The Verdict on Drug Courts and Other Problem-Solving Courts

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INTRODUCTION

In the court system, judges or juries return verdicts that represent a final resolution of the case at bar. Aside from relatively circumscribed grounds for appeal or post-conviction relief, the verdict is dispositive of the current controversy, and may under some circumstances have precedential authority over factually related controversies presented in future cases.

Scientists, in contrast, rarely speak of verdicts. To the scientist, virtually all conclusions are provisional and subject to revision as new data become available. Much of what is believed to be true turns out, after the collection of more information, to be only partially true, conditionally true, or sometimes outright false.[1] It is, therefore, most prudent to withhold final judgment until all of the relevant facts are in. Unfortunately, for most matters, all of the relevant facts are never fully in or sufficiently understood.

Practitioners and policymakers do not have the same luxury as scientists of withholding judgment indefinitely. These professionals are charged with making important decisions that may influence the lives of countless clients, litigants, or society at-large. Criminal justice professionals and treatment professionals, for example, must act on the basis of the best available data to decide which programs or dispositions are most likely to be safe, effective and cost-efficient for individuals coming before the courts. Although it is understood that future research may uncover superior solutions or cast doubts on currently accepted practices, decisions must be made in the here and now, in the ab-

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1 *See, e.g.*, GARY B. MELTON ET AL., PSYCHOLOGICAL EVALUATIONS FOR THE COURTS 11–12 (3d ed., Guilford 2007) (noting sciences are inherently probabilistic in understanding truth whereas law demands appearance of certainty and irrevocability).

sence of perfect hindsight. In other words, a verdict is often called for, whether the scientific experts like it or not.

This article reviews current research findings on the effects of drug courts and other problem-solving court programs for drug-abusing or addicted individuals involved with the justice system. An effort is made to translate scientific standards of proof into comparable legal criteria which lawyers and criminal justice professionals can understand and rely upon as a basis for making informed policy decisions. The goal is to reach tentative "verdicts," based upon presently available knowledge, regarding the proven or unproven effects of these programs.

It is not suggested that legal and scientific terminology can be literally equated. Rather, the respective criteria may be cross-walked or analogized to aid criminal justice professionals in reaching conclusions about the current state of the science. Many criminal justice practitioners were not trained in scientific methods and may have difficulty interpreting research findings. Placing scientific standards of proof in a similar context to legal burdens of proof may assist these professionals to evaluate the extant research findings and base important decisions on those findings. There is certainly room to disagree with how various scientific standards are compared to legal criteria in this article, and future efforts might propose different criteria. This article represents one attempt to find common ground between legal and scientific standards for judging the merits of court-based treatment programs.

I. LEGAL & SCIENTIFIC STANDARDS OF PROOF

A. Beyond a Reasonable Doubt

The highest burden of proof in legal proceedings is the criminal standard of beyond a reasonable doubt.[2] This threshold is set intentionally high to reduce the likelihood that an innocent person will be wrongfully convicted of a crime.[3] In scientific terms, it greatly reduces the chances of a false positive (i.e., the conviction of an innocent person) by allowing a wide berth for false negatives (i.e., the acquittal of guilty persons). This degree of confidence has been roughly quantified by some commentators as having a level of certainty of greater than ninety percent.[4]

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2 *See* BLACK'S LAW DICTIONARY 1380 (9th ed. 2009) (defining criminal standard of beyond a reasonable doubt).

3 *In re.* Winship, 397 U.S. 358, 363-64 (1970) (6–3 decision) (finding beyond a reasonable doubt standard provides concrete substance to presumption of innocence).

4 *See* MELTON ET AL., *supra* note 1, at 26 (stating beyond a reasonable doubt standard can reasonably be quantified at above ninety percent).

A great deal of confirmatory evidence would need to be garnered for scientists to conclude that a program has been proven effective beyond a reasonable doubt. First, scientists would ordinarily require *experimental studies* involving *random assignment* of participants either to the program in question (the experimental condition, such as a drug court) or to a comparison intervention (the control condition, such as standard probation).[5] Random assignment provides the greatest assurance that participants in both conditions started out with an equal chance of success, and thus any superior effects of the experimental condition can be attributed to the effects of that intervention, rather than to irrelevant or extraneous factors such as differences in the severity or prognosis of the groups before they entered the programs.[6]

Ordinarily, one experimental study would not be sufficient. The experiment would need to be replicated or reproduced across different settings. This provides greater confidence that any positive effects were not merely a fluke or the result of chance, but are apt to be stable and real.[7] Two experimental studies conducted by different investigators are often considered adequate to conclude an intervention is an evidence-based practice (or EBP).[8] This assumes, of course, it is not associated with serious or dangerous side effects that would preclude its usage in routine practice.

After a program has been studied in a large number of research studies, investigators may perform what is called a *meta-analysis*. Meta-analysis involves systematically reviewing the research literature, selecting only those studies that are scientifically defensible according to standardized criteria, and statisti-

5 *See, e.g.*, DONALD T. CAMPBELL & JULIAN C. STANLEY, EXPERIMENTAL AND QUASI-EXPERIMENTAL DESIGNS FOR RESEARCH 13 (Rand McNally 1963) (concluding true experimental designs are most strongly recommended in methodological literature); CARY HECK, LOCAL DRUG COURT RESEARCH: NAVIGATING PERFORMANCE MEASURES AND PROCESS EVALUATIONS 11 (Nat'l Drug Ct. Inst. 2006) (concluding experimental design is the most time-honored and proven way to discover effect of treatment on a population).

6 *See* CAMPBELL & STANLEY, *supra* note 5, at 13–22 (explaining why random assignment reduces threats to internal and external validity of research studies).

7 *See, e.g.*, GEOFFREY KEPPEL, DESIGN & ANALYSIS: A RESEARCHER'S HANDBOOK 73-77 (2nd ed., Prentice-Hall 1982) (explaining why independent replication increases statistical power and confidence in research findings).

