

RESEARCH ON DRUG COURTS:
A CRITICAL REVIEW
2001 UPDATE

by Steven Belenko, Ph.D.

The National Center on
Addiction and Substance Abuse
at Columbia University

June 2001

This publication was funded by a grant from the
Robert Wood Johnson Foundation

**RESEARCH ON DRUG COURTS:
A CRITICAL REVIEW
2001 UPDATE**

**by Steven Belenko, Ph.D.
The National Center on Addiction
and Substance Abuse (CASA)
at Columbia University**

EXECUTIVE SUMMARY

This is a critical review of 37 published and unpublished evaluations of drug courts (including seven juvenile drug courts, one DUI court, and one family drug court) produced between 1999 and April 2001. The conclusions drawn from this research are generally consistent with those of previous reviews published by the author in June 1998 and December 1999. Drug courts have achieved considerable local support and have provided intensive, long-term treatment services to offenders with long histories of drug use and criminal justice contacts, previous treatment failures, and high rates of health and social problems. Program completion rates are generally consistent with previous findings, with an average of 47% of participants graduating. Drug use and criminal activity are relatively reduced while participants are in the program.

Less clear are the long-term post-program impacts of drug courts on recidivism and other outcomes. In this critical review of drug court research, four of the six studies that examined one-year post-program recidivism found a reduction, but the size of the reduction varied across courts. None of the studies reported post-program drug use, employment, or other outcomes for all drug court participants, so these impacts remain largely unknown. Three studies used random assignment to drug court or control conditions and all

found a reduction in recidivism for the drug court participants; however, none of these studies distinguished between in-program and post-program rearrests, and sample sizes were small in two of the studies. Several studies that examined program costs found that average per-client drug court costs are lower than standard processing, primarily due to reduced incarceration. However, straight diversion may be less expensive and intrusive for low-risk offenders and achieve similar outcomes as drug courts.

This review suggests a continuing need for better precision in describing data sources, measures, and time frames for data collection. Data quality and information systems problems continue to affect the quality and utility of drug court evaluations. Despite the importance of looking inside the “black box” of drug court treatment, relatively few evaluations included data on program services, either because of lack of data or because service delivery was not included in the evaluation design. Findings from several evaluations suggest that drug court impacts may fluctuate over time, indicating the importance of multi-year or replication studies to gauge the long-term impacts of drug courts. Finally, research on juvenile and family drug courts is still in its very early stages, making conclusions about their impacts impossible. Qualitative analyses suggest that a number of juvenile courts have faced implementation or operational problems.

Several of the evaluations included detailed and useful descriptions of operational components, including the screening and referral process. A fuller understanding of the impacts of drug courts in the context of the larger criminal justice system requires more research on the targeting, referral, screening, and admission process. The use of experimental designs to test program impacts in several of the evaluations is another encouraging trend. The findings from

several evaluations that drug court clients have high rates of mental health problems suggest that programs need to consider inclusion of services for co-occurring disorders. Future research on drug courts needs to examine the client, operational, and treatment delivery characteristics that affect outcomes, so that drug courts can maximize their impacts and cost effectiveness, and the relative effectiveness of the various elements of the drug court model can be better understood.

Dr. Belenko is one of the nation's foremost researchers and writers on drug court programs and the impact of drug abuse on the criminal justice system. Dr. Belenko is a CASA Fellow at the National Center on Addiction and Substance Abuse at Columbia University, where he authored a major study on drug abuse and prison populations, *Behind Bars: Substance Abuse and America's Prison Population* (1998). Founded in 1992, the National Center on Addiction and Substance Abuse is a nationally recognized policy research center that conducts major research, policy and program demonstration initiatives in the substance abuse field.

ARTICLE SUMMARIES

CONSISTENT FINDINGS

[1] The conclusions of this review are generally consistent with those of 1998 and 1999, indicating that drug use and criminal activity are relatively reduced while participants are in the program.

CLIENT CHARACTERISTICS

[2] Drug courts continue to admit offenders with characteristics that are consistent with those of the overall drug-involved offender population.

RETENTION

[3] For those drug courts addressing retention and graduation rates, the data are generally consistent with previous estimates.

IN-PROGRAM RECIDIVISM

[4] Studies using comparison or matched samples show lower rearrest rates for participants than for the comparison group(s).

POST-PROGRAM RECIDIVISM

[5] Consistent with previous findings, a majority of the studies found lower recidivism rates for drug court participants.

COST ANALYSIS

[6] For those drug courts conducting cost analysis, estimates indicate that drug courts produce cost savings compared to traditional adjudication; a good cost analysis model is cited.

IMPROVING EVALUATION

[7] Areas for improving evaluation are cited, such as data sources and collection, specifying time periods, and distinguishing between in program and post program results.

MULTI-YEAR EVALUATION

[8] A one-shot evaluation may offer a distorted conclusion about the impact of a drug court program in just one time frame; periodic, multi-year evaluations are preferred.

**RESEARCH ON DRUG COURTS:
A CRITICAL REVIEW
2001 UPDATE**

**by Steven Belenko, Ph.D.
The National Center on Addiction
and Substance Abuse (CASA)
at Columbia University**

INTRODUCTION

As a mechanism for providing long-term court-supervised treatment to offenders with drug problems, drug courts continue to receive broad support and attention. As of May 2001, there were 483 adult, 158 juvenile, 38 family, and 9 combination adult/juvenile/family drug courts in operation, for a total of 688, with an additional 432 drug courts in the planning process (American University, 2001). Included among these are 31 operational Tribal drug courts, with another 49 in the planning process (American University, 2001). The Congress continues to support drug courts with \$50 million in funding to the Drug Courts Program Office (DCPO). An estimated 220,000 adults and 9,000 juveniles have enrolled through December 2000, and 73,000 adults and 1,500 juveniles have graduated (American University, 2001).

In this context, drug courts have become a key court-based treatment intervention for drug-involved offenders. Beginning with the Dade County (Miami, FL) program in 1989 (Finn & Newlyn, 1993), treatment drug courts have established an important presence in America's criminal court system. In many jurisdictions, drug courts have become the preferred mechanism for linking drug- or alcohol-involved offenders to community-based treatment and related clinical interventions (Office of Justice Programs, 1998). Although

still serving a relatively small percentage of offenders with substance abuse problems,¹ drug courts have enjoyed considerable positive publicity, government and public encouragement, and local, state, and federal funding.

Despite their ongoing popularity and rapid spread, historically there has been a relative paucity of empirically sound and comprehensive research on drug court operations and impacts. Most evaluations have been relatively small-scale local process evaluations mandated for DCPO grantees, which include program and client descriptions, with some retention and outcome data. However, over the past two years drug courts have begun to attract considerable attention in the research community. There have been an increasing number of articles on drug court research published in peer-reviewed academic journals. These include both findings from evaluations of specific drug courts as well as policy, legal, or theoretical analyses of various aspects of drug courts. A special issue on drug courts was recently published by the *Journal of Drug Issues*, and another special drug court issue is being planned by the journal *Substance Use and Misuse*. In addition, Phase I evaluations of four of the well-established drug courts (Portland, OR; Las Vegas, NV; Escambia County (Pensacola), FL; Jackson County (Kansas City), MO), funded by the National Institute of Justice (NIJ), have been completed and findings are included in this report. Phase II evaluations of those courts are now underway.

Several drug court evaluations being funded by the National Institute on Drug Abuse (NIDA) are now underway. None of these studies are general evaluations of specific drug

¹ There were an estimated 1,250,000 arrests for drug possession in 1999, and 79% of arrestees either test positive for an illegal drug, had used illegal drugs recently, report a history of drug dependence or drug treatment, or are in need of treatment at the time of their arrest (Belenko, 2000).

courts, but are testing the efficacy of various components or new interventions in drug courts using experimental designs. Findings are not yet available.

Finally, the drug court field continues to encourage the development and improvement of process and outcome evaluations. In its recent solicitation for drug court implementation grants for Fiscal Year 2001, DCPO is requiring grantees to conduct both process and outcome evaluations. The National Drug Court Institute (NDCI) has conducted periodic evaluation workshops over the past two years in an effort to encourage drug court practitioner-researcher collaborations, to improve the quality and depth of drug court research, and to promote the dissemination of research findings.

[1] The conclusions drawn from the current review are generally consistent with those reached from previous reviews (Belenko, 1998; 1999). Drug courts have achieved considerable local support and have provided intensive, long-term treatment services to offenders with long histories of drug use and criminal justice contacts, previous treatment failures, and high rates of health and social problems. Program completion rates are generally consistent with previous findings. Drug use and criminal activity are relatively reduced while participants are in the program. Less clear are the long-term post-program impacts of drug courts on recidivism and other outcomes. Four of the six studies that examined one-year post-program recidivism found a reduction, but the size of the reduction varied across courts. None of the studies reviewed here reported post-program drug use, employment, or other outcomes for all drug court participants.

METHOD

This is the third in a series of reviews of published and unpublished evaluations of drug courts. The methods used to identify published and unpublished drug court evaluations were similar to those used in the author's previous reviews.² Evaluation reports produced between June 1999 (the cutoff date for the author's previous review) and April 2001 are included in the current review. Unpublished reports were obtained from NDCI and the American University Drug Court Clearinghouse and Technical Assistance Project, and some were sent directly to the author. In addition, several evaluations that were produced prior to June 1999 and not previously reviewed were identified and are included here. As in the past, it is possible that other evaluation reports have been issued that are not known to NDCI, the Drug Court Clearinghouse, or the author, and thus have not been included in either the current or previous reviews. In addition, online searches of several bibliographic databases were conducted to identify published drug court evaluations.³ Evaluations of the Portland (OR), Las Vegas (NV), Jackson County (MO), and Escambia County (FL) drug courts prepared under funding from NIJ were completed this past year and are included.

