eligible for a non-custodial sentence, reduced custody term, or dismissal of their federal case conditional to complying with the requirements of the program. It is not hyperbolic to state that the stakes are very high. A term of custody imposed on non-participants and failed participants alike poses significant life-long negative consequences, which, if avoided, can allow defendants the chance to continue their rehabilitation in the community.

While interest in problem-solving courts generally, and specifically in demographic fairness, is relatively recent in the federal system, over a decade ago public policy and criminal justice professionals at the state and local levels began to focus on whether demographic disparities exist in these courts, thus possibly exacerbating systemic injustices in the criminal justice system at large. There is evidence that this concern was not unfounded. For example, in the United States, Black individuals are underrepresented in drug courts by approximately 15 to 20 percentage points compared with the arrestee, probation, and incarcerated populations, and Hispanic or Latino individuals are underrepresented by approximately 10 to 15 percentage points (Marlowe et al., 2016). Among those who enter drug court programs, Black, Hispanic, and female participants are less likely than White males to graduate successfully from many programs (Finigan, 2009; Marlowe, 2013; Marlowe et al., 2016).

² Of the 416 ATI defendants whose program was completed, 363 were successful graduates. Fifty-three had their programs terminated unsuccessfully, and the remaining 96 were still participating in a program at the time the data were drawn.

Today criminal justice professionals, including drug court professionals, maintain their eye on the goal of racial and gender equity. In 2010, the board of directors of the National Association of Drug Court Professionals (NADCP), which describes itself as the premier training, membership, and advocacy organization for the treatment court model in the United States and 20 other countries,³ issued a resolution directing treatment courts to determine whether racial or ethnic disparities exist in their programs and to take reasonable corrective measures to eliminate any disparities that are identified. More recently, the National Center for State Courts (NCSC) partnered with NADCP to develop a tool known as the Equity and Inclusion Assessment Tool.⁴ Developed by NCSC and announced in 2020, the tool keeps track of who gets referred to these courts and who is more likely to get the most out of the programs. This tool is also applicable to problem-solving courts other than drug courts.

Recognizing the importance of racial and gender equity, in 2019 the study group designed and developed a Decision Support System (DSS) report⁵ that displays the racial and gender composition of a court's ATI program in the context of the entire defendant pretrial services supervision caseload. This report uses extant data from PACTS, and thus requires no additional data entry or separate tracking systems. This report is available to any district that wants to monitor the racial and gender composition of its program(s).

Data

The study team assembled data from probation and pretrial services national case management system, Probation and Pretrial Services Case Tracking System (PACTS). The sample consisted of 27,283 defendants. Of the full sample of defendants drawn from the 13 districts, 1000 defendants participated in an ATI program. Sixty-three percent (63.4 percent) of the participants in the study cohort successfully completed their ATI program, fifteen percent (15.1 percent) were unsuccessfully discharged from the program, and twenty-one percent (21.5 percent) were still enrolled in the program as of the date of the data extract.

The following programs were included in the original study:

- **Sentencing Alternatives Improving Lives (SAIL)**, operated by the U.S. Pretrial Services Office of the Eastern District of Missouri. This population contributed 36 cases, or 3.6 percent of the total cohort.
- **Conviction Alternatives Program (CAP)**, operated by the U.S. Pretrial Services Office of the Northern District of California (with venues in San Francisco, Oakland, and San Jose). This program contributed 87 cases, or 8.7 percent.
- **Conviction and Sentencing Alternatives (CASA)**, operated by the U.S. Pretrial Services Office of the Central District of California. By a significant margin, this program, with 297 cases (29.7 percent), was the largest contributor to the study's cohort.
- **Alternatives to Detention Initiative (PADI)**, operated by the U.S. Probation Office of the Central District of Illinois. Unlike other programs in the study, PADI has been inactive for several years. This program contributed 148 cases, 14.8 percent of the total. This program represented the next largest contributor to the cohort. All the other programs represented single-digit percentages of the total cohort. This means that findings of this study will be heavily weighted in favor of this and the CASA program.
- **Young Adult Opportunity Program (YAOP)**, operated by the U.S. Pretrial Services Office of the Southern District of New York. This program contributed 43 cases, or 4.3 percent of the study cohort.
- **Pretrial Opportunity Program (POP)**, operated by the U.S. Pretrial Services Office of the Eastern District of New York. The POP program contributed 45 ATI cases, or 4.5 percent.
- **Special Options Services (SOS)**, operated by the U.S. Pretrial Services Office of the Eastern District of New York. SOS contributed 72 cases, or 7.2 percent of the total. Combined, the two programs in the Eastern District of New York contributed 117 cases, or 11.7 percent of the total.
- **Pretrial Opportunity Program (POP)**, operated by the U.S. Pretrial Services Office of the District of New Jersey. This program contributed 31 cases, or 3.1 percent of the total.

The following programs augmented the original dataset by contributing their case data:

- **Repair Invest Succeed Emerge Program (RISE)**, operated by the U.S. Probation

Office of the District of Massachusetts. This 12- to 18-month program, which began in 2015, targets defendants with (a) serious history of substance abuse; or (b) history that reflects significant deficiencies in family support, education, decision-making, or prosocial peer networks because of which the defendant would benefit from a structured program under intense supervision. This program contributed 59, or 5.9 percent of the study's cohort.

