

DRUG COURT REVIEW

Volume IX, Issue 1

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The National Drug Court Institute (NDCI) is the Professional Services Branch of the National Association of Drug Court Professionals (NADCP). NDCI is grateful to the Bureau of Justice Assistance within the Office of Justice Programs at the U.S. Department of Justice for the support that made this publication possible.

This project was supported by Grant No. 2012-DC-BX-K007 awarded by the Bureau of Justice Assistance. The Bureau of Justice Assistance is a component of the Office of Justice Programs, which also includes the Bureau of Justice Statistics, the National Institute of Justice, the Office of Juvenile Justice and Delinquency Prevention, the SMART Office, and the Office for Victims of Crime. Points of view or opinions in this document are those of the author and do not represent the official position or policies of the U.S. Department of Justice.

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THE DRUG COURT REVIEW

Published annually, the *Drug Court Review*'s goal is to keep the Drug Court practitioner abreast of important new developments in the Drug Court field. Drug Courts demand a great deal of time and energy of the practitioner, allowing little opportunity to read lengthy evaluations or keep up with important research in the field. Yet, the ability to marshal scientific and research information, apply best practices, and "argue the facts" can be critical to a program's success and ultimate survival.

The *Drug Court Review* builds a bridge between law, science, and clinical communities, providing a common tool to all. A headnote indexing system allows access to evaluation outcomes, scientific analysis, and research on Drug Court related areas. Scientific jargon and legalese are interpreted for the practitioner in common language.

Although the *Drug Court Review*'s emphasis is on scholarship and scientific research, it also provides commentary from experts in the Drug Court and related fields on important issues to Drug Court practitioners.

The *Drug Court Review* invites submission of articles relevant to the Drug Court field. This would include but not be limited to drug testing, case management, cost analysis, program evaluation, legal issues, application of incentives and sanctions, and treatment methods.

Please visit <http://www.ndci.org/publications/drug-court-review> for complete submission guidelines.

THE NATIONAL DRUG COURT INSTITUTE

The *Drug Court Review* is a project of the National Drug Court Institute (NDCI). NDCI was established under the auspices of the National Association of Drug Court Professionals with support from the Office of National Drug Control Policy, Executive Office of the President, and the Bureau of Justice Assistance, U.S. Department of Justice.

NDCI's mission is to promote education, research, and scholarship to the Drug Court field and other court-based intervention programs.

Since its inception in December 1997, NDCI has emerged as the preeminent source of cutting-edge training and technical assistance to the Drug Court field, providing research-driven solutions to address the changing needs of treating substance-abusing offenders. NDCI launched five separate team-oriented Drug Court training programs, eight comprehensive, discipline-specific training programs, and five separate subject matter training programs.

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ACKNOWLEDGMENTS

I wish to thank all those who have contributed to this issue of the Drug Court Review, beginning with the Bureau of Justice Assistance, U.S. Department of Justice, for the leadership, support, and collaboration it has offered to the National Drug Court Institute.

For their contributions as authors, I would like to thank Dr. Shannon Carey, Dr. Nicolle Clements, Dr. Karen Dugosh, Dr. David Festinger, Dr. Michael Finigan, Dr. Benjamin Gibbs, Hon. James Kandrevas, Dr. Juliette Mackin, Dr. Douglas Marlowe, Dr. Gerald Melnick, Dr. Tamara Perkins, Dr. Sonali Rajan, Hon. James Sullivan, Dr. Jacqueline van Wormer, Dr. William Wakefield, Dr. Harry Wexler, and Mr. Mark Zehner.

Finally, I would like to thank the peer reviewers, Shannon Carey, Paul Cary, Fred Cheesman, Karen Dugosh, Kirstin Frescoln, Karen Gennette, Jeffrey Kushner, Mike Loeffler, Angela Plunkett, Josiah Rich, Shelli Rossman, and Terrence Walton.

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THE EFFICACY OF ENHANCED ALCOHOL USE MONITORING: AN EXAMINATION OF THE EFFECTS OF ETG/ETS SCREENING ON PARTICIPANT PERFORMANCE IN DRUG COURTS

Benjamin R. Gibbs — William Wakefield

[1] Effect of EtG/EtS Testing in Drug Court—Participants subjected to weekly ethyl glucuronide/ethyl sulfate (EtG/EtS) alcohol testing completed the first two phases of a Drug Court significantly sooner than those undergoing standard ethanol urine testing.

[2] Detecting Weekend Alcohol Use in Drug Court—EtG/EtS testing in a Drug Court was more likely to detect alcohol use occurring over weekends than standard ethanol urine testing.

[3] Efficient EtG/EtS Testing in Drug Court—EtG/EtS testing is most likely to be cost-efficient when used with Drug Court participants diagnosed with an alcohol use disorder or suspected of recent alcohol use.

SINCE THE INCEPTION of Drug Courts in the late 1980s, researchers have examined the Drug Court model to isolate the mechanisms that drive the successes and failures of these programs. One key element of Drug Court is supervision, and supervision has depended on alcohol and drug testing (NADCP, 1997). Such testing has played a significant role in participants' successes (Banks & Gottfredson, 2004; Gottfredson et al., 2007). Studies have found an increase in alcohol and drug screening improves the probability of participant abstinence and reduces recidivism (Banks & Gottfredson, 2004; Gottfredson et al., 2007).

Drug Court research has also focused on the profile of a successful Drug Court candidate, including categorizing them by type of drug used (Butzin et al., 2002; Deschenes et al., 2009; Hickert et al., 2009; Newton-Taylor et al., 2009). Previous research has shown that participants who use cocaine and other illicit stimulants are more often terminated from Drug Court (Hickert et al., 2009; Newton-Taylor et al., 2009); however, little is known about the effects of continued alcohol use on participant outcomes.

This deficiency may result in part from inadequate alcohol detection capabilities. Many Drug Courts monitor participant alcohol use through ethanol screens, which detect alcohol consumption for less than fifteen hours (Wurst et al., 2002). Because Drug Courts are not necessarily capturing alcohol use by their participants, data is minimal concerning continued alcohol use and its effect on participant performance. To overcome the limitations of ethanol screening, some Drug Courts and other professional agencies have turned to ethyl glucuronide/ethyl sulfate (EtG/EtS) testing. This advanced screening method has a detection capability vastly superior to that of standard ethanol testing (Hoiseth et al., 2008; Wurst et al., 2002). Ethyl glucuronide is a biomarker that remains detectable in bodily fluids longer than that of ethanol (Wurst et al., 2002) and allows for detection for up to ninety-six hours after consumption (Wurst et al., 2002).

We based this study on an evaluation of data from a Drug Court that turned to EtG/EtS testing for a better method than standard ethanol screening, which cannot detect alcohol consumption across an entire weekend. The underlying philosophy prompting the search for a better method was that enhanced detection of alcohol use could lead to better supervision and aid rehabilitation efforts within the Drug Courts, reducing both in-program violations and postprogram recidivism.

This preliminary research was intended to test that underlying philosophy and the effects of EtG/EtS testing on participant program performance. We used an experimental research design that followed 149 participants of the study Drug Court for eighteen months to answer our primary research question: *How does the EtG/EtS screening as an enhanced alcohol detection tool affect participant performance in Drug Court?*

LITERATURE REVIEW

The Drug Court model was built upon existing community-based correction programs in an effort to better serve substance-involved offenders (Hora et al., 1999). The model combines both rehabilitative and criminal justice elements that follow the Ten Key Components (NADCP, 1997). The fifth key component, recommending that abstinence be monitored by frequent alcohol and other drug testing, is considered vital to the Drug Court model (NADCP, 1997)—a claim well supported in the Drug Court literature (Flango & Chessman, 2009; Gottfredson et al., 2007; Harrell et al., 1998; Hawken & Kleinman, 2009; Kleinpeter et al., 2010). The effectiveness of this component was also supported by Drug Court participants who reported that alcohol and other drug monitoring may be the strongest component of the program (Goldkamp et al., 2002; Turner et al., 1999). Despite this, the traditional alcohol-monitoring method, ethanol testing, has a substantial drawback—supervision gaps exist within Drug Court protocols. Drug Courts often operate within the traditional Monday-through-Friday workweek and lack the ability to effectively monitor participants over weekends. Thus, programs using intermittent testing protocols and inferior screening methods are likely not capturing all participant substance abuses (Flango & Chessman, 2009; Goldkamp et al., 2002; Kleinpeter et al., 2010; Marlowe & Kirby, 1999; Wolfer, 2006).

Advancements in screening technology have increased the potential supervision coverage of Drug Courts. The sweat patch and SCRAM (Secure Continuous Remote Alcohol Monitoring) have provided the opportunity for Drug Courts to monitor participants continuously but with mixed results. Users of the sweat patch were not more likely to graduate; however, they had fewer violations for continued substance use (Kleinpeter et al., 2010). Flango and Chessman (2009) attempted to isolate the effects of the SCRAM device on alcohol-involved offenders. Users of SCRAM were less likely to recidivate than their counterparts (Flango & Chessman, 2009). These studies have demonstrated the value of evaluating advanced alcohol and other

drug monitoring tools in an effort to determine the relationship between continued alcohol use and participant performance.

Ethyl Glucuronide/Ethyl Sulfate (EtG/EtS) screening is another monitoring advancement that provides greater alcohol detection capabilities than standard methods (Hoiseth et al., 2008; Wurst et al., 2002). There is an obvious utility in the efforts of Drug Courts to diminish participant alcohol use. Continued alcohol use can act as a gateway to illicit drug use (Yamaguchi & Kandel, 1984) and can also lead to future criminality (Gottfredson et al., 2008). Beyond these considerations, Drug Court administrators may also want to thwart circumvention of the abstinence requirement. Goldkamp and colleagues (2002) relay an anecdote where Drug Court participants admitted that some participants substitute for illicit drug use with alcohol because of the inability of Drug Courts to effectively detect alcohol use.

The standard testing method, ethanol screening, has limited detection capabilities and is unlikely to detect alcohol fifteen hours after consumption (Wurst et al., 2002). EtG/EtS screening can potentially detect alcohol use up to four days after consumption (Hoiseth et al., 2008; Wurst et al., 2002). Thus, the EtG/EtS screening tool may effectively close the supervision gap (Helander et al., 2008). However, much of what is known concerning the capabilities of EtG/EtS screening comes from the medical arena and is reported in medical journals, leaving its efficacy within an operational Drug Court virtually unknown (Helander et al., 2008; Hoiseth et al., 2008; Wurst et al., 2002).

RESEARCH DESIGN/METHODOLOGY

Midwestern Metropolitan Adult Drug Court

The research venue for this study was a Midwestern metropolitan adult Drug Court with a post-plea program serving substance-involved offenders charged with felony offenses. At the time of our study, offenders had to meet the following eligibility criteria to participate in this Drug Court program: Only those charged with a drug-related offense, either directly or indirectly, were considered for admittance. Participants could have no previous violent convictions or

have been previously charged with a sex offense (DCADC, 2011). Program services were delivered by an operational staff known as the Drug Court team. This team consisted of a primary Drug Court judge, assistant district attorney, program coordinator, four substance abuse case managers, and a lab technician.

Similar to many Drug Court programs, this program had three phases. Participants advanced by achieving all therapeutic goals designated in respective phases. This made each phase completion a milestone of rehabilitative progress. Participants had to complete all three phases to graduate from the program, another milestone, which generally takes twelve to eighteen months.

Research Sample

The research sample comprised 149 Drug Court participants, who entered the program during the 2010 calendar year. The sample population characteristics are as follows:

- Gender
 - 98 males (66%)
 - 51 females (34%)
- Race or ethnicity
 - 96 Caucasians (64%)
 - 42 African-Americans (28%)
 - 11 Hispanics (7%)
- Age
 - 19–70 years old (average of 34 years old)

Most of the participants ($n = 108$, or 72%) had earned a high school diploma or equivalency before entering into the program. One of the requirements for successfully completing the Drug Court program was to obtain employment if not already employed. At the time of group assignment, only 66 participants (44%) had gainful employment. Just under half (45%) of the research participants were still active in the Drug Court program when the study ended. Ninety-seven participants (65%) successfully completed phase I, and 70 participants (47%) completed phase II and entered into phase III during the study period. In addition, the host Drug Court graduated 34 research participants (23%) and terminated 49 participants (33%) from the program.

Data Collection

Data was collected from two sources, the Problem Solving Court Management Information System (PSCMIS) and hard-copy files located at the Drug Court. Demographic characteristics (gender, age, race or ethnicity, education, and employment status) were gathered for each participant, including criminogenic and chemical dependency characteristics. This information comprised participants' criminal histories, *Diagnostic and Statistical Manual (DSM-IV)* dependency diagnosis (if available), drug of choice, and any current charges.

Research Design

This study employed an experimental research design. When participants reported for orientation and submitted their baseline urine drug and alcohol screens, a lab technician placed participants into one of the two groups by one-to-one alternating assignment. Specifically, a participant was assigned to either the experimental ($n = 72$) or control group ($n = 77$) after they were deemed eligible for the program and officially referred by the court. The group assignment procedure was administered for all new Drug Court participants accepted into the program during the 2010 calendar year, ceasing December 31, although protocol continued until June 30, 2011. The final sample comprised 149 Drug Court participants. The unequal numbers between the experimental and control groups occurred because of a late recognition of ineligible participants initially assigned to the study. Participants deemed ineligible were subsequently removed from the study, and the 1:1 ratio of group assignment continued with no attempt to replace them.

The standard alcohol and other drug use monitoring protocol of the host Drug Court at the time of this study was to randomly screen participants approximately three times a week. This particular Drug Court used two screening tools, a pupilometer and urinalysis. A pupilometer (an eye-scanning tool) was used to detect recent alcohol or illicit drug use. In cases where the eye scan detected alcohol or drug use, the participant submitted to a 9-panel urinalysis test (which includes ethanol screening) for confirmation. However, each participant

assigned to the experimental group had a urinalysis test during his or her first random screen each week, regardless of the results of the pupilometer test, to complete the EtG/EtS testing required for this study. This pattern of testing in the experimental group provided a greater opportunity for detecting weekend alcohol consumption.

The control group was exposed only to the standard monitoring protocol. However, part of this protocol was that Drug Court counselors maintained the prerogative to order an EtG/EtS screen for any participant, including those assigned to the control group. As a result, control group participants were potentially exposed to the enhanced supervision tool when counselors suspected substance use. In this case, the EtG/EtS screening was not applied with the same consistency or to the same extent as with the experimental group. Half of those in the control group never received EtG/EtS screening at all. Participants were not formally informed they were being screened by an enhanced monitoring agent. The treatment incurred by the experimental group placed no greater obligation on them than potentially exists outside of the research protocol for any voluntary participant of the Drug Court. The research team received Institutional Review Board approval through an accredited university medical center (IRB #626-11-EX).

Once collected by Drug Court staff, the specimens were outsourced for analysis. The screening methodology was a quantitative confirmation analysis using LC/MS/MS, or liquid chromatography/mass spectrometry/mass spectrometry. Both ethyl glucuronide and ethyl sulfate levels were tested to guard against possible false positives derived from enzyme breakdown in the ethyl glucuronide. This potential instability is nonexistent in the ethyl sulfate compound (Forensic Laboratories, 2011). Because the Substance Abuse and Mental Health Services Administration (SAMHSA) recommends a testing cutoff to protect against false positives resulting from incidental alcohol exposure (SAMHSA, 2006), the screening laboratory implemented a 500-nanogram cutoff for ethyl glucuronide and a 300-nanogram cutoff for ethyl sulfate. No pre- and postscreening of samples occurred; they were screened only once.

OUTCOME AND TREATMENT VARIABLES

The primary purpose of this study was to explore the effects EtG/EtS screening had on participant program performance. This study established two measures to capture the performance of Drug Court participants: participant phase movement and program completion. Both program performance measures are supported in the literature (Banks & Gottfredson, 2004; Hepburn & Harvey, 2007; Hickert et al., 2009).

We used the number of days spent in phase I and in phase II as the outcomes for the participant phase movement measure. Studies have shown that even when they fail the program, participants benefit from participation through exposure to the program components (Banks & Gottfredson, 2004). Duration of time spent in each phase can also serve as an indicator of participants' resistance to the Drug Court program requirements (i.e., relapse, delayed treatment completion, etc.; U.S. GAO, 1997). Program completion captures the ultimate program outcome—whether a participant graduated or was terminated from the program.

As is the case in experimental research designs, the treatment experienced by participants is the primary independent variable. Consistent with the methods used in existing Drug Court literature (Butzin et al., 2002; Deschenes et al., 2009; Hepburn & Harvey, 2007; Hickert et al., 2009; Newton-Taylor et al., 2009), we analyzed participant characteristics, including gender, race, education, employment status, criminal history, and alcohol diagnosis (i.e., addicted, abuse, or no issue) using *DSM-IV* criteria to determine their relationship with our outcome measures.

Analysis

We used three statistical techniques to analyze the data.

Chi-Square Test—This test augments the reporting of raw numbers and can suggest that a relationship between two variables is a real one (e.g., between the education level of a participant and program graduation; Bachman & Paternoster, 1997).

T-Test—We examined the differences in participant phase performance with this technique to determine the statistical significance of the difference, in average days, between the two groups (Bachman & Paternoster, 1997).

Analysis of Covariance—We randomized the selection of participants for our experimental research design to eliminate unwanted differences between our two groups. The experimental and control groups were statistically similar in all individual characteristics, except for the age variable. A statistically significant difference exists between the average ages in the experimental group and the control group. The experimental group had an average age of 30 years, whereas the control group had an average age of 34 years. As a result of unintended differences between our experimental and control groups, we analyzed the performance between groups through analysis of covariance. This statistical technique allows for an examination between averages while controlling for an independent variable that may have influence over our outcome variables (Field, 2005).

RESULTS

The first set of results evaluated was outcome differences between the experimental and control groups. We explored program performance through these program outcomes:

- Days to complete phase I
- Days to complete phase II (including phase I)
- Program graduation or termination

We analyzed the differences in duration of phase participation between participants of the two groups as well as the differences in graduation and termination rates between groups. In conjunction with the analysis of this data, we also analyzed the relationships between program performance and participant characteristics (see Table 1 and Table 2 on pages 11 and 13).

The second set of results this study evaluated was the performance of the EtG/EtS screening tool and participant attributes most associated with detected alcohol consumption. For the study, we did the following:

- Compared positive screening results between EtG/EtS and ethanol
- Compared ratio of positive results between the experimental and control groups
- Described participant characteristics of those yielding positive EtG/EtS results

Experimental Design Measures and Outcome Results

Participant Phase Movement

This measure used the number of days a participant needed to complete a phase as its outcome data. As shown in Table 1, we found no statistically significant difference in the average number of days participants took to complete phase I. The time spent in this phase for participants in the experimental group was 161 days, whereas those in the control group took approximately 10% longer, or 178 days. During the study, 51 participants in the experimental group and 46 in the control group completed phase I of the program.

A similar difference was found between the groups in the duration spent completing phase II. The average number of days for phase II completion combines the number of days spent in both phase I and phase II. The research team believed this outcome significant because no person in this study who completed phase II was terminated during phase III. At the time of analysis, 70 participants (47%) in the study had completed phase II, 36 from the experimental group, and 34 from the control group. Participants not undergoing weekly EtG/EtS screening took 33 days longer to complete the first two phases of the program (280 days for the experimental group, 313 days for the control group). Although this is not statistically significant, the analysis of covariance indicates the difference nearly approaches significance at the .053 level (.05 is considered statistically significant).