8 *See, e.g.*, U.S. Food & Drug Admin., *Guidance for Industry: Providing Clinical Evidence of Effectiveness for Human Drug and Biological Products* 3 (May 1998), *available at* http://www.fda.gov/downloads/Drugs/GuidanceComplianceRegulatoryInformation/Guidances/UCM078749.pdf (requiring at least two well-controlled studies for medications or medical devices to be considered effective); *see also* Douglas B. Marlowe, *Drug Court Efficacy vs. Effectiveness*, *in* VOL. II TREATING ADDICTED OFFENDERS: A CONTINUUM OF EFFECTIVE PRACTICES 16–1, 16–3 (Kevin Knight & David Farabee eds., Civic Res. Inst. 2007) (applying FDA requirement of at least two randomized controlled studies to effectiveness research on drug courts).

cally averaging the effects of the intervention across all of the acceptable-quality studies.[9] This provides the most conservative and scientifically rigorous estimate of the average effects of a program.

Finally, to be confident beyond a reasonable doubt, scientists may look to what are called *matching studies* and *fidelity studies* to determine not only whether a program works, but for whom it works and how it works.[10] No intervention should be expected to work for all individuals. In fact, it is a sign of an immature profession if one intervention is applied to all clients. Matching studies help practitioners to pinpoint the specific types of clients who are most likely to be helped by a particular program.[11] Practitioners can elicit the best effects at the least cost by identifying the optimal target population for each intervention.

Fidelity studies reveal what occurs if components of a program are removed or the dosage is decreased.[12] This process addresses the important question of whether faithful adherence to the model of the program is important. For example, judicial status hearings are believed to be a critical component—perhaps the defining component—of drug courts.[13] If, in fact, drug courts elicited equivalent outcomes regardless of whether or not participants appeared before a judge, this would cast serious doubt on the underlying theory of drug courts. On the other hand, if holding regular status hearings enhanced drug court effectiveness, then it could be more confidently concluded that drug courts

9 *See generally* MARK W. LIPSEY & DAVID B. WILSON, PRACTICAL META-ANALYSIS (Sage 2001) (describing application of meta-analysis to behavioral and criminal justice research studies); Michael L. Prendergast et al., *The Effectiveness of Drug Abuse Treatment: A Meta-Analysis of Comparison Group Studies*, 67 DRUG & ALCOHOL DEPENDENCE 53 (2002) (reporting results of meta-analysis on effects of drug abuse treatment on substance use and criminal recidivism).

10 *See, e.g.*, AMANDA B. CISSNER & MICHAEL REMPEL, CTR. CT. INNOVATION, THE STATE OF DRUG COURT RESEARCH: MOVING BEYOND "DO THEY WORK" 1 (2005) (discussing necessity of identifying target population for drug courts and determining which components are important to effective outcomes).

11 *See generally* Project Match Research Group, *Matching Alcoholism Treatments to Client Heterogeneity: Project MATCH Posttreatment Drinking Outcomes*, 58 J. STUD. ALCOHOL 1 (1997) (reporting results of national study matching alcoholic patients to specific treatments).

12 *See generally* Bruce J. Rounsaville et al., *NIDA's Stage Model of Behavioral Therapies Research: Getting Started and Moving on From Stage I*, 8 CLINICAL PSYCHOL.: SCI. & PRAC. 133 (2001) (describing progressive stages of sophistication in behavioral research, with fidelity studies or dismantling studies constituting the most advanced stage).

13 *See generally* Douglas B. Marlowe et al., *The Judge is a Key Component of Drug Court*, 4 DRUG CT. REV. 2 (2004) (reporting research on central role of judge in drug courts) [hereinafter *Judge is Key*]; Douglas B. Marlowe, *Judicial Supervision of Drug-Abusing Offenders*, SARC Suppl. 3 J. PSYCHOACTIVE DRUGS 323 (2006) (same) [hereinafter *Judicial Supervision*].

work in the manner that they are assumed to work.[14] Understanding how a program works provides greater assurance to practitioners and policymakers that it will be efficacious under the appropriate circumstances.

B. Clear and Convincing Evidence

The next highest standard of proof in law is clear and convincing evidence.[15] This reflects an augmented burden of proof for civil proceedings in which a fundamental interest is implicated. For example, involuntary civil commitment of mentally ill persons typically requires proof by clear and convincing evidence that the individual is unable to care for him or herself, or is a clear and present danger to self or others.[16]

For scientists, proof by clear and convincing evidence might be expected to require at least two *quasi-experimental studies* (or perhaps one experimental study and one quasi-experimental study) reporting superior effects for a program. Quasi-experimental studies do not involve random assignment, but they do include similarly situated and unbiased comparison groups.[17] An example of an unbiased comparison group might be otherwise eligible drug offenders who were placed on a wait-list or denied entrance to a drug court simply because there were not enough slots available in the program. The mere happenstance of a full census is unlikely to lead to the systematic exclusion of individuals with more severe problems or poorer prognoses, and therefore is unlikely to bias the results.[18]

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14 For a review of the research evidence on whether judicial status hearings are a critical component of drug courts, *see infra* notes 65–70 and accompanying text.

15 *See* BLACK'S LAW DICTIONARY, *supra* note 2, at 636 (defining clear and convincing evidence as evidence indicating the thing to be proved is highly probable or reasonably certain).

16 *See* Addington v. Texas, 441 U.S. 418 (1978) (8–0 decision), *remanded* to 588 S.W.2d 569 (Tex. 1979) (establishing constitutional requirement of proof by clear and convincing evidence for involuntary civil commitment); *see also* Pennsylvania Mental Health Procedures Act, PA. STAT. ANN. Tit. 50 § 7301 (1976) (delineating statutory requirements for involuntary civil commitment in Pennsylvania); MELTON ET AL., *supra* note 1, at 326 (stating a lesser standard of clear and convincing evidence suggests society may not be as troubled by unjustified civil commitment as by false criminal conviction).