- **Kapilipono**, operated by the U.S. Pretrial Services Office of the District of Hawaii. This program began in 2019 and is 12-18 months in duration. Being a new program, Kapilipono contributed only 5 cases, or 0.5 percent of the total.
- **Sentencing Options that Achieve Results (SOAR)**, operated by the U.S. Pretrial Services Office of the Northern District of Illinois. This program targets young adult defendants (generally under 30 years old), was begun in 2016, and is 18 to 24 months in duration. SOAR contributed 28 cases, or 2.8 percent.
- **Law Abiding Sober Employed and Responsible Lifestyle (LASER)**, operated by the U.S. Probation Office of the District of New Hampshire. Begun in 2010, this 12-month program targets defendants with a criminal history that is likely attributable to drug abuse or addiction. This program contributed 59 cases, or 5.9 percent.
- **Drug Reentry Alternative Model (DREAM)**, operated by the U.S. Probation Office of the Western District of Washington. This 12- to 24-month program that began in 2012 targets defendants whose criminal conduct appears to be motivated by a substance use disorder. This program contributed 71 cases, or 7.1 percent.
- **Deferred Sentencing** of the U.S. Probation Office of the District of Rhode Island is a 6- to 12-month program. This program, which began in 2016, has flexible eligibility criteria, but generally is offered to defendants with little or no prior criminal history, supportive family, strong community connections, or other positive influences; and is motivated to effect positive change. This program contributed 19 cases, or 1.9 percent.

ATI and non-ATI cases were drawn from PACTS using the approximate date when the ATI program commenced in the district. For all districts, the supervision ending cut-off date was December 30, 2019.

³ About NADCP - NADCP.org

⁴ Is your drug court serving all the people it should? | NCSC.

⁵ The report was developed by the Eastern District of New York and is named *PTS Active ATI and Regular Supervision Cases Demographics*.

For IL-C, we selected all cases that began pretrial supervision from November 1, 2002. For NY-E, we selected all cases that began supervision on or after January 1, 2011. For New Hampshire, we selected cases that began Jan 1, 2010. For all other districts, we selected cases that began pretrial supervision beginning January 1, 2012.

Independent (i.e., "Treatment") Variable

The key explanatory variable is a dichotomous measure (yes/no) indicating whether an individual was selected for participation in an ATI program during the person's time on pretrial supervision. Participation in an ATI program was determined using data on non-contract referrals drawn from PACTS. Districts recorded the start date, end date, and outcome of the defendants' ATI program participation in the non-contract referral screen of PACTS.

Outcome Variables

The goal was to examine the relationship of ATI program participation and program completion on several pretrial services outcomes. In line with existing research on pretrial services, three familiar pretrial outcomes were examined: whether defendants failed to appear for their assigned court dates (coded 0/1), were arrested for new criminal activity (0/1), or received a technical violation⁶ pending case disposition (a count of technical violations during supervision period).

In addition to the pretrial outcomes discussed above, we examined intermediate supervision outcomes related to employment and sobriety. Specifically, we used two measures of employment, the number and percentage of days worked at least part-time while on supervision ((total # of days working/# of days on supervision) *100). Additionally, we created a measure that represents the percentage of drug tests where there was a positive result. This measure accounts for the fact that defendants participating in an ATI program were often required to undergo additional screenings and are under supervision for a longer amount of time. Table 1 presents the descriptive statistics for the sample of ATI defendants included in the analysis.

Methodology

Much like its predecessor, the current study employs propensity score matching (PSM) techniques to estimate "treatment" effects of ATI participation on the outcomes described above. This quasi-experimental approach estimates average treatment effects on the treated with the intervention of interest—in this case, ATI program participation (see Guo & Fraser, 2010). This technique is useful

for simulating independent assignment of a designated treatment and estimating more directly the treatment's effects. For purposes of this study, "treated" defendants are those who participated in an ATI program. We used PSM techniques to match the ATI group to a group of defendants who had not participated in an ATI program yet were comparable in terms of their other characteristics. Based on this approach, two defendants with

TABLE 1.
Descriptive Statistics for Analysis of Alternative to Incarceration
Courts across 13 U.S. Districts (n=1,000)