Program Completion

Whether a participant graduates or terminates from the program was the outcome for this measurement. By the end of the research

TABLE 1	PARTICIPANT PHASE MOVEMENT					
Participant Characteristics	Phase I Completion†	% Difference	t-test Score	Phase II Completion†	% Difference	t-test Score
Group						
Experimental	161			280		
Control	178	10%	.312	313	11%	.053
Gender						
Male	157			279		
Female	193	19%	.019*	330	16%	.007*
Race/Ethnicity						
Caucasian	162			293		
Non-Caucasian	180	10%	.214	302	3%	.319
Education						
High School Diploma	168			287		
No High School Diploma	173	3%	.779	338	15%	.028*
Employment						
Employed	159			287		
Unemployed	178	11%	.190	306	6%	.322
Criminal Offense						
Possession	167		.730	297		.961
Distribution	166		.702	288		.483
Property Crime	190	12%	.274	319	10%	.347
Criminal History (Arrests)						
No Felony Arrests	171			298		
At least 1 Felony	166	3%	.732	295	1%	.878
Alcohol Abuse Diagnosis (DSM-IV)						
Alcohol Dependence	166		.799	306		.321
Alcohol Abuse	173		.797	311		.497
No Alcohol Issue	169	4%	.947	275	12%	.107

NOTE: An analysis of covariance was completed to compare the differences between the experimental and control groups to compensate for the unintended age difference between the two groups.

†Average number of days

*Denotes statistical significance at the .05 level.

period, 83 participants who entered the host Drug Court program in 2010 were no longer in the program. Of these 83 participants, 34 participants (41%) had successfully completed the program, whereas the other 49 participants (59%) were terminated from it for various violations. Seventeen participants, approximately 44%, of those screened weekly through EtG/EtS testing (the experimental group) graduated from the program, whereas 35% of their counterparts (17 participants) in the control group graduated. This does not represent a statistically significant difference as explored through a chi-square test (Table 2).

Participant Characteristics Correlated with Outcomes

Prior research has shown that specific participant attributes correlate with Drug Court performance outcomes (Butzin et al., 2002; Hepburn & Harvey, 2007). We contrasted participant characteristics within the context of our two study measures (participant phase movement, Table 1, and program completion, Table 2).

Demographic Characteristics—Males progressed through the program at a statistically significant faster rate than females. However, this performance difference did not hold true in the ultimate success of the participants. Females graduated at a comparable rate (37%) to males (43%). Consistent with prior Drug Court research (Hepburn & Harvey, 2007; Hickert et al., 2009), those with a high school diploma performed statistically better, both in phase movement and in graduation rates, than those with less education.

Criminogenic Characteristics—Of the criminogenic characteristics, only crime of record possessed a statistically significant relationship with program success. Those who were charged with a crime of distribution were more likely to graduate from Drug Court. This crime type may be more indicative of criminogenic activity rather than addiction behavior exhibited by those charged with drug possession. These participants may have had fewer issues with alcohol or other drugs and thus were able to maintain abstinence and complete the program.

Substance Abuse Diagnoses—Lastly, this study accounted for participants' substance abuse diagnoses as set forth by the DSM-IV.

TABLE 2	PROGRAM COMPLETION			
Participant Characteristics	Graduates (n = 34)	Terminations (n = 49)	Graduation Rate	Chi-Square Test
Group				
Experimental	17	22	44%	.647
Control	17	27	35%	
Gender				
Male	24	32	43%	.613
Female	10	17	37%	
Race/Ethnicity				
Caucasian	23	32	42%	.824
Non-Caucasian	11	17	39%	
Education				
High School Diploma	30	33	48%	.029*
No High School Diploma	4	16	20%	
Employment				
Employed	19	17	53%	.055
Unemployed	15	32	32%	
Criminal Offense				
Possession	16	32	34%	.098
Distribution	16	9	64%	.005*
Property Crime	2	8	20%	.154
Criminal History (Arrests)				
No Felony Arrests	14	24	37%	.483
At least 1 Felony	20	25	44%	
Alcohol Abuse Diagnosis (DSM-IV)[†]				
Alcohol Dependence	14	17	45%	.459
Alcohol Abuse	7	7	50%	1.000
No Alcohol Issue	12	9	57%	.428

*Denotes statistical significance at the .05 level

[†]Numbers in this row do not add up to the total number of participants as indicated in the column heading owing to missing data in some participants' records.

This information was collected from substance abuse reports located in the participant files on 130 of the 149 persons included in this re-

search (19 participants had no such record in their files). The majority of those participants (71%, $n = 92$) with a documented diagnosis suffered from alcohol-related issues, 54% ($n = 70$) were alcohol dependent, and 17% ($n = 22$) were diagnosed with alcohol abuse issues. Not surprisingly, participants not diagnosed with an alcohol-related issue moved through phase II more quickly.

EtG/EtS Performance

We compared a total of 2,669 urine samples screened through both the EtG/EtS and ethanol tests. These screens yielded 76 positive results. In only six instances did a standard ethanol screen detect alcohol consumption. In all six instances, the EtG/EtS screen was also positive. This finding directly supports the superior detection window that EtG/EtS screening purports to have over ethanol testing. Further supporting this assertion, the majority of positive urine samples were collected on Mondays, presumably detecting weekend alcohol consumption. Of the 76 total positive screens, 46 were samples collected on Monday. Predictably, Tuesday's samples were second with 13 positive screens (because of the host Drug Court's randomized screening procedures, in combination with the research design, participants in the experimental group most frequently submitted to urinalysis screens on Mondays or Tuesdays). *These results, consistent with prior research, suggest EtG/EtS is a superior tool for alcohol-use detection.*

When comparing the experimental group samples with those of the control group, the difference in detection rate was notable. Mandated weekly screens only detected alcohol use in 2% (66 out of 2,582 screens) of all tests administered. However samples screened based on counselor suspicion had a detection rate of 11% (10 out of 87 screens). The difference in the rate of positive screens may be explained by examining the counselors' initial suspicions of participants' noncompliance. Those participants screened based on counselor suspicion may have previously demonstrated patterns of noncompliant behavior that influenced the counselors' requests for EtG/EtS screens. Future research may attempt to ascertain counselor reasoning for increasing monitoring efforts on specific clients.

Detected Alcohol Consumption and Program Success

For this analysis, we did not consider the comparison research design, but rather focused on those participants who yielded positive EtG/EtS screens (from both the experimental and control groups). In all, 45 participants tested positive. Their progress through phase I of the program was not significantly different than those who had no positive screens of either type. However, it took these participants 320 days to complete phase II of the program compared with 274 days for those participants who never screened positive. *The difference in days spent in the first two phases of the Drug Court program was 14%—a statistically significant difference.*

The data revealed no differences in graduation rates. Sanctions imposed in response to positive screens were the probable cause for the delay in phase progression. Participant relapse in Drug Court programs is met with incremental punishment (Harrell et al., 1998; Hawken & Kleinman, 2009); however, it is also met with a reevaluation of intervention that slows participant progression through the phases (U.S. GAO, 1997).

Participant Characteristics Most Associated with Detected Alcohol Consumption

We analyzed the characteristics of those who tested positive for alcohol use (see Table 3). Continued alcohol use was, for the most part, evenly distributed across participant characteristics. Only persons with an alcohol issue diagnosis demonstrated a relationship with detected alcohol use. Those who had been diagnosed with an alcohol dependency composed nearly 61% of participants who screened positive, yet these participants made up only 50% of those who underwent EtG/EtS screening. Similarly, just over 50% of participants diagnosed with alcohol abuse yielded positive results.

DISCUSSION

By enhancing detection capabilities of participant alcohol consumption through the use of EtG/EtS screening, the host Drug Court hoped to deter participant alcohol use, thus improving participant

TABLE 3		CHARACTERISTICS OF PARTICIPANTS WITH POSITIVE EtG/ETS SCREENS			
Participant Characteristics	No. of Positives (n = 46)	No. of Participants tested with EtG/ETS (n = 110)	% of Positives	Chi-Square Test	
Gender					
Male	31	76	40%	.744	
Female	15	34	44%		
Race/Ethnicity					
Caucasian	30	71	42%	.901	
Non-Caucasian	16	39	41%		
Education					
High School Diploma	34	84	41%	.640	
No High School Diploma	12	26	46%		
Employment					
Employed	24	47	51%	.090	
Unemployed	22	63	35%		
Criminal Offense					
Possession	27	60	45%	.459	
Distribution	15	37	41%	.847	
Property Crime	4	13	31%	.390	
Criminal History (Arrests)					
No Felony Arrests	25	58	43%	.773	
At least 1 Felony	21	52	40%		
Alcohol Abuse Diagnosis (DSM-IV)[†]					
Alcohol Dependence	28	55	50%	.046*	
Alcohol Abuse	8	15	53%	.335	
No Alcohol Issue	6	30	20%	.004*	

*Denotes statistical significance at the .05 level.

[†]Numbers in this row do not add up to the total number as indicated in the column heading owing to missing data in some participants' records.

performance in the program. Prior research has validated the effectiveness of the EtG/EtS screening tool and suggests a need to promote

alcohol abstinence because alcohol use may contribute to poor program outcomes and increased criminality (Gottfredson et al., 2008), which is not only grounds to terminate a participant from the program but an increased burden on courts and communities. This study sought to evaluate the premise that better monitoring of alcohol use would improve program outcomes by examining how EtG/EtS screening affected participant performance and evaluating its detection capabilities.

This study used an experimental design to compare participants screened weekly through EtG/EtS testing with those who underwent screening only upon counselor suspicion in relation to two measurements: participant phase movement and program completion. As reported, analysis of phase movement and graduation rates revealed no statistical differences in participant performance between our experimental and control groups. However, patterns do begin to emerge within the data. Participants screened weekly through EtG/EtS testing progressed through phase I and phase II more quickly than those within the control group. Participants in the control group took 11% longer to complete the first two phases of the program. This pattern did not appear in the program completion measure where the groups graduated at similar rates.

The performance of all participants who yielded positive EtG/EtS screens was compared with those who had only negative screens. Not surprisingly, participants who continued their alcohol use spent more time in both phase I and phase II than those who did not provide a positive sample. Despite these performance differences, these participants still graduated at similar rates. This is consistent with the key components of Drug Court. The model requires Drug Courts to use alcohol and other drug monitoring as a mechanism to gauge treatment progress while recognizing relapse is a part of recovery (NADCP, 1997). These outcomes may be explained by this recognition of relapse as part of the process. Relapse can plausibly delay the progress of participants through program phases; however, Drug Courts use graduated sanctions, not program revocation, as a therapeutic response (Taxman et al., 1999). Subsequently, this study reveals differences in phase movement, but not in graduation.

We found no statistically significant performance differences in cases of weekly EtG/EtS screening exposure. Although those in the experimental group performed incrementally better, pinpointing the exact cause of this performance is difficult. Future research needs to evaluate the sanctioning responses to continued participant alcohol use as compared with illicit drug use.

Limitations

Because of the nature of our data and the supervision protocols of the host Drug Court, we encountered limitations to our design and study. This study was preliminary in nature using bivariate analysis to compare the outcome measures between our randomly assigned groups and participant characteristics. This research was limited, in part, by the constrained research period, which limited analyzable numbers from our outcome variables. Of the 149 participants, only 83 completed their participation during the 18-month research period. Subsequently, we could not control for covariates through a multivariate analysis when analyzing participant characteristics.

Ideally, the control group would have had no exposure to the EtG/EtS screening; however, a few participants assigned to the control group were sometimes exposed to EtG/EtS screening because of counselor suspicion. We could not rectify this in our initial research design because the research team did not wish to interfere with this supervision protocol of the Drug Court.

The lack of distinction between the two groups may be attributed to the amount of alcohol and other drug monitoring both groups experienced. As stated previously, the standard protocol for the host Drug Court was to randomly screen participants three to four times a week. Thus, it is possible the maximum effect of monitoring was already achieved, making enhanced alcohol-testing protocols (i.e., EtG/EtS screening) superfluous. However, because of the fifteen-hour limitation of ethanol screening, we contend its use, even five days a week, would be insufficient to capture all participant alcohol use, particularly over the weekends.

Policy Implications

This study confirms EtG/EtS screening as a superior monitoring tool to standard ethanol screening. The EtG/EtS tool allows for greater supervision of participants. For Drug Courts using the traditional ethanol screening method, participant use of alcohol over weekend periods is more likely to be detected through EtG/EtS screening. More accurate screens provide greater opportunity for intervention, limiting participant relapse, and reevaluating participant treatment. However, no statistical outcome differences existed between the two groups, suggesting that complete implementation of weekly EtG/EtS screening might not be the optimal use of the test. EtG/EtS screening is relatively expensive. In 2010, a standard 9-panel screen cost this program \$7 and an EtG/EtS screen cost approximately \$18, making a full screen \$25 total. For many Drug Courts, adding EtG/EtS screening to all testing of participants is impractical.

However, the EtG/EtS screening tool might be managed more efficiently to achieve an optimal application. The study implications are that targeting specific participants for EtG/EtS screening would be a more efficient administration of this tool. Testing participants at counselor request provided a greater return on the investment with the more expensive EtG/EtS screening tool. Additionally, participants with diagnosed alcohol-related issues yielded positive screens at a statistically greater rate than their counterparts, suggesting this population should be screened more closely for alcohol use. Finally, the EtG/EtS test could be used to better effect at the participant's first screening of the week since, as this study showed, the greatest number of positive screenings occurred then.

Alcohol can lead to illicit substance use progression (Yamaguchi & Kandel, 1984), increased criminogenic behavior (Gottfredson et al., 2008), and poorer outcomes in Drug Courts (Gottfredson et al., 2007). EtG/EtS screening allows for better supervision of alcohol use, making it a productive tool for Drug Courts' standard or supplemental monitoring procedures. Information gleaned from using this enhanced alcohol and other drug monitoring tool would enable Drug Courts to assist in improving participant program performance as has been

found in previous research (Flango & Chessman, 2009; Kleinpeter et al., 2010). While cost may prohibit a comprehensive application of this method across all Drug Courts, judicious application could prove prudent. Despite the lack of differences in participant performance, this study demonstrated the utility and effectiveness of EtG/EtS screening and how it might be employed efficiently in a Drug Court program. Emerging differences between the groups suggest further research is necessary to fully understand and leverage the benefits of the EtG/EtS screening tool.

This research was supported by the Edward Byrne Memorial Justice Assistance Grant (JAG), 2007-F2610-NE-DJ. The views expressed are those of the authors.

We want to acknowledge Paul Yakel, Lori Tworek, and all the staff of the Drug Court research site. We sincerely appreciate the cooperation and assistance you provided.

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IS THERE A ROLE FOR EXTENDED-RELEASE NALTREXONE IN DRUG COURTS? RESULTS OF A PILOT STUDY

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[4] Effect of Extended-Release Naltrexone in Drug Courts—Alcohol-dependent participants receiving monthly naltrexone injections in two Drug Courts had significantly lower rearrest rates than matched participants who did not receive naltrexone.

[5] Cost Benefits of Extended-Release Naltrexone in Drug Court—Providing extended-release naltrexone in Drug Court was estimated to yield \$4,000 to \$12,000 in cost offsets per participant over two years.

ALCOHOL USE DISORDER, both abuse and dependence, is a major public health problem in the United States affecting 6% to 9% of adults (Grant et al., 2004; Kessler et al., 2008). Alcohol abuse and dependence contributes to the high crime rates and incarceration in the U.S. In 2009, state and federal correctional authorities had jurisdiction over 1,613,656 prisoners (West, 2010). In a 2004 survey of inmates, an estimated 37% of state prisoners and 21% of federal prisoners serving time for a violent offense said they were under the influence of alcohol at the time of the offense (West, 2010). Alcohol was involved in nonviolent crimes committed by 29% of state prisoners and 18% of federal prisoners. In a 2002 survey, 33% of inmates in local jails throughout the U.S. reported using alcohol at the time of their offense (Rand et al., 2010). This excluded approximately 35,000 people who were convicted of driving while intoxicated (DWI). Another national survey found 48% of convicted inmates had an alcohol use disorder (25% for abuse, 23% for dependence; Kerridge et al.,

2008). This prevalence was approximately six times the rate in the general population (Grant et al., 2004; Kerridge et al., 2008).

The human and economic toll of DWI is especially steep. Motor vehicle accidents are the leading cause of death for persons under the age of forty-five (Heron et al., 2009). In 2008, 11,773 alcohol-impaired driving fatalities were reported, representing 32% of all motor vehicle fatalities (Century Council, 2008). From 1982 to 2008, the rate of alcohol-impaired driving fatalities declined by 57% from 9.1 persons to 3.9 persons per 100,000 (Century Council, 2008). Nonetheless, the number of alcohol-related motor vehicle fatalities remains unacceptably high.

The prevalence of offenders with alcohol and substance abuse issues in the criminal justice system was the primary impetus for the formation of Drug Courts. Many studies support that Drug Courts are effective and reduce recidivism rates (Carey et al., 2012; Finigan et al., 2007; Galloway & Drapela, 2006; Gottfredson et al., 2003; Roman et al., 2003; Ronan et al., 2009). Although one of the key elements in Drug Court programs is addiction treatment, a recent national survey (Matusow et al., 2013) revealed that medication for addiction treatment was substantially underused. In two-thirds of U.S. Drug Courts, agonist medication therapy (methadone and buprenorphine) was not available to participants who could potentially benefit from it. Agonists are drugs that mimic the effects of neurotransmitters on the brain by binding to and activating opioid receptors, blocking other drugs that would bind with these receptor sites. The key barriers to using agonists in treatment appeared to be court policies and cost. Fewer than half of responding Drug Court personnel believed that agonists reduced or blocked the effects of heroin. Other barriers to use of medication in treatment included court prohibition, lack of availability from drug treatment providers, and concerns about diversion.

Extended-release naltrexone is an opioid antagonist. Like an agonist, an antagonist will bind with and block an opioid receptor site but without triggering the receptor, thus preventing the reinforcing effects of alcohol and opioids. Studies showed that extended-release naltrexone treated alcohol dependence effectively (Garbutt et al., 2005) and prevented long-term relapse to opioid dependence following detoxifi-

cation (Krupitsky et al., 2011; Krupitsky et al., 2013). The U.S. Food and Drug Administration approved it for use in both alcohol and opioid dependence disorders.

A health professional can easily administer extended-release naltrexone by giving participants a monthly intramuscular injection. The binding medication (Medisorb) gradually releases the active ingredient, naltrexone, into the bloodstream. When naltrexone reaches the brain, it binds to and blocks the endorphin, or opioid, receptor but does not produce euphoria, reward, or an aversive reaction should the individual drink. In alcohol-dependent participants who were recently abstinent (e.g., for four days), treatment with extended-release naltrexone combined with psychosocial support was associated with the following:

- A 300% increase in abstinence at six months
- A 90% reduction in the median number of drinking days per month
- A 95% reduction in the number of heavy drinking days
- An over 900% delay in the median time to the first heavy drinking day—more than 180 days versus 20 days (O’Malley et al., 2007)

Our study examined the results of a pilot program using extended-release naltrexone treatment for alcohol-dependent participants in selected Drug Courts in Missouri and Michigan. The goal of the study was to obtain preliminary data on the effectiveness of extended-release naltrexone in reducing rearrest rates and maintaining abstinence and compliance in alcohol-dependent Drug Court participants. Following the study results, this report addresses implementation, including how to address practical aspects such as barriers to adoption, cost, access, and dissemination.

METHODS AND RESEARCH DESIGN

For this study, we conducted a retrospective analysis of anonymized administrative records from random Drug Court participants (i.e., not persons seeking to enter a research trial). We compared rearrest rates and other near-term outcomes at approximately the one year

benchmark between a naltrexone group and a comparison group. The naltrexone group comprised alcohol-dependent Drug Court participants referred for treatment with extended-release naltrexone where both researchers and participants knew participants were getting the drug (i.e., open label), whereas the comparison group comprised participants who received standard Drug Court care.