17 *See* CAMPBELL & STANLEY, *supra* note 5, at 34 (defining quasi-experimental studies); HECK, *supra* note 5, at 11 (concluding quasi-experimental design as the next best option after random assignment).

18 It would still be necessary to rule out any potential pre-existing differences between the groups that could have biased the results. For example, admission procedures might have unwittingly excluded more severe cases from the drug court. If so, it would be necessary to statistically control or adjust for such differences when comparing outcomes. There are a number of statistical procedures which researchers can employ to take account of such differences and obtain defensible results. *See, e.g.*, DOUGLAS B. MARLOWE, INTRODUCTORY HANDBOOK FOR DWI COURT PROGRAM EVALUATIONS 39–40 (Nat'l. Ctr. DWI Cts., 2009), *available at* http://www.mdt.mt.gov/safety/docs/courts/dwi_handbook.pdf (describing how to control for baseline differences in drug court or DWI court evaluations).

If positive results from a quasi-experimental study are replicated in at least one additional setting, this could be argued to provide clear and convincing evidence of efficacy. The absence of random assignment, matching information and fidelity information leave meaningful room for reasonable doubt, but the degree of confidence that can be placed in the findings is nevertheless substantial.

C. Preponderance of the Evidence

The lowest evidentiary burden of proof in legal proceedings is preponderance of the evidence.[19] This is the standard for civil proceedings in which a fundamental right is not implicated, and the dispute is between private parties rather than between a private party and the government.[20] This standard requires a showing that a proposition is more likely than not to be true,[21] which can be logically quantified as greater than fifty percent certainty.[22]

For this modest degree of certainty, scientists might be expected to accept one quasi-experimental study that has not yet been replicated. Alternatively, scientists might accept several less rigorous studies that do not rise to the level of being quasi-experimental, but which are still minimally defensible from a scientific perspective. For example, comparison subjects might be drawn from a neighboring county that does not have a drug court. Because adjacent counties may differ on important dimensions that could influence outcomes, such as the socioeconomic status of the two populations, less confidence can be placed in the results. Statistical adjustments can sometimes be made to account for such differences (referred to as confounds), and thus permit greater confidence in the results. However, the adequacy of the statistical adjustments will depend upon many factors, including whether all of the relevant confounds were adequately recognized and accurately measured by the researchers.[23] This leaves greater room for doubt about the reliability of the conclu-

19 *See* BLACK'S LAW DICTIONARY, *supra* note 2, at 1301 (defining preponderance of the evidence standard).

20 *See, e.g.*, MELTON ET AL., *supra* note 1, at 30 (noting preponderance of the evidence standard applies when civil proceeding will not result in loss of liberty and the dispute is between private parties with roughly equivalent resources).

21 *See id.* (noting preponderance of the evidence standard requires showing that plaintiff's version of facts is more likely than defendant's).

22 *See* BLACK'S LAW DICTIONARY, *supra* note 2, at 1301 (defining preponderance of the evidence as the greater weight of the evidence, however slight that edge might be).

23 *See, e.g.*, MARLOWE, *supra* note 18, at 19 (discussing limitations in ability to control for baseline differences between groups in drug court and DWI court evaluations).

sions, but could perhaps be sufficient for greater than fifty percent confidence in those conclusions.

D. Probable Cause

When confidence in a finding falls below fifty percent, no evidentiary burden of proof is satisfied. Still, early findings may be sufficiently promising that they justify the effort and expense of gathering more information. In the criminal justice system, this is referred to as probable cause.[24] For example, if there is probable cause to believe a suspect may have committed a crime, this would justify allowing the police to conduct additional searches to gather more evidence.[25] By analogy, there may be probable cause to believe a program could turn out to be successful if further research is conducted.

Many research studies are insufficiently rigorous, or may employ research designs that are unfairly biased in favor of the experimental condition. For example, some studies have compared outcomes between graduates of drug courts and individuals who dropped out of the programs or were terminated for poor performance. This is not a fair comparison. There is a serious risk that dropouts or terminated cases may have had relatively more severe problems prior to entering the criminal justice system, due to such negative characteristics as lower motivation for change, lesser social supports, or more serious substance abuse problems.[26] Therefore, comparing them to graduates could unfairly stack the deck in favor of the drug court. Although such studies are inadequate to prove whether or not drug courts work, the findings might nevertheless be sufficiently interesting to justify conducting better-quality studies in the future.

It is also not unusual for mixed results to be reported in the research literature.[27] Some studies may report superior outcomes for a given program, whereas other studies may report no better outcomes, or perhaps even worse outcomes. On one hand, such discrepancies can be informative. For example, programs that showed better outcomes might have been implemented with greater fidelity, or might have targeted the optimal population of clients. If so, divergent findings could point to best practices or

24 *See* BLACK'S LAW DICTIONARY, *supra* note 3, at 1321 (defining probable cause in criminal and civil cases).

25 *See id.* (noting probable cause is necessary for search warrant).

26 *See, e.g.*, MARLOWE, *supra* note 18, at 20 (describing invalid or biased comparison groups in drug court and DWI court evaluations).

27 *See generally* U.S. GOV'T. ACCOUNTABILITY OFF., ADULT DRUG COURTS: EVIDENCE INDICATES RECIDIVISM REDUCTIONS AND MIXED RESULTS FOR OTHER OUTCOMES (2005) (concluding evidence is mixed for effects of drug courts on outcomes other than criminal recidivism, such as employment or family functioning).

evidence-based practices for the field. On the other hand, discrepant findings might simply reflect a failure to replicate the results, which would suggest the impact of the program may be unreliable. Until such ambiguities can be cleared up through additional research, any conclusions that are drawn must be viewed as tentative. In other words, there may be probable cause to justify additional studies to sort out the confusion, but no definitive inference is justified.

E. Reasonable Suspicion

The lowest threshold of evidence in law is a reasonable suspicion.[28] This requires more than merely a bare suspicion, which may be based on no evidence at all. Reasonable suspicion requires a particularized and objective basis for suspecting that something may be true, which can be supported by specific and articulable facts.[29] It is the relatively minimal standard, for example, that would justify a police officer stopping an individual to ask questions or to frisk for weapons during an unannounced and unanticipated encounter.[30] Although a reasonable suspicion is not sufficient to support a search warrant, it is sufficient to pique one's curiosity to begin asking questions and looking around for clues.