For general characteristics of the operations of a larger number of drug court programs, findings from the most recent national surveys conducted in the fall of 2000 by the American University Drug Court Clearinghouse and Technical

² In the first two reviews (Belenko, 1998; 1999) 59 evaluations of 48 drug courts were reviewed.

³ The databases included the National Criminal Justice Reference Service, Criminal Justice Periodical Index, PsycInfo, Sociological Abstracts, Social Science Abstracts, Applied Social Science Abstracts, ERIC, and Dissertation Abstracts.

Assistance Project were also incorporated (American University, 2001).

In all, 37 evaluation reports covering 36 different drug courts (including seven juvenile drug courts and one family drug court) were included for the current review.⁴ Only evaluations conducted by outside evaluators have been included; internal evaluations, progress reports, or monitoring reports prepared by drug court or other court staff were excluded. Also excluded were research reports or articles that examined general legal, policy, or theoretical issues. Several studies included here are more recent evaluations of drug courts for which previous reports had been issued (Orange County, CA; Santa Barbara County, CA; Baltimore, MD; Cumberland County, ME). For several courts for which evaluations had been included in previous reviews, new evaluations by different researchers using different methodologies have been included (Escambia County, FL; Jefferson County, KY; Jackson County, MO; Portland, OR). Table 1 provides a list of the evaluations reviewed.

Largely reflecting DCPO evaluation requirements, as well as time and resource constraints, the evaluations reviewed were primarily process evaluations.⁵ As noted in previous reviews, the evaluations varied in quality, comprehensiveness, use of comparison groups, and types of the measures used. Although findings from specific evaluations are cited for illustrative purposes, the purpose of this article is not to provide a detailed review of individual evaluations, but rather

⁴ Because of the unique programmatic and evaluation issues involved, juvenile and family drug court findings are discussed separately below.

⁵ Process evaluations focus on the analysis of program implementation, client characteristics, drug court operations and services, program compliance, program quality, and program completion. Some include limited outcome measures and cost analyses as well.

to synthesize the findings and identify common conclusions that can be drawn from the research. All of the evaluations included some basic process measures such as number of admissions, program retention, and client characteristics. Ten evaluations included drug court program or treatment service information, such as sanctions and rewards, counseling sessions, or other services. Nine included in-program drug test results, six included at least some cost analyses, and six analyzed post-program recidivism with a comparison group. Nearly half of the evaluations (N=18) included qualitative interviews with staff or clients. Such interviews often yielded useful suggestions for improving drug court operations or identifying strong and weak points of the drug court program. Because few of the evaluations used a formal survey or quantified the findings, and because they tended to be convenience samples rather than random samples of clients or staff, the findings should be considered descriptive and anecdotal. The interested reader is referred to these individual evaluations for summary findings and sample responses from the interviews.

Table 1
List of Drug Court Evaluations Reviewed, Current Review

Adult Drug Court Evaluations				
Jurisdiction	Report Title	Author	Organization	Date of Report
Alameda County, CA	A Final Evaluation Report: A Cross-Sectional Analysis of the Alameda County Consolidated Drug Court (ACDC) Program	D.Y. Ja, D. Taube, M. Gee, L. Stewart, B. Dee, and J. Yuen	Davis Y. Ja and Associates, Inc.	January 2001
Escambia County (Pensacola), FL	Impact Evaluations of Pensacola and Kansas City Drug Court Programs	Truitt, Rhodes, Seeherman, Carrigan, and Finn	Abt Associates	November 2000
Mendocino County, CA	An Evaluation of the Mendocino County Adult Drug Court: August 1996-October 1999.	R.A. Hicks, G.J. Hicks, J.M. Bautista	Scientific and Professional Consulting Services	November 1999
Orange County, CA	Success of Drug Court Participants: Central and South Justice Centers Superior Court of Orange County, California	E.P. Deschenes, K. Moreno, and C. Condon	California State University, Long Beach and Orange County Health Care Agency	April 2001

2001 Update

Jurisdiction	Report Title	Author	Organization	Date of Report
Santa Barbara County, CA	Santa Barbara County Substance Abuse Treatment Courts: Year 2000 Evaluation	M. Cosden, S. Peerson, and M. Orless	University of California Santa Barbara	August 2000
Polk County, IA	Final Report on the Polk County Adult Drug Court	P. Stageberg, B. Wilson, and R.G. Moore	Statistical Analysis Center, Division of Criminal and Juvenile Justice Planning, Department of Human Rights	January 2001
First District, KY	First District Drug Court Process Evaluation	T.K. Logan, B. Lewis, K. Williams, and C. Leukefeld	Center on Drug and Alcohol Research, University of Kentucky	March 2000
Jefferson County, KY	Jefferson County Adult Drug Court Program Process Evaluation	T.K. Logan, K. Williams, and C. Leukefeld	Center on Drug and Alcohol Research, University of Kentucky	December 1999
Kenton County, KY	Kenton Drug Court Process Evaluation	T.K. Logan, K. Williams, C. Leukefeld and B. Lewis	Center on Drug and Alcohol Research, University of Kentucky	October 1999

Jurisdiction	Report Title	Author	Organization	Date of Report
Warren County, KY	Warren Drug Court Program Process Evaluation	T.K. Logan, K. Williams, and C. Leukefeld	Center on Drug and Alcohol Research, University of Kentucky	July 1999
Baltimore, MD	The Baltimore City Drug Treatment Court: One-Year Results from a Randomized Study	D. Gottfredson, M. Exum	Dept. of Criminology and Criminal Justice, The University of Maryland	April 2000
Cumberland County, ME	Project Exodus: Maine's First Treatment Drug Court	D. Anspach, A. Ferguson	Maine Center for Socio-Legal Research, University of Southern Maine	December 1999
Jackson County (Kansas City), MO	Impact Evaluations of Pensacola and Kansas City Drug Court Programs	Truitt, Rhodes, Seeherman, Carrigan, and Finn	Abt Associates	November 2000
Douglas County, NE	Phase II Douglas County Drug Court Evaluation: Final Report	T.J. Martin, C.C. Spohn, R.K. Piper, J. Robinson	Institute for Social and Economic Development, University of Nebraska	June 1999
Dona Ana County, NM	Drunk Drivers, DWI "Drug Court" Treatment, and Recidivism: Who Fails?	J.F. Breckenridge, L.T. Winfree, Jr., J.R. Maupin, D.,L. Clason	University of New Mexico	Justice Research and Policy

2001 Update

Jurisdiction	Report Title	Author	Organization	Date of Report
				(2000) 89-105
Las Vegas, NV	Do Drug Courts Work?: Getting Inside the Drug Court Black Box	J.S. Goldkamp, M.D. White, J.B. Robinson	Crime and Justice Research Institute	November 2000
Las Vegas, NV	Reintegrative Shaming and Recidivism Risks in Drug Court: Explanations for Some Unexpected Findings	T. Miethe, H. Lu, E. Reese	University of Las Vegas, Nevada	Crime and Delinquency (2000)
Lackawanna City, NY	Lackawanna City Drug Court, Process Evaluation Report	J.G. Fox		July 2000
Niagara Falls/Tonawanda, NY	Niagara Falls/Tonawanda Treatment Court Process Evaluation	H.M. Weiss	Health Management Group, Ltd.	January 2001
Rochester, NY	Rochester Drug Treatment Court Enhancement Project, Final Evaluation Report	Pacific Institute for Research and Evaluation	Pacific Institute for Research and Evaluation	September 2000
Syracuse, NY	Process Evaluation: Syracuse Community Treatment Court Final Report: Continuation Grant	E. Wolf and S. Adair	Center for Community Alternatives	November 2000
Butler County, OH	Butler County Court of Common Pleas, Court-Directed Addiction Treatment Program (CDAT): One Year Evaluation	B. Fulton, and E. Latessa	University of Cincinnati, Division of Criminal Justice	N.D.

Research on Drug Courts: A Critical Review

Erie County, OH	The Erie County Drug Court: Outcome Evaluation Findings	S.J. Listwan, D.K. Shaffer, and E.J. Latessa	Center for Criminal Justice Research, University of Cincinnati	February 2001
Jurisdiction	Report Title	Author	Organization	Date of Report
Portland, OR	Do Drug Courts Work?: Getting Inside the Drug Court Black Box	J.S. Goldkamp, M.D. White, J.B. Robinson	Crime and Justice Research Institute	November 2000
Chester County, PA	An Evaluation of the Chester County (PA) Drug Court Program	M.P. Brewster	West Chester University	Journal of Drug Issues (2001) 31:1 177-206
Tarrant County, TX	The Effect of the Tarrant County Drug Court Project on Recidivism	A. Bavon	University of North Texas	Evaluation and Program Planning (2001) 24: 12-22
Salt Lake County, UT	Salt Lake County Drug Court Evaluation Report, July 1996 through September 1998	R.S. Harrison, B.V. Parsons, E.I. Byrnes, S. Sahami	Social Research Institute, University of Utah	September 1998
Roanoke, VA	Evaluation Report for the Drug Treatment Court Program, Twenty-Third Judicial Circuit of Virginia	D.J. Shoemaker	Department of Sociology, Virginia Polytechnic Institute and State	October 1999

			University	
--	--	--	------------	--

Juvenile Drug Court Evaluations

Jurisdiction	Report Title	Author	Organization	Date of Report
Los Angeles County, CA	Evaluation of the Los Angeles County Juvenile Drug Court Program	E.P. Deschenes, K.S.Moreno, V.M Emami, E. Thompson, and K. Manatt	California State University, Long Beach	April 2001
Orange County, FL	Evaluation of the Orange County Juvenile Substance Abuse Treatment Court Program	B.K. Applegate, D. Reuter, B.J. McCarthy, S. Santana	University of Central Florida, Department of Criminal Justice and Legal Studies	February 1999
Campbell County, KY	Campbell Juvenile Drug Court Program Process Evaluation	T.K. Logan, B. Lewis and C. Leukefeld	Center on Drug and Alcohol Research, University of Kentucky	June 2000
Missoula, MT	Missoula Youth Drug Court: Process Evaluation	B.K. Roche, MA Department of Psychology	The University of Montana	August 1999

Research on Drug Courts: A Critical Review

17

Albuquerque, NM	Final Report: Process Evaluation of the Second Judicial District Juvenile Drug Court in Albuquerque, New Mexico	P. Guerin, R. Hyde, L. Carrier, N. Damon, L. Smith, and B. Ulibarrie	Center for Applied Research and Analysis, Institute for Social Research, University of New Mexico	November 2000
Jurisdiction	Report Title	Author	Organization	Date of Report
Summit County, OH	Summit County Juvenile Court Drug Court Evaluation Report: July 1, 1999 – June 30, 2000	J.L. Dickie	The Institute for Health and Social Policy, University of Akron	2000
Beckham County, OK	Preliminary Analysis of the Beckham County Juvenile Drug Court 1999	P. O'Connell, D. Wright, B. Huntington, B. Clymer, C. Brown, T. Stiefmiller, W. Benedict	Oklahoma Criminal Justice Resource Center	March 1999

Family Drug Court Evaluations

Jurisdiction	Report Title	Author	Organization	Date of Report
Suffolk County, NY	Evaluation of the Suffolk County Family Treatment Court	Child Welfare Training Program	SUNY Stony Brook School of Social Welfare	October 2000

N/A = not available; N.D.= no date.