		N	%			
Sex	Female	456.00	45.60%			
	Male	544.00	54.40%			
Race	Non-Hispanic White	457.00	45.70%			
	Non-Hispanic Black	194.00	19.40%			
	Hispanic	296.00	29.60%			
	Non-Hispanic Other/Unknown	53.00	5.30%			
Offense Type	Drug Offense	642.00	64.20%			
	Financial Offense	260.00	26.00%			
	Other Offense	11.00	1.10%			
	Violent Offense	28.00	2.80%			
	Weapons Offense	59.00	5.90%			
PTRA Risk Category	Category 1	77.00	7.70%			
	Category 2	201.00	20.10%			
	Category 3	396.00	39.60%			
	Category 4	237.00	23.70%			
	Category 5	89.00	8.90%			
ATI Program Outcomes	Still Active	215.00	21.50%			
	Unsuccessful Program Discharge	151.00	15.10%			
	Successful Program Completion	634.00	63.40%			
		Mean	Median	SD	Min	Max
Age at Intake		32.05	29.19	10.25	18.32	71.66
Time in Program		14.40	12.47	10.06	0.07	80.07
New Charge / Rearrest During Supervision		0.12	0.00	0.33	0.00	1.00
Technical Violations		2.08	0.00	5.61	0.00	60.00
FTAs		0.01	0.00	0.08	0.00	1.00
Drug Tests Administered		42.11	31.00	38.96	0.00	223.00
Percent Positive Drug Tests		11.54	2.86	21.35	0.00	100.00
% of Days on Supervision Worked		53.05	52.98	45.69	0.00	292.26

⁶ Technical violations are violations of court-imposed conditions of release.

similar estimated treatment likelihood scores (probability that they would participate in an ATI program) would be comparable. Using this method, differences between those individuals on a given outcome can be more confidently attributed to participation in an ATI program.

Comparing the results against their matched counterparts who did not participate in an ATI program, the study team analyzed the outcome measures described above and sentences imposed for all defendants who *participated* in an ATI program; and separately for those who *completed* a program. Additionally, to better understand the impact of ATI programs on reduced sentences or case dismissals, the study team analyzed the sentences imposed on matched defendants who did not participate in an ATI program with those who received a dismissal because of their participation in a program. This analysis was repeated for ATI defendants who successfully completed the ATI program.

Pre-matching Differences between ATI and non-ATI Defendants

We examined the differences between defendants who had participated in an ATI program compared to those who had not participated. (Of the 785 defendants who had completed their program at the time of the data extraction, 634 of those successfully completed, an 81 percent success rate.) This comparison revealed that the ATI group was significantly different on each of the 20 measures we examined and ultimately used in our matching specification. For example:

- Men comprise a lower percentage of ATI participants (54.5 percent vs. 78.7 percent).
- ATI participants are younger than general population (mean age 32 vs. 36).
- Whites comprise a higher percentage of ATI participants (45.7 percent vs. 37.6 percent).
- Hispanics comprise a higher percentage of ATI participants (29.6 percent vs. 22.9 percent).
- ATI defendants are higher risk as measured by the Pretrial Risk Assessment (PTRA) (mean raw score⁷ of 7.6 vs. 5.8 PTRA).

⁷ Officers perform the PTRA risk assessment on defendants to help inform their bail recommendation. The officer does not see the raw score, which ranges from 0 to 15, but rather the PTRA category (Categories 1 to 5. These categories inform the relative risk of a defendant (normed on the entire federal population), with Category 5 being the highest.

Matching ATI Defendants to Non-ATI Defendants

The matching process contains two steps. We first estimated propensity scores using a logistic regression analysis in which we predicted the likelihood of a defendant participating in an ATI program during the period under pretrial supervision (n=1000). This model included all the measures used as matching dimensions. We then used the estimated likelihood scores from this analysis to match the ATI group (the treated group) to the comparison group, applying one-to-one nearest neighbor matching without replacement, and a caliper setting equal to 0.2 of the standard deviation of the propensity score (Austin, 2011). Using these specifications, matches were found for all but 83 (8.3 percent) of the defendants in the treatment group. The remaining cases fell “off support” during the matching procedure because no suitable matches in the pool of eligible “controls” (i.e., those defendants who did not participate in an ATI program) could be found. In other words, for these unmatched cases there is no satisfactory counterfactual in the sample of pretrial defendants in our dataset.

The matching procedure yielded treatment and comparison groups that show strong balance on the covariates considered.⁸ For all variables, the standardized bias statistic (SBS) values in the matched samples fall below the conventional cutoffs (Rosenbaum & Rubin, 1985). We observed no significant differences across the samples on any of the characteristics considered once the groups had been matched. It is also important to note that matched cases come from the same district as the focal treatment case to ensure that jurisdictional differences did not confound the results. The resulting matched groups, comprising 917 defendants who participated in an ATI program and 917 who did not, made it possible to assess the relationship more accurately between ATI participation and the outcomes of interest.

To estimate the effect that ATI program participation has on sentences imposed by the court, we re-estimate the propensity scores for each group among the sample of defendants who have had their sentences executed, i.e., who have begun their term of prison or probation (for both the treatment and matched comparison groups). We go on to assess the differences in sentences imposed between the group who participated in ATI programming and the matched comparison group. We then

⁸ Matching results are available upon request.

repeat the matching procedure for these groups to ensure balance of covariates for ATI defendants who *completed* their ATI program.⁹

Results

Successful Graduation Rates

Like the first study, we observe high rates of successful completion among our ATI defendants (81 percent). In the matched ATI group, a total of 758 defendants had completed the program. Of those, 616 completed successfully and 142 did not.