For scientists, a reasonable suspicion is based upon logic, anecdote or analogy. It might be logical, for example, to posit that if adult drug courts work, then perhaps other programs that provide similar services, such as juvenile drug courts, should also work. This is a rational argument to put forth, but it offers no direct proof. It is merely hypothesis generating. Although it might stimulate a scientist or practitioner's interest in considering a possible new avenue for their work, it falls far short of admissible evidence to prove a proposition.

II. ADULT DRUG COURTS

Consider how adult drug courts measure up against the standards of proof described above. Adult drug courts are judicially supervised programs that provide nonviolent, drug-abusing or addicted offenders with a mandatory regimen of substance abuse treatment and other indicated services in lieu of criminal

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28 *See* BLACK'S LAW DICTIONARY, *supra* note 3, at 1585 (defining reasonable suspicion).

29 *Id.*

30 Terry v. Ohio, 392 U.S. 1, 30 (1968) (8–1 decision) (holding that an officer can conduct a limited search of the outer clothing of an individual whom he reasonably suspects to be carrying a weapon after making reasonable inquiries).

prosecution or incarceration.[31] Participants are required to undergo random weekly drug testing[32] and attend regular status hearings in court, during which the judge reviews their progress in treatment and may impose a range of consequences contingent upon their performance.[33] The consequences may include punitive sanctions (e.g., writing assignments, community service or brief jail detention), desired rewards (e.g., verbal praise, reduced supervision requirements, or token gifts), or modifications to the participant's treatment plan (e.g., transfer to a more intensive modality of care).[34]

Consequences are typically meted out by the judge in open court after the drug court team has met privately in a staff meeting to review the case and reach a tentative determination about the appropriate course of action.[35] The various team members—which often include representatives of the court, prosecution, defense bar, treatment providers, case managers and probation officers—contribute information from their perspectives about participants' progress in the program, and may offer recommendations for suitable responses; however, the judge is legally and ethically required to make the final decision about what consequences to impose, after giving due consideration to all of the relevant information and discussing the matter with the participant in court.[36]

In pre-adjudication drug courts, successful graduates have their charge(s) dropped and may also have an opportunity to have the record of the offense or conviction expunged.[37] In post-adjudication drug courts, graduates may avoid a sentence of in-

31 *See generally* NAT'L. ASS'N. DRUG CT. PROF., DEFINING DRUG COURTS: THE KEY COMPONENTS (1997) [hereinafter KEY COMPONENTS] (defining ten key components of drug courts).

32 *Id.* at 11 (defining key component of frequent monitoring of abstinence by alcohol and other drug testing).

33 *Id.* at 15 (defining key component of ongoing judicial interaction with each participant).

34 *Id.* at 14 (defining key component of coordinated strategy that defines responses to participants' compliance).

35 *Id.* at 9–10 (defining key component of multidisciplinary team approach in drug courts).

36 *See generally* Douglas B. Marlowe et al., *Adaptive Interventions in Drug Court: A Pilot Experiment,* 33 CRIM. JUST. REV. 343 (2008) (describing team decision-making process in drug courts and experimental method for improving this process); Douglas B. Marlowe et al., *Adaptive Interventions May Optimize Outcomes in Drug Courts: A Pilot Study*, 11 CURRENT PSYCHIATRY REP. 370, 371 (2009).

37 Record expungement ordinarily entitles the individual to respond truthfully on an employment application or similar document that the arrest or conviction did not occur for legal purposes. *See, e.g.,* David S. Festinger et al., *Expungement of Arrest Records in Drug Court: Do Clients Know What They're Missing?*, 5 DRUG CT. REV. 1, 5–7 (2005) (describing legal and practical benefits to drug court participants of obtaining record expungement).

carceration, reduce the term or conditions of their probation, or consolidate multiple probationary sentences.

A. Effectiveness of Adult Drug Courts

Five meta-analyses[38] have been conducted, to date, on the effects of adult drug courts.[39] These meta-analyses included several randomized experimental studies[40] and dozens of quasi-experimental studies. In each instance, the results concluded that adult drug courts significantly reduced criminal recidivism (commonly measured by re-arrest rates) by an average of approximately eight to fourteen percent.[41] Because these figures reflect averages, they included drug courts that were poorly implemented, targeted to the wrong types of offenders, or had only recently opened their doors, and thus were still developing their procedures and operations. Most drug courts were found to sig-

38 For a description of meta-analysis, *see supra* note 9 and accompanying text.

39 *See generally* David B. Wilson et al., *A Systematic Review of Drug Court Effects on Recidivism*, 2 J. EXPER. CRIMINOLOGY 459 (2006); Christopher T. Lowenkamp et al., *Are Drug Courts Effective: A Meta-Analytic Review*, Fall J. COMMUNITY CORRECTIONS 5 (2005); JEFF LATIMER ET AL., CANADA DEPT. JUSTICE, A META-ANALYTIC EXAMINATION OF DRUG TREATMENT COURTS: DO THEY REDUCE RECIDIVISM? (2006); DEBORAH K. SHAFFER, RECONSIDERING DRUG COURT EFFECTIVENESS: A META-ANALYTIC REVIEW 3 (Dept. Crim. Just., U. Nevada 2006); STEVE AOS ET AL., WASHINGTON STATE INST. PUB. POL'Y, EVIDENCE-BASED ADULT CORRECTIONS PROGRAMS: WHAT WORKS AND WHAT DOES NOT (2006).