FINDINGS

Client Characteristics

[2] Most of the evaluation reports presented at least some basic data on the characteristics of clients enrolled in the drug court. In general, the evaluated drug courts admit offenders who mirror the drug court population described in the national surveys conducted by the American University Drug Court Clearinghouse and Technical Assistance Project: drug court participants are predominantly male, have poor employment and educational achievements, fairly extensive criminal histories, and prior failed treatment. Such characteristics are consistent with those of the overall drug-involved offender population (Belenko & Peugh, 1999). According to the most recent American University survey of 237 responding adult drug courts (out of 438 operational adult drug courts; American University, 2001), an estimated 72% of drug court clients are male; 38% are African American, 42% white non-Hispanic, and 17% Hispanic; 49% were unemployed; 76% had prior substance abuse treatment; 74% had at least one prior felony conviction; and 56% had been previously incarcerated.

Findings from two drug court evaluations that considered relative risk levels of drug court clients (Orange County, CA; Douglas County, NE) suggest that many drug courts target offenders with midrange risk levels: higher risk than the low-level offenders typically given standard diversion, and lower risk than sentenced drug offenders.

As in previous evaluations (Belenko, 1998; 1999) drugs of choice vary widely across regions and courts. These differences probably reflect local drug use patterns as well as local law enforcement strategies. For example, in the Baltimore City Drug Court, 87% of clients reported using

heroin as their primary or secondary drug of choice, reflecting the high prevalence of heroin use in that city. In the Polk County (IA) drug court, methamphetamine was the drug of choice for white male clients (67%) and white females (81%). One third of the Santa Barbara (CA) clients reported methamphetamine as the drug of choice. Cocaine or crack were the most common primary drugs used by participants in Roanoke (VA) (67%), Syracuse (NY) (59%), and in Lackawanna County (NY) (53%). Drug courts do not always target users of “hard” drugs. In several adult drug courts a substantial proportion of clients reported that marijuana was the primary drug used: Chester County (PA) (47%), Lackawanna County (NY) (22%), and Syracuse (NY) (25%). A majority of participants in the Cumberland County (ME) drug court reported alcohol as their primary drug (58%).

As noted elsewhere, drug-involved offenders often have other serious physical and mental health problems that can complicate the recovery process (Belenko, 2001; Broner et al., 2001; Hammett et al., 2000; Marquart et al., 1997; Peters & Hills, 1993; Teplin, 2001). Several evaluations included data on such health issues, especially psychological problems. For example, 40% of Mendocino County (CA) and 20% of the Syracuse (NY) clients reported a need for mental health services at the time of admission to drug court. Based on the Addiction Severity Index (ASI), 57% of Salt Lake County (UT) clients had an indication of a psychological problem, and 46% needed treatment for this problem. Nearly one-third (30%) of Butler County (OH) clients had received past psychiatric care, as did about 40% of Santa Barbara (CA) and 48% of Salt Lake County (UT) participants. In contrast to these findings, only three percent of Erie County (OH) participants said that they had serious physical or mental health treatment needs.

Consistent with other studies of drug-involved offenders (Broner et al., 2001; El-Bassel et al., 2001; Peugh & Belenko, 1998), drug court clients have been reported to have a high prevalence of histories of physical and sexual abuse, and of suicidal ideation as well as suicide attempts. For example, among Salt Lake County (UT) participants, 35% had ever had thoughts of suicide, and 20% had attempted suicide; among clients of the Santa Barbara (CA) drug court, 13% of the North district clients and 19% of those in the South district had ever attempted suicide.

The evaluations of the Santa Barbara (CA) and Polk County (IA) drug courts collected data on prior physical and sexual abuse. In Santa Barbara, about 15% of the clients had ever been sexually abused and 31% physically abused. In Polk County, 38% of the women clients had ever been sexually abused, and 56% physically abused.

Finally, several evaluations provided data on medical problems. In Salt Lake County (UT), 35% of the clients reported a need for medical treatment at the time of drug court admission, and 30% had chronic medical problems. Twelve percent of clients in Jefferson County (KY) had a sexually transmitted disease at the time of intake. Given the high prevalence of chronic health problems among offenders (Hammett et al., 1999; Marquart et al., 1997), it is important for drug courts to assess clients for medical problems, and link them to appropriate health services.

Program Operations

Most drug court process and outcome evaluations have focused on descriptions of clients, program retention, relapse, and recidivism. However, a thorough understanding of the process by which offenders enter drug courts, and the type and quality of services that are delivered in the drug court model,

are important to further our knowledge of the unique aspects of drug courts that may impact on participant outcomes. More data on program services, sanctions, courtroom dynamics, and client supervision are needed to get inside the “black box” of the drug court model and learn how client, staff, and organizational factors interact to affect client and system outcomes (Belenko, 2001; Goldkamp et al., 2001; Marlowe & Kirby, 1999; Satel, 1998; Taxman, 1999).

Unfortunately, with the exception of urinalysis data (see below), very few of the evaluations reviewed for this article provided any quantitative data on program services, supervision, or sanctions. Only five studies (Butler County, OH; Cumberland County, ME; Erie County, OH; Polk County, IA; Las Vegas, NV; Portland, OR) provided any sanctions or incentives data. In the Butler County drug court (a post-conviction sentencing alternative model), participants received a mean of 2.4 sanctions. Among Cumberland County clients, 45% of the sanctions imposed during the evaluators’ courtroom observations consisted of having to sit in the “dock,” and 36% involved some jail time. In Erie County, 22% of the clients were sanctioned to increased “treatment intensity,” 11% received a jail sanction, 11% house arrest, and 29% “other” (primarily increased AA/NA meeting requirements or writing an essay about their noncompliance). Finally, 97% of the Polk County clients received at least one sanction, although these findings are tentative because sanctions data were missing for many participants. Goldkamp et al. (2001) conducted multivariate analyses of the relationship between number and type of sanctions received and their impact on rearrest one year after drug court admission, and on graduation within two years. They found that in Portland the imposition of any jail sanction was associated with a higher likelihood of rearrest, and the imposition of any sanction was associated with a lower probability of graduation, controlling for other client and

program participation factors. In Las Vegas, both the imposition of a jail sanction and sanctions in general were associated with higher rearrest as well as lower graduation rates. Goldkamp et al. (2001) did not control for the temporal ordering of the sanctions and rearrest so those results should be interpreted with caution. Nonetheless, these findings suggest that drug court clients may “signal” higher risk during their time in drug treatment, so that additional supervision or services for clients who are sanctioned early in the program may help reduce later recidivism and dropout (Smith et al., 1989; Toborg et al., 1989).

Some data on treatment services were reported by Logan and her colleagues in their process evaluations of several Kentucky drug courts. The number of counseling sessions varied across jurisdictions. For example, the 29 clients studied in the rural First District (KY) drug court received 519 individual and 40 group counseling sessions. In contrast, the 28 clients of the Kenton County (KY) drug court received only 27 individual counseling but 88 group sessions. During the fourth quarter of 1998, the approximately 60 clients of the Warren County (KY) drug court received 203 individual, 102 group, and 25 family counseling sessions. Differences among these courts may reflect the availability of services, the time frame of the evaluation, or program requirements.

In Butler County (OH), 63% of the participants had some family involvement in treatment, 38% received financial management training, and 6% received mental health services. This report also contained a fairly detailed and useful description of the screening and referral process.

The Polk County (IA) evaluation, which also had a detailed and comprehensive description of the drug court screening and referral process, as well as the drug court’s

operations, was the only evaluation reviewed that provided some data on client supervision. In this court, participants had an average of 47 contacts with their probation officer during their time in drug court, 58 contacts with the TASC counselor, 15 appearances before the judge, and 40 drug tests. This evaluation did not specify the nature of the probation officer or TASC contact (e.g. phone vs. face-to-face), or compare these contact rates to standard probation supervision.

Staff and participant attitudes and perceptions

In addition to quantitative data on clients, operations, and outcomes, qualitative data on the attitudes, experiences, and perceptions of drug court clients and staff are useful for understanding the way in which drug courts operate, the factors that may help or hinder client engagement in the drug court, and the challenges that staff face in identifying client needs and linking them to effective services. In addition, little is known about the drug court environment or the nature of the interactions among staff and clients that may affect drug court retention rates and program compliance. Individual interviews, focus groups, and courtroom observations can illuminate these processes and assist in the interpretation of quantitative outcome data.

