DRUG COURT POLICIES AND PRACTICES: HOW PROGRAM IMPLEMENTATION AFFECTS OFFENDER SUBSTANCE USE AND CRIMINAL BEHAVIOR OUTCOMES

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[4] Adult Drug Court Rankings—*A sample of 23 adult Drug Courts were ranked by their ability to reduce substance use and criminal behavior.*

[5] Drug Court Practices and Criminal Behavior—*Drug Courts that prevented more criminal acts had high leverage over their participants, medium predictability of sanctions, positive judicial attributes, and admitted participants at the same point in the criminal justice process (i.e., all pre-plea or post-plea).*

[6] Drug Court Practices and Substance Use Outcomes—*Drug Courts that prevented more drug use had medium predictability of sanctions, participant populations that entered post-plea, and positive judicial attributes.*

[7] High-Performance Drug Courts—*The most effective Drug Courts created synergistic effects by implementing multiple best practices.*

THE JUSTICE POLICY CENTER at the Urban Institute, RTI International (RTI), and the Center for Court Innovation (CCI) conducted the Multisite Adult Drug Court Evaluation (MADCE)—a five-year study of adult Drug Courts funded by the National Institute of Justice. In addition to examining whether Drug Courts work to reduce drug use and crime, another goal of the MADCE was to explain *how* Drug Courts work by studying key program policies and practices that lead to more successful outcomes for participants. In this report, we identify variations in policies and practices across Drug Courts and determine whether these variations influenced program effectiveness.

In 1997, the Bureau of Justice Assistance (BJA) promulgated ten key components of Drug Courts. In part, these components recommend that Drug Courts monitor abstinence through frequent alcohol and drug testing, use coordinated strategies to respond to participants' compliance with sanctions and incentives, and provide ongoing judicial interaction with each Drug Court participant. Although the ten key components are consistently recommended as central to the Drug Court model, many have not been subjected to empirical investigation. When Drug Court programs have been evaluated, much of the previous literature focused on participant-level experiences rather than on court-level practices. However, the receipt and amount of Drug Court services correlates highly with individual outcomes. That is, Drug Courts routinely increase the amount of services they provide to participants in direct response to participants' infractions or other behaviors.

For this reason, this article focuses on the effectiveness of court-level practices. Few previous studies focused on court-level policies and many of those examined the effectiveness of specific Drug Court practices, primarily court appearances, treatment, and sanctions. In brief, although most Drug Courts require regular status hearings for program participants, requirements pertaining to the frequency of status hearings vary across courts. In a series of related studies, researchers were able to compare the impact of twice-monthly versus as-needed status hearings (Festinger et al., 2002; Marlowe et al., 2003; Marlowe, Festinger, & Lee, 2004; Marlowe et al., 2005). Overall, little support was found for the relationship between frequency of judicial status hearings and drug use or recidivism with the exception of two subgroups—those with a history of substance abuse treatment and those with antisocial personality disorder (ASPD)—who benefited from twice-monthly status hearings. Beyond the frequency of judicial status hearings, Finigan, Carey, and Cox (2007) examined whether judges differed in their success in reducing recidivism among Drug Court participants and whether they improved with experience. They found that all judges exhibited fewer rearrests for Drug Court participants than for comparison cases, and judges who had more than

one rotation on the bench achieved better outcomes during their second rotation.

The provision of substance abuse treatment is a major component of most Drug Courts and key to the program model (BJA, 1997). Harrell, Cavanagh, and Roman (2000) explored treatment as a court-level practice in an experimental study in which drug felony defendants were randomly assigned to one of three court dockets (sanctions, treatment, and standard[1]). After random assignment, defendants in the sanctions and treatment dockets who failed two drug tests while on pretrial release—and were therefore considered program eligible—were offered the intervention services available within their respective dockets. Outcomes were compared for program-eligible defendants in all three dockets, with some analyses restricted to the subset of defendants who agreed to participate in the intervention services available within the sanctions and treatment dockets.

Results indicated that program-eligible defendants within the treatment docket were more likely to test drug-free in the month prior to sentencing and had a smaller percentage of positive drug tests than program-eligible defendants in the standard docket. Reductions in drug use were even more significant among program participants in the treatment docket (i.e., those who agreed to receive the comprehensive treatment available). Being eligible for the treatment program had no impact on self-reported drug use or the likelihood of arrest in the year after sentencing, although program participants in the treatment docket did have fewer arrests for drug offenses.

Another key component of Drug Courts is using a coordinated strategy for governing participant compliance and noncompliance (BJA, 1997). Typically, Drug Courts respond to participant behavior with sanctions for noncompliance and incentives for compliance. Re-

[1] For the purposes of this study, the dockets were defined as follows: The sanctions docket had clearly defined penalties that were applied swiftly to participants for failing drug tests and encouraged entering treatment. The treatment docket offered comprehensive treatment programs designed to provide participants with skills, self-esteem, and community resources to help them leave the criminal life. While the sanctions and treatment dockets offered new intervention services, the standard docket handled drug cases in a routine manner (Harrell, Cavanagh, & Roman, 2000).

lated to this, results for the sanctions docket in the Harrell, Cavanagh, and Roman (1998) study included the following: program-eligible defendants in the sanctions docket who agreed to receive the intervention services were more likely to test drug-free in the month before sentencing (and had a lower percentage of positive drug tests) and were less likely to be arrested in the year after sentencing than program-eligible defendants in the standard docket.

Current Study

Although Drug Courts share several common elements, substantial variation has been documented in how policies and practices are implemented across Drug Courts (Carey, Finigan, & Pukstas, 2008; Rempel et al., 2003). The purpose of the current study is to identify how implementation of Drug Court policies and practices varies and which strategies are most effective in reducing and preventing criminal behavior and drug use. The study included a number of Drug Courts ($n = 23$) selected to reflect variations in key policies and practices. We chose ten specific policies and practices to explore that might relate to the ability to prevent future crime and substance use. Specifically, we examined the influence of leverage, predictability of sanctions, adherence to treatment best practices, drug testing, case management, judicial status hearings, point of entry into the program, multidisciplinary decision making among the Drug Court team, positive judicial attributes, and judicial interaction.

METHODS

Design

The MADCE was a longitudinal, quasi-experimental design consisting of twenty-three Drug Courts and six comparison sites. The study was designed to compare Drug Court participants to offenders with similar drug use, criminal histories, and psychosocial profiles in jurisdictions that do not offer Drug Courts. We conducted an extensive site-selection process to identify Drug Courts and comparison sites that reflected substantial variation in the implementation of various Drug Court polices, such as differences in sanction and supervi-

sion policies. To identify sites, we first administered the adult Drug Court survey as a Web-based instrument between February and June 2004 (see Zweig, Rossman, & Roman, 2011). A total of 380 Drug Courts completed the survey, representing a 64% response rate of the 593 Drug Courts identified across the U.S. that met the eligibility requirements of primarily serving adults and being in operation for at least one year at that time. Although national in scope, the sample was not nationally representative. Nonetheless, it provided an important foundation for understanding Drug Court programs throughout the country.

Using data from the survey, we chose twenty-three Drug Courts located in seven geographic clusters and then identified six comparison jurisdictions in similar locations.[2] The comparison sites included several alternative models for handling drug-involved offenders, representing the diverse activities employed in jurisdictions that had not implemented Drug Courts.[3] Notably, some comparison sites mandated offenders to community-based treatment, but without other components of the Drug Court model; other comparison sites involved standard probation.