40 *See* Wilson et al., *supra* note 39, at 468 (including five drug court studies that used random assignment in meta-analysis, although two studies suffered excess attrition); NAT'L INST. JUST., DRUG COURTS: THE SECOND DECADE 3 (2006) (concluding a number of randomized and controlled experimental studies published in peer-reviewed journals found significantly better outcomes for drug courts); *see generally* Denise C. Gottfredson & M. Lyn Exum, *The Baltimore City Drug Treatment Court: One-Year Results From a Randomized Study*, 39 J. RES. CRIME & DELINQ. 337 (2002) (reporting results from randomized experimental evaluation of adult drug court in Baltimore); Susan Turner et al., *Perceptions of Drug Court: How Offenders View Ease of Program Completion, Strengths and Weaknesses, and the Impact on Their Lives*, 2 NAT'L DRUG CT. INST. REV. 61 (1999) (reporting results from randomized experimental evaluation of adult drug court in Arizona).

41 *See* Wilson et al., *supra* note 39, at 479 (concluding drug courts reduced crime an average of fourteen to twenty-six percent); LATIMER ET AL., *supra* note 39, at 9 (concluding drug courts reduced crime an average of fourteen percent); SHAFFER, *supra* note 39, at 3 (concluding drug courts reduced crime an average of nine percent); AOS ET AL, *supra* note 39, at 9 tbl.4 (concluding drug courts reduced crime average of 8%); Lowenkamp et al., *supra* note 39, at 8 (concluding drug courts reduced crime average of 7.5 percent); *see also* U.S. GOV'T. ACCOUNTABILITY OFF., ADULT DRUG COURTS: EVIDENCE INDICATES RECIDIVISM REDUCTIONS AND MIXED RESULTS FOR OTHER OUTCOMES (2005) (concluding drug courts significantly reduce crime); Steven Belenko, *Drug Courts*, *in* TREATMENT OF DRUG OFFENDERS: POLICIES AND ISSUES 309–10 (Carl G. Leukefeld et al. eds., Springer 2002) (concluding drug courts reduce crime and drug abuse); Douglas B. Marlowe et al., *A Sober Assessment of Drug Courts*, 16 FED. SENTENCING REP. 153, 153–54 (2003). Definitive findings are largely lacking concerning the post-program effects of drug courts on outcomes other than criminal recidivism, such as employment, substance abuse, psychological health and family functioning. *See generally* U.S. GOV'T. ACCOUNTABILITY OFF.

nificantly reduce recidivism,[42] with the best programs reducing recidivism by as much as thirty-five percent.[43] In some well-controlled studies, the reductions in recidivism were found to last at least three years post-entry,[44] and in one study the effects lasted an astounding fourteen years.[45]

These positive findings were, however, by no means universal. A relative minority (about one-fifth) of the drug courts were found to have minimal impacts on recidivism, and in rare instances some drug courts were actually associated with increased recidivism.[46] This latter finding underscores the importance of identifying the best practices for drug courts that can minimize harms and optimize positive results. As was noted previously, matching studies and fidelity studies[47] can assist researchers to identify best practices and explain why some programs elicit better effects than others.

In line with their generally positive effects on crime, drug courts have also proven to be highly cost-effective.[48] A recent cost-related meta-analysis concluded that drug courts produce an average of $2.21 in direct benefits to the criminal justice system for every $1.00 that is invested.[49] These savings reflected measurable and provable cost-offsets to the criminal justice system stemming from reduced re-arrests, law enforcement contacts, court hearings, use of jail or prison beds, and tangible impacts

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42 *See* SHAFFER, *supra* note 39, at 147 (finding drug courts reduced recidivism in seventy-eight percent of studies).

43 *See* Lowenkamp et al., *supra* note 39, at 10 (finding some drug courts reduced recidivism by thirty-five percent); see SHAFFER, *supra* note 39, at 147 (same).

44 *See* Denise C. Gottfredson et al., *Effectiveness of Drug Treatment Courts: Evidence From a Randomized Trial*, 2 CRIMINOLOGY & PUB. POL'Y 171, 189 (2003) (finding reduction in crime lasting two years); Denise C. Gottfredson et al., *The Baltimore Drug Treatment Court: 3-Year Self-Report Outcome Study*, 29 EVAL. REV. 42, 60 (2005) (finding reductions in crime and substance abuse lasting three years); Turner et al., *supra* note 40, at 69–70 tbl.1 (finding drug court participants significantly less likely to receive technical violations or be re-arrested at thirty-six-month follow-up).

45 *See* MICHAEL FINIGAN ET AL., THE IMPACT OF A MATURE DRUG COURT OVER 10 YEARS OF OPERATION: RECIDIVISM AND COSTS iv, 51 (NPC Res., 2007), *available at* www.npcresearch.com (finding reduction in crime lasting fourteen years).

46 See SHAFFER, *supra* note 39, at 147 (finding twenty-two percent of drug courts had no effect on recidivism or increased recidivism by as much as thirty-three percent); Lowenkamp et al., *supra* note 39, at 10 (finding small number of drug courts increased recidivism by up to fifteen percent).

47 For a description of matching studies and fidelity studies, *see supra* notes 10–14 and accompanying text.

48 *See* STEVEN BELENKO ET AL., MISSOURI FOUND. FOR HEALTH & NAT'L RURAL ALCOHOL & DRUG ABUSE NETWORK, ECONOMIC BENEFITS OF DRUG TREATMENT: A CRITICAL REVIEW OF THE EVIDENCE FOR POLICY MAKERS 40–42 (2005) (concluding from review of research evidence that drug courts generate criminal justice savings and avoid future costs by reducing crime).

49 *See* AVINASH S. BHATI ET AL., URBAN INST., TO TREAT OR NOT TO TREAT: EVIDENCE ON THE PROSPECTS OF EXPANDING TREATMENT TO DRUG-INVOLVED OFFENDERS 56 (2008).

from crime victimization.[50] When other cost-offsets were also taken into account, such as savings from reduced foster care placements and healthcare service utilization, studies have reported net economic benefits ranging from approximately $2.00 to $27.00 for every $1.00 invested.[51] The result has been net economic benefits to local communities ranging from approximately $3,000 to $13,000 per drug court participant.[52]

B. Target Population

As noted earlier, no one intervention should be expected to work for every drug-involved offender.[53] It is a sign of an advanced profession that can identify which types of offenders are best suited to specific programs. A growing body of research can reliably indicate which types of drug-involved offenders are apt to have the best outcomes in adult drug courts.