Among the 37 evaluations reviewed, 18 conducted interviews with samples of clients and/or staff. However, because of small sample sizes or use of a nonrandom sample of respondents (usually limited to program graduates), it is difficult to draw definitive conclusions about client attitudes or perceptions. And, in general, studies that included interviews with drug court staff tend to report highly positive opinions about the drug court's impacts and effectiveness. In several reports, however, staff did note areas where the drug court might need improvement. Examples of staff suggestions culled from various evaluations include the need for tougher

sanctions, expanded services for children and families, improved interagency communication, and smoother interagency linkages. For the most part, the evaluations presented general narratives and selected quotes from respondents.

However, several evaluations, notably the several Kentucky drug court process evaluations and the Erie County (OH) study, included rating scales for clients to rank their perceptions of the importance or value of various program components. Nearly all the clients in Erie County (OH) agreed that the judge treated them with respect (96%), was fair (93%), and was concerned about them (86%). Three-quarters said that the court interactions with the judge helped them to stay off drugs, as did regular court appearances. Interestingly, 96% of the clients said that the drug court was “easier” than jail or prison, while only 48% thought that it was easier than standard probation. This finding runs counter to the common assumption by proponents of drug courts and other criminal justice-supervised treatment that, because of the intensity and long-term nature of these programs, offenders would perceive a jail term as an “easier” experience.

Program Outcomes

As treatment-based interventions, drug courts seek to maximize offenders’ engagement in long-term services. Treatment research has consistently noted that longer time in treatment is associated with better outcomes (Carroll, 1997; Chou et al., 1998; Lang & Belenko, 2000; Simpson et al., 1997). Although there is some variation among drug courts, previous reviews of drug court research have noted that overall treatment retention is substantially better than in other community-based treatment programs for offenders (Belenko, 1998, 1999; U.S. GAO, 1997).

As criminal justice-based interventions, drug courts have as their key goals to reduce drug use and criminal behavior by engaging offenders in judicially supervised, structured treatment and other services. Although viewed as embracing a therapeutic jurisprudence model of justice, drug courts (with the exception of family drug courts) nonetheless exist within a criminal justice system whose primary focus is on adjudicating criminal cases and improving public safety. Accordingly, virtually all drug courts have as their primary goals to reduce recidivism and relapse to drug use. Many evaluations collect at least some rearrest data.

Retention and graduation

Among the studies examined for this review, none had sufficient data to enable the calculation of one-year post-admission retention rates. Often, drug court process evaluations do not adequately specify the post-admission observation period. In other cases, the program was relatively new and very few clients had an opportunity to be in the program for as long as one year. Often, a number of clients were still enrolled in the drug court at the time of the evaluation's data collection, and had been in the court for varying lengths of time. This made it impossible to estimate accurate one-year retention rates (Belenko, 1999).

[3] Eight evaluations, however, presented data on graduation rates. Overall, these were consistent with previous estimates (Belenko, 1998; U.S. GAO, 1997), averaging 47% across the eight courts, ranging from a low of 36% (Alameda County, CA) to a high of 60% (Roanoke, VA). In an effort to identify differences in the characteristics of graduates and nongraduates, several reports conducted descriptive comparisons. Several factors distinguished those who successfully completed the drug court, although these factors varied from study to study. In addition, without

simultaneously controlling for other client, program, or external factors, it is not possible to determine whether these characteristics directly relate to program completion. Male participants had higher graduation rates than females in Lackawanna County (NY), but females had higher rates in Portland (ME) and Polk County (IA). In Roanoke (VA) and Polk County (IA) whites had much higher graduation rates than nonwhites (77% vs. 38% in Roanoke, 50% vs. 17% in Polk County). In the Roanoke drug court, the evaluators speculated that this difference may have reflected that nonwhites had lower employment rates, which was associated with graduation. In Polk County (IA), the evaluators also found that clients whose primary drug was cocaine had much lower graduation rates than those who used methamphetamine, and drug type was strongly correlated with race. In Santa Barbara (CA), participants who were Latino, used heroin as their primary drug, or had a more serious criminal history had lower graduation rates.

The Polk County (IA) evaluation was able to compare graduation rates for different cohorts of clients admitted to the court in several different years. The evaluators found that graduation rates increased substantially after the court had been in operation for two years. In contrast, the program completion rate in Orange County (CA) decreased slightly over time: for the 1997 admission cohort 58% graduated (2.5% were still in the program at the close of data collection in February 2001), while 48% of 1998 admissions had graduated as of February 2001 (8.2% were still in the program). These findings suggest that evaluations focusing only on the initial phase of drug court implementation, as many evaluations do, may provide a misleading view of how a court may function once it has reached a more stable operational phase. Multiyear data are needed in order to draw a more accurate conclusion about a mature court's operations.

Multivariate analyses of factors affecting graduation were included in drug court evaluations of the Portland (OR) and Las Vegas (NV) drug courts by Goldkamp et al. (2001). Several variables were significantly related to graduation in the Portland (OR) drug court, including time in treatment, not receiving sanctions, and number of court appearances. Individual client factors were not statistically significant. In the Las Vegas (NV) drug court, not receiving any jail sanctions was significantly related to program graduation, in addition to the same factors found for the Portland court. Of course, all these factors themselves reflect compliance with drug court requirements and longevity in the program, which by definition lead to program graduation. Additional research is needed to identify client, organizational, staff, or treatment service delivery characteristics that increase the probability of drug court graduation (Belenko, 2001; Peters et al., 1999; Taxman, 1999).

Drug use in program

Nine of the 37 evaluations provided data on drug test results during drug court participation. Although most drug tests were negative, there was a wide range of positive rates across the courts. Differences in measures used, sample size, and time period used for data collection make it difficult to compare the findings. Relatively low drug use rates were found in three Kentucky drug courts (0.8% of all drug tests were positive in Warren County, 2% in Kenton County, and 4% in the First District), Butler County (OH) (3.7% of the tests), and Salt Lake County (UT) (9% of tests). Using the same measure, somewhat higher positive drug test rates were found in Chester County (PA) (17% of all tests administered). In the Syracuse (NY) drug court, an estimated 18% of clients had at least one positive drug screen, as did 35% of the clients in Butler County (OH) and 71% in Polk County (IA). The

latter study did not present data on the percentage of drug tests that were positive.

Recidivism during the program

A shortcoming of some drug court evaluations is a lack of specificity about data collection time frames, especially in terms of recidivism outcomes. Because a reduction in recidivism is a universal goal for adult and juvenile drug courts, it is important for researchers to distinguish recidivism that occurs while an offender is under drug court supervision from that occurring after program participation has ended. Evaluations that, for example, merely state that rearrests were identified for a period of one year after drug court admission do not allow a distinction between in-program and post-program rearrests. A number of participants will have left the drug court program during that one-year period, so their rearrests could have occurred during or after drug court participation. In this section, findings are included only from those evaluations in which it could clearly be determined that recidivism data were collected specifically while in the program. More generally, few evaluations presented data on recidivism during program participation (in several cases, anecdotal data were presented or the number of drug court cases was too small to draw any conclusions).

[4] Three of the studies reviewed included a comparison sample to assess the impact of drug courts on recidivism while in the program. The Chester County (PA) study (Brewster, 2001) included a comparison sample of matched offenders sentenced to probation prior to the drug court implementation. Drug court participants were less likely to be rearrested for any offense (5.4%) than the comparisons (21.5%). Because the time at risk was longer for the comparisons, Brewster (2001) calculated the rate of rearrest per year at risk, and again the drug court clients had a

significantly lower rate (0.1 arrest per year vs. 0.2⁶). Participants also served a lower average number of new jail days per year (6.6 vs. 13.6⁷). In Polk County (IA) 19% of the participants were reconvicted on a new offense during the program, compared to 38% of a comparison sample of similar offenders referred to the drug court but who did not enroll.

Compared to a matched sample of offenders sentenced to probation, clients admitted in 1997 and 1998 to the Orange County (CA) drug court had lower rearrest rates while in the program (17% vs. 35%), although the difference was not statistically significant. However, after controlling for other factors, participation in the drug court did significantly lower the odds of rearrest and increase the length of time to rearrest. In this study, Deschenes and her colleagues were able to analyze recidivism by risk level (low, medium, and high), as determined at admission. For low- or medium-risk offenders, in-program rearrest prevalence was slightly lower than the probation comparison sample (16% vs. 22%) but the difference was not statistically significant. However, for high-risk clients, drug court participation significantly reduced rearrest (19% vs. 38%). A high-risk score at intake was also a significant predictor of rearrest after controlling for other factors in multivariate analyses, and a significant predictor of program termination.

Three other evaluations measured in-program recidivism for all drug court participants: 37% of Syracuse (NY) drug court participants were rearrested during the program, as were 28% of clients of the Cumberland County (ME) drug court. In the Santa Barbara (CA) evaluation, the average number of arrests, convictions, and jail days served all

⁶ $p < .01$.

⁷ $p = .05$.

decreased significantly comparing the 12 month period before program entry to recidivism during 12 months in the drug court.

Post-program recidivism

[5] In this section, the results are summarized from the six evaluations that examined recidivism outcomes for all drug court clients after they graduated from or were discharged from the program, and that included a comparison group. As with previous studies, recidivism rates varied across jurisdictions, in part reflecting different follow-up periods, local law enforcement strategies, or different populations served by the drug court. Table 2 summarizes the recidivism findings, including the type and size of the comparison sample, the length of the follow-up period, the measure(s) used, and the recidivism rate. Consistent with previous findings, a majority of the studies found lower recidivism rates for drug court participants (4 of 6 studies). In two of the analyses the lower drug court recidivism rate was statistically significant (Jackson County, MO and Escambia County, FL). Two other studies that found much lower recidivism rates for drug court clients (Polk County, IA and Salt Lake County, UT) did not include tests for statistical significance. In one study of the Las Vegas (NV) drug court (Miethe et al., 2000), the drug court sample had a significantly higher recidivism rate, and in another (Tarrant County, TX) the rate was slightly lower for the drug court but was not statistically significant. Miethe et al. (2000) found that drug court participants had significantly higher rearrest rates than the comparison sample even after simultaneously controlling for other factors in multivariate analyses.