Study participants were male and female adult participants in Drug Court programs who were charged with DWIs and other offenses and who were diagnosed with co-occurring alcohol dependence disorder. Judges provided referrals to treatment programs that offered longitudinal outpatient care with extended-release naltrexone. The decision to recommend the medication for a given participant lay with the evaluating physician, but accepting the medication was the prerogative of the participant. In addition to being diagnosed with alcohol dependence, Drug Court participants selected for the study tested positive for alcohol use multiple times, had problems complying with the demands of Drug Court, and continued to drink after all other interventions had been tried (e.g., daily Alcoholics Anonymous meetings and inpatient and outpatient treatments). Extended-release naltrexone is indicated for Drug Court participants with alcohol dependence who are not currently drinking, are able to maintain abstinence on an outpatient basis long enough to detoxify (seven to ten days), and have psychosocial support.

Candidates for the study meeting the above criteria were excluded if they had any medical condition that was incompatible with extended-release naltrexone (e.g., acute liver disease or pain condition requiring opioids) or were currently using any opioid agonist drug (e.g., heroin, methadone, or narcotic analgesics) since extended-release naltrexone's opioid blockade can trigger abrupt opioid withdrawal. A history of violence or an arrest for a violent offense such as assault also was grounds for exclusion. All candidates who met all criteria were included in the study.

After the naltrexone group was established, an equal number of Drug Court participants were selected for the comparison group in order to achieve a 1:1 ratio of study participants between the two groups. The comparison group comprised the first-available, eligible

participants from within each Drug Court. They were all diagnosed with alcohol dependence and had been arrested for similar offenses as those in the naltrexone group during the twelve months prior to the availability of extended-release naltrexone. Participants from the comparison group were matched post hoc but prior to analysis on five baseline demographic variables: age, gender, race, diagnosis, and criminal history.

Treatment

The three Drug Courts in this study provided the comparison group with standard care, which comprised the following:

- Attendance at group sessions (four times per week for the first month and two times per week thereafter)
- Attendance at individual treatment sessions (once per week for the first month at least)
- Attendance at Drug Court hearings (once per week for the first month, once every two weeks for the next three months, and once per month thereafter)
- Attendance at 12-step self-help meetings (once per week)
- Breath alcohol or urine drug tests (four times per week for the first month, two per week for the next three months, and one per week thereafter)

The naltrexone group received standard Drug Court care and intramuscular injections of extended-release naltrexone (380 mg) every four weeks, though actual timing of doses sometimes varied by a week or two. Participants in this group received a mean of 4.33 injections with about a third receiving six or more injections.

Drug Court Procedures

Once a defendant was arraigned and entered a voluntary plea agreeing to participate in an alcohol intervention program, the probation officer used *Diagnostic and Statistical Manual (DSM-IV)* criteria to determine whether the participant had a substance abuse diagnosis and the appropriate level of care based on the patient placement criteria of the American Society of Addiction Medicine (Mee-Lee et al.,

2001). As part of the Drug Court program, participants were required to attend review hearings, report to their Drug Court case manager, submit to random alcohol and drug testing, attend self-help groups, and attend substance abuse treatment. Drug Court participants who were candidates for using extended-release naltrexone were referred for medical screening to determine whether they had any medical contraindications that would exclude them from participating in the extended-release naltrexone treatment.

Outcomes

Data collection from the Michigan courts were based on the statewide Drug Court Case Management Information System (DCCMIS) and supplemented where needed by a review of paper records. Data from the Missouri court were collected from paper records. Four outcome measures were assessed as follows:

- Compliance was measured based on the number of missed Drug Court appearances per month.
- Abstinence was measured based on the number of positive alcohol and drug tests per month.
- Persistent return to drinking was measured as the proportion of participants with more than 25% of their alcohol and drug tests returned positive.
- Rearrest was measured as the number of new arrests per month for participants in the naltrexone group contrasted with the comparison group. It was the primary outcome variable because any combination of failures with the three above variables could contribute to the bottom-line outcome of rearrest. Because the mean duration of treatment was longer for participants in the naltrexone group (thirteen months) than for the comparison group (eleven months), the new arrest data were annualized.

We analyzed baseline demographic characteristics and statistics on compliance, abstinence outcomes, and rearrest rates. Baseline criminal history data were only available from two of the three sites. We first calculated the *absolute risk reduction* for each measure by determining the difference between the naltrexone group's event rates versus those of the comparison group. We then calculated the *relative*

risk reduction achieved through extended-release naltrexone treatment by dividing the absolute risk reduction by the event rate in the comparison group.

In this retrospective analysis, we used only administrative data from the Drug Courts. NPC Research has a general approval from its IRB (institutional review board) to conduct these kinds of administrative, data-only research studies without specific approval for each study. All data were anonymized, reported only in the aggregate, and kept under strict confidentiality and security. All NPC Research staff are required to complete the National Institutes of Health (NIH) confidentiality training and maintain NIH-compliant standards of confidentiality.

RESULTS

The 32 participants in the naltrexone group, treated with extended-release naltrexone between June 2008 and December 2009, were matched with the 32 participants in the comparison group. The naltrexone and comparison groups were similar on key demographic variables at baseline (see Table 1). The mean number of prior convictions was relatively higher in the naltrexone group (3.20 versus 2.44,

TABLE 1		BASELINE CHARACTERISTICS OF TREATMENT SAMPLE		
Variable	Naltrexone Group using XR-NTX* (n = 32)	Comparison Group (n = 32)	Significance	
Female, %	24%	21%	NS†	
Non-Caucasian, %	40%	43%	NS	
Age (mean)	33	33	NS	
No. of prior criminal convictions§ (mean)	3.20	2.44	NS	

*Extended-release naltrexone

†Not significant

§Prior criminal conviction data were available from two of the three sites.

$p = NS$), although this difference was not statistically significant. To evaluate whether the Drug Courts treated the naltrexone group differently from comparison groups, we analyzed the ratio of sanctions to incentives-plus-sanctions for each group. The ratios were similar (0.5 for the naltrexone group versus 0.47 for the comparison group, $p = NS$), suggesting that the Drug Courts treated the two groups similarly.

Missed Drug Court Appearances Outcome Measure

To evaluate compliance with the demands and expectations of the Drug Courts, we analyzed the number of missed court appearances. The mean number of missed court appearances per month was low for both groups, and was not significantly more frequent for the comparison group as compared with the naltrexone group (0.07 versus 0.03, $p = NS$). This represented a relative risk reduction of 57% for extended-release naltrexone treatment (see Table 2).

TABLE 2	OUTCOME RESULTS		
Outcome	Naltrexone Group	Comparison Group	Relative Risk Reduction
Compliance Mean no. of missed Drug Court sessions per month	.03	.07	57%
Drinking Episodes Mean % of positive alcohol or drug tests per month	11%	17%	35%
Persistent Drinking Offenders with >25% positive tests for alcohol or drugs	18%	27%	33%
Rearrest* Offenders with new arrests (annualized)	8%	26%	69%

* $p < .05$

Abstinence Outcome Measure

To evaluate abstinence, a crucial outcome measure in Drug Court, we calculated the proportion of positive alcohol or drug tests per month for each group. The mean proportion of positive alcohol or drug tests per month was slightly higher for the comparison group than for the naltrexone group (17% versus 11%, $p = \text{NS}$); however, this difference was not statistically significant. The reduced number of positive tests represented a relative risk reduction of 35% for those being treated with extended-release naltrexone (see Table 2).

Persistent Return to Drinking Outcome Measure

We also calculated the proportion of participants whose alcohol or drug tests were positive more than 25% of the time as a way of indexing persistent return to drinking. The comparison group had relatively more participants with more than 25% positive tests compared with the naltrexone group (27% versus 18%, $p = \text{NS}$); however, this difference was not statistically significant. Extended-release naltrexone treatment provided a 33% relative risk reduction for a persistent return to drinking among Drug Court participants in the naltrexone group (see Table 2).

Rearrest Outcome Measure

Participants in the comparison group were significantly more likely to be rearrested within a year than those in the naltrexone group (26% versus 8%, $p < .05$). This represented a relative reduction of 69% for participants being treated with extended-release naltrexone in the annual risk of having a new arrest while engaged with Drug Court (see Table 2).

CONCLUSIONS

Standard care in the Drug Court setting, which includes psychosocial intervention with drug and alcohol monitoring, has proved to be effective and to reduce recidivism (Carey et al., 2012; Finigan et al., 2007; Galloway & Drapela, 2006; Gottfredson et al., 2003; Roman et al., 2003; Ronan et al., 2009). In this study, adding treatment

with extended-release naltrexone proved promising for alcohol-dependent participants by promoting relatively greater success in the measured outcomes of complying with Drug Court appearances, abstaining from alcohol use, avoiding persistent drinking habits, and avoiding rearrest; however, several of these trends were not statistically significant. The absence of statistical significance on some of the outcome measures may be attributable to the small sample size for the study ($n = 32$ per group). For mathematical reasons, small samples make it difficult for researchers to detect statistical significance, even when improvements are clinically noteworthy.

Treatment with extended-release naltrexone correlated with increased compliance with regular, court-mandated appearances. Study participants who received the extended-release naltrexone abstained more from alcohol, returning 35% fewer positive alcohol or drug tests, and were 33% more likely to avoid returning to drinking than participants treated with standard care alone. Participants treated with extended-release naltrexone also had a 69% reduction in rearrest rates (the primary outcome measure) at twelve months. In interviews and Drug Court records, judges observed that the study participants treated with extended-release naltrexone had noticeably improved focus in the courtroom and in the overall Drug Court program.

Despite the beneficial effects of extended-release naltrexone treatment on compliance, abstinence, and rearrest rates, treatment for the majority of the naltrexone group's participants was brief. They received a mean of 4.33 injections with one-third receiving 6 or more. Reasons for this duration of treatment are unknown. Loss of funding was not among them since medication was provided by the state. Discontinuation could have occurred because of side effects, nonadherence, or successful treatment completion. Whether more consistent and prolonged use of extended-release naltrexone might have been needed or might have yielded even greater benefits remains untested.

One important point to note is that a selection bias may have reduced the magnitude of the treatment effect of extended-release naltrexone compared with outcomes previously reported for standard care interventions within Drug Courts (Galloway & Drapela, 2006; Gottfredson et al., 2003; Roman et al., 2003; Ronan et al., 2009). Be-

cause this was a pilot study of the use of extended-release naltrexone, individuals who participated were recidivists at the more severe end of the client spectrum and typically had served jail time, were alumni of residential treatment programs, or both. Furthermore, because this was a retrospective case-controlled study, participants were not randomly assigned to extended-release naltrexone versus standard care. The higher mean rate of prior convictions in the extended-release naltrexone treatment group (3.20 versus 2.44) suggests that even an attempt to correct for this difference by post hoc matching was not wholly successful.

The results of this pilot study were consistent with a recently reported case series conducted in a DWI court (Lapham et al., 2011). In that study, ten repeat offenders with a diagnosis of alcohol dependence who were treated, open-label, with extended-release naltrexone reported significant reduction in mean drinks per day ($p < .01$), mean number of drinks per drinking day ($p = .04$), and an increase in number of abstinent days ($p = .02$). Furthermore, treatment with extended-release naltrexone correlated with reduced detection of alcohol-related biomarkers and a nonsignificant reduction (from 3% to 1.29%) in study participants' failures to start their alcohol-interlock-equipped vehicles as a result of elevated breath alcohol (Lapham & McMillan, 2010).

Treatment with extended-release naltrexone has also demonstrated efficacy in other situations where the risk of relapse to drinking was high. For example, in a post hoc analysis of a double-blind, placebo-controlled trial, treatment with extended-release naltrexone combined with psychosocial intervention resulted in a reduction to zero in the median number of drinking days during high risk holidays such as New Year's Eve, Labor Day, Fourth of July, and Super Bowl Sunday (Lapham et al., 2009).

Because extended-release naltrexone is relatively costly, Drug Courts will need to determine whether the cost is offset by the gains and advantages of treating Drug Court participants with it. Cost benefits have already been established in retrospective health economic studies (Baser, Chalk, Fiellin, & Gastfriend, 2011; Baser, Chalk, Rawson, & Gastfriend, 2011; Mark et al., 2010), including in studies

independently conducted by the health insurance industry (Jan et al., 2011; Bryson et al., 2011). In one national retrospective health economic analysis of insurance data, the average cost per patient for an average of two months of treatment was \$2,842 for extended-release naltrexone, \$398 for oral naltrexone, \$1,297 for buprenorphine, and \$211 for methadone, not including the costs of administration and monitoring. When total health care costs (including inpatient, outpatient, other pharmacy costs, and the cost of the specific medication) were calculated over six months, however, the cost relationships were quite different. Extended-release naltrexone becomes the least expensive at a cost of \$8,582, whereas oral naltrexone cost \$8,903, buprenorphine cost \$10,049, and methadone cost \$16,752—a significantly greater total cost than with extended-release naltrexone ($p < .001$). Treatment without medication was also significantly more costly than treatment with medication in both alcohol dependence (Baser, Chalk, Fiellin, & Gastfriend, 2011; Bryson et al., 2011; Mark et al., 2010) and opioid dependence (Baser, Chalk, Rawson, & Gastfriend, 2011).

Criminal justice costs, being much greater than those in health care, offer potentially greater cost savings. National studies find that the cost of a single arrest approaches \$7,000 per offender (Zarkin et al., 2012), and annual costs of incarceration average \$29,000 per inmate (Pew Center on the States, 2009). A preliminary estimate of criminal justice costs as they related to this study was obtained using data from a previous Michigan DWI court study (not involving extended-release naltrexone) and from other Drug Court cost studies (Carey, et al., 2006; Carey et al. 2012; Marchand, et al., 2006). Based on the 69% reduction in rearrest rates as found in this study, we estimated that treatment with extended-release naltrexone might offer a cost offset advantage to the taxpayers of \$4,000 to \$12,000 per person over the two years following the initial arrest. These findings were consistent with cost estimates by two of this study's authors (Sullivan and Kandrevas) who report that the cost of DWI confinement in the Missouri system was approximately \$16,800 per year. If confirmed in a formal cost analysis on a larger, prospective-controlled sample, the policy implications would be of interest to Drug Courts nationwide.

Our findings of a more than two-thirds reduction in rearrest rates suggest that courts and communities have at least as much opportunity to benefit from cost savings in criminal justice as in health care, if not more so. Pilot evaluations of extended-release naltrexone could, for example, compare costs associated with Drug Court participants treated with extended-release naltrexone with the historical costs associated with Drug Court participants not treated with it. Such demonstrations are under way in many jurisdictions.

Implementation Considerations

Certain considerations need to be addressed before selecting naltrexone as a treatment for a Drug Court participant. The participant needs to be opioid-free for seven to ten days, have a willingness to be drug- and alcohol-free, and engage in psychosocial treatment. Among other things, naltrexone is not for use by participants concerned with liver disease or who have ongoing pain that might require opioid medication. If the participant has previously shown extended success with drug-free counseling alone, this may be considered; however, a national health economic retrospective study found that patients receiving only psychosocial treatment had worse outcomes than patients receiving medication-assisted treatment (Baser, Chalk, Fiellin, & Gastfriend, 2011). In light of this finding, agonist therapy should be considered if the participant is not willing to undergo the detoxification prerequisite for extended-release naltrexone. The manufacturer provides a Web-based tool to locate health care professionals who are willing to administer, evaluate, and counsel patients interested in the treatment (see www.vivitrol.com).

The potential benefits are too great to ignore. A 69% reduction in rearrest rates suggests that the criminal justice system could potentially realize large cost savings. The potential for savings is similarly great for health care costs. These potential savings are worthy of more investigation and given that the mean number of injections per naltrexone group participant was 4.33 with a third receiving six or more, a future study should include setting a minimum treatment duration for extended-release naltrexone.

The decision to discontinue the extended-release naltrexone treatment was an individual clinical consideration for each participant in the naltrexone group. The Drug Court team evaluated whether participants had achieved a full acceptance of the disease, understood potential risk factors, acquired healthy coping skills, established recovery lifestyles and supports, and had sufficient time in treatment to experience and appropriately manage both negative and positive stressors. In addition, counselors and physicians communicated with Drug Court personnel to ensure collective awareness of each participant's Drug Court status, compliance, and any pertinent circumstances.

Medicaid in a majority of the states and 80% to 90% of commercial insurers currently reimburse for the use of extended-release naltrexone. Health care reform is likely to make this treatment available to an increasing number of Drug Court participants. Costs are being subsidized through bulk purchasing by county or state agencies, including in Los Angeles County, Maryland, Missouri, Ohio, and Florida. Small pilot programs in many of these locales provided the first data, which subsequently led to budget allotments through departments of public or mental health, legislative initiatives, or governors' offices. The U.S. Substance Abuse and Mental Health Administration (SAMHSA) also sponsors funding initiatives specific to Drug Courts that provide for adoption and coverage of extended-release naltrexone (SAMHSA, 2013a; SAMHSA, 2013b).

Although extended-release naltrexone is an antagonist opioid blocker with no intrinsic opioid-like effects (which have been cited as source of resistance to adoption of agonists; Matusow et al. 2013), Drug Courts have been slow to adopt it, perceiving the use of extended-release naltrexone as a treatment of last resort for repeat offenders after all else had failed. In the Missouri and Michigan programs used for this study, accrual of Drug Court participants into the extended-release naltrexone treatment group was slow and the overall sample size was small in spite of training and policy explicitly supporting use of these medications in these early adoption Drug Courts. This reticence occurred even though naltrexone is used for alcohol dependence by 28% of U.S. Drug Courts (Matusow et al., 2013).

Similar resistance to treatment was reported statewide in Missouri, where all certified substance abuse treatment programs that receive state and federal funds (including Medicaid) have been encouraged, and lately required, to include medication-assisted treatment in the services available to substance-involved Drug Court Participants for whom it is clinically appropriate. Even so, Medicaid stated in data from its fourth quarter in 2009 that only 4% of 6,976 persons with a diagnosis of alcohol use disorder (or a related mental condition) received medication treatment (Mark Stringer, personal communication). Approaches to improving adoption include judge-to-judge peer interactions and state contracting with a new model of treatment provider, the medically staffed injection center. If these data are replicated in other jurisdictions, the field will need educational initiatives to (1) disseminate the results, (2) promote sharing of implementation strategies and tactics, and (3) foster collaboration within regions on building mechanisms to provide ready access for offenders in need.

Alcohol dependence is a chronic disease with a high relapse rate and a highly negative impact on public safety (Greenfield, 1998). The introduction of Drug Courts was an evidence-based example of progressive jurisprudence at its best (Galloway & Drapela, 2006; Gottfredson et al., 2003; Nolan, 2001; Roman et al., 2003; Ronan et al., 2009). This pilot study suggests that the use of extended-release naltrexone to treat alcohol-dependent Drug Court participants at high risk for recidivism may represent a similar evidence-based advance.

In the 2013 national Drug Court survey, Matusow and colleagues noted that naltrexone was more widely used for alcohol dependence than opioid dependence, with one in four Drug Courts reporting having some participants receiving extended-release naltrexone for alcoholism. Although it is used less for opioid dependence, nevertheless

its appeal as an antagonist (blocking the effects of opioids) to a criminal justice constituency concerned about Drug Court participants' abuse or diversion of medication may increase its adoption and diffusion over time. With the (Food and Drug Administration's)...approval of injectable, long-acting naltrexone...for treatment of opioid dependence, in-

vestigating attitudes, knowledge, and availability associated with its use in Drug Courts represents an important avenue for future research.