Procedure

The data for the current analyses came from three sources. The first source of data was the Web-based adult Drug Court survey identified above. Drug Court staff completed the survey, answering general information questions about the Drug Court, program structure and operations, treatment and drug testing, and courtroom practices.

The second source of data was a process evaluation that included multiple contacts with Drug Courts ultimately included in the study.

[2] More detail about recruiting sites and selection criteria can be found in Rossman et al. (2011). Altogether, MADCE includes 29 sites in eight states (Florida, Georgia, Illinois, New York, North Carolina, Pennsylvania, South Carolina, and Washington).

[3] Comparison sites included: Pierce County, WA Breaking the Cycle program; Human Services Associates TASC in Florida; Stewart-Marchman-ACT Behavioral Health Care, Florida; Illinois TASC; and North Carolina probation (NC is divided into two judicial districts and, therefore, we divided the comparison participants similarly, representing two comparison sites).

In 2004, phone interviews about court operations were conducted with potential Drug Courts during site selection. The process evaluation assessed each Drug Court's adherence to best practices related to leverage, sanctioning, and treatment in order to secure a varied sample of Drug Courts. In 2006 after the impact study began, evaluation team members visited the twenty-three Drug Courts to interview stakeholders and conduct observations of staffing meetings and court hearings. Program structure and management, operations, treatment, drug testing, and courtroom practices were assessed through open-ended questions and observations.

The third source of data was in-person interviews with offenders across the twenty-nine Drug Court and comparison sites conducted at three intervals: (1) when participants enrolled in the Drug Courts or comparison sites to provide a baseline, (2) six months after the baseline interview, and (3) eighteen months after baseline. Baseline enrollment took place during a 16-month period from March 2005 through June 2006. During that time, Drug Courts and comparison sites identified people enrolling in or entering their systems. These individuals were recruited by trained field interviewers who conducted informed consent procedures. The interviews with study participants lasted 1.5–2 hours and covered topics such as background characteristics, attitudes and perceptions (e.g., perceived legal pressure, motivations, perceptions of court, and judicial fairness), in-program behavior (e.g., receipt of treatment and other services), and outcomes (criminal behavior, drug use, and other measures of personal functioning).

Offender Sample

We enrolled 72% of eligible study participants at baseline, for a total initial sample of 1,781 offenders. Subsequently, 86% of those individuals completed 6-month interviews, and 83% completed 18-month interviews. The majority of the sample was male (70%), and the average age of study participants was 33.7 years with the Drug Court group being significantly younger than the comparison group. More than half the sample was white (55%), one-third was black/African–American (33%), 6% was Hispanic/Latino, and 6% fell

into other categories including multiracial. Just over one-third (35%) of the sample reported having a high school diploma or GED equivalency diploma; one-quarter (25%) reported having some college-level education; and 41% of the sample had less than a high school education. Slightly more than one-third of sample members (36%) were working at the time of baseline. Sixty-two percent of the sample had never been married; 11% were married; and 27% were divorced, separated, or widowed at the time of the baseline interview. Half reported having children younger than 18 years of age.

Study members, on average, reported that they began using drugs at the age of 13.6 years and had been using drugs for an average of 20 years. In the six months before they entered the program, 81% of the sample used some form of illicit drug or alcohol, and 57% used drugs other than alcohol or marijuana (including amphetamines, cocaine, heroin, hallucinogens, and nonprescribed medications). The study grouped participants by their primary substance of abuse, because many were polysubstance users. The subgroups were alcohol; marijuana; amphetamines (including methamphetamine); cocaine (powder and crack cocaine); and a subgroup hereafter referred to as *other drugs* (heroin, hallucinogens, and nonprescribed medications).

More participants in the Drug Court group reported using drugs than in the comparison group. They also reported significantly more days of use. On average, participants in both groups used drugs or alcohol 12.9 days per month, or 7.4 days per month when alcohol and marijuana were excluded.

Significantly more individuals in the comparison group had prior arrests before the one that brought them into the study (92% of the comparison group versus 86% of the Drug Court group). Of those arrested, comparison participants reported having more prior arrests (about eleven) than the Drug Court group (about eight).[4]

[4] Although we employed strategies to recruit comparable offenders for both the treatment and comparison samples, some differences existed, and although we retained in the study the majority of offenders at 6 and 18 months, some differences existed between those who remained in the study and those who did not. We employed two statistical corrections to correct for baseline differences between the Drug Court

Analytic Strategy

We employed complementary approaches using quantitative and qualitative methodologies to evaluate the effectiveness of Drug Court policies and practices. First, we tested the effectiveness of particular practices using a traditional quantitative approach, hierarchical modeling. Generally, Drug Court participants are repeatedly exposed to the same judge; thus, it is easy to confuse the effect of the judge on outcomes with the effect of the court. Hierarchical models parse out individual effects on outcomes from court effects. This article presents findings for each policy and practice using hierarchical analysis of variance with follow-up Tukey tests of group comparisons.[5]

Second, we employed an innovative approach that ranked Drug Courts' levels of effectiveness at preventing drug use and crime. We created a score for each individual that was the difference between the person's expected outcome and his or her observed outcome in Drug Court. Thus, we predicted what participants' drug use and criminal activities would have been without Drug Court and subtracted the observed outcomes from the predicted outcomes.[6] For example, a Drug Court participant's actual observed outcome may have been two days of drug use per month. But, the same person's predicted outcome had they not been in Drug Court might have been ten days of drug use per month. Thus, this person's score on number of days of drug use prevented per month would be eight days.[7]

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and comparison samples and between retained and attrited cases in the two follow-up interviews. More details can be found in Rempel and Farole (2011).

[5] Further details on why we chose this statistical analysis can be found in Zweig and colleagues (2011).

[6] We estimated drug use and criminal activity outcomes for the comparison group based on variables that predict such activities (e.g., criminal history at baseline, substance use history at baseline, etc.). Then, estimated coefficients from the comparison group were applied to Drug Court participants' characteristics (i.e., their values on variables that predict substance use and criminal activity) to determine the expected behaviors for each individual had they not been in the Drug Court program.

[7] Further details on how the study scored outcomes can be found in Zweig and colleagues (2011).

We then ranked Drug Courts based on the average performance of their participants. Overall, Drug Courts as a whole prevented 1.7 crimes per month on average, but this ranged widely ($SD = 16$, $r = -264–32$). Also, Drug Courts as a whole prevented 1.6 days of drug use per month on average, but this, too, ranged widely ($SD = 7$, $r = -33–37$). Positive average values for the Drug Courts indicated that participants did better as a result of being in Drug Court, whereas negative values indicated participants did worse than expected. Drug Courts were ranked based on two outcomes: days of drug use prevented and number of criminal activities prevented. Courts were ranked in general and then by particular subgroups of participants. [8]

Once the court rankings were created for the two outcomes, we assigned codes to each Drug Court that characterized the way they implemented particular policies and practices. From this, we identified patterns within effective Drug Courts and top–performing Drug Courts in how they implemented policies and practices and compared these with lower-performing Drug Courts.