The Polk County (IA) evaluation used two comparison samples: one consisted of offenders who were referred to the drug court but never enrolled (rejects or refusals) and the second comparison sample were offenders deemed eligible for

the drug court during a pilot phase to assess drug court program needs prior to implementation. The follow-up period varied but averaged 416 days. Using reconviction as the recidivism measure, 37% of drug court participants were reconvicted after leaving the drug court, compared to 75% of the pilot group sample. Felony reconviction prevalence was 6% for the drug court and 25% for the pilot comparison.

In Salt Lake County (UT), drug court participants were compared to a small group (N=29) of offenders who were screened for the drug court but did not enroll. In the 12 months following drug court completion, participants had an average of 3.2 new bookings and 29.2 new jail days compared to 6.6 new bookings and 54 new jail days for the comparison sample. Unfortunately, because of the small comparison sample size and the fact that the follow-up period varied greatly for the sample subjects (from one day to more than one year) these findings should be considered preliminary.

Abt Associates' NIJ-funded evaluations of the Escambia County (FL) and Jackson County (MO) drug courts tracked rearrests for a two-year period following drug court participation. The comparison samples were matched groups of offenders adjudicated before the drug courts were implemented. Looking at felony rearrests only, participation in the Escambia County drug court decreased felony recidivism from an expected 40% to 12% within two years of leaving the drug court. There was no impact on misdemeanor arrests. In the Jackson County drug court recidivism for felonies was reduced from 50% to 35%, and for any type of rearrest from 65% to 45%.

The study of recidivism in the Tarrant County (TX) drug court found only a small and non-significant effect on rearrests and time to rearrest for 12 months post-program. Among drug court participants, 13% were rearrested within

one year of leaving the program compared with 17% of a comparison sample of offenders who were eligible for the drug court but opted out of participation. The author of this study speculated that the lack of impact may have reflected the fact that participants of this drug court were relatively low-level offenders (this is clear from their relatively low rearrest rates) who would tend to do fairly well even without a special intervention (Bavon, 2000).

Table 2
Summary of Post Program Recidivism Outcomes, Adult Drug Courts^a

Drug Court	Author	Comparison Sample(s)	Follow-up Period	% Rearrested		Other Recidivism Measure	
				Drug Court	Comparison	Drug Court	Comparison
Escambia County, FL	Truitt et al.	Drug court participants (N=483) Comparison sample of pre-drug court offenders (N=252)	24 Months	12% ^b felony	40%		
Polk County, IA	Stageberg et al.	Drug court participants (N=124) Two comparison samples were used in this study: 1. Referred Group—offenders referred to the drug court who did not enter the program (N=188) 2. Pilot Group—offenders who were included in the “pilot group” identified to determine the need for a drug court in Polk County (N=124)	Averages: 416 days, drug court 450 days, referred group 655 days, pilot group	37% ^c total reconvict. rate	Referred: 39% Pilot: 75%	6% felony reconvict. rate	Referred: 22% Pilot: 25%
Jackson County, MO	Truitt et al.	Drug court participants (N=693) Comparison sample of drug felony offenders pre-drug court (N=1,416).	24 Months	45% ^d	65%	35% felony	50%

Drug Court	Author	Comparison Sample(s)	Follow-up Period	% Rearrested		Other Recidivism Measure	
				Drug Court	Comparison	Drug Court	Comparison
Las Vegas, NV	Miethel et al.	Treatment sample involved all 301 defendants who entered drug court in 1995 Comparison sample of equivalent size was randomly selected from the non-drug court cases processed in the general district courts in 1995	12 Months	26% ^b court appearance in 1997	16%		
Tarrant County, TX	Bavon	Drug court treatment group (N=157) Comparison sample consists of eligible offenders who “opted-out” (N=107)	12 Months	13% ^e	17%		
Salt Lake County, UT	Harrison et al.	Total treatment group (graduates + dropouts, N=158) Comparison sample consists of clients who were assessed with ASI but did not participate (N=29)	1 to 12 Months	39% ^c booked post treatment	73%	29 mean # post-drug court jail days	54

^a Percentages rounded off to nearest whole number.

^b $p < .05$.

^c Statistical significance levels not presented.

^d $p < .01$.

^e Difference not statistically significant.

General recidivism

Three evaluations deserve separate discussion because they utilized the strongest research design (an experimental design with random assignment to the drug court) to test the impact of the court on recidivism. Such a design provides the most conclusive assessment of program impact because it can generally be assumed that the groups receiving the intervention and those processed as usual are highly equivalent. The design also assures the control of time-dependent factors such as local law enforcement and prosecution policies, the nature of the local drug problem, and organizational factors. Unfortunately, in these studies there was no distinction made between recidivism occurring during the program and that occurring post-program. Accordingly, the results are a more general measure of the impact of the drug court on recidivism during the period after admission into the program.

For the evaluation of the Baltimore City Drug Court by Gottfredson and her colleagues, 235 eligible clients were randomly assigned either to the drug court or to “treatment as usual” between February 1997 and August 1998. Recidivism from official records was tracked for 12 months from program entry and included both rearrests and reconvictions. The drug court sample had a significantly lower prevalence of both rearrest (48% vs. 64%) and average number of rearrests (0.9 vs. 1.3).⁸ The percentage reconvicted on new charges was also slightly lower (31% vs. 35%) but the difference was not statistically significant. The authors of this study noted that the drug court impact may have been a conservative estimate because 10 of the 139 cases assigned to the drug court never enrolled in the program, but were still included in the experimental sample.

⁸ $p < .05$.

In their evaluation of the Las Cruces (NM) DWI court, Breckenridge et al. (2000) randomly assigned convicted first-time DWI offenders assessed as alcoholic into the DWI court and a control group. This random assignment occurred over a nine-month period in 1997. Among the 79% of those who agreed to participate in the study, the experimental and control groups were then followed up for a range of 15-24 months after the initial arrest. Using reconviction as the recidivism measure, Breckenridge et al. (2000) found no impact on traffic offenses: 20% of the DWI court group and 17% of the controls were reconvicted for a traffic offense. However, participation in the DWI court did significantly lower the likelihood of reconviction for “alcohol-related or serious” offenses (15% vs. 22% of the controls). These mixed results, and the relatively low reconviction rates found overall, may have reflected the general use of enhanced sanctions in this county during the period of the study (Breckenridge et al., 2000). Moreover, sample sizes were small (N=39 DWI court clients, N=36 control group) so the findings need to be replicated with a larger sample.

Finally, the evaluation of the Summit County (OH) juvenile drug court included random assignment of eligible youth to the drug court or standard adjudication. The number of cases that had available rearrest data was small (27 experiment subjects and 13 controls) and the post-admission follow-up period was only six months, so the findings should be considered preliminary. The drug court group averaged one rearrest and the control group averaged 2.3. Among the experimentals, 11% had 3 or more new charges, compared with 46% of the controls.

Four other evaluations used a quasi-experimental design to calculate rearrests for a 12-month period after drug court admission without distinguishing between in-program and post-program recidivism. In the Erie County (OH) drug

court, 36% of drug court participants were rearrested after admission, in contrast to 69% of a comparison sample of rejects and refusals deemed eligible for the drug court and matched on race, gender, and substance abuse problem.⁹ Multivariate analysis of the factors predicting rearrest found that the only statistically significant predictor of rearrest was participation in the drug court. Because of a small sample size, however (39 drug court clients and 48 comparisons), and variable follow-up period (approximately one to three years) these findings should be considered preliminary.

Goldkamp et al. (2001) also examined rearrests for several admissions cohorts for 12-month periods after drug court admission for the Portland (OR) and Las Vegas (NV) programs. For the Portland drug court there were two comparison samples tracked for 12 months after entering the court process.¹⁰ For the Las Vegas study the comparison samples were randomly selected from among all felony drug cases that did not enter the drug court. Accordingly, these recidivism outcome measures include both in-program as well as post-program rearrests depending upon when a participant left the drug court. Presumably for a drug court graduate all the rearrests in this time frame would have occurred during program participation, while for drug court dropouts the rearrest could have occurred during or after the program depending upon when they dropped out.

Nonetheless, the Portland and Las Vegas recidivism analyses are useful because they provide a general measure of

⁹ $p < .01$.

¹⁰ One comparison sample included drug defendants who attended a public defender orientation but did not enter the drug court and the second sample were drug defendants who neither attended the public defender orientation nor entered the drug court.

short-term recidivism impacts, and because these evaluations collected data from several time periods. In Portland, rearrest prevalence was lower for drug court participants overall for the 1991-97 period (37% vs. 53% for one comparison sample and 49% for the other), and was lower for each of the admissions cohorts examined. However, in Las Vegas it was found that short-term recidivism impacts varied by admission cohort. For example, while rearrest prevalence was lower for drug court participants overall for the 1993-97 period (53% vs. 65% for comparisons, any rearrest), the drug court rearrest prevalence was actually higher for the drug court for the 1996 admissions cohort (73% vs. 65%) and about the same for the two groups for the 1997 cohort (56% and 59%). This important finding suggests that one-shot evaluations of a drug court, especially during its early phases of implementation, may give a distorted picture of program impacts. As Goldkamp et al. (2001) point out, time-dependent external and internal factors such as changes in the judge, treatment provider, or program structure, as well as changes in client characteristics over time, may have substantial impacts on a drug court's effectiveness.