Such research into extended-release naltrexone has practical implications for Drug Courts across the United States and around the world. Nearly 60% of U.S. Drug Court personnel are uncertain or disagree with the scientific evidence that medication-assisted treatment reduces or blocks the effects of heroin (Matusow et al., 2013). Clearly, more education is needed about the overwhelming evidence base for pharmacotherapy in substance dependence. However, even in Drug Courts that are open to medication, as were those in the present study, implementation challenges persist—specifically, communication problems in coordinating with community addiction treatment providers. The implications are that even the world of Drug Courts has a shortfall of knowledge and attitudinal readiness for integrating psychosocial and medical treatment, which “underscores the critical need for a strong educational initiative to disseminate evidence about [medication-assisted therapy] efficacy...” (Matusow et al., 2013). As the Drug Court programs increasingly focus on highly addicted populations, Drug Courts need additional tools to prepare their addicted participants to actively participate and comply with Drug Court procedures. Extended-release naltrexone promises to be a useful tool to accomplish this.

Funding for the purchase of extended-release naltrexone for participants of Missouri DWI and Drug Courts was provided by the Missouri Department of Mental Health’s Division of Alcohol and Drug Abuse.

Portions of this paper have been previously presented at the annual meeting of the American Psychiatric Association, New Orleans, Louisiana, May 22–26, 2010. An earlier version of this manuscript was published in the Journal of Substance Abuse Treatment (Finigan et al., 2011).

The Medisorb preparation used in extended-release naltrexone, which allows for its extended-release properties, was developed with support from National Institute on Drug Abuse Grant R43DA013531 and National Institute on Alcohol Abuse and Alcoholism Grant N43AA001002.

This study was funded by Alkermes, Inc., under a contract with NPC Research. Research design, data collection, data analyses, and report writing were performed primarily by NPC Research. Dr. Finigan was a paid consultant for Alkermes, Inc., in connection with the current study. Dr. Edward Schweizer of Paladin Consulting Group, a paid consultant to Alkermes, Inc., provided editorial assistance on an early draft of this manuscript.

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ALTERNATIVE TRACKS FOR LOW-RISK AND LOW-NEED PARTICIPANTS IN A MISDEMEANOR DRUG COURT: PRELIMINARY OUTCOMES

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Nicolle T. Clements — Douglas B. Marlowe

[6] Low-Risk and Low-Need Participants—Participants assessed as low risk or low need may require reduced supervision or treatment services in Drug Court.

[7] Alternative Tracks for Low-Risk and Low-Need Participants—Outcomes were favorable for low-risk and low-need participants assigned to alternative tracks with reduced services in a misdemeanor Drug Court.

IN JULY OF 2013, the National Association of Drug Court Professionals (NADCP) released the first volume of the *Adult Drug Court Best Practice Standards* (Standards; NADCP, 2013). The *Standards* promotes measurable and enforceable practices in Drug Courts, which have been demonstrated through scientific research to improve outcomes and reduce negative side effects for participants. The first standard, on target population, provides that Drug Courts should seek offenders for admission who meet diagnostic criteria for dependence on drugs or alcohol and who are at substantial risk for reoffending or failing to complete a less-intensive disposition, such as standard probation or pretrial supervision. These individuals are commonly referred to as *high-risk and high-need offenders*. If a Drug Court is unable to target only high-risk and high-need offenders, the *Standards* provides that the program should develop alternative tracks with services modified to meet the risk and need levels of its participants.

The empirical justification for the targeting standard is well documented (Andrews & Bonta, 2010; Marlowe, 2012a). Providing substance abuse treatment to nonaddicted substance abusers has been shown to increase rates of criminal recidivism and substance abuse (Lovins et al., 2007; Lowenkamp & Latessa, 2005; Wexler et al., 2004). Moreover, treating participants with different risk or need levels together in counseling groups or residential treatment programs can make outcomes worse for the low-risk and low-need participants by exposing them to antisocial peers or interfering with their engagement in productive activities such as work or school (DeMatteo et al., 2006; Lowenkamp & Latessa, 2004; McCord, 2003; Petrosino et al., 2000).

Many resources provide evidence-based recommendations for designing alternative tracks in Drug Courts (DeMatteo et al., 2006; Marlowe, 2009, 2012b). To date, however, no one has conducted an empirical evaluation of the effects of an alternative track for low-risk and low-need participants in a Drug Court. This article describes one Drug Court's efforts to develop alternative tracks for low-risk and low-need participants. The Drug Court placed participants meeting clearly defined eligibility criteria into tracks with reduced requirements for court hearings, treatment services, or urine drug testing. For our pilot study, we examined preliminary outcomes including participants' graduation rates, rearrest rates, and the average time required to graduate from the Drug Court.

METHODS

Setting

We conducted this study in a misdemeanor Drug Court located in a northeastern metropolitan city. Because supervision and treatment requirements were reduced for some of the study participants, we felt that beginning this research with low-level misdemeanor offenders was the prudent choice.

At the time of this study, eligibility criteria for this Drug Court were as follows:

- Defendants were at least 18 years of age.
- Defendants were residents of or had committed their offenses in New Castle County, Delaware.
- Defendants were charged with misdemeanor drug offenses, including possession or consumption of cannabis, possession of drug paraphernalia, or possession of a hypodermic syringe.
- Defendants had no histories of violent offenses involving serious injuries to victims or the use of deadly weapons.

The Drug Court required defendants to plead guilty to the initial charges and held the guilty pleas in abeyance pending graduation or termination from the program. Graduates had pleas and charges withdrawn and were eligible to have arrest records expunged if they remained arrest free for an additional six months. If a participant failed to complete the program, the guilty plea was formally entered as a conviction. The offender was then sentenced based on the original charge and lost his or her driver's license (if he or she had one) for two years. Participants who were terminated from the program were typically sentenced to probation.

The Drug Court's Standard Program

The Drug Court designed its original standard program to be a minimum of eighteen weeks (approximately four months) long with no maximum time limit for enrollment. The minimum requirements for graduation from the standard program included attending at least twelve weekly psychoeducational group classes, providing drug-negative urine specimens for at least fourteen consecutive weeks, remaining arrest free, obeying the program's rules and procedures, and paying a \$200 court fee. The psychoeducational group sessions were didactic and covered standard topics such as the pharmacology of drug and alcohol use, progression from substance use to dependence, the impact of addiction on the family, treatment options, HIV/AIDS risk reduction, and relapse prevention strategies. Participants also attended individual and group therapy sessions based on their assessed clinical needs.

Participants delivered urine specimens on a random, weekly basis under the direct observation of a same-gender treatment staff member. An independent, certified laboratory performed the drug screens using the enzyme multiplied immunoassay technique (EMIT) with gas chromatography/mass spectrometry (GC/MS) to confirm positive results on a 6-panel screen for cannabis, alcohol, opiates, amphetamines, cocaine, and phencyclidine (PCP). They also performed additional drug screens on an individualized basis for any other substance believed to be abused by the participant. The judge was authorized to administer sanctions or therapeutic consequences for inadequate performance in the program, including verbal reprimands, homework assignments, additional treatment or supervisory obligations, daylong attendance in Drug Court as an observer, and community service. The team also administered incentives for good performance, including verbal praise, certificates of recognition, and reductions in participants' supervisory obligations.

Participants were required to appear in Drug Court for status hearings no less frequently than once per month, to attend outpatient or intensive outpatient therapy sessions based on their clinical needs (in addition to the psychoeducational classes), and meet individually with a clinical case manager during the first phase of the program.

Alternative Tracks

Because previous studies demonstrated that low-risk and low-need participants performed as well or better with less frequent court hearings (Festinger et al., 2002; Marlowe et al., 2006), the Drug Court created alternative tracks for low-risk and low-need participants.

Low-Risk and Low-Need Track

The Drug Court adopted a standardized assessment instrument called the Risk and Needs Triage (RANT), which participants complete upon entry into the program. The RANT is a screening tool that provides a reliable and valid measure of an offender's risk of recidivism and need for treatment services (Marlowe et al., 2011). Participants who were assessed as being both low risk and low need were assigned to an alternative low-risk and low-need track (LR/LN track).

Like most others in the Drug Court, participants in the LR/LN track were required to provide random, weekly urine specimens and complete a basic sequence of twelve psychoeducational group sessions. However, they were not required to attend court hearings after the initial entry hearing unless they failed to attend psychoeducational sessions or to provide valid, drug-negative urine samples. In addition, participants in this track were not required to attend therapy sessions or clinical case-management sessions unless they requested them or performed poorly in the program.

Accelerated Track

Previous research by DeMatteo and colleagues (2009) in this same Drug Court revealed that approximately 30% of participants rarely provided a drug-positive urine sample or missed a psychoeducational group session during their enrollment. The Drug Court determined that reducing the graduation requirements even further for very low-risk individuals might save valuable resources without risking public health or safety; therefore, they created an accelerated track in addition to the LR/LN track for participants with a well-documented absence of risk factors for failure in Drug Court. In addition to being assessed as low risk and low need on the RANT, accelerated-track candidates needed to have the following:

- No current or prior charges for crimes involving alcohol or drugs other than marijuana
- A high school diploma (a General Educational Development, or GED, credential was not sufficient)
- A minimal history of police contacts, regardless of whether or not those contacts resulted in arrests or formal charges

Participants meeting these stringent criteria were required only to provide eight (as opposed to fourteen) consecutive drug-negative urine screens and attend eight (as opposed to twelve) psychoeducational classes as a condition of graduation.

The Drug Court adopted a zero-tolerance policy for the accelerated track. Participants were reassigned to the LR/LN track if they had or provided the following:

- An unexcused failure to provide a scheduled urine specimen
- A drug-positive, diluted, or tampered-with urine specimen
- An unexcused failure to attend a psychoeducational class

Outcome Measures

The Drug Court implemented the accelerated track on June 1, 2011. We examined outcomes for participants who entered the program between June 1, 2011, and January 9, 2013. We analyzed the percentage of participants retained in the accelerated track, the percentage who graduated from the LR/LN and accelerated tracks, and the average time required to graduate from the LR/LN and accelerated track. In addition, we examined rearrest data for a subsample of participants ($n = 79$) in the accelerated track who graduated on or before November 30, 2012, and were thus out of the program for at least six months. We obtained the arrest records for these participants from the Delaware Justice Information System (DELJIS), a statewide criminal justice database. Arrests were classified as drug offenses, crimes against persons, property and theft offenses, driving under the influence (DUI), weapons offenses, and other criminal offenses. Unfortunately, rearrest data were not available to the research team for participants in the LR/LN track.

RESULTS

The results are summarized in the flowchart depicted in Figure 1. A total of 473 participants entered the Drug Court between June 1, 2011, and January 9, 2013. Of those, 43% ($n = 205$) met criteria for at least one of the two alternative tracks. Twenty-five percent ($n = 121$) of the participants met the stringent criteria for the accelerated track. An additional 17% ($n = 84$) met criteria for the LR/LN track because they were assessed as low risk and low need on the RANT but did not satisfy the more stringent requirements for the accelerated track.

Seventeen percent ($n = 20$) of the participants in the accelerated track transferred to the LR/LN track as a result of missed or failed urine tests or missed psychoeducational classes. All of the 101 participants who remained in the accelerated track graduated from the Drug

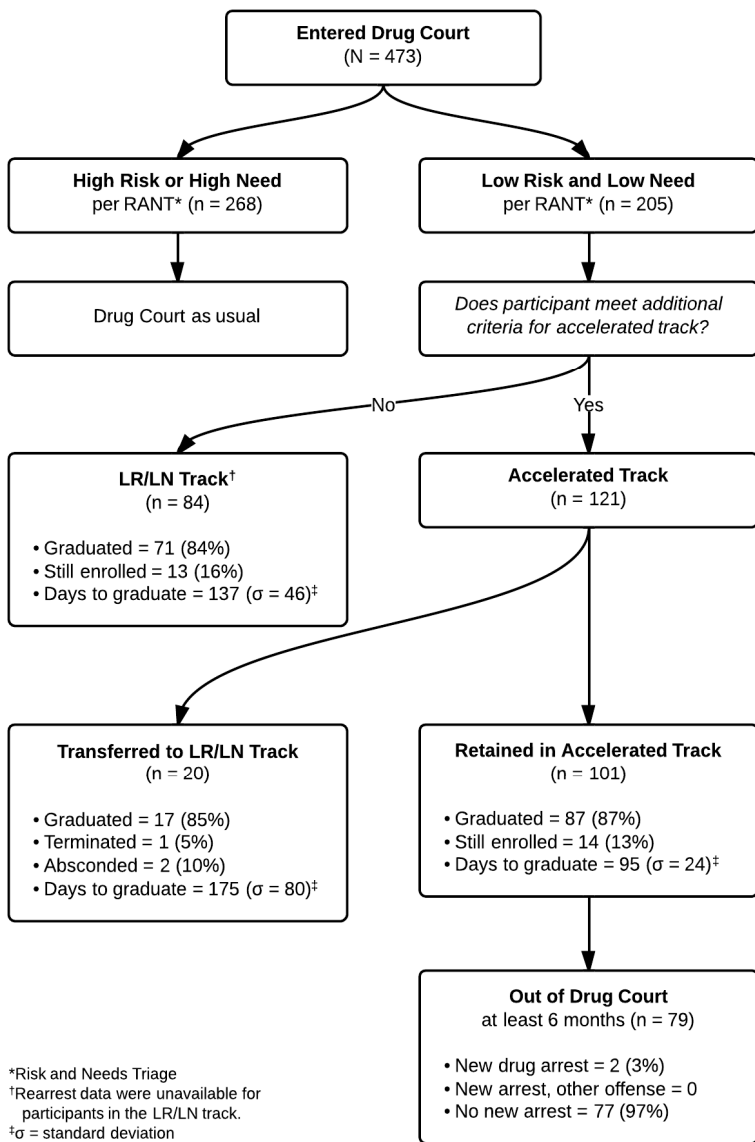


Figure 1. Outcomes for LR/LN and Accelerated Tracks in Drug Court

Court ($n = 87$, 87%) or were still actively enrolled at the time of the data analyses ($n = 14$, 13%). Of the 20 participants who transferred to the LR/LN track, 85% ($n = 17$) ultimately graduated from the Drug Court. The remaining 3 participants were terminated from Drug Court or were on a bench warrant because they absconded from the program. Similarly, 84% ($n = 71$) of the participants assigned to the LR/LN track graduated, and 16% ($n = 13$) were still enrolled at the time of the analyses.

On average, participants assigned to the accelerated track graduated within 95 days ($SD^1 = 24$ days) of entering the Drug Court. Participants assigned to the LR/LN track graduated within 137 days ($SD = 46$ days). These results compared favorably with the average time required to graduate for the Drug Court as a whole, which was approximately 200 days (six to seven months) in another recent evaluation (Marlowe, Festinger, et al., 2012). Participants in the accelerated track graduated in significantly less time than did participants in the LR/LN track, $t(170) = 7.53$, $p < .0001$. Of the 17 participants who transferred out of the accelerated track but ultimately graduated, the average time to graduation was 175 days ($SD = 80$), which was comparable to the typical graduation rate for the Drug Court as a whole.

Seventy-nine participants in the accelerated track graduated prior to November 30, 2012, and thus were out of the program for at least six months. Three percent ($n = 2$) of these individuals were rearrested for new offenses (marijuana possession) within six months of graduating from the Drug Court. This recidivism rate compared favorably to the overall recidivism rate for this Drug Court, which a recent study reported to be 22% at six to twelve months postdischarge (Marlowe et al., 2013).

DISCUSSION

This article reports preliminary outcomes from two alternative tracks for low-risk and low-need participants in a misdemeanor Drug Court: the LR/LN track and the accelerated track. Participants in the

¹ Standard deviation

alternative tracks were not required to attend court hearings or therapy sessions unless they requested those services or were performing poorly in the program. In addition, participants in the accelerated track were required to attend fewer psychoeducational classes than other participants (8 versus 12) and were required to provide fewer consecutive drug-negative urine tests as a condition of graduation (8 versus 14).

The results were favorable as evidenced by high graduation rates, reduced times to graduation, and a negligible recidivism rate at six months after graduation. Nearly all of the participants in the alternative tracks graduated or were still enrolled in the Drug Court at the time of the analyses. Compared with the typical duration of enrollment for the Drug Court, the average time to graduation was approximately two months less for participants in the LR/LN track and three months less for participants in the accelerated track. Although the Drug Court maintained a zero-tolerance policy for any infractions in the accelerated track, approximately 83% of accelerated participants had graduated or were active in the track at the time of analysis. Of importance to note is that 97% of the participants who graduated from the accelerated track remained arrest free for at least six months after graduation. Finally, most of the participants (17 out of 20) who were transferred out of the accelerated track into the LR/LN track ultimately graduated.

Limitations

This study has several important limitations to consider when interpreting the results. First, this pilot study did not include a control condition involving low-risk and low-need participants assigned to Drug Court as usual. We therefore had no way of estimating how participants might have performed had they not been assigned to the alternative tracks. Still, participant outcomes appear to have been favorable with minimal evidence of negative effects to the participants or risks to public safety.

Second, the alternative tracks were evaluated in a single Drug Court that served low-level misdemeanor drug offenders and, as such, did not apply some of the traditional key components of the Drug

Court model. For example, the standard program was only four months long and required status hearings on an infrequent monthly basis. Whether the alternative tracks would elicit comparable effects in Drug Courts that administer the full range of best practices as identified in the research literature is unclear. Future studies should examine the generalizability of the findings to other programs including felony and postadjudication Drug Courts.

Third, the study examined recidivism for only six months following graduation. Future research should follow recidivism over longer intervals.

Conclusion

The results of this study may have important implications for Drug Courts. Nearly one half (43%) of these misdemeanor drug offenders met criteria for one of the two alternative tracks, and 25% of them met the more stringent criteria for the accelerated track. Reducing the average duration of enrollment by two to three months for this sizeable minority of participants, without sacrificing graduation rates or recidivism rates, might reduce the costs of a Drug Court considerably. Future studies should investigate the cost-effectiveness of such alternative tracks to determine whether they produce net cost savings for Drug Courts or permit Drug Courts to serve more participants at the same cost. If our findings can be replicated in controlled studies, they may promote new practical and evidence-based strategies that can substantially improve the efficiency and cost-effectiveness of Drug Courts.

This research was supported by grant #R01-DA-013096 from the National Institute on Drug Abuse (NIDA). The views expressed are those of the authors and do not necessarily reflect the views of NIDA.

The authors gratefully acknowledge the continuing collaboration of the New Castle County Court of Common Pleas, Delaware State Attorney General's Office, Delaware Office of the Public Defender, Delaware Association of Criminal Defense Lawyers, Delaware State Division of Substance Abuse & Mental Health, Treatment Access Center, and

Brandywine Counseling, Inc. We also thank Kathie Benasutti and Gloria Fox for their assistance with project management and data collection and Brittany Seymour for her help with manuscript preparation.

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MEASURING TEAM MEMBERS' SATISFACTION IN DRUG COURTS: AN INSTRUMENT TO GAUGE THE COMPONENT DISCIPLINES IN DRUG COURT

Gerald Melnick — Harry K. Wexler — Sonali Rajan

[8] Measuring Team Member Satisfaction in Drug Court—The Satisfaction of Component Disciplines within Drug Court (SCD-DC) Scale exhibited acceptable validity and reliability for measuring team member satisfaction in Drug Courts.

[9] Factors Influencing Team Member Satisfaction in Drug Court—Drug Court professionals were significantly more satisfied with their program when there was open communication and shared values among team members.