Supervision Outcomes for Matched Groups

Rearrest, Failures to Appear, and Technical Violations

Expressed as a percentage of all ATI participants *including both closed and ongoing (still active in the program)*, sixty-three percent of the ATI participants in the study cohort successfully completed their ATI program (n=634). As Table 1 shows, the cohort included 215 defendants (21.5 percent) whose programs were still active.

The same matching procedures described above were repeated for this subsample, resulting in successful matches for 598 of the 634 defendants within this group. Table 2 depicts the supervision outcomes of rearrest, failures to appear, and technical violations for (1) all ATI participants regardless of completion and for (2) successful completers compared to their non-ATI counterparts. Notably, we observe that defendants who successfully completed their ATI program were significantly less likely to be rearrested on supervision. Fewer successful ATI participants have rearrests compared to matched comparison group (.068 vs. 11.54). We also note that the percentage of those rearrested during supervision is slightly lower for those who successfully completed the ATI program (.068) compared to those who did not (.115). However, we observed little

⁹ Because recent research has highlighted potential shortcomings of using PSM to estimate treatment effects when random assignment is not possible (King & Nielsen, 2018), we assessed the robustness of our results using Kernel matching. Kernel matching uses the estimated propensity scores to match individual cases in the treatment group to a weighted mean of control cases. In each case, the results of the Kernel matching specification were substantively similar to that from the PSM analysis. As one-to-one matching offers a more logical interpretation, we chose to present those results in the text. Ancillary results are available upon request.

difference in FTA and technical violations among the four groups, and both events are relatively rare for the groups.

Sobriety and Employment Defendant Outcomes

In addition to rearrests, FTAs, and technical violations, for all ATI participants as well as those who successfully completed their ATI, we observed the differences in two commonly used indicators of favorable adjustment to pretrial supervision. These measures were chosen because these domains are known correlates to criminal behavior and are also readily available in PACTS. Results reveal (shown in Table 2) that defendants who successfully completed their program worked a greater proportion of days while on supervision (55.4 percent vs. 47.9 percent) and had significantly fewer positive drug tests measured as a percentage of all drug tests taken (8.65 percent vs. 18.3 percent). Overall, the results suggest that ATI program completion is associated with improved outcomes, such as increases in employment and fewer positive drug tests, and a lower probability of rearrest.

ATI Case Dispositions

After examining the association of ATI programs on improved outcomes during supervision, we assessed the impact of ATI programs on case dispositions and sentences imposed. Panel A of Table 3 presents the resultant case dispositions for the 758 defendants who participated in an ATI program and whose cases have been closed (regardless of whether they successfully completed the program). Of the 758 ATI participants, a sizeable proportion had their cases dismissed (34 percent) or received pretrial diversion leading to dismissal upon satisfaction of the terms of the pretrial diversion agreement (4 percent), for a total 38 percent dismissal rate. Of the group of *sentenced defendants* (regardless of ATI completion status), 59 percent of the ATI defendants received prison time while 40.1 percent received a probation term.

Contrasting the percentage of *successful completers* who received prison sentences with their matched counterparts, we see substantial differences. Of the *sentenced defendants* who *successfully completed* their program, only half (50.7 percent) were sentenced to prison (including those who received time served), as compared to nearly 80 percent of their matched counterparts (79.5 percent).

Importantly, there are substantial differences in the sentences imposed on those who successfully completed their

TABLE 2:
Average Treatment Effects (ATT) of ATI Participation on Pretrial Supervision Outcomes

Panel A: Assessment of Outcomes Among All ATI Participants				
Outcome	Matched ATI Participants (n=917)	Matched Defendants (n=917)	S.E.	T-statistic
New Charges / Rearrest During Pretrial Period	.115	.103	.014	0.75
Technical Violations	2.03	1.70	.241	1.36
Failures to Appear	.006	.008	.004	-0.28
Percentage of Drug Tests with Positive Result	11.72	19.33	1.20	-6.36*
Percentage of Days Worked on Supervision	52.83	46.37	2.25	2.86*
Panel B: Assessment of Outcomes Among All Successful ATI Participants				
Outcome	Matched ATI Participants (n=598)	Matched Defendants (n=598)	S.E.	T-statistic
New Charges / Rearrest During Pretrial Period	.068	11.54	.017	-2.81*
Technical Violations	1.43	1.60	.245	-0.66
Failures to Appear	.005	.007	.004	-0.38
Percentage of Drug Tests with Positive Result	8.65	18.32	1.40	-6.88*
Percentage of Days Worked on Supervision	55.40	47.96	2.83	2.63*

Note: A total of 83 cases were lost of support in the analysis of all ATI participants, while 36 were lost in the analysis of successful ATI participants only. * $p < .05$. Full results of PSM analysis available upon request.

TABLE 3.
ATI Case Dispositions for ATI Participants Across Districts

Panel A : ATI Participants		
	Cases	Percent
Dismissed	257	34%
Diversion Satisfied	33	4%
Diversion Still Pending	2	0%
Sentenced	456	60%
Fugitive / Other (Unknown) Outcome	10	1%
Total	758	100%
Panel B : Successful ATI Participants		
	Cases	Percent
Dismissed	249	40%
Diversion Satisfied	33	6%
Diversion Still Pending	2	0%
Sentenced	331	54%
Fugitive / Other (Unknown) Outcome	1	0%
Total	616	100%
Panel C : Unsuccessful ATI Participants		
	Cases	Percent
Dismissed	8	6%
Sentenced	125	88%
Fugitive / Other (Unknown) Outcome	9	6%
Total	142	100%

**There are 29 cases where the individual has completed or dropped out of the program but a disposition had not occurred when the data was extracted.