The Douglas County (NE) evaluation used two comparison samples: the first included offenders placed in a diversion program and the second was a sample of offenders processed through traditional court adjudication. Both comparison samples were matched to the drug court sample on offense, gender, race, and age. Because of missing data, the evaluators were unable to match on criminal history, but controlled for this in multivariate analyses. Aside from the use of two matched comparison groups, another strength of this study was the use of multiple recidivism measures (e.g., rearrest, time to rearrest, reconviction, and average number of rearrests). Generally, it was found that drug court participants had lower post-program recidivism than did offenders in the traditional adjudication sample, and higher rates than those

placed in diversion. The observation period was 12 months after the sample arrest (i.e. roughly time of admission into the drug court): 42% of the drug court clients were rearrested for any offense, 61% of the traditional adjudication sample, and 29% of the diversion sample. Felony rearrest prevalence rates were 19%, 35%, and 10% respectively. The mean number of months to first rearrest was the same for the drug court and traditional adjudication groups (3.3 and 3.1 respectively), and highest for the diversion comparison sample (4.3). After controlling for prior criminal history and other factors in multivariate analyses, lower rearrest rates were still found for the drug court compared to traditional adjudication, and higher rearrest rates compared to diversion clients.

Other post-program outcomes

The measurement of post-program outcomes other than recidivism remains quite limited in the drug court evaluation literature. Several factors probably account for this. Few criminal justice or treatment data systems exist that track drug use, employment, or other social or health indicators. Collection of such data usually requires client interviews that are expensive and time-consuming to administer. Finally, many drug court evaluations are conducted within a relatively short time frame, making it impossible to collect extensive data aside from computerized criminal justice records.

Although several evaluations conducted small numbers of qualitative interviews with nonrandom samples of drug court graduates, none contained post-program data on health, employment, or other measures. One evaluation (Santa Barbara County, CA) included data on drug use and other problems 12 months after program admission, but the data were limited to those still in the program for that period. Using composite score and severity measures from the

Addiction Severity Index (ASI), it was found that compared to scores at intake, after 12 months in the drug court, drug and alcohol abuse severity significantly decreased as did medical, psychological, and family/social problems.

Cost Analyses

One important empirical question about drug courts is whether the costs of operating such programs are lower than the economic benefits or avoided costs that accrue because incarceration time is reduced, or because drug treatment reduces the likelihood of relapse and recidivism. Research on treatment in other criminal justice settings has concluded that investments in treatment generate net economic benefits relative to their costs (e.g., Belenko & Peugh, 1999; Gerstein et al., 1994; Rajkumar & French, 1996; Rydell et al., 1996). Several studies reviewed previously (Belenko, 1998; 1999) concluded that drug courts generate criminal justice savings or lead to avoided future costs. Two relatively comprehensive cost analyses of drug courts were conducted by Finigan (1999) and by Harrell et al. (1999), and both found net cost savings attributable to the drug court.

Among the current set of evaluations reviewed, five included drug court cost data. As in previous reviews, the methods used in each analysis were different, so it is not possible to synthesize the findings.

The Alameda County (CA) drug court was estimated to cost only \$21.55 per case; this figure was calculated by dividing the total drug court budget by the number of clients admitted during 1998-99. This is clearly an underestimate of the actual costs of operating the drug court and providing services. Although not specified in the evaluation, it is likely that some staff costs as well as treatment services costs and the cost of jail sanctions were excluded. In contrast, the

Mendocino County (CA) drug court cost per case was calculated at \$3,900; no information on the sources of these costs was provided in this evaluation. That cost was contrasted with estimated jail costs of \$6,360 for similar offenders not processed through the drug court. In addition, the evaluation found that total jail costs for participants were \$113,606 prior to entering the drug court, and \$44,679 during drug court participation. However, it is problematic to compare these costs because the pre-drug court period was presumably much longer than the drug court participation period; an annualized jail cost measure would have been more meaningful.

[6] The evaluation of the Douglas County (NE) drug court included a fairly extensive analysis of the comparative costs of processing an offender through the drug court compared to simple diversion and traditional adjudication. Based on a random sample of the cases used for their recidivism analyses (see above), detailed criminal justice costs (including arrest, court hearings, sentencing, incarceration, and other court activities) and treatment costs were enumerated. The total criminal justice costs were \$4,352 per case for the drug court (including treatment), \$8,358 for traditional adjudication, and \$808 for diversion (including treatment). The lower costs compared to traditional processing primarily were attributable to lower incarceration costs, and the higher costs relative to diversion were due to higher court and case management costs (by definition diversion cases have much fewer court appearances and little supervision) and higher jail costs. These cost analyses excluded criminal justice costs for processing new rearrest cases. It is recommended that the reader consult this report as a good model for the types of detailed components of drug court costs and analytical strategies that are useful in cost analyses.

Included in the evaluation of the Polk County (IA) drug court was a detailed comparative analysis of the correctional system and treatment costs for drug clients, offenders referred to drug court but not enrolled, and pre-drug court offenders who would have been eligible for the drug court. Adjusting the data to assure cross-sample comparability of time frame and case mix severity, the evaluators found that jail costs were lower for the drug court compared to the pre-drug court comparison (\$7,237 per case vs. \$9,757), as were prison costs (\$13,334 vs. \$27,632). Including drug court operational costs, drug court clients cost an average of \$26,022 compared with \$39,777 for the pre-drug court sample, or 35% lower. Not surprisingly, given the typical lack of treatment access for traditionally processed offenders, average treatment costs were much higher for drug court clients (\$4,401 including clients who did not actually receive any treatment vs. \$901). Adding the criminal justice and treatment costs together, drug court client costs were still 25% lower than traditional processing (\$30,423 vs. \$40,678).

In a revised and updated analysis of program costs, evaluators of the Cumberland County (ME) drug court examined program costs and projected benefits based on data for all drug court participants in their sample of 59 clients (35 graduates, 24 failures). For the participants, drug court costs were \$319,012, jail sanctions costs were \$51,559, probation costs were \$74,160, and state and local incarceration costs for terminated clients were \$427,349, for a total cost of \$872,080 or \$14,781 per drug court participant. The evaluators estimated the projected incarceration and probation sentence costs had the offenders not been in the drug court at \$1,130,084 and \$69,840 respectively, for a total cost of \$1,199,924. Thus the total estimated economic benefits from this group of drug court clients were \$327,844, a net annualized savings of \$5,557 per client. Other unmeasured benefits may have accrued from tax revenues from graduated

clients' employment, and from the economic multiplier effect of employment earnings. On the other hand, their analysis may have excluded drug treatment and other service costs, which would have reduced the net economic benefits.

Juvenile Drug Court Evaluations

The first juvenile drug court (JDC) began operations in Key West, FL in October 1993 (American University, 2001). As of December 2000, there were 131 JDCs in 46 states and the District of Columbia, and an estimated 9,500 participants had been enrolled to date (American University, 2001). Juvenile drug courts tend to be small programs, which complicates the evaluation process; enrollment per court was 34 as of July 1999 (American University, 1999). As with adult offenders, JDCs serve a relatively small proportion of the potential target population.

According to the most recent American University survey, participants tend to be older youth: 57% were 16 or 17 years of age (American University, 2001). Eighty-three percent of JDC participants are male, 49% are Caucasian, 24% African American, and 23% Hispanic. Only 26% were living with both parents, and 7% of the participants had at least one child of their own. African Americans are underrepresented in JDCs: in the juvenile justice system as a whole, 39% of drug cases for which petitions were filed in 1997 were African American (Snyder et al., 1999). Nearly all JDC participants (83%) have had at least one prior criminal justice contact, including 34% with three or more, while approximately one-third have never been in a treatment program. The drugs of choice for participants are marijuana and alcohol. At the time of program entry, 86% of JDC participants were receiving some type of schooling: 47% were in a mainstream school, 31% in an alternative school, and 8% were in a GED or vocational training school. Not surprisingly, most participants

in the drug court had educational problems: 97% of JDC programs listed academic underachievement as a special need of their clients, 97% listed reading below grade level, 97% reported attention deficit disorder, and 80% reported other learning disabilities.

Seven evaluation reports for JDCs have been released since the 1999 review was written: Los Angeles County (CA), Orange County (FL), Campbell County (KY), Missoula (MT), Second Judicial District (Albuquerque) (NM), Summit County (OH), and Beckham County (OK). The Summit County evaluation is notable for their use of an experimental design to randomly assign youth to the drug court or standard adjudication. Because of the relative newness of JDCs, the lack of research on their operations, and the different operational and treatment challenges compared to adult drug courts, these evaluations are summarized separately in this section.

Consistent with the national survey results, marijuana is the drug of choice for most juvenile clients (for example, 94% of Orange County, FL clients; 80% of Summit County, OH; 100% of Beckham County, OK; 77% of the Second Judicial District (Albuquerque), NM). Almost three-fourths of Los Angeles County (CA) clients used marijuana daily prior to admission. Different patterns were found in Missoula (MT), where 56% were primary marijuana users, and 25% alcohol.

Juvenile drug courts differed in terms of the seriousness of their clients' histories. Participants in the Los Angeles County, Missoula, Albuquerque, and Summit County JDCs were relatively serious offenders. For example, 52% of the Summit County clients had two or more prior felonies, 64% had prior drug treatment, 94% had a prior school suspension, and 88% had been truant. Albuquerque clients averaged 6.5 prior arrests, and Missoula participants averaged

10.1 prior charges. In contrast, a substantial percentage of participants in the Beckham County and Orange County (FL) drug courts were first or second offenders.

Several JDC evaluations included health data that suggest a substantial need for other health-related services. For example, 10% of Orange County (FL) clients had a history of mental health problems. In Summit County, fully 43% of the clients were dually diagnosed, and 33% had ever been on medication for psychological problems. High rates of prior physical or sexual abuse may be responsible for or compound psychological problems for substance-involved youth: 39% of the Summit County clients in that study had been physically abused, and 14% had been sexually abused. Intergenerational cycles of substance abuse and criminality are evident. The most common reason for a juvenile being denied admission to the Missoula JDC was the presence of mental health problems. High rates of mental health problems have been noted in other research on juvenile offenders (Teplin, 2001).