DRUG COURTS PLAY a crucial role, both in the judicial process and in the recovery of individuals struggling with drug addiction and related criminal activity. For the system to be successful, judges, prosecutors, public defenders, probation officers, treatment professionals, and Drug Court administrators must cooperate and coordinate with one another to ensure the Drug Court functions smoothly and fosters greater collaboration among its constituents (Armstrong, 2008). To achieve this, these Drug Court team members must transition from adversarial relationships and reconcile their divergent responsibilities. For example, they must navigate criminal justice concerns for the safety of society while understanding the legal rights of the offender and emphasizing substance abuse treatment to foster individual growth and recovery. This means the prosecutor must find common ground with the public defender to ensure access to the Drug Court. Probation officers must find common ground with treatment counselors to ensure they both have the current information upon

which to base informed judicial recommendations. Given the differences in training and responsibilities among team members from disparate disciplines, one might expect breakdowns in communication and coordination among the constituencies that compose the Drug Court. Some members might feel their values and contributions are less respected within the Drug Court. How well team members interact and how well they promote the success of the Drug Court may be due in no small part to the level of satisfaction team members experience when performing their jobs.

Extensive literature supports the relationship between satisfaction and burnout within health care and social services (Hakanen & Schaufeli, 2012; Helewa et al., 2012; Rossi et al., 2012). Studies have shown in the other criminal justice settings how differences between staff values about substance abuse treatment and institutional policies can result in cynicism about the system and its ability to change (Melnick, Ulaszek, et al., 2009). Additional studies have established the relationship between high levels of satisfaction and an improved quality of professional life, an improved quality of work performance, and a higher level of engagement with clients and patients (e.g., Beder et al., 2012; Verhaeghe & Brack, 2012). Thus, fostering satisfaction among the team members representing the varied component disciplines within the Drug Court could prove particularly important, and yet little research has been reported in this area.

Although no studies show how satisfaction affects the interactions among all of the different Drug Court constituencies, prior studies have reported that participants are satisfied with their overall treatment in the Drug Court (Saum et al., 2002). Drug Court participants who have expressed satisfaction with such issues as procedural fairness and respectful, courteous, and empathic treatment (Tyler, 2003) are more likely to have successful outcomes (NADCP, 2013). Studies have also examined the effect of therapeutic jurisprudence as practiced in the Drug Courts and other problem-solving courts on judicial satisfaction. Indeed, these studies show that how satisfied the judge is in Drug Court correlates with Drug Court participant respect and gratitude (Chase & Hora, 2000, 2009).

The primary purpose of this study is to provide an instrument to measure the level of satisfaction of team members from *all* of the component constituencies to facilitate future research into causes of satisfaction and dissatisfaction among the diverse Drug Court personnel. We developed the instrument *Satisfaction of Component Disciplines within Drug Court (SCD-DC)* to assess the level of satisfaction among the team members from the component disciplines and to provide an important metric in evaluating the functioning of the Drug Court. A secondary aim of the study was to begin to understand the factors contributing to the satisfaction of team members from the varied disciplines that compose a Drug Court.

METHODS

For this study, we developed two instruments, the *SCD-DC* and *Beliefs about Drug Court*, and modified a third instrument to create *Open Communication within the Drug Court*. Each of these instruments consisted of statements, or *items*, that respondents scored using Likert-type ratings on an anchored, 5-point scale:

- 1—Disagree Strongly
- 2—Disagree
- 3—Uncertain
- 4—Agree
- 5—Agree Strongly

Negative items were reversed scored. Additional items provided basic demographic information about respondents, and all responses were anonymous. Prior to data collection, the National Development and Research Institutes (NDRI) Institutional Review Board reviewed and approved the project.

Satisfaction of Component Disciplines within Drug Court Instrument

We developed the *SCD-DC* instrument drawing upon our experience with building consensus to effect changes in Drug Courts. The consensus building consisted of a one-day workshop and debriefing sessions that included judges, court administrators, probation officers,

treatment professionals, prosecutors, and public defenders. The workshops focused on resistance to change and reaching consensus among these component disciplines within the Drug Court. A morning session focused on facilitating the work of a change team and the afternoon session involved all members of the Drug Court. Follow-up coaching calls with the change team leaders addressed both the work of the change team and wider issues of communication within the Drug Court and staffing meetings (Melnick et al., 2014; Wexler, et al., 2012). Additional resources that we leveraged to develop the *SCD-DC* instrument included the Drug Court (Saum, 2002; Tyler, 2003) and literature supporting the inference that factors affecting a positive organizational climate would also be a determinant of satisfaction (Furnham & Gunter, 1993; James & James, 1989).

The *SCD-DC* instrument comprised fourteen items. Topics included the respondents' satisfaction with various aspects of the Drug Court culture:

- Cooperation between the various component disciplines within the Drug Court, such as the prosecutor's office, public defender's office, probation, and treatment
- Disposition of cases
- General professionalism of the Drug Court
- Respondent's role in the Drug Court
- Pride in being part of the Drug Court
- Leadership of the Drug Court
- Support from the criminal justice system and community

For example, the item *I am satisfied with the cooperation of the prosecutor's office with the court* tested satisfaction with the collaboration between the Drug Court and the prosecutor's office, a discipline important to access to the Drug Court. The item *I am satisfied with decisions that the court makes regarding individual offenders* tested satisfaction with the Drug Court's dispensation of cases.

Beliefs about Drug Court Instrument

Drawing upon Drug Court literature and our experience working with change teams in Drug Courts (Melnick et al., 2014; Wexler, et al., 2012), we developed a second instrument called *Beliefs about Drug Court*. We created and employed this instrument to gauge the perceived suitability of the Drug Court as an alternative to incarceration and to measure the degree of latitude offenders are permitted. We inferred that a Drug Court team member's agreement with, or belief in, the decisions and underlying values of the Drug Court would relate to satisfaction with the court and thereby provide convergent validity for the primary satisfaction instrument, the *SCD-DC*. The *Beliefs about Drug Court* instrument consisted of twenty items, such as *Deter future drug use by severely punishing drug users who are caught and convicted*, and *Only people who show steady progress should remain in Drug Court*.

Open Communication within the Drug Court Instrument

A secondary aim of this study was to explore the factors that influence satisfaction with the Drug Court among team members from the component disciplines. To accomplish this, we administered the *Open Communication within the Drug Court* instrument with nine items, such as *We have open and frank discussions about our differences* and *Disagreements are generally resolved fairly*. Again we drew from previous research to develop this instrument (Melnick, Wexler et al., 2009). Previous research links open communication to positive organizational climate (Furnham & Gunter, 1993; James & James, 1989; Lehman et al., 2002) and to the degree of staff consensus (Melnick, Wexler, et al., 2009). We included this instrument on the inference that factors affecting positive organizational climate and consensus among the staff could also determine satisfaction.

Data Collection

We gathered data in two groupings, Cohort 1 and Cohort 2, from convenience samples comprising individuals available to the authors

rather than a scientifically chosen random sample. These were readily accessible individuals who fit our eligibility criteria of being members of one of the component disciplines of the Drug Court. Each respondent completed all three instruments addressed in this article.

Cohort 1 ($n = 85$) data were collected in two waves. The first wave used an online data collection Web service (SurveyMonkey) with a password-protected link. The survey was distributed to Drug Court personnel participating in a NIATx (formerly the Network for the Improvement of Addiction Treatment) change-team project involving ten Drug Courts (Wexler et al., 2012) and funded by the Substance Abuse and Mental Health Services Administration (SAMHSA). We collected twenty-four responses via this method. Because many respondents found using the computerized survey system awkward, we created a paper survey instrument for a second wave of data collection and distributed it at the conclusion of SAMSHA-sponsored workshops on consensus building described earlier. Sixty-one additional responses resulted.

Cohort 2 data were collected from a convenience sample of 201 participants at the 2011 National Association of Drug Court Professionals (NADCP) conference in Washington, DC. The NADCP facilitated data collection by announcing the study at meetings and setting up a centrally located table from which the investigators recruited attendees with NADCP convention tags into the study. Although the location was not private, no on-looking was evident nor was anyone observed influencing respondents. The high rate of volunteering necessitated reprinting a second batch of surveys for a total of 201 collected responses. Recruitment was terminated upon exhausting the second batch of instruments. We did not obtain the rate of refusal or offer remuneration for respondents.

Data Analysis

For this study, we tested the *SCD-DC* instrument with psychometric analyses, which are used to construct and validate instruments such as surveys and questionnaires. We calculated the mean score and standard deviation for the instrument across all participants and reverse coded items where necessary. We performed the following

psychometric analyses on Cohort 1 data, Cohort 2 data, and the merged data from both, except where noted.

One-Way Analyses of Variance (ANOVA)—This technique compares the means of two or more groups to analyze the variances. We conducted one-way ANOVAs to explore the differences in the mean score for satisfaction by key demographic variables such as employment status, education, and job function.

Cronbach's Alpha Analysis—This technique tests for consistency within an instrument by comparing answers given for similar items, the higher the consistency, the more reliable the instrument. A measure greater than .70 confirms an acceptable internal consistency (Nunnally, 1978) and .90 confirms an excellent internal consistency (Kline, 1999).

Principal Component Analysis (PCA)—This technique reveals the principal factor or factors that explain the variances in the data. We chose it over exploratory factor analysis because our variables correlated highly. We performed this analysis on only Cohort 1 to explain differences we observed in the Cohort 1 *SCD-DC* scores.

Confirmatory Factor Analysis (CFA)—This technique determines whether an instrument supports a proposed hypothesis. We conducted this analysis on Cohort 2 data to validate the fit or relationship between the principal factors from Cohort 1 using these standard procedures:

- *Root Mean Square Error of Approximation (RMSEA)*—.05 or less indicates a close fit and .10 or above indicates a poor fit.
- *Standard Root Mean Square Residual (SRMR)*—.08 or less indicates a close fit.
- *Goodness of Fit Index (GFI)*—.90 or greater indicates an acceptable model fit.

Convergent Validity Analysis—This technique determines the degree to which a test measures what it claims to be measuring (Brown, 1996). To establish convergent validity for the *SCD-DC*, we analyzed the merged data and examined the relationship between the scores on the two instruments *Beliefs about Drug Court* and *Satisfaction with*

the Drug Court to determine if there was a statistically significant ($p < .05$) relationship between the instruments.

Correlation—The Pearson product-moment correlation coefficient measures the relationship between two variables. It can be positive or negative ranging from zero to plus or minus one. In the social sciences .30 to .70 represents a moderate correlation.

RESULTS

SCD-DC Instrument

The demography of Cohorts 1 and 2 is shown in Table 1. In Cohort 1, the majority of the respondents were full-time employees (99%) representing a range of job functions and work settings within the Drug Court system. Nearly half of the study participants (49%) had formal graduate training at the master's or doctoral level, and 19% had bachelor's degrees. A substantial proportion (41%) of the respondents had positions as officers or counselors, 31% had a supervisory or facility director role, and the remaining respondents were either support staff (14%) or had another unspecified role (14%). A notable proportion of these participants worked in a community substance abuse treatment program (32%), and several of the participants worked directly in a Drug Court setting as a judge (6%), court officer (14%), probation officer (20%), or public defender (4%).

The demography of Cohort 2 was similar in that the vast majority were full-time employees (95%) representing a range of job functions and work settings within the Drug Court system. As was observed for Cohort 1, approximately half of Cohort 2 (51%) had formal graduate training at the master's or doctoral level, and 27% had bachelor's degrees. As compared with Cohort 1, a larger proportion of Cohort 2 respondents had a supervisory or facility director role (41%), whereas only 28% were officers or counselors, and 11% were support staff. A smaller proportion of Cohort 2 respondents (16%) worked in community substance abuse treatment programs, and just over half of the participants worked in a Drug Court setting as a judge (14%), court officer (10%), probation officer (18%), or public defender (9%).

TABLE 1	DEMOGRAPHIC COMPARISONS		
Demographic	Cohort 1 (n = 85)	Cohort 2 (n = 201)	Combined Cohorts (n = 286)
Employment Status			
Full-time	99%	95%	96%
Part-time	1%	5%	4%
Education Level			
Master's degree or higher	49%	51%	51%
Bachelor's degree	19%	27%	25%
High School or some college	32%	22%	25%
Job Function			
Officer	12%	12%	12%
Counselor	29%	16%	20%
Supervisor or facility director	31%	41%	38%
Support staff	14%	11%	12%
Other	14%	20%	18%
Work Setting			
Substance Abuse Treatment Program	32%	16%	21%
Drug Court Setting			
Judge	6%	14%	12%
Court Officer	14%	10%	11%
Probation Officer	20%	18%	19%
Public Defender	4%	9%	7%
Other	25%	33%	31%

We conducted psychometric analyses of the *SCD-DC*. Cronbach's alpha analysis revealed high internal consistency for the instrument ($\alpha = .96$ and $\alpha = .95$ for Cohorts 1 and 2 respectively with a combined $\alpha = .96$ for all 286 respondents from both cohorts). A PCA for Cohort 1 revealed that the 14-item instrument consisted of a single factor, or dimension—satisfaction. This single factor accounted for 68% of the variances in data (producing an eigenvalue of 9.52 with no other factor attaining a value of 1). The correlation matrix showed the relationship between all items across both cohorts was extremely high, ranging from .70 to .90 and corroborating the PCA results.

Results tended to have a skewed distribution with mean scores between four and five for each item. To compensate, we performed a second PCA on a binary score by converting all responses of *five* to *one* and all other responses to *zero*. This analysis also showed all items with the highest correlation on a single factor, satisfaction (ranging from .59 to .78). A CFA conducted on Cohort 2 showed a value for RMSEA of .13, indicating statistical significance and a poor fit, an SRMR of .05, indicating a good fit, and a GFI of .89, indicating an acceptable model fit. The significant RMSEA may have been attributable to the skewness of the data, which may have persisted despite the attempt to compensate by using a binary scoring procedure.

Item scores were generally, but not universally, high (see Table 2). Respondents in Cohort 1 showed less satisfaction with the cooperation of the offices of the prosecutor and public defender, the suitability of offenders admitted to the Drug Court, and decisions regarding individual offenders. Both cohorts showed lower satisfaction scores for the cooperation of the criminal justice system and for community support. We conducted one-way ANOVAs to explore differences in mean satisfaction scores across groups for each of the key demographic variables: *work setting*, *job functions*, and *education level*. None of the comparisons were statistically significant ($p < .05$, work setting, $F = 0.79$; job functions, $F = 0.71$; and education level, $F = 0.37$). Details on category distinctions within each demographic variable are provided in Table 1. We used no more than five subgroups per variable in each one-way ANOVA, thereby meeting sample size requirements. The data met basic assumptions of homogeneity of variance.

Beliefs about Drug Court and Open Communication within the Drug Court Instruments

We used these two instruments to examine the relationship between satisfaction and the beliefs associated with how Drug Courts function as well as between satisfaction and open communication. We felt we could merge the results into one combined sample for each instrument because of the consistency of the Cronbach's alpha coefficient of reliability between cohorts for each instrument ($\alpha = .72$ and

TABLE 2		RESPONSE TO ITEMS BY COHORT					
Item	I am satisfied with...	Cohort 1 (n = 85)		Cohort 2 (n = 201)		Combined Cohorts (n = 286)	
		Mean	SD	Mean	SD	Mean	SD
1	The cooperation of the prosecutor's office to the court	3.43	(±1.46)	4.03	(±1.41)	3.86	(±1.45)
2	The cooperation of parole/probation to the court	4.05	(±1.19)	4.27	(±1.47)	4.20	(±1.39)
3	The cooperation of treatment counselors to the court	4.37	(±0.98)	4.39	(±1.16)	4.38	(±1.11)
4	The cooperation of the public defender's office to the court	3.87	(±1.28)	4.11	(±1.29)	4.04	(±1.38)
5	The suitability of offenders admitted to the court	3.77	(±1.21)	4.11	(±1.30)	4.01	(±1.30)
6	Decisions that the court makes regarding individual offenders	3.96	(±1.11)	4.10	(±1.23)	4.06	(±1.20)
7	The general functioning of the court	4.11	(±1.02)	4.18	(±1.19)	4.16	(±1.14)
8	The professionalism of the others that contribute to the quality of the court decisions	4.13	(±1.09)	4.22	(±1.24)	4.19	(±1.20)
9	My own role in the Drug Court	4.35	(±1.01)	4.38	(±1.10)	4.37	(±1.07)
10	Being part of this Drug Court	4.45	(±0.97)	4.52	(±1.10)	4.50	(±1.06)
11	The work that we are doing in the Drug Court	4.45	(±1.01)	4.59	(±1.10)	4.55	(±1.05)
12	The leadership of the court	4.39	(±0.10)	4.20	(±1.34)	4.25	(±1.24)
13	The support that the court receives within the criminal justice system	3.72	(±1.20)	3.79	(±1.40)	3.77	(±1.35)
14	The support that the court receives from the community	3.65	(±1.29)	3.72	(±1.44)	3.70	(±1.40)
	Overall Mean Score (Range: 29-70)	53.2	(±11.91)	54.56	(±13.15)	54.18	(±12.77)

NOTES: (A) Response range 1-5: 1=Disagree Strongly, 2=Disagree, 3=Uncertain, 4=Agree, and 5=Agree Strongly. (B) A higher score on each item indicates greater satisfaction.

.73 for *Beliefs about Drug Court* and $\alpha = .80$ and .82 for *Open Communication with the Drug Court*). Merging provided the most stable basis on which to assess the relationships. This left us with one sample ($n = 286$) for the *Beliefs about Drug Court* instrument and one sample ($n = 286$) for the *Open Communication within the Drug Court* instrument.

Mean scores, standard deviations, and alpha coefficient reliability scores for these instruments were as follows: *Beliefs about Drug Court* ($\bar{x} = 2.45$, $SD = 0.84$; $\alpha = .73$) and *Open Communication within the Drug Court* ($\bar{x} = 3.83$, $SD = 1.01$, $\alpha = .81$). Thus both instruments demonstrated acceptable levels of reliability ($\alpha > .70$; Nunnally, 1978). We calculated a statistically significant correlation ($r = .15$, $p < .05$) between the *SCD-DC* and the *Beliefs about Drug Court* instruments, demonstrating an expected relationship between respondents' values and beliefs concerning the Drug Court and their level of satisfaction. We also calculated a robust correlation ($r = .44$, $p < .05$) between the instruments *SCD-DC* and *Open Communication within the Drug Court*, demonstrating the relationship between communication and satisfaction among the component disciplines of the Drug Court.

DISCUSSION

This study augments previous research on the role satisfaction plays in the Drug Court and provides an instrument, the *SCD-DC*, to measure satisfaction among team members from the various disciplines contributing to the Drug Court. The *SCD-DC* demonstrated good psychometric characteristics, including a single factor structure. This single factor structure was supported by several of the analyses: a PCA (Cohort 1), a CFA (Cohort 2) and a convergent validity analysis. The convergent validity values (.07 to .09) showed high correlations between the items and the instrument score. To compensate for the skewed distribution of item scores, many of which had a mean score of 4 or more on the 5-point scale, we performed a PCA using a binary score. This factor analysis and a subsequent CFA also provided additional evidence of the single factor structure of the instrument on two of the three criteria.

The *SCD-DC* demonstrated good reliability with Cronbach's alpha of .96, .95, and .96 for Cohort 1, Cohort 2, and the combined sample respectively. Convergent validity was also demonstrated by the relationship between the *SCD-DC* instrument and respondents' beliefs in the values of Drug Court as assessed in the *Beliefs about Drug Court* instrument. However, although statistically significant, the correlation was relatively weak and accounted for only 2% of the variance in the *SCD-DC*. We interpret this relatively weak effect as a result of other factors that might influence satisfaction with the Drug Court aside from the perceived value of the court.