ATI program and those who did not. For example, as shown in Panel B of Table 3, 40 percent of successful defendants ultimately had their cases dismissed, while 49 percent received a probation term and 50.7 percent were sentenced to prison. Compare this to the unsuccessful group, of which 84.1 percent were sentenced to prison and 15.9 percent were given a probation term. These differences are shown in Panels B and C of Table 3.

ATI Participant Success and Sentences Imposed

Successful ATI Participants

As shown in Table 4, successful ATI participants *who were sentenced* (N = 331 of 616 sentenced defendants) were significantly less likely to receive a prison term than their matched counterparts (50.7 percent vs. 79.5 percent). Conversely, successful completers (Panel B of Table 4) were significantly more likely than their matched counterparts to receive a non-custodial sentence of probation (49.3 percent vs. 20.5 percent).

Also important are the sizeable differences in the length of terms received. As shown in

TABLE 4.
Likelihood of Prison Sentence for Sentenced Defendants, Post-Matching

Panel A : All ATI Participants and Matched Group		
Likelihood of Prison Sentence or Probation Term	Non-ATI	ATI
	Probation	16.2%
Prison Term	83.8%	59.9%
Chi-Square = 44.4, p < .000		
Panel B : Successful ATI Participants and Matched Group		
Likelihood of Prison Sentence or Probation Term	Non-ATI	ATI
	Probation	20.5%
Prison Term	79.5%	50.7%
Chi-Square = 55.29, p < .000		
Panel C : Unsuccessful ATI Participants and Matched Group		
Likelihood of Prison Sentence or Probation Term	Non-ATI	ATI
	Probation	23.6%
Prison Term	76.4%	84.1%
Chi-Square = 2.09, p > .100		

Prison sentences include those sentenced to time served.

Table 5, successful ATI participants received an average prison sentence of 3.9 months, while their matched counterparts were sentenced to an average of 33.3 months. (Due to limitations in PACTS and inconsistent data entry practices, we are unable to ascertain with certainty whether the prison time recorded in the PACTS sentence segment reflects “time served,”¹⁰ that is, time in pretrial detention

¹⁰ Though this is no longer the recommended practice, some districts, particularly in earlier years of the cohort, record a time served prison sentence by entering “1 day” in the prison time for the

that is credited against the entire length of the prison term.¹¹ Probation terms, on the other hand, were more similar (35.4 months vs. 33.7 months), with successful participants receiving a slightly longer probation term.

Unsuccessful ATI Participants

sentence and “time served” in the remarks. We tabulate these cases in the disposition statistics as “time served”; however, we know that this is likely an under-representation of the number of cases sentenced to time served.

¹¹ 18 U.S. Code § 3585(b).

TABLE 5.
Sentence Length for Sentenced Defendants, Post-Matching

All ATI defendants Who Were Sentenced and Matched Goup		
Post-Matching Differences in Sentences Received		
Prison Sentences	Mean Prison Sentence	T-Statistic
Non-ATI Pretrial Defendants	29.3	8.05*
ATI Participants	8.95	
Probation Terms	Mean Probation Term	T-Statistic
Non-ATI Pretrial Defendants	35.4	0.48
ATI Participants	34.3	
Supervised Release	Mean TSR Time	T-Statistic
Non-ATI Pretrial Defendants	41.3	1.52
ATI Participants	38.9	
Successful ATI defendants Who Were Sentenced and Matched Goup		
Post-Matching Differences in Sentences Received		
Prison Sentences	Mean Prison Sentence	T-Statistic
Non-ATI Pretrial Defendants	33.3	9.77**
ATI Participants	3.9	
Probation Terms	Mean Probation Term	T-Statistic
Non-ATI Pretrial Defendants	35.4	0.676
ATI Participants	33.7	
Supervised Release	Mean TSR Time	T-Statistic
Non-ATI Pretrial Defendants	40.8	-0.282
ATI Participants	41.4	
Unsuccessful ATI defendants Who Were Sentenced and Matched Group		
Post-Matching Differences in Sentences Received		
Prison Sentences	Mean Prison Sentence	T-Statistic
Non-ATI Pretrial Defendants	21.6	0.846
ATI Participants	18.6	
Probation Terms	Mean Probation Term	T-Statistic
Non-ATI Pretrial Defendants	37.8	-0.183
ATI Participants	38.4	
Supervised Release	Mean TSR Time	T-Statistic
Non-ATI Pretrial Defendants	42.9	3.13**
ATI Participants	34.8	

These tabulations only include the average sentence for those who were given each particular sentence (does not include zeros for those who were given probation over prison).

Prison sentences include those sentenced to time served.