According to the criminological theory of the *Risk Principle*,[54] intensive programs such as drug courts are hypothesized to exert the greatest effects for high-risk offenders[55] who have more se-

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50 *Id*. at 39–44.

51 *See* Shannon M. Carey et al., *California Drug Courts: Outcomes, Costs and Promising Practices: An Overview of Phase II in a Statewide Study,* SARC Supp. 3 J. PSYCHOACTIVE DRUGS 345, 352 (2006) (finding average benefits ranging from $3.50 to $27.00 for every $1.00 invested in nine California drug courts); L. ANTHONY LOMAN, INST. APPLIED RES.. A COST-BENEFIT ANALYSIS OF THE ST. LOUIS CITY ADULT FELONY DRUG COURT vi (2004) (finding $2.80 in outcome savings for every $1.00 invested in drug court during first 24 months, and $6.32 after 4 years); FINIGAN ET AL., *supra* note 45, at 48 tbl.20 (finding drug court produced average benefit of $2.63 for every $1.00 invested); ROBERT BARNOSKI & STEVE AOS, WASH. ST. INST. PUB. POL'Y, WASHINGTON STATE'S DRUG COURTS FOR ADULT DEFENDANTS: OUTCOME EVALUATION AND COST-BENEFIT ANALYSIS 11 (2003) (finding average benefit of $1.74 for every $1.00 invested in drug courts in Washington State).

52 *See* AOS ET AL., *supra* note 39, at 9 tbl.4 (concluding adult drug courts in Washington State produced average net benefit of $4,767 per participant); Carey et al., *supra* note 51, at 351 (finding average net benefit of $11,000 per participant in nine California drug courts); FINIGAN ET AL., *supra* note 45, at 49 tbl.21 (finding average benefit of $13,609 per drug court participant including savings from crime victimization); LOMAN, *supra* note 51, at vi (finding net savings of $2,615 per participant during first 24 months, and $7,707 per participant after four years); BARNOSKI & AOS, *supra* note 51, at 11 (finding average net benefit of $2,888 per drug court participant).

53 *See supra* note 1 and accompanying text.

54 *See generally* D. A. ANDREWS & JAMES BONTA, THE PSYCHOLOGY OF CRIMINAL CONDUCT (5th ed., Lexis/Nexis 2010) (describing Risk, Needs, Responsivity [RNR] Theory and rationale for targeting interventions to risks and needs of offenders); Faye S. Taxman & Douglas B. Marlowe, *Risk, Needs, Responsivity: In Action or Inaction?*, 52 CRIME & DELINQ. 3 (2006) (introducing special journal issue on recent research on RNR for offenders).

55 *See generally* Christopher T. Lowenkamp et al., *The Risk Principle in Action: What Have We Learned From 13,676 Offenders and 97 Correctional Programs?*, 52 CRIME & DELINQ. 77 (2006) (finding better outcomes in correctional programs when services were targeted to high-risk offenders); J. Stephen Wormith et al., *The Rehabilitation and Reintegration of Offenders: The Current Landscape and Some Future Directions for Correctional Psychology*, 34 CRIM. JUST. & BEHAV. 879, 881 (2007) (concluding effects of correc-

vere antisocial propensities or treatment-refractory drug use histories,[56] but such programs may be unnecessary or counterproductive for low-risk offenders.[57] The rationale for this is that low-risk offenders are less likely to be on a fixed antisocial trajectory and are apt to improve their conduct following a run-in with the law. Therefore, intensive dispositions may offer little incremental benefits for these individuals, but at a higher cost. On the other hand, high-risk offenders often require intensive and sustained interventions to alter their entrenched, negative behavioral patterns.

Consistent with the predictions of the Risk Principle, drug courts have been shown to produce the greatest benefits for high-risk drug offenders who were younger, had more prior felony convictions, were diagnosed with antisocial personality disorder,[58] or had previously failed in less intensive dispositions.[59] Of-

tional treatment are greatest when programs adhere to principles of risk, needs and ponsivity); Meredith H. Thanner & Faye S. Taxman, *Responsivity: The Value of Providing Intensive Services to High-Risk Offenders*, 24 J. SUBSTANCE ABUSE TREATMENT 137, 145–46 (2003) (finding high-risk offenders had greater reductions in drug use, unemployment and re-arrests than lower-risk offenders when assigned to intensive drug treatment case management); Faye S. Taxman & Meredith Thanner, *Risk, Needs, Responsivity (RNR): It All Depends*, 52 CRIME & DELINQ. 28, 36–42 (2006).

56 Among drug offenders, the most reliable and robust risk factors include a younger age, male gender, early onset of substance abuse or delinquency, prior felony convictions, previously unsuccessful attempts at treatment or rehabilitation, a co-existing diagnosis of antisocial personality disorder (APD) and a preponderance of antisocial peers or associates. *See generally* Paul Gendreau et al., *A Meta-Analysis of the Predictors of Adult Offender Recidivism: What Works!*, 34 CRIMINOLOGY 575 (1996); Douglas B. Marlowe et al., *Amenability to Treatment of Drug Offenders*, 67 FED. PROBATION 40 (2003); Timothy W. Kinlock et al., *Prediction of the Criminal Activity of Incarcerated Drug-Abusing Offenders*, Fall J. DRUG ISSUES 897 (2003); Matthew L. Hiller et al., *Risk Factors That Predict Dropout From Corrections-Based Treatment for Drug Abuse*, 79 PRISON J. 411 (1999); Roger K. Peters et al., *Predictors of Retention and Arrest in Drug Court*, 2 NAT'L. DRUG CT. INST. REV. 33 (1999); Devon D. Brewer et al., *A Meta-Analysis of Predictors of Continued Drug Use During and After Treatment for Opiate Addiction*, 93 ADDICTION 73 (1998).