RESULTS

Court Rankings

To determine whether the effect of Drug Court practices varied across participants, we created thirty-one subgroups based on participant attributes as self-described in the baseline interview. We chose these thirty-one measures for two reasons. First, the effectiveness of Drug Courts has been shown to vary based on some individual characteristics, such as participants' substance use and criminal histories. Second, we identified individual characteristics that seemed related to substance use and criminal behavior even if they had not been studied as part of a previous Drug Court evaluation. The thirty-one subgroups for which rankings were created reflect three broad categories:

- *Background Characteristics*—Age 30 and older or under age 30; male or female; in an intimate relationship or not; having features

[8] Further details on how rankings were developed can be found in Zweig and colleagues (2011).

of depression or not; and having antisocial personality disorder (ASPD) or not

- *Criminal History*—No prior arrests, one to four prior arrests, or more than four prior arrests; previous incarceration or no previous incarceration; and any relatives or friends with a conviction or no such relatives or friends
- *Substance Use Factors*—Age of first drug use 15 years or younger or over 15 years; any substance abuse treatment during the six months before baseline or no such treatment; any relatives or friends with drug problems or no such relatives or friends. Primary drug of choice: alcohol, marijuana, amphetamines, cocaine, or other drugs; drug use of any kind other than marijuana. Used aggression-inducing drugs (i.e., amphetamines, cocaine) at some point or never used aggression-inducing drugs

Court Rankings for Crimes Prevented

Table 1 describes the Drug Court rankings for crimes prevented. Throughout the rankings, each Drug Court is represented by a letter rather than court name to provide anonymity. Letters above the bold line in each column represent Drug Courts achieving participant outcomes better than the expected outcomes—that is, effective courts. Drug Courts below the bold line are those where participant outcomes were worse than the expected outcomes. In columns without a bold line, all courts achieved positive results.

In each column, bold letters represent the top three Drug Courts with the most participants meeting that subgroup criterion. To be eligible for such, a Drug Court had to have at least 50% of its population meeting that criterion. Columns with no bold letters indicate that no court in that subgroup met this criterion. In addition, a Drug Court had to provide five participants in the given subgroup to be included in that ranking. Therefore, some subgroups contain fewer courts because some courts did not meet this criterion. The general ranking indicates that eighteen of the twenty-three Drug Courts in our study effectively prevented crime for their participant populations. However, rankings varied substantially among the subgroups. On average, more Drug Courts performed positively for the following groups:

TABLE 1	COURT RANKINGS: SUBSTANCE USE PREVENTED AT 18 MONTHS										
	General Ranking	Age 30 and Over	Under Age 30	Male	Female	In Intimate Relationship	Not in Intimate Relationship	Features of Depression	No Features of Depression	Features of ASPD[1]	No Features of ASPD
1	W	**W**	Q	Q	W	**Q**	D	E	T	Q	W
2	Q	**S**	M	W	S	W	S	R	E	W	L
3	S	**G**	G	G	Q	G	W	A	//	G	S
4	G	Q	L	**L**	I	T	I	//	//	D	**G**
5	L	L	D	D	V	V	M	//	//	S	Q
6	D	V	V	B	M	M	**L**	//	//	M	V
7	M	D	T	M	T	S	V	//	//	V	D
8	V	B	S	S	U	N	K	//	//	L	M
9	T	R	U	V	G	L	G	//	//	T	N
10	N	N	K	K	O	D	B	//	//	R	**I**
11	I	I	I	R	R	O	**R**	//	//	I	B
12	R	M	N	N	C	R	N	//	//	N	K
13	B	T	O	T	K	**I**	T	//	//	O	T
14	K	K	R	E	E	B	E	//	//	B	E
15	O	O	E	I	B	E	J	//	//	K	U
16	E	J	B	O	**P**	K	O	//	//	J	O
17	F	E	J	**J**	A	A	C	//	//	E	R
18	J	A	**P**	F	//	J	P	//	//	C	P
19	C	C	C	C	//	**U**	U	//	//	A	**F**
20	U	U	**H**	A	//	H	F	//	//	P	J
21	P	F	A	U	//	C	A	//	//	U	C
22	A	H	//	**H**	//	P	**H**	//	//	H	A
23	H	//	//	//	//	//	//	//	//	//	H

TABLE 1	COURT RANKINGS: SUBSTANCE USE PREVENTED AT 18 MONTHS											
	General Ranking	No Prior Arrests	1–4 Prior Arrests	More Than 4 Prior Arrests	Previous Incarceration	No Previous Incarceration	Relatives/Friends with a Conviction	No Relatives/Friends with a Conviction	First Drug Use Age 15 or Younger	First Drug Use Over Age 15	Substance Abuse Treatment Before Baseline	No Treatment Before Baseline
1	W	R	L	W	I	Q	W	T	G	W	I	**Q**
2	Q	S	D	G	W	S	**Q**	V	S	**Q**	**W**	G
3	S	Q	**M**	S	O	D	**S**	K	W	**D**	S	T
4	G	P	N	**L**	S	M	G	M	Q	L	**L**	S
5	L	D	V	M	Q	V	D	O	V	S	M	**D**
6	D	O	Q	V	T	G	**L**	P	L	M	G	V
7	M	A	T	T	K	W	V	I	I	T	K	L
8	V	H	K	**J**	R	F	**M**	B	M	G	N	U
9	T	J	C	B	V	**L**	R	H	N	V	O	M
10	N	K	U	I	M	**N**	I	C	R	K	E	B
11	I	T	S	K	E	U	E	A	T	B	**R**	N
12	R	//	G	R	C	T	T	E	O	C	H	R
13	B	//	I	E	A	B	**N**	J	B	N	A	K
14	K	//	B	O	U	K	B	R	E	R	P	O
15	O	//	E	**F**	//	R	J	//	K	I	B	E
16	E	//	O	U	//	I	K	//	**F**	O	C	J
17	F	//	R	C	//	E	O	//	A	E	J	**F**
18	J	//	A	A	//	O	C	//	**P**	**J**	T	**C**
19	C	//	P	P	//	**J**	F	//	U	U	U	I
20	U	//	J	H	//	A	A	//	C	A	//	A
21	P	//	H	//	//	C	P	//	**H**	P	//	P
22	A	//	//	//	//	P	U	//	J	H	//	H
23	H	//	//	//	//	H	H	//	//	//	//	//

TABLE 1	COURT RANKINGS: SUBSTANCE USE PREVENTED AT 18 MONTHS										
				Primary Drug of Choice							
	General Ranking	Relatives/ Friends with Drug Problems	No Relatives/Friends with Drug Problems	Alcohol	Marijuana	Amphetamines	Cocaine	Other Drugs[2]	Other Than Marijuana	Tried Aggression Drugs[3]	Never Tried Aggression Drugs
1	W	Q	T	M	S	**V**	Q	M	Q	Q	A
2	Q	W	F	I	T	U	S	K	**M**	W	I
3	S	S	O	G	Q	W	M	T	G	S	O
4	G	D	P	L	G	S	W	E	W	G	K
5	L	G	C	**N**	B	T	K	R	V	**D**	**P**
6	D	**L**	I	C	K	D	R	O	**D**	L	E
7	M	**M**	K	J	V	R	L	S	S	M	C
8	V	V	H	A	O	//	E	P	I	**V**	J
9	T	E	R	T	M	//	J	//	L	N	//
10	N	I	A	K	R	//	I	//	**N**	T	//
11	I	**N**	E	//	I	//	V	//	E	E	//
12	R	T	J	//	**P**	//	B	//	R	I	//
13	B	R	//	//	E	//	T	//	T	K	//
14	K	K	//	//	C	//	O	//	K	B	//
15	O	B	//	//	A	//	A	//	J	**R**	//
16	E	J	//	//	J	//	C	//	B	O	//
17	F	O	//	//	U	//	H	//	O	J	//
18	J	C	//	//	//	//	U	//	P	P	//
19	C	A	//	//	//	//	//	//	C	C	//
20	U	U	//	//	//	//	//	//	U	F	//
21	P	P	//	//	//	//	//	//	A	U	//
22	A	H	//	//	//	//	//	//	F	A	//
23	H	//	//	//	//	//	//	//	H	H	//