Among the Orange County (FL) drug court clients, 39% had a relative who had been incarcerated and 47% had a relative with a substance abuse problem. Eighty-five percent of the Albuquerque clients had a history of alcohol abuse in their family. The Albuquerque evaluation was the only one to collect data on other risky health behaviors: 81% of the clients smoked cigarettes, and among the 77% who were sexually active, only 41% usually or always had protected sex.

Three of the evaluations reviewed included drug test data, with widely disparate results. More than one-third of the drug tests were positive in the Missoula (35% for marijuana) and Summit County studies (39% in the latter court), compared with only 4% of tests that were positive in Albuquerque.

The only studies to report retention data suggest that JDCs may have somewhat lower completion rates than adult drug courts. In Orange County (FL), 42% of the clients in a one-year admissions cohort successfully completed the program. Factors associated with successful completion included race (whites were more likely to complete), being in school, having a positive family attitude toward the program, and being a misdemeanor drug offender. Among those entering the drug court in its first year of operations, only 24% of the Los Angeles County participants had graduated by the end of the data collection period; 66% had been terminated and 10% were still active. Even if all the active clients eventually graduated, the completion rate would be only 34% (females had a higher completion rate than males, 38% vs. 21%).

Two evaluations collected some data on sanctions and rewards. Missoula youth averaged 10.2 sanctions and 6 rewards. The most frequent sanctions imposed were community service, followed by home arrest and detention. By far the most common incentive awarded was a week off from appearing in drug court, followed by store gift certificates. In Beckham County, the primary reason for imposing a sanction was a dirty urine (43% of the sanctions). Seventeen percent of the sanctions were due to a curfew violation, a similar percentage for school problems, and 15% of the sanctions were because of "poor attitude." The most common type of sanction imposed was time in an intensive intervention program (45% of the sanctions); 13% of the sanctions were community service, and 13% were electronic monitoring.

Only one evaluation included data on court or treatment service delivery. In Orange County (FL), graduates received an average of 46 treatment sessions over 196 days compared to 14 sessions over 77 days for dropouts.

Limited recidivism data are available from these JDC evaluations. Data from the Summit County experimental evaluation were presented above. In Orange County (FL), only 10% of the participants were rearrested during program participation. This evaluation also collected post-program recidivism data for those who had left the program (either through graduation or unsuccessful termination). Because no comparison group data were collected, and the follow-up time ranged from 20 to 434 days (average 181 days), these results should be considered preliminary. Overall, 15% of the clients were rearrested during post-program follow-up. Among Los Angeles County clients, 26% had a rearrest during the follow-up period after program admission, with two-thirds of the rearrests occurring during the program. Thus 16% were rearrested during program participation.

Finally, as noted in previous JDC evaluations, data and management information system limitations continue to limit the scope and utility of program evaluations. Several of the studies reviewed cited data problems as hampering the evaluation. In addition, the relatively small number of clients in most JDCs limits the ability to draw definitive conclusions about their impacts or operations for evaluations that collect data for only a one- or two-year period.

Family Drug Court Evaluation

In October 2000, researchers from the Child Welfare Training Program of the State University of New York (SUNY) at Stony Brook School of Social Welfare released a preliminary evaluation of the Suffolk County (NY) Family Treatment Court. This is the first external evaluation of a family treatment court.

Unfortunately, the evaluators encountered limitations on the availability and consistency of the data that hindered

the study. Although the program had adapted the management information system developed for the Brooklyn (NY) Treatment Court, there were substantial problems with missing or lost data. No structured system was in place for integrating or tracking client or case data over time, and information from seven different data sources had to be collected and integrated for the evaluation.

The evaluation included both a process and a limited outcome evaluation. The study focuses on 98 parents and their families entering the family treatment court (FTC) between January 1998 and December 1999. Of the 98 participants, all had been cited for neglect only (rather than abuse or a combination of both). At the end of the study period, 78 parents (80%) were still active at the end of the study period, 13 (13%) had successfully completed the program, 4 (4%) were terminated from the program for noncompliance, and 3 (3%) were terminated for other reasons. The mean time to graduation was 14 months.

According to the report, the purpose of the FTC is “to provide enhanced services to parents alleged to have neglected their children as a result of alcohol or other drug use, to ensure the safety and well being of children and to expedite permanency for children.” The court seeks to improve screening and assessment, provide immediate access to treatment and use a system of rewards and sanctions to motivate parents to continue treatment and increase accountability and judicial supervision.

Most of the clients (91%) were female, and the mean age of the parent was 34. Terminated clients were slightly younger (average age 31). Fewer than a third of the participants were employed (28%) at intake and 36% had less than a high school education. Nearly half (44%) were receiving government assistance. Parents averaged 2.7

previous treatment episodes. The primary drug of abuse was cocaine or crack (56%), followed by alcohol (23%). Of the 221 children under the supervision of the FTC, 25% were under 2 years old, and the average age was 6.6 years.

The mean number of days between screening and intake at treatment was 40 days, while half entered treatment within 32 days. After screening and entrance to the program, the parent is referred to treatment and completes a full intake assessment. In conjunction with their treatment goals, a comprehensive case management plan is assembled with the parent. The parent is then required to attend treatment, submit to drug testing, and attend regular court hearings with the judge. Non-compliance with these activities results in sanctions. There were no data reported on use of rewards and sanctions. In the first three months of the program, clients had an average of 9.7 court hearings; this decreased to 7.5 hearings during their second 3 months, and 5.9 in the third 3-month period. Most of the parents attended outpatient treatment, but 50% had at least one residential treatment episode. The number of treatment visits averaged between 30 and 39 for each of the 3-month periods.

The evaluators concluded that the Suffolk County Family Treatment Court has been successful in facilitating collaboration among other agencies and service providers impacting families cited for neglect. Collaborators in the Suffolk County Family Treatment Court include the county attorney's office, the Legal Aid Society, the local Department of Social Services (local child welfare agency), the Department of Health, the local substance abuse treatment agency and providers, and court appointed special advocates. Based on interviews with members of the FTC team, members of the court team have similar conceptions of the goals and objectives of the model and their agreement among the partners of progress to date. However, team members

acknowledge different cultures, caseload differences, new responsibilities, and overall increased workload. Staff from different agencies differed greatly in whom they viewed as the FTC client (i.e. family vs. parent vs. child vs. Department of Social Services). Interestingly, in this model, the evaluators determined that neither the child protective service workers nor the team members themselves considered frontline child protective services workers as part of the team. In fact, FTC cases represented only 5-15% of the CPS worker caseloads, so FTC staff had to deal with a number of case workers who were not always very familiar with the FTC. Secondly, legal representatives, while active in some activities, were also not considered part of the team by all team members.

Preliminary outcomes suggest the FTC does lead to reunification of children with their families. For graduates (N=13), 75% of the children resided with their parent at the end of the program, up from 25% at intake; the percent of children in foster care decreased from 31% to 3% for graduates. However, these families did not show any significant changes in most of the factors in family risk assessment scales. Graduates did have significant decreases in domestic violence and overall case risk rating with an increase in acknowledgment of responsibility. For other clients, however, there was little change in child placement between intake and the end of the data collection period.

DISCUSSION

The number and quality of drug court evaluations continue to grow. The current set of evaluations is generally consistent with previous findings in several areas. These evaluations indicate a high degree of local satisfaction with the drug court models. Drug courts enroll older offenders who have fairly extensive criminal histories and numerous service needs. Program graduation rates averaged 47% in the eight

studies that reported such data. Drug use and recidivism rates (based on a limited number of studies) are relatively low while clients are in the program. The three studies that used random assignment to drug court or control conditions all found a reduction in recidivism for the drug court participants, although the outcomes in these studies mixed in-program and post-program rearrests. Further, one of these studies had a very small sample size and only looked at six-month outcomes (the Summit County, OH juvenile drug court), and one found an effect on non-traffic rearrests but not on new traffic offenses (Las Cruces, NM DWI Court).

Post-program recidivism rates are reduced in most studies that analyzed such data. Four of the six studies that included post-program recidivism data with a comparison sample found lower rates for drug courts, but the size of the effect varied across jurisdictions. However, longer follow-up and better precision in equalizing the length of follow-up between experimental and comparison groups are needed. Several studies that examined program costs found that per client drug court costs are lower than standard processing, primarily due to reduced incarceration. However, for low-risk offenders straight diversion may be less expensive and achieve similar outcomes. The existing body of drug court research indicates that these programs can engage many drug offenders in long-term treatment while minimizing public safety risk.

[7] There remains a need for better precision in describing data sources, measures, and time frames for data collection. Many evaluations were unclear about one or more of these aspects, making it difficult to assess the meaning of the results. It is particularly important to distinguish in-program from post-program outcomes, rather than just indicating a certain length of follow-up time post-admission. The distinction is important because it captures information in two different settings: client behavior during drug court, when

they are under close supervision and have many reporting and service requirements, and their behavior once they have left the drug court, whether through graduation or unsuccessful termination.

Data quality and information systems problems continue to affect drug court evaluations. A number of evaluators cited problems with extensive missing data, inconsistent data, data entry errors, or the need to merge information from a number of different agencies and data sources. In some cases, client or program data had to be coded manually from case files, because the existing management information system was inadequate. Relatively few evaluations included data on program services, either because of lack of data or because service delivery was not included in the evaluation design. Many researchers and drug court practitioners have noted the importance of looking inside the “black box” of drug court treatment and other services, in order to understand which elements of the drug court process affect client outcomes (e.g., Belenko, 2001; Goldkamp et al., 2001; Taxman, 1999).

[8] Another important issue in drug court evaluation was made evident from two of the studies. Recidivism impacts in the Orange County (CA) and Las Vegas (NV) drug courts varied by year of admission. One can therefore reach a distorted conclusion about the impact of a drug court program by just examining one time frame. Impact and effectiveness may fluctuate over time because of external or internal factors such as staff changes, changes in the treatment provider, alterations in drug court program design, or changes in client eligibility criteria. Accordingly, periodic, multi-year evaluations of drug courts are preferred.