57 *See* David S. DeMatteo et al., *Secondary Prevention Services for Clients Who Are Low Risk in Drug Court: A Conceptual Model*, 52 CRIME & DELINQ. 114, 119 (2006) (considering why low-risk drug offenders may be ill-suited to intensive programs such as drug courts).

58 For the official diagnostic criteria for antisocial personality disorder, *see* AMER. PSYCHIATRIC ASSOC., DIAGNOSTIC AND STATISTICAL MANUAL OF MENTAL DISORDERS 701-06 (4th ed. 2000) [hereafter DSM-IV].

59 *See* Lowenkamp et al., *supra* note 39, at 10 (finding doubling of effectiveness of drug courts for high risk offenders who were younger or had more prior felony convictions); Jonathan E. Fielding et al., *Los Angeles County Drug Court Programs: Initial Results,* 23 J. SUBSTANCE ABUSE TREATMENT 217, 223 (2002) (finding high and medium risk offenders received greatest benefits from drug court); *see generally* Douglas B. Marlowe et al., *Adapting Judicial Supervision to the Risk Level of Drug Offenders: Discharge and Six-Month Outcomes From a Prospective Matching Study*, 88 DRUG & ALCOHOL DEPENDENCE 4 (2007) [hereafter *Adapting Supervision*] (finding high-risk drug offenders with antisocial personality disorder or prior treatment failures performed significantly better when supervised on drug court status calendar); Douglas B. Marlowe et al., *Matching Judicial Supervision to Clients' Risk Status in Drug Court*, 52 CRIME & DELINQ. 52 (2006) [hereafter *Matching Supervision*]; David S. Festinger et al., *Status Hearings in Drug Court:*

fenders with these high-risk characteristics typically perform poorly on low intensity dispositions, such as pre-trial diversion or standard probation, and apparently require the additional structure and accountability offered by drug courts in order to succeed.

C. Fidelity to the Model

As previously discussed, fidelity studies reveal what occurs when specific components of a program are removed or the dosage is decreased.[60] This addresses the important question of whether adherence to the model is essential for positive outcomes. Fidelity to the adult drug court model has been studied in two general categories of research. The first category of studies experimentally manipulated specific components of the drug court model to determine whether those components contributed to effective results. For example, components such as judicial status hearings were removed from the program on a random basis to determine whether this affected outcomes.[61] This type of study, called a *dismantling study*, yields the strongest evidence for the importance of a particular element of a program.[62]

The second category of research is what is commonly referred to as studies of *best practices*. These studies compared the characteristics of drug courts that had large, positive outcomes with those that had poor or insignificant outcomes.[63] Presumably, services provided by effective programs and not provided by ineffective programs are likely to be important ingredients of the intervention. However, the reliability of such findings is somewhat diminished because the services were not under experimental control. Nevertheless, it makes good logical sense to emulate the practices of effective programs and avoid the practices of ineffective or harmful programs.

1. Judicial Status Hearings

Judicial status hearings are the defining ingredient of a drug court.[64] Many programs offer substance abuse treatment, drug

When More is Less and Less is More, 68 DRUG & ALCOHOL DEPENDENCE 151 (2002).

60 *See supra* notes 12–14 and accompanying text.

61 For a discussion of the results of these studies, *see infra* notes 65–70 and accompanying text.

62 *See generally* Rounsaville et al., *supra* note 12 (describing dismantling studies as one aspect of the most sophisticated stage of behavioral research).

63 *See generally* SHANNON M. CAREY ET AL., EXPLORING THE KEY COMPONENTS OF DRUG COURTS: A COMPARATIVE STUDY OF 18 ADULT DRUG COURTS ON PRACTICES, OUTCOMES AND COSTS (NPC Res., 2008), *available at* www.npcresearch.com (reporting research on best practices among eighteen drug courts).

64 *See generally Judicial Supervision*, *supra* note 13 (discussing central role of judge

testing and sanctions and rewards for drug-involved offenders; however, only drug courts are primarily supervised by a judge and require frequent court appearances.

Several tightly controlled dismantling studies have confirmed that judicial status hearings are a key ingredient of adult drug courts. In one systematic program of research, investigators randomly assigned drug court participants either to appear before the judge for status hearings on a bi-weekly basis, or to be monitored instead by a treatment case manager and brought into court only in response to repetitive infractions. Results confirmed that for high-risk drug offenders (the appropriate target population for drug courts), outcomes were several-fold better in terms of greater counseling attendance, drug abstinence and graduation rates when participants were required to appear frequently before the judge.[65] These findings were replicated in misdemeanor and felony drug courts, serving both urban and rural communities.[66]

Research on best practices has uncovered highly similar findings. Drug courts that required participants to appear in court for status hearings on at least a bi-weekly basis during the first several months of the program had significantly better outcomes than those that held status hearings less frequently.[67] In addition, outcomes were substantially better for programs in which the judges served on the drug court bench for at least two years, and thus had greater seniority and experience.[68]

Finally, these findings are very much in line with the perceptions of drug court participants. A consistent theme emerging

in drug courts).

65 *See generally Adapting Supervision, supra* note 59; *Matching Supervision*, *supra* note 59; Festinger et al., *supra* note 59; Douglas B. Marlowe et al., *Are Judicial Status Hearings a "Key Component" of Drug Court? Six and Twelve Months Outcomes*, 79 DRUG & ALCOHOL DEPENDENCE 145 (2005); Douglas B. Marlowe et al., *Are Judicial Status Hearings a Key Component of Drug Court? During-Treatment Data From a Randomized Trial*, 30 CRIM. JUST. & BEHAV. 141 (2003).

66 *See generally* Douglas B. Marlowe et al., *The Role of Judicial Status Hearings in Drug Court*, *in* TREATING ADDICTED OFFENDERS: A CONTINUUM OF EFFECTIVE PRACTICES chap. 11 (Kevin Knight & David Farabee eds., Civic Res. Inst. 2004) (reporting results of replication study in rural misdemeanor drug courts); *Judge is Key, supra* note 13 (reporting results of replication in rural felony drug courts).