As expected, among unsuccessful participants the differences were far less pronounced. Unsuccessful participants who were sentenced (N = 125 of 142) were no more or less likely to receive a prison or probation sentence than the defendants in the comparison group. Further, although the prison sentences received by the unsuccessful ATI participants were shorter on average (18.6 months vs. 21.6 months), this difference was not statistically significant. This finding suggests that defendants who fail to complete the ATI program are *not* sentenced more harshly than if they had not entered the program (shown in Table 5). This is significant because some defense attorneys and defendants may fear that entry and then failure in a program may result in punitive action in the form of a harsher sentence.

Comparison of Non-ATI cases to Dismissed ATI Cases

Given the major differences between the two groups in case dispositions and sentences imposed, we took a closer look at dismissed ATI cases (including those who were granted pretrial diversion and ultimately dismissed) who were matched to non-ATI cases on the matching dimensions described above. See Table 6. A total of 252 defendants who had their cases dismissed after participating in an ATI program were successfully matched to a group who did not. Of the 252 non-ATI comparison cases, the majority (162 or 64.3 percent) received a prison sentence, while 69 (27.4 percent) received probation. Further, the length of terms imposed on the comparison group illustrate that, had it not been for completion of the ATI program, custody terms would have been substantial. The average prison sentence was 25.75 months. The median prison term imposed was 13.5 months. The average probation term given was 30.8 months, with a median of 36 months. These results underscore the potential for ATI programs to provide significant cost savings in avoided prison time and are discussed below.

Racial and Gender Disparity Analysis

As we discussed in the background of this paper, the study districts felt it pertinent to assess demographic parity in their ATI programs. To do this, we first compared the demographic characteristics of those defendants who participated an ATI program to the entire population of federal defendants. Secondly, we used exact matching to cull those defendants who may not be considered

comparable to the ATI group (due to extreme PTRA scores or violent offense types) to assess disparities between the two groups. More specifically, in the second portion of our analysis we first matched each ATI participant to a randomly selected non-participant on the following characteristics: offense type, PTRA score, and citizenship. The matching analyses employed a 1:k (or “one to many”) matching procedure to maximize the matched sample size. Thus, the matched sample includes all possible exactly matched control cases in the

comparisons presented. The results of this analysis are presented in Table 7.

Even after accounting for pertinent defendant and case characteristics, we observe potential racial and gender disparity in program participation, which may reflect unintended bias in the selection or entrance criteria of the programs. To this point, however, we note that we have no data on who was *offered* and subsequently *declined* entrance in an ATI program, and thus any differences in program participation may

TABLE 6.
Sentencing Outcomes for Defendants Matched to ATI Cases that were Dismissed

	n / %	Mean Sentence	Median Sentence
Acquited / Dismissed / Diverted	21	--	--
Sentenced to Probation	69	30.8 months	36 months
Sentenced to Prison	162	25.75 months	13.5 months

Note: Includes a total of 252 defendants who were successfully matched to the ATI defendants who were dismissed after completing the ATI program.

TABLE 7.
Race / Sex / Age and Risk Differences between ATI Participants and Non-ATI Defendants

Panel A: Differences Prior to Matching				
	Non-ATI Defendants n=26,283	ATI Participants n=1,000	Chi-Square / T-Test	Sig.
Race				
White	37.6%	45.7%	27.0*	<.001
Black	27.5%	19.4%	31.7*	<.001
Hispanic	22.9%	29.6%	24.7*	<.001
Non-Hispanic/ Other/ Unknown	12.1%	5.3%	41.7*	<.001
Sex				
Female	21.3%	45.6%	329.4*	<.001
Male	78.7%	54.5%		
Age	40.4	32.0	20.1*	<.001
PTRA Score	5.8	7.6	20.1*	<.001
Panel B: After Exact Matching on Offense Type, PTRA Score and Citizenship				
	Non-ATI Defendants n=26,283	ATI Participants n=1,000	Chi-Square / T-Test	Sig.
Race				
White	30.40%	45.70%	49.6*	<.001
Black	36.10%	19.40%	69.5*	<.001
Hispanic	26.50%	29.60%	2.4	>.05
Non-Hispanic/ Other/ Unknown	7.00%	5.30%	2.5	>.05
Sex				
Female	22.10%	45.60%	123.3*	<.001
Male	77.90%	54.40%		
Age	36	32	8.26	<.001

reflect reluctance on the part of non-White, male, or older participants. Further, we have no quantitative data on the relative weight of program stakeholders' say—either formal or otherwise—in nomination, selection, and denial of program participation. Additionally, federal prosecutors enjoy wide discretion on who they charge and for what offenses, which may have a downstream impact on the pool of program-eligible defendants. In federal ATIs, there appears to be no standardized process for vetting participants, and therefore such vetting ultimately depends on the individual courts' collaborative model. Nevertheless, the analysis (of pre-matched cohort) shows us that ATI defendants are more likely to be White (45.7 percent) or Hispanic (29.6 percent) than Black (19.4 percent), and that there is a higher proportion of females in these ATI programs (45.6 percent) as compared to the general defendant population (21.3 percent). We also observe that ATI defendants are

younger in age (32.0 vs. 40.4 years old) and are at higher risk as measured by the Pretrial Risk Assessment (PTRA) (7.6 vs. 5.8 PTRA raw score).