NOTES: (A) Courts below the black lines were ones where we predicted that participants' expected outcomes would be better than their actual outcomes. (B) Courts were not included in the ranking if they had fewer than five people meeting the category criterion (indicated by //). (C) Bold letters represent the top three Drug Courts for percentage of population meeting that criterion. No bold letter indicates that no Drug Court had over 50% of their population meeting that criterion.

[1]Antisocial personality disorder; [2]Heroin, hallucinogenics, & prescription drugs; [3]Amphetaines, cocaine

- People age 30 years and older compared with younger than 30 years
- Males compared with females
- People with one to four prior arrests compared with those with no prior arrests or with more than four prior arrests
- People with no previous incarceration compared with those who had been incarcerated before
- People with relatives or friends with a conviction compared with those with no such relatives or friends
- People whose age of first drug use was older than 15 years compared with those age 15 or younger
- People with relatives or friends with drug problems compared with those with no such relatives or friends

We also examined court success for participant subgroups characterized by primary drug of choice. Drug Courts were more effective at preventing crime for participants whose primary drugs of choice included alcohol, amphetamines, cocaine, and other drugs.

All Drug Courts were effective at preventing crime within the other drug subgroup. All Drug Courts but one had positive outcomes within the alcohol and amphetamine subgroups. Drug Courts were less effective at preventing crime within the marijuana subgroup. Of the seventeen Drug Courts serving participants whose primary drug of choice was marijuana, only nine were effective.

When looking across the columns of Table 1, the top performing Drug Courts appear effective across a range of participant types, although the exact placement of the courts in the rankings varies somewhat across subgroups. For example, Court S ranked third in the general ranking, second for participants age 30 years and older, and eighth for participants under age 30. In addition, although rankings varied by subgroup, a set of high-performing Drug Courts emerged—with the top courts largely remaining the same across subgroups—as did a set of low-performing courts. The top five Drug Courts in the general ranking were G, L, Q, S, and W. Four of these Drug Courts appeared routinely in the top five courts across subgroups (G was in the top five courts 15 times; Q and S, 19 times; and W, 18 times). The other court that appeared in the top five courts across subgroups was

Court D, ranked sixth in the general ranking and ranked in the top five in twelve subgroups.

Court Rankings for Substance Use Prevented

Table 2 shows the Drug Court rankings for days of substance use prevented. According to the general ranking, twenty-two of the twenty-three Drug Courts in our study effectively prevented future substance use for their participant populations overall. Thus, more Drug Courts in the MADCE were effective at preventing substance use than criminal behavior.

Again, subgroups varied substantially. On average, more courts performed positively in preventing substance use for the following groups:

- People age 30 years and older compared with younger than 30 years
- Males compared with females
- People who had not been incarcerated before compared with those who had
- People with relatives or friends with a conviction compared with those with no such relatives or friends
- People whose age of first drug use was 15 years or younger rather than older
- People who had no substance abuse treatment within six months before baseline compared with those who had some
- People with relatives or friends with drug problems compared with those with no such relatives or friends

The pattern of Drug Court effectiveness for substance use prevented was similar to that found for crimes prevented. Court performance varied based on the participants' primary drug of choice. Drug Courts effectively prevented crime when the participants' primary drugs of choice included alcohol, amphetamines, cocaine, and other drugs but were less effective at preventing crime among participants whose primary drug of choice was marijuana. Therefore, although not all Drug Courts were effective for their participants in the marijuana subgroup, more of these Drug Courts prevented substance use more effectively than they prevented crime.

TABLE 2	COURT RANKINGS: SUBSTANCE USE PREVENTED AT 18 MONTHS										
	General Ranking	Age 30 and Over	Under Age 30	Male	Female	In Intimate Relationship	Not in Intimate Relationship	Features of Depression	No Features of Depression	Features of ASPD[1]	No Features of ASPD
1	G	M	G	G	M	G	D	E	E	G	L
2	M	B	U	Q	W	**U**	I	R	T	D	U
3	Q	I	Q	U	S	M	M	A	//	Q	M
4	U	Q	D	M	U	**Q**	U	//	//	M	Q
5	I	L	M	V	I	**I**	S	//	//	U	**I**
6	D	N	S	I	Q	T	V	//	//	S	N
7	S	U	V	K	T	W	**L**	//	//	I	**G**
8	L	C	I	T	**P**	S	N	//	//	V	V
9	F	**G**	K	**L**	G	V	C	//	//	C	**F**
10	V	**S**	L	F	V	B	O	//	//	T	T
11	C	**W**	T	C	O	K	G	//	//	K	C
12	T	T	**P**	S	R	D	K	//	//	W	W
13	W	V	C	B	C	P	W	//	//	L	B
14	K	O	**H**	D	E	L	T	//	//	O	S
15	N	R	O	E	B	C	J	//	//	P	E
16	B	J	A	W	A	E	B	//	//	R	K
17	P	E	N	O	K	N	**R**	//	//	H	P
18	O	D	E	N	//	R	P	//	//	B	O
19	E	K	R	R	//	A	E	//	//	A	D
20	R	A	J	**J**	//	H	F	//	//	N	R
21	J	F	B	A	//	O	A	//	//	J	J
22	A	H	//	**H**	//	J	**H**	//	//	E	A
23	H	//	//	//	//	//	//	//	//	//	H

TABLE 2	COURT RANKINGS: SUBSTANCE USE PREVENTED AT 18 MONTHS											
	General Ranking	No Prior Arrests	1–4 Prior Arrests	More Than 4 Prior Arrests	Previous Incarceration	No Previous Incarceration	Relatives/Friends with a Conviction	No Relatives/Friends with a Conviction	First Drug Use Age 15 or Younger	First Drug Use Over Age 15	Substance Abuse Treatment Before Baseline	No Treatment Before Baseline
1	G	S	Q	G	I	U	G	T	U	G	I	U
2	M	D	U	U	O	Q	**Q**	V	M	L	C	G
3	Q	P	**M**	M	W	M	I	O	Q	**Q**	**L**	M
4	U	R	V	I	Q	F	**M**	I	G	M	S	**Q**
5	I	Q	C	**L**	M	G	U	B	I	I	M	T
6	D	J	K	P	T	S	**S**	C	S	W	G	**D**
7	S	H	L	T	K	D	D	P	V	S	**W**	V
8	L	A	T	S	C	V	C	K	**F**	T	E	B
9	F	O	D	K	S	I	**L**	A	C	**D**	N	S
10	V	T	S	V	R	**L**	V	E	T	U	P	**F**
11	C	K	N	W	E	C	T	R	W	C	K	**C**
12	T	//	G	A	V	T	W	J	L	K	O	I
13	W	//	B	**J**	U	**N**	K	H	K	V	U	K
14	K	//	I	C	A	K	F	//	**P**	B	**R**	R
15	N	//	O	B	//	P	E	//	A	N	T	L
16	B	//	E	E	//	B	B	//	O	R	H	J
17	P	//	P	**F**	//	O	J	//	E	O	A	O
18	O	//	R	O	//	E	R	//	B	P	J	P
19	E	//	A	R	//	W	**N**	//	R	E	B	E
20	R	//	J	H	//	R	P	//	**H**	**J**	//	A
21	J	//	H	//	//	A	O	//	//	A	//	H
22	A	//	//	//	//	**J**	A	//	//	H	//	//
23	H	//	//	//	//	H	H	//	//	//	//	//