Although not the primary purpose, the study explored one of the possible factors that may influence the level of satisfaction: open communication. The *Open Communication within the Drug Court* instrument supported a moderate correlation between satisfaction with the Drug Court and open communication ($r = .44$). This correlation represents 19% of the variation in the satisfaction score, a meaningful relationship. The strength of the relationship between open communication and satisfaction with the Drug Court may speak to an underlying climate of psychological safety among Drug Court personnel. The diversity of the disciplines represented by the Drug Court team members with varying agendas could result in an adversarial environment. Psychological safety has proved key in turning task conflict into high performance (Bradley et al., 2012). Thus, that the members of the Drug Court feel they can find a common language and communicate freely appears important in their relationships to the Drug Court and to their ability to work together as a truly integrated team.

Limitations

Because we recruited as respondents individuals who were readily available to the authors rather than using a scientifically chosen random sample of Drug Court personnel from each of the component disciplines, we were not able to generalize the high degree of satisfaction across Drug Courts. For example, the convenience sampling may have oversampled individuals more predisposed to look favorably on the Drug Court. The respondents in Cohort 1 were from Drug Courts that had volunteered to participate in a SAMSHA-sponsored change

team project and might not be representative of all Drug Courts. Further, a small proportion of Cohort 1 ($n = 24$) completed the survey online, whereas the remaining participants in Cohort 1 ($n = 61$) completed the survey on paper. Therefore, we acknowledge some of the variance observed in Cohort 1 may be due to this difference in survey administration. However, we compared the online responses with the paper responses and found no meaningful differences. Also, the consistency of results (as validated by Cohort 2) reinforces the expectation that this limitation had minimal impact on the overall findings.

Cohort 2 also represented a convenience sample comprising individuals attending an NADCP conference, who may have been more involved and committed to the Drug Court than nonattendees. These circumstances could have produced higher scores than would ordinarily be expected. Furthermore, the method of administration in Cohort 2 did not guarantee privacy (although the similarity in responses in Cohorts 1 and 2 reinforces the impression that the method of administration did not unduly influence respondents in Cohort 2). The *SCD-DC* instrument produced generally good psychometric properties, although the significant RMSEA in the CFA was problematical and may have been the result of the skewness of the data. Additional data representing a less skewed sample of Drug Court personnel may produce an RMSEA more consistent with the other measures of good fit to the model.

Conclusion

We set out to create and validate an instrument to measure satisfaction in Drug Court. Toward that end, we administered instruments for validating the primary *SCD-DC* instrument and for examining the role open communication among staff might play in satisfaction. The *SCD-DC* proved promising as an instrument to measure the level of satisfaction among the personnel from the varied disciplines that compose the Drug Court. Already research has demonstrated the importance of satisfaction with organizations in regard to combatting burnout (Hakanen & Schaufeli, 2012; Helewa et al., 2012; Rossi et al., 2012), improving work performance, and increasing engagement with clients (Beder et al., 2012; Verhaeghe & Brack, 2012). Positive

work climates have been associated with cohesion and cooperation among personnel. (Furnham & Gunter, 1993; James & James, 1989). This is particularly true in the instance of Drug Court, where the cooperation between disciplines underlies the successful functioning of the court.

The next step for this instrument is to apply it in research studies to determine what satisfaction contributes to a successful Drug Court, which is fundamentally dependent on the cooperation among the team members and their different background disciplines. On a practical level, the *SCD-DC* is a single instrument for use across all of the constituencies composing the Drug Court, making it easier to administer and to contrast data. The instrument should prove useful in evaluating satisfaction among staff members and thus gauging the working climate within Drug Courts. In revealing areas of diminished satisfaction, the instrument may be valuable for determining areas of weakness in staff meeting process and communication, thus affording an opportunity to target improvements.

All three of the instruments in this study are free upon request. Please email Dr. Gerald Melnick at either of these emails: melnick@ndri.org_melnick@yahoo.com.

This project received funding support from SAMHSA purchase orders #HHSP 233200900406P, #HHSP 233201-000574, and #HHSP 233201100527P. The content of the manuscript is solely the responsibility of the authors and does not necessarily represent the official views of CSAT/SAMHSA.

The authors would like to acknowledge the contributions of Kenneth Robertson, the CSAT/SAMSHA officer who provided oversight for the project and who was helpful at every turn in facilitating the work for this article.

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MAINTAINING FIDELITY TO THE JUVENILE DRUG COURT MODEL: LET'S NOT THROW THE BABY OUT WITH THE BATH WATER

Shannon M. Carey — Jacqueline van Wormer
Juliette R. Mackin

[10] Outcomes in Juvenile Drug Courts—Mixed outcomes in juvenile Drug Courts are attributable to inconsistent adherence to best practices.

[11] Future of Juvenile Drug Courts—Renewed efforts are needed to improve staff training and research on best practices in juvenile Drug Courts.

YEARS OF STUDY and research have demonstrated that Drug Courts help adult offenders with substance abuse issues change their behavior, including reducing substance use and criminality (e.g., GAO, 2005; Wilson et al., 2006). The research also has revealed that these changes in behavior led to reduced costs in the criminal justice system compared with costs for offenders who were processed through the traditional court system (e.g., Bhati et al., 2008; Carey & Waller, 2011). When the Drug Court model expanded into other offender populations, similar results were expected; however, the outcomes for juvenile Drug Courts were mixed. The majority of studies demonstrated little or no significant differences between program youth and comparison youth (e.g., Latessa, et al., 2013; Shaffer, 2006; Wilson et al., 2006). This has led to a burgeoning perception in the field that the Drug Court model does not work for juveniles.

However, a closer look at the programs under study illustrated the problem. Most of the juvenile Drug Courts were not actually following the key components of the Drug Court model (NADCP, 1997), practices that we know from the adult programs are associated with significantly higher graduation rates, lower recidivism rates, and increased cost savings.

In addition to the Ten Key Components that govern adult Drug Courts, juvenile Drug Courts should follow the practices outlined in *Juvenile Drug Courts: Strategies in Practice*, which reveals the strategies in practice for juvenile Drug Courts known as the *sixteen strategies* (NDCI & NCJFCJ, 2003). The number of studies on juvenile programs that have fully implemented the sixteen strategies and the Ten Key Components of Drug Courts is small, but those that have been done showed positive results. Because of these promising results and the overwhelming evidence that best practices improve outcomes in adult Drug Courts, juvenile courts need to focus on the following:

- Ensuring that all programs understand the key practices that define the Drug Court model, especially for juvenile programs
- Implementing them and obtaining any needed technical assistance to do so
- Studying them and assessing their effectiveness

A common misperception in juvenile justice programs is that youth have less entrenched substance abuse and dependence and need less intensive services because they are more easily influenced and apt to adopt behavior changes than adults. However, research has demonstrated that juvenile offenders with substance abuse issues are at *higher* risk than adults, which makes fidelity to the model for this population even more important. Before we conclude that juvenile Drug Courts do not work, further research must be performed in programs that are following the model.

LITERATURE REVIEW

Longitudinal research has shown that juvenile-justice-involved youth who exhibit substance abuse disorders are more likely to continue serious, chronic offending into adulthood (Mulvey et al., 2010; Young et al., 2007). Four out of five youth arrested have a substance-use issue and are involved with or do one or more of the following (CASAColumbia, 2004):

- They are under the influence of drugs or alcohol at the time of their offending.

- They test positive for drugs upon arrest or booking.
- They are arrested for a drug or alcohol offense.
- They admit to having substance abuse problems.

The majority of juvenile-justice-involved youth are treated in publicly funded substance abuse programs and account for most admissions to treatment programs (SAMHSA, 2004; Young et al., 2007). Given the documented existence of a drug-crime cycle for juveniles, appropriate and accessible services founded on evidence-based principles must be available for youth within the juvenile justice system.

The Needs of Juvenile-Justice-Involved Youth

The core tenet of the juvenile justice system is to balance the needs and development of the juvenile offender with community safety. The Illinois Juvenile Court Act of 1899 embodied the first attempt to address the unique needs of juveniles and acknowledge that youth should not be tried or mixed with adults. Most important, juvenile policy during this time focused on treatment and rehabilitation (Hess, 2010). Over the next 100 years, the juvenile justice system moved through several distinct phases, but by the late 1980s and early 1990s, juvenile offenders were caught up in the moral panic and “get-tough” movement that swept the country (Steinberg, 2008). Based on a punitive and deterrence-oriented model, this movement resulted in increasing numbers of youth serving severe sentences without access to rehabilitative programs—a harsh departure from the original intent of the juvenile court system.

Over the past decade, policymakers and juvenile justice experts across the country have acknowledged that the get-tough movement did little more than warehouse youthful offenders at high economic and societal costs while doing little to change behavior (Steinberg, 2008). With mounting evidence highlighting the positive results that can be achieved by employing *risk-needs-responsivity* (RNR) principles and evidence-based practices, juvenile courts nationwide are again shifting philosophy and returning to a more balanced approach. The past decade brought significant reform to juvenile justice as legislators increasingly invested in community-based programming,

coordinated case management, and evidence-based practices for juveniles rather than strict, punitive regimens.

Nearly one million petitions are filed each year in juvenile courts. Burdened by so many petitions and limited resources, probation staff and the courts struggle to meet the complex needs of the juvenile offenders (and their families). Many youth in the juvenile justice system present with a host of risk factors:

- Substance abuse
- Negative peer groups
- Histories of physical, sexual, and emotional abuse
- Disrupted family structures
- Learning disabilities
- Mental health issues
- Antisocial attitudes

Experts agree that no single risk factor leads to juvenile offending; however, as the number of risk factors increase, so, too, does the likelihood of reoffense (Shader, n.d.). In order to intervene and increase protective factors for youth, juvenile court practitioners must address multiple risk factors simultaneously via a comprehensive case management process.

Juvenile Case Management and Evidence-Based Practices

Over the past decade, select states have combatted the legacy get-tough approach by creating a comprehensive treatment-oriented approach using standardized risk-needs assessment tools for juvenile offenders, targeted case management, and evidence-based practices that align with RNR principles (see Resources at the end of this article for a sample list of best practices including standardized risk assessment tools). Research has shown that evidence-based programs are more successful when they have created procedures to maintain strong fidelity to the model, matched youth with services based on risk and need, involved the family, and been community based (Barnoski, 2004; Latessa & Lowenkamp, 2006; Lipsey et al., 2010). In his meta-analysis of over 548 juvenile correctional and treatment pro-

gramming efforts, Lipsey and colleagues (2010) found that high-risk juvenile offenders experienced better outcomes from targeted interventions than low-risk offenders. In addition, therapeutic, as compared with control-based (e.g., detention), interventions were most successful with adolescents. Perhaps most important, the quality of the program implementation, that is, the ability of the staff to employ and follow the treatment model, was key to successful outcomes for youth. Programs that reported high rates of staff turnover, lack of training or poorly trained staff, and inconsistent program delivery had reduced positive effects as evidenced by high program drop-out rates and reoffending. In their review of what works with juvenile offenders, Henggeler and Schoenwald (2011) found that programs are most effective when they engage families, seek to disrupt and change peer networks, and are community based. Just as critical are ongoing training, quality assurance procedures, and the ability of the staff to assess ongoing program performance to adjust and correct program practices when necessary.

The Rise of the Juvenile Drug Court

Juvenile Drug Courts, formed as a response to the rapidly growing number of drug cases proceeding through the juvenile justice system in the late 1990s and early 2000s, were created to address the complex needs of substance-abusing juvenile offenders. The juvenile Drug Courts were modeled after adult Drug Courts but placed a greater emphasis on family-based services, education, and intensive case management. The first juvenile Drug Court was launched in 1993 and quickly grew to over 492 juvenile Drug Courts nationwide within the first decade (NADCP, n.d.). In 2003, the Office of Juvenile Justice and Delinquency Prevention and the National Council of Juvenile and Family Court Judges (NCJFCJ) published *Juvenile Drug Courts: Strategies in Practice*, which defined sixteen strategies. Modeled after the Ten Key Components, the sixteen strategies take into consideration and address the developmental stages of adolescence and peer and family dynamics. The sixteen strategies focus more on ancillary services and school-based support, which increase protective factors in youth and subsequently decrease offending. The creation of

the sixteen strategies provided juvenile Drug Courts with program guidelines to shape the development of policies and practices. Like the Ten Key Components, the sixteen strategies address topics such as the following:

- Legal and addiction screening processes
- Judicial involvement
- Eligibility criteria
- Structure of program requirements into phases
- Incentives and sanctions
- Coordination of services
- Treatment and education planning
- Family involvement
- Program monitoring

Ironically, the sixteen strategies do not address the topic of staff training, one of the Ten Key Components. This lack of emphasis on training may contribute to the issue of lack of fidelity to the model in juvenile Drug Courts.

As was the case for other treatment courts, some early juvenile Drug Court evaluations were methodologically weak, lacking control or comparison groups or including sample sizes too small to produce significant results (Belenko, 2001; Roman & DeStefano, 2004). This led to some concern in the field of whether the Drug Court model was appropriate for juveniles. Once federal funding became available to juvenile Drug Courts, the need—and ability—to contract for professional evaluations increased. Some of the resulting research returned positive results when using more rigorous methods, such as larger sample sizes and contrasting juvenile Drug Court participants with matched comparison groups of juvenile offenders outside of the Drug Court programs (Crumpton et al., 2006; Henggeler et al., 2006; Latesa et al., 2002; Lutze & Mason, 2007; Thompson, 2006). Researchers at NPC Research found that juvenile Drug Courts that implemented the sixteen strategies significantly reduced participant drug use, had lower rearrest rates for participants versus comparison group members, and realized significant cost savings (Carey, Allen, et al., 2013).

However, despite some promising studies, the three meta-analyses on juvenile Drug Courts to date (Mitchell et al., 2012; Shaf-

fer, 2006; Wilson et al., 2006) have, for the most part, all returned null results, meaning that the researchers found little or no difference in outcomes between the juvenile Drug Court participants and the comparison groups. The exception was found by Mitchell and colleagues (2012) who discovered a small but significant reduction equivalent to a reduction from 50% to 44 percent. Researchers from each meta-analysis lamented the state of juvenile Drug Court outcome studies, citing inconsistencies across the study methodologies and program designs. In their recent cross-site study of nine juvenile Drug Courts, Latessa and colleagues (2013) also found mixed results.

Implementation Challenges in Juvenile Drug Courts

Juvenile justice reforms and the shift toward the use of community-based services and evidence-based practices require that juvenile Drug Courts embrace practices based on science. Administrators and juvenile court officials need to commit to implementing the model properly. This effort also requires a commitment of resources, training, and ongoing coaching and technical support to follow prescribed models (e.g., functional family therapy, aggression replacement training, multisystemic therapy, or coordinated case management). The challenge, however, is that much like its adult counterpart, the juvenile justice system programming efforts have been beset with implementation failures (Pisciotta, 1994; Rhine et al., 2006; Rothman, 1980; Urban, 2008). Efforts have been impeded by such challenges as the following (Drapela & Lutze, 2009; Rothman, 2002; Urban, 2008; van Wormer, 2010):

- Lack of proper staff training
- Confusion about terms and practices
- Financial and personnel limitations
- Philosophical differences
- Lack of understanding of the innovation
- Unwillingness to follow the designated program design
- Program drift over time (back to the traditional, often punitive system)
- Political barriers
- Lack of quality assurance measures

Research from the adult Drug Court field has shown that careful implementation of the Ten Key Components, strengthening certain core practices in the Drug Court model, and maintaining these practices are central to a successful Drug Court (Carey et al., 2012). Research on program implementation and process from the juvenile Drug Court field yields mixed results (Carey et al., 2012; Latessa et al., 2013; van Wormer, 2010). In their study of nine juvenile Drug Courts nationwide, Latessa and colleagues (2013) found that the majority of the juvenile Drug Courts were not following the model as intended and that only those Drug Courts that did follow the model reduced recidivism. The programs with positive results had the following in common (Latessa et al., 2013):

- They used evidence-based treatment services for sufficient periods of time.
- They were adequately funded.
- They targeted the correct population of high-risk, high-need youth.
- They had a designated program coordinator.
- They provided case management.
- They adhered to RNR principles.
- They provided a phased program structure.

Researchers at NPC Research have found similar results in process and outcome evaluations of juvenile Drug Courts. Evaluations of six juvenile Drug Courts across Maryland and Oregon found that five of the six reduced recidivism and generated overall cost savings. However, the courts that over relied on detention as a sanction had higher costs than those that used less detention, and they had less impact on recidivism. Some courts provided family-based therapy services or parenting sessions, both of which correlate with better outcomes in both adult and juvenile Drug Court research (Carey et al., 2012; Henggeler et al., 2006).

Recent research of more than 1,934 youth participating in a more intensive and structured Reclaiming Futures juvenile Drug Court model revealed that youth experienced greater in-program success (fewer positive drug tests, faster engagement in treatment, and fewer reoffenses) than youth enrolled in the traditional juvenile Drug Court

model (Dennis et al., 2013). The Reclaiming Futures juvenile Drug Court treatment sites received more training and external support and employed a structured six-step model in addition to the sixteen strategies (Dennis et al., 2013).

In a nationwide survey, van Wormer (2010) questioned Drug Court team members on their adoption of the Ten Key Components and sixteen strategies and found that adult Drug Courts reported fairly high levels of adoption and adherence to the Ten Key Components. Almost two in three adult Drug Court respondents (65%, $n = 113$) reported general adherence to the Ten Key Components, and 20% ($n = 35$) reported that the Drug Court “somewhat” followed the model. Such levels of adherence were not duplicated in the juvenile Drug Courts. Just over one in three survey respondents (36%, $n = 40$) reported following the sixteen strategies, 32% ($n = 35$) answered “unknown,” and 28% ($n = 31$) reported “somewhat.” Respondents from juvenile Drug Courts were more likely to report following the Ten Key Components (47%) than the sixteen strategies (36%).

ADULT DRUG COURT RESEARCH AND IMPLICATIONS FOR JUVENILE DRUG COURT

Adult Drug Court research has moved through four distinct phases of development (Marlowe et al., 2006). The first stage of research simply sought to answer the important question of *Do they work?* The second stage focused on *why and how* they work. The third stage measured the cost-effectiveness of the model. The fourth and current stage is identifying specific practices associated with better Drug Court outcomes and greater cost-effectiveness.

Compared with the more established and thoroughly researched adult Drug Court model, juvenile Drug Court research is still trying to answer the first question—Do they work? Current meta-analysis studies identify only thirty or so studies methodologically rigorous enough to include in an analysis, and even these outcome studies had numerous limitations, including small sample sizes and questionable control group procedures (Mitchell et al., 2012; Shaffer, 2006; Wilson et al., 2006). Because the research has not progressed to the second

stage, little is known about what factors correlate with implementation success for juvenile Drug Courts or which of the practices within the sixteen strategies correlate with more successful outcomes.

The extensive research in adult Drug Courts, including five meta-analyses (Barnoski & Aos, 2003; Lowenkamp et al., 2005; Mitchell et al., 2012; Shaffer, 2006; Wilson et al., 2006), has concluded that adult Drug Court participation can significantly reduce recidivism 18% or more. Further, research conducted by multiple researchers (e.g., Carey et al., 2008; Carey et al., 2012; Carey & Finigan, 2004; Carey, Finigan, et al., 2006; Carey & Waller, 2011; Marlowe et al., 2006; Shaffer, 2006) has begun to show clear best practices, including over fifty practices across sixty-nine adult Drug Courts that are correlated with lower recidivism and higher cost savings in programs that implement them. These research-based best practices have led to the creation of national and state standards, certification materials, and peer review processes. This research has been instrumental in establishing guidelines for drug testing (twice per week), hearing schedules (at least every two weeks), and judge interactions with participants (at least three minutes per participant). It has found that the best Drug Courts have multidisciplinary teams that participate in staffings and court hearings and engage in ongoing staff training and performance monitoring of operations and outcomes. The best programs also provide ancillary services for participants, such as relapse prevention, gender-specific services, mental health treatment, parenting classes, family counseling, anger management classes, health and dental services, and residential care. Finally this research has revealed courts that modify their practices in response to feedback from self-monitoring and evaluation enjoy increased cost savings, greater reductions in crime, and lower societal costs.