After matching, these differences are mitigated in the non-ATI defendants, with White defendants comprising 30.4 percent; Blacks, 36.1 percent, and Hispanics, 26.5 percent. Table 7 also shows that, post-matching, females comprise 22.1 percent and males comprise 77.9 percent; the average age of non-ATI defendants is 36. These differences in risk and possibly age confirm that, generally, program participation is geared towards those most in need of the intensive services and structure afforded by a program.

Demographics in ATI Successful Completion Rates

While differences in program participation may be cause for further investigation, such differences do not appear when we examine

which defendants successfully complete an ATI program. (See Table 8.) Although there are some small racial differences in program success rates, these are not statistically significant. Females are not significantly more likely than their male counterparts to be successful. There are also no significant differences across offense types in program success. As could be expected, we find that younger defendants are significantly less likely to be successful than their older counterparts, and finally, we find that actuarial risk as measured by the PTRA is consistent with program success, meaning that defendants with higher PTRA scores are less likely to successfully complete a program. For purposes of this study, we did not analyze each program individually; therefore, these results are presented in the aggregate. That said, however, we did observe significant differences among programs in both their participation and success rates by demographics (not shown).

Conclusion

Like the original study of the ATI programs across seven districts, this study uses an expanded dataset that includes the programs of six more districts and focuses on short-term outcomes that reflect improved conduct of defendants on pretrial supervision and the avoidance of conviction and custodial sentences.

Notwithstanding this current study and its predecessor, there remains limited evidence of long-term efficacy of federal ATI programs. As stated by the USSC in its 2017 report on ATIs in the federal system,

Proponents of (these) programs have pointed to limited data showing low recidivism rates of graduates of certain programs, ... Although important, such data needs to be supplemented with data showing both the long-term recidivism rate of participants who did not successfully complete the programs, and the long-term recidivism rate of a meaningful comparison group of similarly situated offenders who received traditional dispositions of their cases.

To this end, the study team was recently granted permission by the Federal Bureau of Investigation¹² to access criminal history

¹² Requests for FBI criminal history record information (CHRI) for research purposes must be submitted in accordance with Title 28, Code of Federal Regulations (C.F.R.) Part 22.

TABLE 8.
Race / Sex / Age and Risk Differences between Successful and Unsuccessful ATI Participants

	Unsuccessful ATI n=151	Successful ATI n=634	Chi-Square / T-Test	Sig.
Race				
White	62 (16.8%)	306 (83.1%)	4.30	> .05
Black	35 (24.5%)	108 (75.5%)		
Hispanic	47 (20.3%)	184 (79.7%)		
Other/Unknown	7 (16.3%)	36 (83.72%)		
Sex				
Female	62 (16.7%)	310 (83.3%)	3.00	> .05
Male	89 (21.5%)	324 (78.4%)		
Age				
18-24	59(29.2%)	143 (70.8%)	31.4*	<.01
25-30	47 (20.2%)	186 (79.8%)		
30-40	37 (18.3%)	165 (81.7%)		
40+	8 (5.4%)	140 (95.6%)		
Offense				
Drug Offense	94 (18.3%)	419 (81.7%)	4.51	>.05
Financial Offense	38 (18.7%)	165 (81.3%)		
Other Offense	2 (20.0%)	8 (80.0%)		
Violent Offense	4 (22.255)	14 (77.8%)		
Weapons Offense	13 (31.7%)	28 (68.3%)		
PTRA Risk Category				
Category 1	3 (4.4%)	66 (95.6%)	21.97*	<.01
Category 2	22 (13.5%)	141 (86.5%)		
Category 3	60 (19.9%)	241 (80.1%)		
Category 4	45 (24.9%)	136 (75.1%)		
Category 5	21 (29.6%)	50 (70.4%)		

data and is poised to perform a recidivism analysis of ATI participants who are no longer in the federal criminal justice system. Like the current study, results will be compared against similarly situated defendants who received traditional case dispositions. The FBI's permission allows the study team to move beyond the study of short-term outcomes into outcomes that reflect long-term criminal justice purposes, namely that of rehabilitation and desistance from crime. As ATI programs at their very core aim for rehabilitation, recidivism is a key measure of long-term efficacy, especially recidivism by those whose cases were dismissed or who did not serve a term of incarceration. That said, we also must not lose sight of the more qualitative indications of long-term positive changes in defendants' lives, such as relationships, employment, education, access to healthcare, and financial independence. This is an area ripe for future in-depth research.

Importantly, this study with a larger and more recent dataset essentially replicates the findings of its predecessor study: *successful completion of an ATI program is associated with more favorable case dispositions and less severe sentences*. Participants are more likely to avoid new arrests for criminal behavior, remain employed, and refrain from illegal drug use while their cases are pending in court. Such positive outcomes help defendants place their best foot forward while awaiting sentencing, demonstrating to the judge that they are on the path to rehabilitation, and thus deserving of more favorable disposition that imposes "a sentence sufficient, but not greater than necessary, to comply with the purposes set forth in paragraph (2)" of that provision. 18 U.S.C. § 3553(a).