TABLE 2	COURT RANKINGS: SUBSTANCE USE PREVENTED AT 18 MONTHS										
				Primary Drug of Choice							
	General Ranking	Relatives/ Friends with Drug Problems	No Relatives/Friends with Drug Problems	Alcohol	Marijuana	Amphetamines	Cocaine	Other Drugs[2]	Other Than Marijuana	Tried Aggression Drugs[3]	Never Tried Aggression Drugs
1	G	I	F	I	Q	**V**	U	M	G	G	I
2	M	Q	C	M	V	U	S	K	U	M	A
3	Q	G	T	C	S	S	Q	T	M	U	K
4	U	**M**	P	G	I	T	M	S	Q	Q	O
5	I	U	O	**N**	M	D	J	E	I	D	P
6	D	D	I	L	K	W	R	P	D	I	C
7	S	S	R	T	B	R	T	O	S	S	E
8	L	V	E	J	G	//	W	R	C	L	J
9	F	**L**	K	A	C	//	E	//	T	C	//
10	V	K	A	K	**P**	//	I	//	V	V	//
11	C	T	H	//	U	//	C	//	J	T	//
12	T	E	J	//	T	//	L	//	L	W	//
13	W	W	//	//	A	//	O	//	O	F	//
14	K	C	//	//	O	//	V	//	E	E	//
15	N	J	//	//	E	//	B	//	B	K	//
16	B	N	//	//	J	//	K	//	R	B	//
17	P	B	//	//	R	//	A	//	F	P	//
18	O	O	//	//	//	//	H	//	N	N	//
19	E	R	//	//	//	//	//	//	K	O	//
20	R	P	//	//	//	//	//	//	W	R	//
21	J	A	//	//	//	//	//	//	P	J	//
22	A	H	//	//	//	//	//	//	A	A	//
23	H	//	//	//	//	//	//	//	H	H	//

NOTES: (A) Courts below the black lines were ones where we predicted that participants' expected outcomes would be better than their actual outcomes. (B) Courts were not included in the ranking if they had fewer than five people meeting the category criterion (indicated by //). (C) Bold letters represent the top three Drug Courts for percentage of population meeting that criterion. No bold letter indicates that no Drug Court had over 50% of their population meeting that criterion.

[1]Antisocial personality disorder; [2]Heroin, hallucinogenics, & prescription drugs; [3]Amphetaines, cocaine

Although rankings shift somewhat for the substance abuse outcome as they did with the criminal behavior outcome, a set of high-performing Drug Courts emerged—with the top courts largely remaining the same across subgroups—as did a set of low-performing courts. The top five Drug Courts in the general ranking were G, I, M, Q, and U. These five appeared in the top five performing Drug Courts across subgroups the most (G was in the top five courts 14 times; I, 17 times; M, 24 times; Q, 19 times; and U, 18 times). Thus, we concluded that the top-performing Drug Courts at preventing substance use were the same for both their overall population served and specific participant types. In addition, note that two Drug Courts (G and Q) appeared in the top five for both the crime and substance abuse outcomes.

Drug Court Policies and Practices

Below are the results of the analyses for each of the ten policies and practices examined. First, we present how the policy or practice was measured and operationalized in this study. Then, we present findings from both the qualitative and quantitative analyses. For each item, we describe the results for the criminal behavior outcome followed by the substance use outcome.

Leverage

Leverage measures the coercive power of the Drug Court (Longshore et al., 2001). The commonly held consensus is that the more leverage the court has over an individual, the more likely that individual will comply with the Drug Court requirements and therefore succeed in the program. Data for the leverage measure were collected from telephone interviews conducted before the impact study. We operationalized leverage based on five factors that we scored and summed for an overall leverage score:

- An employee of the Drug Court conducted case management (2 points).
- Drug Court participants regularly participated in court hearings (2 points).

- The Drug Court had explicit consequences for dropping out or failing out (2 points).
- The Drug Court told the participant about the explicit consequences (1 point).
- The participant signed a contract which specified the explicit consequences (1 point).

Each Drug Court's leverage was classified as high (7–8 points; 11 courts total), medium (5–6 points; 6 courts total), or low (0–4 points; 6 courts total). We overlaid these classifications on the rankings, coding each Drug Court based on its implementation, and examined resulting patterns.[9]

The qualitative analysis for leverage showed that nearly all of the high-leverage Drug Courts effectively prevented crime. Additionally, many high-leverage Drug Courts clustered toward the top of the ranks, indicating that the highest-performing courts had high leverage and lower-performing courts had either low or medium leverage, though no medium-leverage court was ineffective.

The quantitative analysis revealed that high-leverage Drug Courts prevented significantly more crimes than low-leverage courts ($F = 4.15$, $p < .05$). No statistically significant differences were found between medium- and high-leverage Drug Courts or between low- and medium-leverage Drug Courts for preventing crime. High-leverage courts prevented an average of 4.1 crimes per month compared with 1.4 crimes prevented by low-leverage courts. Medium-leverage courts prevented 2.0 crimes per month.

For substance use, again, most of the high-leverage Drug Courts were effective. However, the clustering of high-leverage Drug Courts toward the top of the ranks for the crime outcome was less pronounced than for the substance use outcome. Low- and medium-leverage courts were distributed throughout the ranks of effective courts, but no medium-leverage courts were ineffective.

In terms of preventing substance use, we found marginally significant differences among Drug Courts with varying leverage ($F = 2.38$,

[9] The full documentation of the qualitative analysis and tables for this finding and all later findings can be found in Zweig and colleagues (2011).

$p < .10$). High-leverage courts prevented an average of 2.6 days of substance use per month, medium-leverage courts prevented 3.1 days, and low-leverage courts prevented 1.8 days.

Predictability of Sanctions

Predictability of sanctions measures the extent to which the Drug Court communicated to participants how and when they would be sanctioned. A coordinated sanction policy (BJA, 1997; Goldkamp, White, & Robinson, 2001) and the extent to which participants are aware of the policy, aware of consequences for noncompliance, able to predict when a sanction will occur, and able to predict what the sanction will be (Longshore et al., 2001) are believed to influence a participant's compliance with program requirements and, thereby, program success. We measured this concept during process evaluation telephone interviews and operationalized predictability of sanctions based on three factors:

- The Drug Court maintained an official schedule of sanctions (2 points).
- The Drug Court provided the official schedule of sanctions to the participant (2 points).
- The Drug Court always or almost always adhered to the official schedule of sanctions (2 points).