Finally, many of the same issues of concern raised in the previous review (Belenko, 1999) continue to apply. Many

evaluations still focus only on program graduates rather than analyzing data for all participants. The calculation of graduation rates remains problematic in some evaluations, with clients still active in the program counted as successes no matter how long they have been in the drug court. Time periods for data collection need to be more carefully specified. Data on sanctions and incentives, as well as treatment and other services, are still fairly limited. Research on juvenile and family drug courts is still in its very early stages, making conclusions about their impacts impossible. Qualitatively, a number of juvenile courts have faced implementation or operational problems.

It should be acknowledged that most local drug court evaluations are conducted under several constraints: limited funding, a short time frame to conduct the study, data management system limitations, and small sample sizes. Nonetheless, several of the evaluations included detailed and useful descriptions of operational components, including the screening and referral process. A fuller understanding of the impacts of drug courts in the context of the larger criminal justice system requires more research on the targeting, referral, screening, and admission process. The use of experimental designs to test program impacts in several of the evaluations is an encouraging trend. The findings from several evaluations that drug court clients have high rates of mental health problems suggest that programs need to consider inclusion of services for co-occurring disorders.

Future research on drug courts needs to examine the client, operational, and treatment delivery characteristics that affect outcomes, so that drug courts can maximize their impacts and cost effectiveness, and the relative effectiveness of the various elements of the drug court model can be better understood.

ACKNOWLEDGEMENTS

This review was supported by a grant from the Robert Wood Johnson Foundation. The author would like to thank the American University Drug Court Clearinghouse and Technical Assistance Project; the Drug Courts Program Office, Office of Justice Programs, U.S. Department of Justice; and the National Drug Court Institute for providing copies of drug court evaluations.

The assistance of National Center on Addiction and Substance Abuse staff members Daniel Mendez, Margaretann Macchetto, and Jennie Hauser in the preparation of this article is gratefully acknowledged.

REFERENCES

- American University. (1999). *Drug court activity update: Composite summary information, July 1999*. Washington, DC: U.S. Department of Justice, Office of Justice Programs, Drug Court Clearinghouse and Technical Assistance Project.
- American University. (2001). *Drug court activity update: Composite summary information, December 2000*. Washington, DC: U.S. Department of Justice, Office of Justice Programs, Drug Court Clearinghouse and Technical Assistance Project.
- American University. (2001). *Drug court activity update: Composite summary information, May 2001*. Washington, DC: U.S. Department of Justice, Office of Justice Programs, Drug Court Clearinghouse and Technical Assistance Project.
- Bavon, A. (2000). The effect of the Tarrant County drug court project on recidivism. *Evaluation and Program Planning, 24*, 13-22.
- Belenko, S. (1998). Research on drug courts: A critical review. *National Drug Court Institute Review, I(1)*, 1-42.
- Belenko, S. (1999). Research on drug courts: A critical review 1999 update. *National Drug Court Institute Review, II(2)*, 1-58.
- Belenko, S. (2000). The challenges of integrating drug treatment into the criminal justice process. *Albany Law Review, 63(3)*, 833-876.
- Belenko, S. (2001). Drug courts. In C. Leukefeld, F. Tims, & D. Farabee (Eds.), *Clinical and policy responses to drug offenders*. New York, NY: Springer.

- Belenko, S., & Peugh, J. (1999). *Behind bars: Substance abuse and America's prison population. Technical report.* New York, NY: The National Center on Addiction and Substance Abuse at Columbia University.
- Breckenridge, J.F., Winfree, L.T., Maupin, J.R., & Clason, D.L. (2000). Drunk drivers, DWI "drug court" treatment, and recidivism: Who fails? *Justice Research and Policy*, 2(1), 87-105.
- Brewster, M.P. (2001). An evaluation of the Chester (PA) drug court program. *Journal of Drug Issues*, 31(1), 177-206.
- Broner, N., Borum, R., & Gawley, K. (2001). Criminal justice diversion of individuals with co-occurring mental illness and substance use. In G. Landsberg, M. Rock, & L. Berg (Eds.), *Serving mentally ill offenders and their victims: Challenges and opportunities for social workers and other mental health professionals.* New York, NY: Springer.
- Carroll K.M. (1997). Enhancing retention in clinical trials of psychosocial treatments: Practical strategies. In L. Onken, J. Blaine, & J. Boren, (Eds.), *Beyond the therapeutic alliance: Keeping the drug-dependent individual in treatment.* [NIDA Research Monograph Series #165, 4-24]. Washington, DC: U.S. Government Printing Office.
- Chou C.P., Hser Y.I., & Anglin M.D. (1998). Interaction effects of client and treatment program characteristics on retention: An exploratory analysis using hierarchical linear models. *Substance Use & Misuse*, 33(11), 2281-2301.
- El-Bassel, N., Witte, S., Wada, T., Gilbert, L., & Wallace, J. (2001). Correlates of partner violence among female

- street sex workers: Substance abuse, history of childhood abuse and HIV risks. *AIDS Patient Care and STDs*, 15(1), 41-51.
- Finigan, M. (1999). Assessing cost off-sets in a drug court setting. *National Drug Court Institute Review*, II(2), 59-92.
- Finn, P., & Newlyn, A.K. (1993). *Miami's "drug court: A different approach*. Washington, DC: U.S. Department of Justice, Office of Justice Programs, National Institute of Justice.
- Gerstein, D.R., Harwood, H., Fountain, D., Suter, N., & Malloy, K. (1994). *Evaluating recovery services: The California Drug and Alcohol Treatment Assessment (CALDATA)*. Washington, DC: National Opinion Research Center.
- Goldkamp, J.S., White, M.D., & Robinson, J.B. (2001). Do drug courts work? Getting inside the drug court black box. *Journal of Drug Issues*, 31(1), 27-72.
- Hammett, T., Harmon, P., & Maraschak, L. (1999). *1996-1997 update: HIV/AIDS, STDs, and TB in correctional facilities*. Washington, DC: U.S. Department of Justice, Office of Justice Programs, National Institute of Justice.
- Harrell, A., Cavanagh, S., & Roman, J. (1999). *Final report: Findings from the evaluation of the District of Columbia superior court drug intervention program*. Washington, DC: Urban Institute.
- Lang, M., & Belenko, S. (2000). Predicting retention in a residential drug treatment alternative to prison program. *Journal of Substance Abuse Treatment*, 19, 145-160.
- Marlowe, D.B., & Kirby, K.C. (1999). Effective use of sanctions in drug courts: Lessons from behavioral

- research. *National Drug Court Institute Review*, *II*(1), 1-32.
- Marquart, J., Merianos, D., Hebert, J., & Carroll, L. (1997). Health conditions and prisoners: A review of research and emerging areas of inquiry. *Prison Journal*, *77*(2), 184-208.
- Miethe, T.D., Lu, H., & Reese, E. (2000). Reintegrative shaming and recidivism risks in drug court: Explanations for some unexpected findings. *Crime and Delinquency*, *46*(4), 522-541.
- Office Justice Programs. (1998). *Looking at a decade of drug courts*. Washington, DC: U.S. Department of Justice, Author.
- Peters, R.H., & Hills, H.A. (1993). In H.J. Steadman & J.J. Coccozza (Eds.), *Mental illness in America's prisons*. Seattle, WA: National Coalition for the Mentally Ill in the Criminal Justice System.
- Peters, R.H., Haas, A.L., & Murrin, M.R. (1999). Predictors of retention and arrest in drug courts. *National Drug Court Institute Review*, *II*(1), 33-60.
- Peugh, J., & Belenko, S. (1999). Substance-involved women inmates: Challenges to providing effective treatment. *Prison Journal*, *79*(1), 23-44.
- Rajkumar, A., & French, M.T. (1996). Drug abuse, crime costs, and economic benefits of treatment. *Journal of Quantitative Criminology*, *13*(3), 294-302.
- Rydell, C.P., Caulkins, J.P., & Everingham, S.S. (1996). *Enforcement or treatment? Modeling the relative efficacy of alternatives for controlling cocaine*. Santa Monica, CA: RAND Corporation.

- Satel, S. (1998). Observational study of courtroom dynamics in selected drug courts. *National Drug Court Institute Review*, *I*(1), 43-72.
- Simpson, D.D., Joe, G.W., & Rowan-Szal, G.A. (1997). Drug abuse treatment retention and process effects on follow-up outcomes. *Drug and Alcohol Dependence*, *47*, 227-235.
- Smith, D.A., Wish, E.D., & Jarjoura, G.R. (1989). Drug use and pretrial misconduct in New York City. *Journal of Quantitative Criminology*, *5*, 101-126.
- Snyder, H., Finnegan, T., Stahl, A., & Poole, R. (1999). *Easy access to juvenile court statistics: 1988-1997* [data presentation and analysis package]. Pittsburgh, PA: National Center for Juvenile Justice [producer]. Washington, DC: Office of Juvenile Justice and Delinquency Prevention [distributor].
- Taxman, F. (1999). Unraveling "what works" for offenders in substance abuse treatment services. *National Drug Court Institute Review*, *II*(2), 93-132.
- Teplin, L. (2001). Mental health: An emerging issue. Presented at the annual conference of the American Correctional Health Services Association, Atlanta, GA, March.
- Toborg, M.A., Bellassai, J., Yezer, A., & Trost, R.P. (1989). *Assessment of pretrial urine testing in the District of Columbia: Summary report*. Washington, DC: U.S. Department of Justice, Office of Justice Programs, National Institute of Justice.
- U.S. General Accounting Office. (1997). *Drug courts: Overview of growth, characteristics, and results*. Washington, DC: Author.

NOTES

NOTES

NOTES