Favorable case dispositions of defendants who benefit from enhanced rehabilitative services while remaining accountable also hold promise as cost-avoidance measures. As this study found, over a third (34 percent) of successful completers had their cases dismissed. Additionally, they are significantly less likely to receive a prison term than their matched counterparts; of those who were sentenced, a significantly smaller proportion receive a prison term compared to their matched sentenced counterparts (50 percent vs. 80 percent). Additionally, successful completers who did receive a custodial sentence were required to serve significantly shorter prison terms (mean of 33.3 months vs. 3.9 months.) This provides evidence that ATI programs can play a small but important role

in mitigating the crisis of over-incarceration facing our criminal justice system.

As we noted in the original study of seven districts, the Judicial Conference has taken no formal position on ATI courts in the federal system (Vance, 2016); thus the federal system has no common definition of or standards for Alternatives to Incarceration courts. As noted in a report by the United States Sentencing Commission titled *Federal Alternative-to-Incarceration Court Programs*, these programs have developed at the grass roots and independently of both the Sentencing Commission and the Judicial Conference policy. Recognizing its importance, in its Five-Year Strategic Plan (developed 2016), the Probation and Pretrial Services Office of the Administrative Office of the U.S. Courts (AO) encouraged research and evaluation of such programs.¹³ Though this study did not evaluate individual programs, its aggregated results represent an advancement in the knowledge base about federal ATIs.

Though formal endorsement of ATIs in the federal system by the Judicial Conference remains pending, an important formal acknowledgement of their ubiquity and resource intensiveness occurred when the Judicial Conference adopted the most recent workload formula that specifically captures the probation and pretrial services staff time associated with all its activities.

Due to the expansion of this study, progress has been made in the standardization of protocols for recording ATI participation in the Probation and Pretrial Services Automated Case Tracking (PACTS). Prior to the original study, no protocols had been shared—or even developed—to record important information about program entry, exit, session attendance, and critical dates. Districts not participating in the study or who have yet to begin an ATI can now benefit from standardized data entry procedures, which will help ensure accurate and consistent data collection.

Equally important is keen awareness by federal criminal justice stakeholders, including judges, of the potential for racial and gender disparity. This awareness should pervade every aspect of program selection, operation, and disposition. Concerted ongoing discussion among program stakeholders should be incorporated into all facets of program operation, particularly as they relate to the selection and success criteria for ATI

participation, as a substantial body of research now indicates that problem-solving courts should focus their efforts on high-risk/high-need defendants. Research indicates that programs that focus on this population reduce crime approximately twice as much as those serving less serious defendants (Lowenkamp et al., 2005; Fielding et al., 2002). How can programs ensure demographic fairness within this paradigm? The racial and gender analysis portion of this study is an incremental—though important—step in raising awareness of demographic parity in all programs, especially for those who have such strong impact on defendants' liberty.

As in all aspects of community corrections, defendants' perception of fairness, respect, and attention to their specific needs is critical to maximizing success in an ATI. Research supports that procedural justice is a critical component of problem-solving courts (MacKenzie, 2016). It is well known that treatment response is colored by differences in cultural, demographic, and experiential factors, and that these often vary significantly among groups. Because of these differences, perceptions of fairness and appropriateness will vary as well. In 2018, a qualitative study was conducted using focus groups of 70 African American drug court participants' views on drug court programs and their perceptions of any service or treatment disparities related to a participant's race. Perhaps surprisingly, many reported favorable perceptions about the accountability aspects of the program and judicial involvement, but most reported unfavorable views of their counselors and the quality of treatment they received for their substance-use disorders. They indicated that their treatment was not tailored to their individual needs, particularly mental health and employment needs. Though the authors of the study acknowledge that the findings of this study are not necessarily generalizable to other drug courts, the report recommends that program evaluations incorporate qualitative methods to assess participants' perceptions, which provides valuable insight generally, and may reveal racial, gender, or cultural differences in perceptions (Gallagher & Nordberg, 2018). Although the current study did not reveal demographic disparities in graduation rates in the federal ATI programs examined, stakeholders may consider pursuing similar qualitative studies to optimize program benefits. Further such studies may inform stakeholders as to the extent intervention modalities are appropriately tailored, e.g.,

¹³ On file at the Administrative Office of the U.S. Courts.

culturally sensitive, trauma-informed, family-involved, etc.

It remains a goal of future study to quantify the short- and long-term financial implications of federal ATI programs. These programs are resource intensive. Intensive supervision and treatment modalities for participants—coupled with considerable staff involvement from pretrial services staff, judges, defense attorneys, and prosecutors—are costly. Capturing some of these data points in the staffing formula moves us a step closer to understanding the resource requirements, if limited to probation and pretrial services. Though much more research on federal ATI programs is clearly needed, the results of this study support the concept that these programs provide rehabilitative benefit to their participants and offer a viable alternative to a strictly punitive model of criminal justice.

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