We scored and summed responses to quantify the predictability of the sanction policies. Each Drug Court was classified as high predictability (6 points; 9 courts total), medium predictability (3–5 points; 4 courts total), or low predictability (0–2 points; 10 courts total).

The qualitative analysis showed all but one of the medium-predictability courts effective, and many of the low-predictability courts were more successful than anticipated. The high-predictability courts were dispersed throughout the ranks of effective Drug Courts and clustered below the bold line in Tables 1 and 2.

The quantitative analysis revealed that, for the overall model, statistically significant differences existed among Drug Courts with varied predictability of sanctions ($F = 3.31$, $p < .05$). However, the follow-up Tukey tests of differences among groups failed to identify

which groups were significantly different from one another. This was likely because Tukey tests of comparisons between groups are a conservative method for identifying group differences. However, the means for each group indicated that the medium-predictability Drug Courts were the most effective at preventing future crimes (4.3 per month), followed by the low-predictability courts (3.9 per month), whereas the high-predictability courts prevented 1.8 crimes per month. Nearly all medium-predictability courts were effective, while courts with a high predictability of sanctions were generally ineffective.

For the substance use outcome, our qualitative analysis showed a similar pattern to the crime outcome. However, all of the medium-predictability Drug Courts were effective and clustered toward the top of the rankings, and low-predictability Drug Courts were dispersed throughout the rankings. Medium-predictability courts prevented significantly more days of substance use than high-predictability courts ($F = 4.32$, $p < .05$), an average of 4.1 days as compared with 2.0 days per month. Low-predictability courts prevented 2.7 days of substance use per month.

Point of Entry into Drug Court Program

Goldkamp and colleagues and Longshore and colleagues (2001) both identify the point in the criminal justice process at which participants enter the Drug Court program—either pre- or post-plea—as important to the Drug Court model. The point in the criminal justice process at which participants enter the Drug Court program may influence how well they perform and their ability to succeed. We asked program representatives where in the criminal justice process participants entered into the Drug Court program, and operationalized the concept as pre-plea entry (diversion strategies) and post-plea entry (in which convictions stood or were lessened after completion of the program). Drug Courts were classified as pre-plea (all participants entered as part of a diversion strategy; 7 courts), combination (courts where some participants entered the program pre-plea and some, post-plea; 6 courts), or post-plea (10 courts).

The qualitative analysis for preventing criminal acts showed that pre-plea Drug Courts and post-plea Drug Courts clustered toward the upper rankings across subgroups. Combination Drug Courts dispersed throughout the rankings, and most of the ineffective Drug Courts were combination courts. Thus, Drug Courts with one point of entry into their program performed more effectively and prevented more crime than those that allowed multiple points.

The quantitative analysis supports this claim. Statistically significant differences ($F = 7.42$, $p < .05$) existed between Drug Courts in which all the participants entered the program through pre-plea courts versus through combination courts. Also, significant differences existed between post-plea courts and combined courts. The average number of crimes prevented per month for pre-plea courts was 4.6, for post-plea courts was 3.6, and for combined courts was 0.8.

In the qualitative analysis for the substance use outcome, a similar pattern holds as for the crime outcome. Drug Courts that had one point of entry into their program prevented more substance use. Drug Courts with participants who came in post-plea prevented significantly more days of drug use per month (3.0 days) than combined courts (1.7 days; $F = 3.88$, $p < .05$). Pre-plea courts prevented an average of 2.9 days of drug use per month.

Positive Judicial Attributes

Goldkamp and colleagues and Longshore and colleagues (2001) include courtroom dynamics and interactions with judges as important factors of the Drug Court experience for program participants. The idea was that participants developed a relationship with the judge, and the extent to which participants saw this relationship as constructive contributed to their program compliance and success. MADCE quantified this by measuring positive judicial attributes. The site-visit team observed, measured, and scored the judge's actions and demeanor toward the participants during Drug Court proceedings.

The team assigned the Drug Court judge a value of 1 to 5 for respectfulness, fairness, attentiveness, enthusiasm, consistency/predictability, caring, and knowledge. After summing the ratings for

each judge, the team created three approximately equal performance categories for the Drug Courts: high (30 points or more; 8 courts), medium (27–29 points; 7 courts), and low (0–26 points; 7 courts).

This qualitative coding showed that, across several subgroups, Drug Courts with high and medium scores for positive judicial attributes clustered in the upper rankings. Those with low scores clustered toward the bottom with a few exceptions. Drug Courts with high and medium scores on positive judicial attributes were more likely to be among top-performing courts than among ineffective courts.

The results of the quantitative analysis revealed statistically significant differences among Drug Courts depending on how they were coded for positive judicial attributes ($F = 5.81$, $p < .05$). Significant differences existed between Drug Courts with high scores on positive judicial attributes and courts with low scores. Also, significant differences existed between courts with medium scores and courts with low scores. Drug Courts with high scores for positive judicial attributes prevented 3.6 crimes per month, courts with medium scores prevented 4.2, and courts with low scores, 0.7 crimes per month.

A similar pattern holds for preventing substance use based on judicial attributes. In terms of the quantitative analysis, Drug Courts with high scores on positive judicial attributes prevented significantly more days of drug use per month (3.2 days) than courts with low scores (1.9 days; $F = 3.16$, $p < .05$). Courts with medium scores prevented 2.6 days of drug use.

Case Management

All Drug Courts in the MADCE sample had case managers to oversee participant progress and assist in accessing necessary services. We wanted to determine if the frequency of contact with case managers related to program success. A question on the Adult Drug Court Survey (Zweig, Rossman, & Roman, 2011) inquired about the frequency at which participants saw case managers during phase 1 (the first two months) of the program. Each Drug Court was classified as high frequency (more than one contact per week; 6 courts total),

medium frequency (one contact per week; 13 courts total), or low frequency (less than one contact per week or not at all; 4 courts total).

Drug Court rankings for preventing criminal acts based on frequency of case management during the first two months of the program showed no strong pattern, but some patterns emerged. Most of the high-frequency Drug Courts in which participants met with their case managers more than once per week were effective. Medium-frequency Drug Courts were dispersed throughout the ranks, both above and below the bold line in Tables 1 and 2, and ranked in the top two courts in several subgroups. All but a couple of courts classified as low frequency were ineffective or lower-performing.

Although no clear patterns were identified based on the qualitative coding, the results of the quantitative analyses showed evidence of some relationships between frequency of case management and court effectiveness. In terms of preventing criminal acts, the model was marginally significant ($F = 2.84$, $p < .10$). Drug Courts with case managers who met with participants more than once per week prevented more criminal acts per month (4.3 acts) than did low-frequency courts (1.2 acts). Medium-frequency courts prevented 3.0 criminal acts per month.

As with the crime outcome, no clear pattern emerged for the Drug Court rankings regarding preventing substance use. Many of the Drug Courts where case managers met with participants more than once per week proved effective, as did all of the courts where participants met with case managers less than once per week or not at all. Drug Courts that had case managers meet with participants once per week were dispersed throughout the rankings.