A comparison of the policies and practices in juvenile programs in studies that included recidivism and cost outcomes revealed some preliminary findings that mirrored those from best-practice research in adult Drug Courts. NPC Research performed process, outcome, and cost evaluations using the same methodology in six juvenile Drug Court programs (Carey, 2013; Carey, Marchand, & Waller, 2006; NPC Research, 2006). The results in five of the six programs demon-

strated significant reductions in recidivism and cost savings, although the magnitude of these reductions and savings varied across the programs. The two juvenile Drug Court programs with the largest reductions in recidivism and highest cost savings performed drug testing twice per week and required participants to attend court hearings twice per month in the first phase, which correlates with the best practices for adult Drug Courts. In addition, the top two programs provided family counseling, drug and alcohol treatment services, and mental health services to both the youth and the parents, whereas the other programs either did not provide these services or provided them only to the youth.

Juvenile Drug Court practitioners, and indeed the juvenile services field in general, tend to believe that youth are so different from adults that any programs that are effective for adults would not apply to youth. In particular, juvenile offenders are thought to need less intensive services because they are still early in their criminal involvement and can change with a little redirection. However, research has shown that adolescent brains are still developing. Youth actually need *more* consistent services for their brains to process the information they receive, such as regularly scheduled and structured daily activities (e.g., SAMHSA/CSAT, 1999) and consistently applied contingency management techniques (e.g., Henggeler et al., 2012). Preliminary evidence from juvenile Drug Court studies to date has shown that the Drug Court model, and specifically the research-based best practices for adult Drug Court programs, is applicable to juvenile Drug Court programs because of the nature of these practices. The majority of the best practices in adult Drug Court are indicators of the effectiveness of collaboration, communication, and strong organizational infrastructure, which would benefit any service population and which also support the sixteen strategies. These practices should be implemented in juvenile Drug Courts until and unless research demonstrates other practices work better.

IMPROVING JUVENILE DRUG COURTS

The effort to improve Drug Courts requires different constituencies to pull together and work as a team to accomplish the Drug Court

objectives. It also requires programs to be supported by funders or individuals who can provide resources that can help juvenile Drug Courts move toward increased fidelity to the Drug Court model and evidence-based practices.

For Team Members or Individuals Working with a Program

The key to effective juvenile Drug Court programs is following the model. Whether a program is starting up or is already operating, many ways are available to ensure the program is on the right track, will benefit the community, and will be sustainable:

Select the Drug Court Team Strategically

For a juvenile Drug Court to be successful, all team members and partners need to support the concepts and philosophies underlying the model. Program staff must be a good fit and want to be part of the program. Staff must be willing to do the following:

- Collaborate and share information.
- Learn and change their beliefs and behaviors based on new information.
- Follow the research.

Staff members should like youth and believe that all youth are capable of learning and changing regardless of prior choices—they should want the youth to succeed.

Learn about the Juvenile Drug Court Model

Establish a program culture that encourages and rewards ongoing learning from the many resources available. Promote ways to share that information such as scheduling time in team meetings to share new information or to discuss possible solutions to challenges. Establish funds to ensure that staff members can attend training and spend time increasing their knowledge. Following are some of the ways staff can keep informed about the Drug Court field:

- Attend Drug Court meetings and conferences.

- Review (or pick someone to review and share) information from the Web sites for the NCJFCJ, National Association of Drug Court Professionals (NADCP), the National Drug Court Resource Center, and American University.
- Subscribe to NCJFCJ, NADCP, and Substance Abuse and Mental Health Services Administration (SAMHSA) listservers and bring new resources and information to the team.
- Read research briefs, newsletters, and other listserv postings—these resources are great ways to get summaries of the latest knowledge in the field.
- Attend webinars and other low-cost training opportunities.
- Observe other programs, particularly those recognized as model programs. If that is not feasible, visit local programs and notice how they implement best practices or when they do not.
- Ask a lot of questions—from peers, experts, and funders.
- If possible, partner with a local university to remain informed about the latest research findings.

Remember that the field is constantly changing—*stay updated on new information.*

Get as Much Training as Possible for All Team Members and Partners

Programs that ensure their staff members are trained are more likely to follow the Drug Court model and have positive participant outcomes (Carey et al., 2012; van Wormer, 2010). Training is an investment that pays off in greater program efficiency and effectiveness. The following are areas where enhanced understanding will benefit Drug Court team members:

- The Drug Court model
- Team members' roles in how the program works
- The sixteen strategies and Ten Key Components and how they relate to each other
- Program policies and procedures
- The special needs of youth and the local participant population

- The role of addiction and substance abuse in the juvenile justice system and in youths' lives
- What approaches work best for helping youth and families make positive life changes

Be creative about accessing resources for training. When applying for a grant, include a line item for staff training, including paying for training fees, travel expenses, materials, or staff time if needed. If the program already has a grant, apply for as much training or technical assistance as the funder will provide. Often funders have training or technical assistance budgets or resources that are available at no cost to the grantees. The NCJFCJ, NADCP, and American University have technical assistance funds to provide direct services and training for local jurisdictions. Applications must be completed to determine need, but they are worth exploring for jurisdictions interested in bringing in trainers.

Assess the Juvenile Drug Court Program

Once training provides team members with an understanding of best practices, Drug Court team members need to assess their own program to determine whether what they are doing locally is aligned with those practices that are linked to positive outcomes. This assessment can be conducted in many ways:

- Utilize the NCJFCJ resource *Ensuring Fidelity to the Juvenile Drug Courts Strategies in Practice—A Program Component Scale*. Staff members should complete this tool as a team.
- Assign a team member to review best practices and determine which have been achieved and which need work.
- Ask a researcher or evaluator in a partner agency to assist with assessment.
- Ask a peer from another local program to provide an assessment. Examples of peer review materials and procedures are available online.
- Consult outside experts. Resources are available to assist in conducting an assessment, including contacting an outside evaluator or researcher with experience in juvenile Drug Courts. NCJFCJ or

NADCP can help identify an appropriate Drug Court expert or consultant.

- Use online self-assessments internally to generate team discussions. Enhance results by adding expert consultation.

(For Web sites associated with some of the above, see Resources at the end of this article.)

In addition to improving program practices, assessment results are useful for other purposes, such as demonstrating program needs, requesting resources from boards of county commissioners or other local groups, or illustrating program capabilities in grant applications.

Work towards Aligning Program Practices with Best Practices

The process assessment will provide Drug Court team members with valuable information about where their program has successfully achieved best practices and what areas need improvement. The next step is to utilize the results to align the program practices with best practices:

- Share the report with all partners. Distribute copies of the report to all team members, any advisory groups, and other key individuals involved with the Drug Court program.
- Meet as a team to discuss results and recommendations. Ask all members to read the report prior to the meeting and to bring ideas and questions.
- Include a facilitator or consultant (if desired) by selecting a team member to facilitate each meeting or by bringing in a person if all core members wish to be active in the discussion. An outside facilitator or consultant may also be helpful in instances where team members disagree.
- Review recommendations for areas needing improvement and discuss solutions. Identify areas that raise questions or lack information and seek additional training or consult an expert.
- Make an action plan. Summarize the discussion, decisions, and next steps. Consider which changes are easiest to make and which ones are most important. Identify which changes can occur quickly and easily and which will take more time and effort. Establish short-term steps with time frames for enacting the changes

and determine who is responsible for each next step and when it will be completed. Set a next meeting or other process to review the progress toward the next steps.

- Establish a regular meeting schedule (e.g., during policy meetings) to discuss progress with the Drug Court team, advisors, and partners.
- Review and revise time lines as needed.
- Keep evaluating progress.

The best way to achieve best practices is to *start working on it, follow up, and keep at it.*

(For an online sample form to guide the planning process, see Resources at the end of this article.)

Focus on Sustaining the Program

Continue to pursue opportunities for funding to ensure enough resources to maintain an effective program. Although federal grants are competitive and lengthy, they also provide relatively larger awards, and typically come with training and technical assistance resources.

- Prepare for grant applications in advance so that the team is ready to apply when funds become available.
- Seek individuals from the Drug Court team or associated agencies who have experience writing grants or are willing to learn the process.
- Keep trying. Federal agencies usually provide detailed feedback on why a grant was not successful—information which can be used to reapply on another round of funding.

Even grant proposals that are not selected can help by informing the government and other funding partners about the needs that exist in local communities.

For Funders and Individuals with Resources

Funders can play key roles in helping the juvenile Drug Court model reach its potential. Funders can provide resources for training. They can help set expectations for what programs must accomplish to

be eligible for or maintain program funding. Funders can also sponsor evaluation and research activities to increase knowledge and provide programs with information for continuing improvement.

Increase Funding for Staff and Program Training

Juvenile Drug Courts do not have as much funding available to them for staff and team training as adult Drug Courts, yet because of higher staff turnover and special needs of the juvenile population, programs need access to more frequent and more in-depth training for staff. Juvenile Drug Courts need additional resources to use for training in evidence-based treatment approaches for youth and families, effective behavior modification and use of sanctions and incentives, strategies for effective interagency collaboration, and developmentally appropriate and strength-based practices. In addition to gaining programs access to training available from local, state, or national organizations (both on- and off-site), funding can be used to create effective web-based support that can be an ongoing resource for staff and programs.

Provide Training and Technical Assistance as Part of All Grant Streams

Funders should approach programs and the juvenile Drug Court field as works in progress with a shared intention to improve services and effectiveness through collaboration. Funders are encouraged to dedicate a portion of the available resources in each funding cycle or grant stream to pay for program staff to attend training, to pay experts to consult with and visit programs, or both. Experts provide hands-on guidance and site-specific suggestions for program improvement, including resources and ongoing monitoring and mentoring as needed.

Require that Grantees Follow the Juvenile Drug Court Model and Best Practices

Funders have leverage that can be used to benefit the field by establishing expectations for programs that receive funds. Requiring the use of best practices and adherence to the program model as conditions of funding allows funders to provide incentives for juvenile Drug Courts to learn and improve adherence to the model. It encour-

ages conversations with and within programs about best practices and provides incentive to learn and develop programs to meet high standards and align with current knowledge of what works. By using research to set guidelines for grantees and then following up with programs to ensure they are using, or learning to use, these guidelines, funders can promote the effectiveness of the juvenile justice system. One of the first steps in helping programs achieve fidelity to the juvenile Drug Court model is ensuring that staff members understand what the model is and how it can look in their program.

Fund Program Assessment

Program assessment is critical to understanding whether programs are achieving fidelity to the juvenile Drug Court model and best practices. Assessments can be conducted through consultation with experts from outside of the program or through a self-assessment or peer assessment process. Funders can aid this process not only by making funding for assessment available and a requirement of grants, but also by funding efforts to create and provide materials, guidelines, and standards that programs can compare themselves with as well as resources that guide members through *how* to make program changes.

Fund Program Evaluation

Program evaluation reveals how well a program is meeting its implementation and outcome goals. Once an assessment reveals what practices a program needs to improve, evaluation should be conducted to identify the following:

- Which practices have been incorporated successfully
- Where the program needs additional support
- Whether the program is able to help participants change their behavior (e.g., abstain from alcohol or other drug use), stabilize their lives (e.g., find employment or engage in school and social support), meet their accountability requirements (e.g., graduate from the program), and achieve long-term success (e.g., avoid reoffending)

Funding program evaluation allows juvenile Drug Court programs to more clearly identify, understand, and achieve successful outcomes for participants.

Fund Research on Juvenile Drug Court Outcomes and Best Practices

Funders can also play an important role in contributing to the greater knowledge within the juvenile justice field. Compilation of results from outcome studies informs us about which practices are most effective in achieving positive change for program participants and ultimately public safety for our communities. Funders who sponsor such research will help ensure that program grants in the future make the most efficient and effective use of resources.

SUMMARY AND CONCLUSIONS

Considering the historical and current challenges associated with developing, implementing, and maintaining programs in adult Drug Courts, that findings have been mixed at this early stage of development in the juvenile Drug Court field is no surprise. These mixed results should be the impetus for more research and investment in juvenile Drug Courts, especially considering that a closer look at the mixed results reveals that the studied programs adhered to the Ten Key Components and the sixteen strategies with varying degrees of rigor and fidelity.

Juvenile Drug Courts are often modeled after existing adult programs, with many programs building their policies and procedures around the idea of a more punitive model. However, juveniles are inherently more complex given their state of maturity and brain development. They need more attention given to the level of substance use and more focus on connectedness to peers and the family structure, in part because they have less independence in decision-making. However, although they need more from services, the availability of evidence-based substance abuse treatment services and ancillary services is often limited for youth in juvenile Drug Courts (Latessa et al., 2013). Being modeled after adult Drug Courts invites comparison of results for outcomes and recidivism; however, given that juvenile Drug Court

research is many stages behind adult Drug Court research, the comparisons are less meaningful as proof of failure of the juvenile Drug Court system and more indicative of what juvenile Drug Courts might achieve with the proper research and application of funds and effort.

For these reasons, juvenile Drug Courts need additional support and investment in research on juvenile best practices and how the best practices in adult Drug Courts translate into juvenile Drug Court programs. Investment in training and maintaining fidelity to the Drug Court model is also critical to programs, because if staff members are confused about program operations or unwilling to follow the given design, the program may return to “business as usual” rather than following the designated model (Drapela & Lutze, 2009; Rothman, 2002; Urban, 2008; van Wormer, 2010). Outcome and cost research needs to be performed in juvenile Drug Courts that are following the model with fidelity before any final conclusions can be reached about juvenile Drug Court efficacy. Juvenile Drug Court teams, juvenile court administrators, and even county and state officials should place a renewed emphasis on properly implementing and managing juvenile Drug Courts to increase successful outcomes; specifically they need to follow the sixteen strategies and adhere to adult Drug Court best practices until research supports other practices.

Juvenile Drug Courts are criticized for many reasons; however, a closer analysis reveals that teams often lack the proper training, resources, and fidelity to the model to carry out an effective program. Early indications are positive that programs that are able to maintain fidelity to the model also see the benefits of those efforts in successful participant and program outcomes. Thus, we maintain that juvenile Drug Courts can be effective but that the field needs more research and training to develop best practices and ensure the model is implemented as intended before concluding that juvenile Drug Courts do not work. In other words—let’s not throw the baby out with the bath water.

Thank you to Jennifer Carson for her detailed editing of this article. Her work on the manuscript led to a higher quality, more focused, and reader-friendly product.

RESOURCES

Brief Guide for Use of Assessment and Technical Assistance Reports (a sample form to guide the planning process)—www.npcresearch.com/Files/Brief_Guide_for_Use_of_Assessment_and_Technical_Assistance_Reports.pdf

Correctional Offender Management Profiling for Alternative Sanctions (COMPAS)—www.northpointeinc.com/solutions/youth

Drug Court Best Practices (practices related to significant reductions in recidivism and higher cost savings)—www.npcresearch.com/Files/Best_Practices_2013.pdf

Ensuring Fidelity to the Juvenile Drug Courts Strategies in Practice—A Program Component Scale—www.ncjfcj.org/sites/default/files/scale.pdf

Idaho Peer Review: Drug Court Fidelity Assessment Process (sample peer review materials and procedures)—www.isc.idaho.gov/solve-court/peer_review

Juvenile Drug Courts: Strategies in Practice—www.ncjrs.gov/pdffiles1/bja/197866.pdf

Washington Positive Achievement Change Tool (WA-PACT) Comprehensive Assessment Template—www.dshs.wa.gov/pdf/dbhr/mh/pact/PACT_Comprehensive_AssessmentTemplate.pdf

Youth Level of Service/Case Management Inventory (YLS/CMI)—www.mhs.com/product.aspx?gr=saf&id=overview&prod=yls-cmi

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COMMUNICATION IN DRUG COURTS: THE CONSENSUS-BUILDING ENHANCEMENT

Gerald Melnick — Harry K. Wexler — Mark Zehner

[12] Team Decision Making in Drug Courts—Successful Drug Courts encourage open communication among team members and a shared understanding of program policies, procedures, and best practices.

[13] Improving Team Communication in Drug Courts—The National Development and Research Institutes (NDRI) consensus training model appeared to enhance team communication and decision-making skills in six adult Drug Courts.

THE GOAL OF CONSENSUS training is to replace miscommunication and resistance to change with agreement and mutual buy-in. This facilitates better decision making and adherence to implementing and sustaining new practices. Encouraging expression of different points of view results in innovative solutions arising from a broader foundation for action. Consensus training is particularly suited to Drug Courts because they have shifted from the traditional, more adversarial approach of the criminal justice system to a more consensus-based system (Armstrong, 2008). This shift requires better consensus and thus better consensus-building skills among prosecutor, public defender, probation officers, treatment counselors, and all the members of the Drug Court team.

Conflicting perspectives often arise because of differences in training of the members of the Drug Court team. For example, focusing on public safety versus focusing on a participant's growth may yield different solutions. The public defender, prosecutor, probation officers, treatment professionals, judge, and any other members of the Drug Court team must work together to gather and weigh all infor-

mation. Successful Drug Courts must work toward a shared understanding of recovery and a consensus regarding suitable candidates for Drug Court, program leverage, and other program requirements (Shaffer, 2011). To do this, the Drug Court team members require consensus-building skills.

To improve the function of Drug Court, the Center for Substance Abuse Treatment (CSAT), a division of the Substance Abuse and Mental Health Services Administration (SAMSHA), initiated a technical assistance project that combined NIATx (formerly the Network for the Improvement of Addiction Treatment) change teams with consensus training delivered by a team from the NDRI. This article reports selected aspects of this effort, specifically, the use of consensus training to improve the functioning of Drug Court change teams and to facilitate the adoption of new practices.

APPROACH

In brief, the NIATx approach¹ involves the formation of change teams that follow five principles for organizational change:

- Understand and involve the client (in this case, the Drug Court participant)
- Fix key problems
- Pick a powerful change leader
- Get ideas from outside the organization or field
- Use rapid-cycle testing to improve program functioning in areas such as increasing admissions, reducing waiting time and no-shows, and continuing in treatment

For the Drug Court project, the NIATx process began with a walkthrough of the service to be improved in which the staff attempted to replicate the experience of the Drug Court participant. The change team used the walkthrough to identify problems and to propose and implement solutions. The changes were evaluated in a rapid-cycle testing sequence on a small scale over a brief period. Depending

¹ For a complete description on NIATx and the methodology followed, see the *Drug Court Review*, Volume VIII (Wexler et al., 2012).

on the results of the test, the team either accepted a change and proposed its adoption or tested another solution.

The change teams in this project generally comprised representatives from Drug Court administration, the prosecutor's and public defender's offices, the probation division, and substance abuse treatment. Change team members fulfilled several basic roles. An executive sponsor, someone with substantial authority, provided leadership, in this case either a Drug Court judge or a high-level administrator. The executive sponsor identified the problems or issues in need of change and provided authority and resources to the change team. The executive sponsor appointed the change team leader, typically someone with Drug Court experience who had the respect and trust of his or her peers and the confidence of the executive sponsor. The executive sponsor and the change team leader selected the other members of the Drug Court change team and assigned their roles within the team, including a data collector to collect baseline and change data for the rapid-cycle testing process and a note taker to record meeting minutes. Teams generally comprised five to seven members.