The quantitative analysis testing prevention of substance use showed marginally significant differences among Drug Courts based upon the frequency of case management meetings ($F = 2.50$, $p < .10$). Drug Courts where case management meetings occurred more than once per week prevented an average of 3.0 days of substance use per month; courts with case management meetings one time per week prevented an average of 2.1 days of substance use; and courts with less than one meeting per week or no meetings prevented 3.2 days of

use. Notably, Drug Courts that had infrequent case management meetings tended to rely on treatment providers to do this work. When treatment providers were the case managers, they were more likely than other providers to see participants more than once weekly (Zweig et al., 2011). This might explain why the Drug Courts with both high and low frequency of case management meetings prevented about the same numbers of days of drug use.

Other Court Policies and Practices

The remaining five Drug Court policies and practices did not relate to offender outcomes. However, because most of the Drug Courts included in MADCE followed a high standard with respect to these policies and practices, insufficient variation made empirically establishing their effectiveness difficult. Below are results summaries for these practices.

Adherence to Treatment Best Practices—The provision of treatment is considered a core aspect of the Drug Court model (BJA, 1997). To be included in the MADCE, the Drug Court had to provide some type of substance abuse treatment to their program participants. To understand the quality of the treatment, we asked a series of questions during the initial telephone interviews with potential sites. These questions did not cover a full set of best practices for treatment provision but did capture a picture of the treatment being provided. Thus, we operationalized adherence to treatment best practices based on the following five factors:

- The treatment provided by the Drug Court was structured, that is, the Drug Court followed a treatment program manual (2 points).
- A clinical assessment was conducted for treatment needs (1 point).
- Individualized treatment plans were developed for each participant (1 point).
- Individualized treatment plans were used to make referrals (1 point).
- Individualized treatment plans were updated periodically (1 point).

The responses were scored and summed for an overall score of adherence to best practices and each Drug Court was classified as high (6 points; 15 courts total), medium (4–5 points; 6 courts total), or low (0–3 points; 2 courts total).

After scoring Drug Courts for the above ratings, no clear patterns emerged for the crime or drug outcomes during the qualitative analysis. Similarly, we found no statistically significant differences between low-, medium-, and high-adherence courts for crimes prevented and substance use prevented during the quantitative analysis. Not enough variation existed among Drug Courts to fully examine this practice because most courts adhered to treatment best practices at either medium or high levels, based on very limited information rating the quality of the treatment provided.

Drug Testing—Routine drug testing to examine compliance with drug-use requirements is important to Drug Courts (BJA, 1997). During the Adult Drug Court Survey (Zweig, Rossman, & Roman, 2011), Drug Courts were asked about the frequency of drug testing during phase 1 (or first two months) of the program and classified as high frequency (more than once per week; 19 courts total), medium (once per week; 4 courts total), or low (less than once per week or not at all; 0 courts).

The results for frequency of drug testing during the first two months of the program mirror the results for adherence to treatment best practices. After coding court rankings for frequency of drug testing, most of which ranked as high frequency, neither qualitative nor quantitative analyses revealed any clear or statistically significant patterns for the crime or drug-use outcomes. Not enough variation exists between Drug Courts to fully examine this practice.

Judicial Status Hearings—Regular contact between Drug Court participants and the Drug Court judge is considered an essential aspect of the Drug Court model (BJA, 1997; Longshore et al., 2001), and the contact between participant and judge is thought to be an essential catalyst to program compliance and success. The practice was measured through questions asked during process evaluation site visits and operationalized as average frequency of judicial status hear-

ings each month. Each Drug Court was classified as high (four times per month; 16 courts total), medium (twice per month; 4 courts total), or low (once per month; 1 court). Two Drug Courts were missing data on this variable.

The results for frequency of judicial status hearings mirror the results for the two previous low-variability practices. Most Drug Courts had high frequency of status hearings; thus, neither the qualitative nor quantitative analyses show differences in outcomes among Drug Courts based on frequency of such hearings.

Multidisciplinary Team Decision Making—The foundation of the Drug Court model includes an interdisciplinary team of interested parties comprising court staff, treatment staff, prosecutors, defense attorneys, etc. (BJA, 1997). The MADCE hypothesized that the extent to which team members participated in a collaborative manner—that is, the extent to which members attend and interact in court staffings and decisions about specific participants—may affect program outcomes. Thus, during site visits, we observed team member interactions during court staffing meetings.

We operationalized multidisciplinary team decision making by scoring the attendance and level of participation of the following stakeholders at Drug Court staffings: judges, prosecutors, defense attorneys, program coordinators, case managers, probation officers, treatment liaison staff, and other stakeholders. Scores of 1 to 5 were assigned to each stakeholder (with zero points assigned if the stakeholder did not attend), and the scores were summed to reflect overall participation from the stakeholders. Each Drug Court was classified as high (23–25 points; 8 courts), medium (18–22 points; 6 courts), or low (15–17 points; 6 courts). Three Drug Courts were not scored because of missing data.

The results of the qualitative analysis showed no clear patterns for high-, medium-, and low-rated Drug Courts, and the quantitative analyses indicated no statistically significant differences among courts for either preventing crime or substance use. Thus, multidisciplinary team decision making was not directly related to outcomes for participants in this study.

Judicial Interaction—In addition to positive judicial attributes, the MADCE team created a second measure to capture interaction between Drug Court participants and judges. During process evaluation site visits, the team observed Drug Court hearings and noted the frequency with which the judge engaged in interactive behaviors during the court session. For each case reviewed by the judge during the session, the site visit team documented whether the judge made regular eye contact with the defendant for most of the appearance, talked directly to the defendant as opposed to through the defendant's attorney, asked nonprobing questions (e.g., questions eliciting only yes, no, or one-word answers), asked probing questions, imparted instructions or advice, explained the consequences of future compliance (e.g., phase advancements, graduation), explained consequences of future noncompliance (e.g., jail or other legal consequences), allowed the defendant to ask questions or make statements.

For each of these eight actions, we created a variable reflecting whether the judge engaged in that action for more than 50% of his or her cases. Then, we counted the total number of actions that the judge regularly displayed (i.e., actions displayed for more than 50% of observed cases). Based upon these scores, the Drug Courts were assigned a value of low, medium, or high with the cut points selected to create a relatively even spread of courts across categories. Six courts were classified as having high judicial interaction (6 or more actions); seven courts were classified as having medium judicial interaction (4–5 actions); and seven courts were classified as low (0–3 actions).

The results of the qualitative analysis showed no clear patterns for high-, medium-, and low-rated Drug Courts, and the quantitative analyses indicated no statistically significant differences among courts for either preventing crime or substance use. Thus, judicial interaction did not directly relate to participant outcomes in this study.

DISCUSSION

This analysis examined how the relationship between variation in implementation of ten Drug Court policies and practices affects participant outcomes. Among the Drug Court policies and practices ex-

amined, four predicted court effectiveness: leverage, predictability of sanctions, the point in the criminal justice process at which participants enter the program, and positive judicial attributes. We found all four of these policies and practices effective at preventing crime, and all but leverage to be effective in preventing substance use (although this finding was marginally significant). More specifically, Drug Courts that prevented higher numbers of criminal acts per month had high leverage, medium predictability of sanctions, participant populations that enter at the same time point in the criminal justice process, and medium or high scores on positive judicial attributes. Drug Courts that prevented more days of drug use per month had medium predictability of sanctions, participant populations that enter at post-plea, and high scores on positive judicial attributes.