CONSENSUS TRAINING

Consensus training teaches skills that create a climate of psychological safety important in eliminating task conflict and promoting high performance (Bradley et al., 2012). It is grounded in the idea that the introduction of new or altered procedures is most productive and lasting when those charged with carrying out the change reach agreement regarding the value of the new practices and the method of implementation (Sagie, 1995; Sagie & Koslowski, 1994; Wanberg & Banas, 2000). Consensus training encourages divergent views to maximize the amount of information to be considered when solving problems, increasing the probability of more satisfactory solutions and greater acceptance of new procedures. High levels of consensus increase the likelihood staff members will follow the procedures and deliver consistent treatment to Drug Court participants, thereby creating reliable expectations between staff members and between staff members and participants (Martin, 2002). Consensus across staff

members is particularly important in service organizations (Tulchinsky & Varavikowa, 2000). For example, a high degree of consensus among staff members has been shown to increase client engagement with treatment (Melnick et al., 2006) and to improve one-year treatment outcomes (Melnick et al., 2008).

Consensus develops from open communication within an organization. Research has shown that organizations fostered high levels of consensus when they cultivated freedom to conduct open and frank discussions of differences, gave serious consideration to different points of view, and resolved disagreements fairly (Melnick et al., 2009). The same research showed other activities that one would expect to promote consensus, such as training and supervision, had little effect on consensus. Staff characteristics, such as years of experience and education, similarly had little effect. Other research has documented the contribution of communication to the success of change teams. For example, Hülshager and colleagues (2009) conducted a meta-analysis of 104 studies over three decades of organizational research and reported that the ability to communicate freely is the most the important factor for successful change team functioning. These findings suggest that linking consensus training with the NIATx change team process is an important integration of the two approaches.

How Does Consensus Training Work?

Consensus training was designed to replace *ego-centered* and *downward communications*, which inhibit positive change, with *substantive communication* to facilitate clear understanding and consensus. Ego-centered communication occurs when a person focuses more on him- or herself or his or her feelings about others, creating an emphasis on interpersonal issues, such as “winning” or being “right,” rather than finding the best solution to a problem (Carnevale & Probst, 1998; Jehn, 1995). This type of communication frequently leads to rigid positions and disagreements. Ego-centered communication often prevents appreciating the value of alternative points of view, limits the amount of information exchanged, and interferes with creating new solutions.

Downward communication, one-way communication that flows from superiors to subordinates, limits the exchange of information and can diminish opportunities to reach consensus. Research on downward communication has shown that supervisors typically assumed subordinates had more knowledge or information than they actually had (Likert, 1961) and that supervisors tended to overestimate how well they communicated with subordinates (Callan, 1993). These two weaknesses of downward communication contributed to misunderstandings that interfered with implementing new practices and resulted in inconsistent application. Subsequently, staff members worked at cross-purposes, failed to instruct new employees properly, and engaged in passive resistance (Kassing & Avtgis, 1999).

In contrast to these ineffective forms of communications, consensus training reinforces *substantive interchanges* (Jehn, 1995; Shalley & Gilson, 2004) that focus communication on the course of action rather than on the participants. Unlike ego-centered and downward communications, consensus-building communication encourages the free exchange of ideas and information, leads to the raising of important issues, and explores differing opinions. In so doing, consensus-building communication avoids satisficing (which often results in choosing the first solution even if it is not the best solution; Simon, 1956), clarifies misconceptions, and facilitates identifying common ground, which frequently leads to new ideas and consensual emergent solutions. In general, consensus-building communication ensures ideas and concerns are heard and acknowledged, creating greater buy-in. Greater buy-in, in turn, promotes fidelity to the implementation of new practices and helps to sustain them over time.

Attentive Listening

Consensus training develops communications skills designed to facilitate substantive communication and consensus. It was developed from research on open communication and the organizational development literature. Training begins with a central tenet of consensus training that facilitates understanding how others perceive threats to their needs and goals—*attentive listening* (AL).

Consensus training stresses attentive listening as the overall context for any communication. People too often divide their attention and begin to formulate responses before the speaker has finished. Attentive listening requires attending closely to what the speaker is saying (or trying to say) in its entirety, separating his or her words from one's own perspective, and looking at the situation and the communication from the other's point of view.

PRIISED Consensus-Building Communication Skills

The PRIISED communication skills are additional tools used to promote substantive interchanges:

Positive Reinforcement—This skill promotes encouraging other Drug Court team members, agreeing with at least some part of opposing points of view, or, at a minimum, pointing out that an important problem is being raised. *Positive Reinforcement* functions to encourage others to provide information and can mitigate some of the interpersonal tension that accompanies disagreements.

Reframing—This skill focuses on ideas over people. Reframing allows team members to move a discussion from an emotional, ego-centered mode, where interchanges are rigid, to one centering on substantive issues.

Identifying Common Ground—This skill focuses Drug Court team members on naming common underlying goals to provide a common target for a discussion and to keep the discussion focused on substantive issues to be resolved.

Inclusion—This skill encourages all team members in a meeting or discussion to have their say. Silence is not necessarily agreement. When all views are presented and addressed, inclusion maximizes the amount of information available to the Drug Court team and mitigates negative feelings.

Showing Understanding—This skill emphasizes periodic, nonjudgmental paraphrasing to confirm one's own understanding, to provide a mutually agreed-upon summary of what has been said, and to demonstrate the words of team members have been attentively received.

Empathic Listening—This skill is about putting one’s self in another’s place and acknowledging the perspectives and feelings of team members.

Discussion—This skill entails reviewing all factors influencing a decision and addressing differences of opinion in a balanced manner, so Drug Court team members recognize that their inputs and concerns have been given serious consideration even if the decision does not go in the direction they would have preferred.

Consensus training emphasizes that PRIISED skills are not intended to be used in any set sequence or in every instance. Everyone has a personal style—consensus training encourages people to use those skills that best suit their own way of communicating. Thus, the choice of skills depends on personal style, the individuals involved, and the circumstances accompanying the communication. To emphasize attentive listening as the starting point, or context, the seven PRIISED communication skills are referred to as *AL-PRIISED*.

METHOD

NDRI provided consensus training utilizing AL-PRIISED to six Drug Courts across a two-year CSAT-funded NIATx collaborative involving two cohorts of Drug Court grantees. Each cohort participated in a 12-month NIATx learning collaborative (see Wexler et al., 2012). In the first year (Cohort 1), ten Drug Courts participated in the NIATx collaborative. NDRI delivered consensus training to three of the ten Drug Courts. In the second year (Cohort 2), NDRI delivered consensus training to three of five participating Drug Courts.

NIATx selected Drug Courts for the collaborative using a six-item scale to determine the likelihood that the Drug Court could successfully apply the NIATx change team approach. Examples of items include the following:

- Walkthrough experience is well articulated.
- The executive sponsor and change team leader appear appropriate.
- Enthusiasm for the project shows in the application.

Items were rated on a ten-point scale with 1 being the lowest rating and 10 the highest. NDRI staffers then used an eight-item scale (Melnick et al., 2009) to choose a subset from the previously selected programs. The NDRI survey measured two domains: openness to change (e.g., one item read, “This program is open to new methods and techniques”) and openness of communication (e.g., one item read, “We actively seek out a variety of opinions”). Items were scored on a five-point Likert scale ranging from 1, strongly disagree, to 5, strongly agree.

The lowest-scoring Drug Courts—those with an obvious need for communication skills and enhanced openness to change—were selected for the intervention. Although not a criteria for selection, the chosen Drug Courts represented a diverse geographic distribution that included the Midwest, South, Southwest, and Pacific Coast. Two were in large urban areas, two were in moderate-sized cities, one was in a suburban area, and one court represented a smaller town and rural area.

The NIATx intervention consisted of expert coaching, including a site visit and coaching calls with the change team leader and other change team members. Consensus training consisted of a one-day, on-site training workshop with follow-up coaching calls. After participation in the study concluded, a follow up call was made to determine if the consensus training was sustained. In Cohort 1, the call occurred ten months after the intervention ended. In Cohort 2, the follow-up occurred during the last coaching session. Each participant responded to open-ended questions about whether the AL-PRIISED communication skills were still being applied and in what context.

Although local conditions resulted in variations, the consensus training workshop typically comprised an initial morning meeting with the executive sponsor and the change team leader to discuss the plan for the day and to identify specific communication issues among the change team. A subsequent meeting with the change team identified any additional concerns. This was followed by the first training session, a workshop for the Drug Court change team focused on applying AL-PRIISED communication skills to build consensus and create solutions to the identified issues. The afternoon started with a

debriefing of the executive sponsor and change team leader, who discussed any additional concerns to be addressed during the afternoon session. The debriefing was followed by the second training session, which presented AL-PRIISED communication skills to the entire Drug Court as a means of establishing two-way communication with the change team. Finally, the change team leader and executive sponsor reviewed that day's activities and developed a consensus-building plan. Coaching calls followed the site visit to support the application of the consensus-building communication skills. Each Drug Court received at least four 30- to 60-minute calls with additional calls provided as needed. These calls allowed the consensus trainers to follow up on plans made during the site visit, address communication problems, and discuss any additional concerns.

OUTCOMES OF CONSENSUS TRAINING

The challenges facing the application of consensus training fall into three areas:

- Communication challenges within the change team
- Implementing new practices
- Sustaining consensus training

Following are examples of the challenges the Drug Courts faced and the solutions they applied.

Communication Challenges within the Change Teams

Full participation by all members of the Drug Court change team is critical to gathering complete information, reaching decisions, and achieving buy-in by the departments represented by the change team.

Example 1: Overcoming the Role of a Dominant Leader—Having a powerful change team leader (a program director) was helpful in advancing the agenda of one member of the Drug Court change team, but intimidated other members. As a consequence, although the process was efficient, the range of ideas and enthusiasm of the team members was limited.

Resolution—To ensure the inclusion of all members and to enhance group process, the program director withheld any suggestions, assumed the role of note taker, and chose a new change team leader. The program director reported that he was extremely pleased with the response of the change team and their ability to identify problems and formulate creative solutions.

Example 2: Limited Participation at Meetings—In another group, the silence and lack of participation of an individual member deprived the team of important information regarding the perspective of the represented department. This resulted in resistance to implementing the practices the change team had proposed.

Resolution—The group turned the team’s focus from changes in the Drug Court to its own processes, emphasizing *inclusion*. The team discussed the need for all members to participate in the process and the importance of each member representing his or her department. After the quiet member agreed to be more active, the team queried whenever that person did not participate in discussions and provided *positive reinforcement*, acknowledging contributions. Repairing this situation took only a few reminders before the individual actively participated.

Challenges to Implementing New Practices

Communications between the change teams and the Drug Courts were particularly important since this interaction affected the buy-in needed for implementing and sustaining the new practices. The challenges facing each Drug Court differed depending on the Drug Court’s culture.

Example 1: Implementing Consensus Training in a Process-Oriented Drug Court—Although judges retained ultimate authority in the Drug Courts, some judges placed a heavy emphasis on the approval of the affected staff regarding any proposed changes. Thus, a number of influential staff members had an important say about the acceptability of the change team’s proposals. This meant the Drug Court change team had to work within the culture to obtain the buy-in of the other staff members outside of the change team.

Resolution—One Drug Court with a process-oriented culture involved the entire Drug Court in planning for changes and how the changes were to be implemented. Once the change team had decided on a new practice, they held a briefing session with the full Drug Court to elicit feedback that was then used to introduce the change. Doing this required using the gamut of AL-PRIISED consensus training skills. The Drug Court change team provided *positive reinforcement* for staff members who voiced concerns, *showed understanding* for these concerns, and *expressed empathy* with staff feelings by modifying the changes to make them more acceptable. After a one-month trial period, the change team held a debriefing session to reassess and modify changes where needed. This process worked within this Drug Court’s established culture to improve the new practices, making them more acceptable to the Drug Court, and developed a feasible implementation plan with the backing of the staff. Through these discussions, everyone in the Drug Court had a thorough understanding of the reasons for the change, what the change entailed, and how it might affect individual functions.

Example 2: Implementing Practices in a Drug Court with a Hierarchical Culture—One large Drug Court formed a change team comprising department heads. The change team reported directly to the judge, who also attended some of the meetings. The team identified problems, formulated solutions, and, in their positions as department heads and judge, implemented the changes. The hierarchical process was efficient for operating a large Drug Court, and the department heads and the judge felt it worked well. The consensus training stressed that including staff in the change process could produce additional benefits for the Drug Court.

Resolution—The change team devised a procedure to include the Drug Court staff in the change process while preserving the efficiency of the hierarchical structure. The judge, in conjunction with the change team, scheduled a one-day retreat for staff members to meet off-site to discuss ways to improve the functioning of the Drug Court. Staff members were organized into subgroups that included members from the different departments. Their objective was to identify functional problems within the Drug Court, propose solutions, and

communicate them to everyone at the retreat. In this context, staff members were *included* in the change process and received *positive reinforcement* for bringing problems to the attention of the department heads and the judge. The procedure leveraged the knowledge of staff members who were most involved in conducting the activities of the Drug Court and brought additional problems to the attention of the change team. The change team continued to determine and implement the most effective solutions.

Challenges to Sustaining Consensus Training

Consistent themes emerged regarding the continuance of activities beyond the project and the generalization of consensus training to new situations. These themes were awareness of the need to consider process amid the multitasking required to meet Drug Court demands, and the use of the AL-PRIISED communication skills to help staff members reach more nuanced decisions.

Example 1: Sustaining Upward Feedback in a Hierarchically Structured Court—The aforementioned hierarchical Drug Court was concerned about continuing to receive feedback from the staff.

Resolution—The court institutionalized inclusion by making the retreat an annual event, closing the court for a day so that all staff members could participate.

Example 2: Generalizing Consensus Training to Overcome Organizational Angst—Some of the Drug Courts' staff generalized consensus training to new applications outside of the duties of the change teams. In one such instance, structural changes in the lines of authority (which emanated from the county administration and had nothing to do with the project or the work of the change team) created turmoil among the Drug Court staff. The change transferred the process of making recommendations to the judge to a new group previously uninvolved with the Drug Court. The situation was further complicated by the new group having a different view of recovery and the appropriate response to relapse.

Resolution—At the time of the coaching sessions, the court administrator planned to use the AL-PRIISED communications skills

to help the affected staff back away from emotional or ego-centered perspectives. The plan included *identifying common ground* for improving the success rates of the Drug Court, *showing understanding* of differing responsibilities and perspectives of the departments, and using *empathic listening* to consider and ameliorate the feelings evoked in the situation. These skills would aid the Drug Court in reaching consensus about how they could continue to work productively to increase the rate of success.

Example 3: Generalizing Consensus Training to Improve the Functioning of Staffing Meetings—Two Drug Courts were concerned that staff members consider all views in staffing meetings in order to reach a consensus that captured the nuances of each case in an environment where everyone was under constant time pressure.

Resolution—In response to the problem, one Drug Court distributed a reprint of the AL-PRIISED skills at the beginning of each staffing meeting in an attempt to slow down and improve the communication process. They reported *empathic listening*, *showing understanding*, and *identifying common ground* were the skills most helpful in reaching a more nuanced consensus, with *positive reinforcement* close behind.

Another Drug Court described staff as “going 200 miles an hour.” This Drug Court put the AL-PRIISED skills on the agenda for discussion at staffing meetings on a monthly basis. Staff reported the greatest benefit was in fostering more informed judgments. *Empathic listening* and *showing understanding* were considered the most important skills, followed by *identifying common ground*. They reported consensus training focused people on listening to what others were saying, whereas *identifying common ground* slowed the pace and made people think about their responses. In general, Drug Court staff reported that better listening resulted in the utilization of more information, and this resulted in more accurate recommendations to the judge.

DISCUSSION

This preliminary report on consensus training reveals a need to consider the role of communication in the functioning of Drug Courts

and suggests the potential usefulness of consensus-building communication skills. Although the number of Drug Courts was relatively small, the sample offered an opportunity to observe how consensus training affects function in different cultures (both hierarchical and process oriented) across large, moderate, and small Drug Courts.

The application of the AL-PRIISED communication skills and the consensus training helped the change teams focus on communication both within the change team and between the change team and the Drug Court. In a hierarchical culture, the change team used their consensus training skills to promote upward communication, which revealed Drug Court functions in need of improvement. In a process-oriented culture, consensus training skills facilitated cooperation and buy-in. When asked about which of the AL-PRIISED communication skills were most important, respondents named *empathic listening*, *identification of common ground*, and *showing understanding*. The *identifying common ground* skill accentuated the shared interests and common goals important to building trust, while *empathic listening* was crucial for understanding other staff members' points of view so that important differences could be respected. *Showing understanding* demonstrated comprehension of other staff members' positions and served as a check against misinterpretation. These reports of the benefit of *empathic listening* were consistent with recent research showing the positive effects of considering others' perspectives on the creativity of teams with diverse members (Hoever et al., 2012).

Although communication is important in every organization, it is particularly important and perhaps more challenging in Drug Court, where different disciplines associated with somewhat different values and responsibilities to the public and Drug Court participants must coordinate their activities and reach common decisions. The AL-PRIISED skills are designed to improve two-way communication between staff at different organizational levels across different disciplines. Moreover, consensus training skills encourage a focus on substantive issues and on obtaining and sharing information from throughout the Drug Court so that all members of the staffing meeting have complete information. This sharing of information maximizes

the amount of information available and facilitates more informed decision making.

The limitation of the current paper is that it represents neither an experimental study nor a formal case study; rather, it is a report describing a practical application of a communications training designed to help Drug Court stakeholders improve consensus. Nevertheless, the results are consistent with extensive organizational development literature. In addition to improving the quality of the decision-making process, the open communication of the consensus-forming process is consistent with good management practices regarding the maintenance of staff morale, the avoidance of staff burnout, and the loss of experienced personnel through attrition. Participating in decision making, which consensus training encourages, creates a sense of control over work-related activities and actions, resulting in a sense of psychological empowerment (Spreitzer, 2007). This leads to a heightened sense of organizational citizenship through greater identification and satisfaction with the organization (Messersmith et al., 2011), promoting higher levels of innovation (Seibert et al., 2011) and superior task performance (Kirkman et al., 2011). Specific to Drug Courts, Rajan and colleagues (2012) found that open communication was the highest correlate of satisfaction with the Drug Court across the disciplines involved in the court.

CONCLUSION

The consensus training approach was well received. The Drug Courts in the project reported how useful this training was for promoting not only the functioning of the change teams but also other court functions. The Drug Courts in this project frequently described their staffs as going between 100 and 200 miles an hour. Under these circumstances efficiency was often paramount, favoring brief discussion, passing on orders, and accepting the first solution that appeared. This project illustrates how short-term efficiency does not always lead to long-term efficiency. Taking the time initially for communicating, gathering feedback, and two-way decision-making processes can provide greater efficiency over the long run by promoting better decisions, garnering staff support, and achieving better fidelity to

implementing and adhering to decisions and changes. The promising results of this project suggest the value of more systematic study of the AL-PRIISED skills in Drug Courts.

This project was supported through purchase orders (#HHSP 233200900406P, #HHSP 233201000574, and #HHSP 233201100527P) from SAMHSA/CSAT. The content of the manuscript is solely the responsibility of the authors and does not necessarily represent the official views of SAMHSA/CSAT.

The authors would like to acknowledge the contributions of Kenneth Robertson, the CSAT/SAMSHA officer who provided oversight for the project and who was helpful at every turn in facilitating the work, and of Linda Frazier for her helpful comments on the manuscript.

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