In addition, when Drug Courts implemented the combined practices in the ways found to be effective, a synergistic effect may have occurred such that they were among the top-performing Drug Courts (that is, courts able to prevent the most crimes and the most days of drug use for many participant subgroups). Table 3 identifies the court policies and practices of the top-performing Drug Courts with respect to the four components that emerged in our analyses. Recall that

TABLE 3	COURT POLICIES AND PRACTICES FOR TOP-PERFORMING COURTS							
Court Policy/ Practice	**Top Performers: Crime & Drug Use Prevention**		**Remaining 3 Top Performers: Crime Prevention**			**Remaining 3 Top Performers: Drug Use Prevention**		
	G	**Q**	**L**	**S**	**W**	**I**	**M**	**U**
Leverage	High	High	Med	High	High	Low	High	Med
Sanctions predictability	High	Med	High	Low	High	Low	Low	Med
Program Point of Entry	post-plea	post-plea	post-plea	pre-plea	pre-plea	post-plea	post-plea	pre-plea
Positive Judicial Attributes	High	High	Med	Med	Med	High	High	Low

two courts were in the top-five-ranked courts for both crime and drug use prevention—Courts G and Q. As shown in Table 3, Court Q implemented all four policies in the ways we found to be effective, and Court G implemented three of the four policies in those ways. The remaining three courts in the top five for crime prevention (L, S, and W) and the remaining three courts in the top five for substance use prevention (I, M, and U) all implemented at least two or three of the four policies in the ways that appeared to produce positive outcomes.

These top-performing Drug Courts seemed purposeful in the ways they implemented policies and practices described here as most effective. The combination of these practices implied that these Drug Courts did not simply implement such components randomly; they fit the practices together. They apparently differentiated participants according to risk, need, or circumstance, rather than trying to fit one model of the Drug Court program to all participants. Additionally, these Drug Courts appeared to have judges who understood the value of building relationships with participants in which the individuals felt respected and supported, perhaps inclining them toward more success.

Several of the policies and practices we examined here have not been previously examined in the literature. Specifically, no previous studies of which we were aware examined the differential effectiveness of programs based on their participants' stage of criminal justice system processing when they enter the program. In addition, although leverage has been hypothesized to be a critical factor for Drug Court success (Longshore et al., 2001), ours was the first study to empirically document that Drug Courts classified as having high levels of leverage were the most effective at reducing criminal behavior among their participants.

Other findings generated from these analyses build on previous court-level research. For example, Harrell and colleagues (2000) demonstrated that graduated sanctions (as a court-level characteristic) were more effective than standard dockets in reducing arrest and the number of offenses committed among program participants. We built on these findings by examining the predictability of sanctions as a court-level characteristic. Interestingly, although highly predictable

sanctioning practices are considered a cornerstone for developing a coordinated strategy governing Drug Court responses to participants' compliance (and are listed as one of the Drug Court key components), we did not find empirical support for this practice. Drug Courts classified as having medium predictability of sanctions were the most effective, which suggests that flexibility in responding to participants' performances may be desirable.

In addition, we found strong evidence that positive judicial attributes positively influenced participant performance. Previous studies have identified substantial variation in participant success among various Drug Court judges (Finigan, Carey, & Cox 2007). We found that Drug Courts with a judge with more positive attributes were better able to prevent criminal behavior and substance use.

Conclusions and Implications

This study[10] contributes to our understanding of how Drug Courts should implement practices to increase their effectiveness in preventing crime and drug use. First, the results suggest that Drug Courts with high leverage, medium predictability of sanctions, single points of entry into the program, and high positive judicial attributes are better at preventing criminal activities and substance use. More specifically, Drug Courts with high leverage regularly monitor participants through Drug Court case managers and judicial hearings. They also have explicit known consequences for failure in the program that participants acknowledge in signed contracts. These practices might focus a participant's attention on the fact that the alternative to Drug Court is not desirable and that he or she is being monitored closely, making the consequence of noncompliance and the alternative for failure very real. These findings also imply that Drug Courts with low leverage (those courts which participants perceive as not having obvious consequences for failure or as not closely monitoring program compliance) are unable to succeed in preventing crime.

[10] Limitations to this analysis and how we addressed them can be found in Zweig et al., (2011).

Second, Drug Courts with medium predictability of sanctions have sanction schedules that participants may or may not know about and that may or may not always be followed. These courts have a coordinated sanctioning strategy, yet exercise some flexibility in its implementation in a way that apparently matters to participants. Perhaps participants perceive flexibility in implementation of sanctions as more fair than those Drug Courts that strictly follow a schedule that does not take into account particular individuals or circumstances. While it seems clear that participants need to know that sanctions are a consequence of noncompliance in the program, sanctions that are rigidly set or perceived as unfair may actually frustrate participants or weaken their resolve to comply with program requirements. In addition, if programs with rigid, highly predictable sanctioning practices had been shown to be the most effective in this analysis, that finding would run counter to our other finding on positive judicial attributes. Programs with judges who treated participants fairly and respectfully achieved better success than programs without such judges. Perhaps rigid sanctioning practices and some features of positive judicial attributes do not easily coexist in a single Drug Court.

Third, Drug Courts with single points of entry into their program have participant populations that either all entered the program before they entered a plea (a diversion program) or all entered the program after their plea. These courts do not have a mix of participants who represent different stages of the criminal justice system process. Perhaps Drug Courts that have a singular focus of participant population might be better at tailoring their practices to meet the needs of a preadjudication or a postadjudication population. When a mixed population is in the program, Drug Courts may be less organized in their approach or may be uniformly implementing practices when such practices might not be appropriate for their clientele.

Fourth, Drug Courts that have high scores on positive judicial attributes are those courts in which judges demonstrate to defendants respect, fairness, attentiveness, enthusiasm, consistency and predictability, caring, and knowledge about the person's case and situation. Our courtroom observations of judicial attributes indicate that how the judge builds a relationship with participants, treats participants,

and behaves in the courtroom matters for participant outcomes. This finding once again underlines the role of therapeutic jurisprudence in problem-solving courts.

Fifth, although the study results focused on the practices that were most effective for the most subgroups, policy makers and practitioners can see the results by subgroups in Tables 1 and 2 and use the information to determine which policies and practices are effective for the subgroups they serve. We find that while the top-performing Drug Courts tend to be effective across subgroups, the specific practices that are most effective vary for different groups. This analysis builds on the limited previous research indicating that not all practices are equally effective across the population subgroups served by Drug Courts.[11] Clearly, more detailed analyses of what works for specific subgroups could be conducted based on the findings presented in this paper.

Finally, findings from this study lend themselves to other future research endeavors. Specifically, we examined each Drug Court policy and practice by itself. Future analysis and research might include looking more closely at different combinations of policies and practices in order to identify critical combinations that appear to account for most of the variability in program effectiveness.

This project and report were supported through Grant Number 2003-DC-BX-1001 from the National Institute of Justice, Office of Justice Programs, U.S. Department of Justice. Points of view in this document are those of the authors and do not necessarily represent the official position or policies of the U.S. Department of Justice, Urban Institute, or its trustees.

[11] For examples see Marlowe et al., 2003; Marlowe et al., 2005; Marlowe, Festinger, & Lee, 2004; and Festinger et al., 2002.

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