67 *See* CAREY ET AL., *supra* note 63, at 57 fig.22 (finding more than twice the net cost savings for drug courts that held bi-weekly status hearings, resulting predominantly from reduced re-arrests); *Id.* at 58 fig. 23 (finding drug courts that held status hearings at least once per month during later phases of the program had nearly three times greater net cost savings).

68 *Id.* at 56 fig.20 (finding more than three times the cost savings for drug courts in which judge sat on bench for at least two years); *see also* FINIGAN ET AL., *supra* note 45, at 38–39 tbl. 13 (finding drug court judges learned from experience as evidenced by better outcomes during subsequent years on bench).

from qualitative interviews and focus groups with drug court participants is that they generally perceived their contacts with the judge to be critical to their success in the program.[69] Taken together, the results from all of these dismantling studies, best practice studies, and focus group studies yield undeniable empirical evidence that the judge is an active ingredient of adult drug courts.

2. Multidisciplinary Team Approach

One of the more controversial features of drug courts is the practice of having professionals from various disciplines meet regularly to coordinate their functions as a team. Traditionally, judges, prosecutors, defense counsel and treatment providers did not sit down together to decide how best to respond to offenders' behaviors. This practice has raised concerns among some commentators about whether drug court professionals might be sacrificing their ethical obligations of neutrality, objectivity, confidentiality or zealous representation.[70] Although anecdotal arguments abound on both sides of the debate, at this juncture

69 *See* DRUG CT. CLEARINGHOUSE & TECHNICAL ASSISTANCE PROJECT, DRUG CTS. PROGRAM OFF., U.S. DEPT. JUST., LOOKING AT A DECADE OF DRUG COURTS 7 (1999) (finding in surveys of 400 participants from 50 drug courts that close supervision and encouragement by judge were perceived as critical to success); NAT'L INST. JUST., *supra* note 40, at 11 (concluding drug court participants reported attention from judge as most important influence in program); Donald J. Farole & Amanda B. Cissner, *Seeing Eye to Eye: Participant and Staff Perspectives on Drug Courts*, *in* DOCUMENTING RESULTS: RESEARCH ON PROBLEM-SOLVING JUSTICE 51, 59 (Greg Berman et al. eds., 2007) (finding drug court participants described judge as fair, sympathetic, caring, concerned, understanding, and tough when necessary); Christine A. Saum et al., *Drug Court Participants' Satisfaction With the Court Experience*, 4 DRUG CT. REV. 39, 56 (2002) (finding majority of drug court participants were satisfied with judge and believed judge was influential to their progress); Turner et al., *supra* note 40, at 80 (finding over seventy percent of drug court participants rated appearances before judge as a "strong" or "very strong" component of program); Gill McIvor, *Therapeutic Jurisprudence and Procedural Justice in Scottish Drug Courts*, 9 CRIMINOLOGY & CRIM. JUST. 29, 37 (2009) (finding participants in Scottish drug courts generally viewed court hearings in positive, therapeutic terms); Sally L. Satel, *Observational Study of Courtroom Dynamics in Selected Drug Courts*, 1 NAT'L DRUG CT. INST. REV. 43, 55–57 (1998) (reviewing drug court participants' positive assessments of role of judge).

70 *See* NAT'L ASSOC. CRIM. DEF. LAW., AMERICA'S PROBLEM-SOLVING COURTS: THE CRIMINAL COSTS OF TREATMENT AND THE CASE FOR REFORM 30-38 (2009) (asserting defense counsel in drug courts are often marginalized and fail to fulfill duty of zealous representation); Richard C. Boldt, *Rehabilitative Punishment and the Drug Treatment Court Movement*, 76 WASH. UNIV. L.Q. 1205, 1246–66 (1998) (asserting drug court model conflicts with philosophy of adversarial system, judicial neutrality, and ethical duty of confidentiality); Morris B. Hoffman, *The Drug Court Scandal*, 78 N.C. L. REV. 1437, 1474–79 (2000) (asserting drug courts are fundamentally unprincipled because they attempt to strike irreconcilable balance between demands of law enforcement and treatment community); John A. Bozza, *Benevolent Behavior Modification: Understanding the Nature and Limitations of Problem-Solving Courts*, 17 WIDENER L.J. 97, 97 (2007) (asserting drug courts distort traditional roles of judges, prosecutors, and defense attorneys by having them assume role of probation officers).

no empirical evidence has been garnered to indicate whether or not such ethical concerns are justified.[71]

Evidence is beginning to emerge, however, to indicate whether a multidisciplinary team approach is needed to improve outcomes among drug offenders. Drug courts take up a good deal of time and energy on the part of team members, in part because these busy professionals must attend frequent staff meetings or status hearings. It is essential to determine whether this intensity of team involvement is truly necessary for effective outcomes, and thus worth the investment costs.

Research on best practices confirms that the more effective drug courts do require ongoing attendance by defense counsel,[72] prosecutors,[73] treatment providers[74] and law enforcement officers[75] at staff meetings and status hearings. When any one of these professional disciplines was regularly absent from team discussions, programs tended to have outcomes that were, on average, roughly fifty percent less favorable.[76] In other words, if any one professional discipline walks away from the table, there is reason to anticipate the possibility that the effectiveness of a drug court could be cut by as much as one half.

Addiction and associated crime are severe and chronic conditions[77] that require an intensive and coordinated response. No one profession could be expected to have the knowledge, expertise, and authority to deal effectively with this intransigent social problem. The research evidence suggests a coordinated team approach, involving continuous input from several professional dis-

71 *See* Peggy Fulton Hora & Theodore Stalcup, *Drug Treatment Courts in the Twenty-First Century: The Evolution of the Revolution in Problem-Solving Courts*, 42 GA. L. REV. 719, 771–801 (2008) (countering that drug treatment courts do not permit unfettered judicial discretion or violate ethical duties of judges or attorneys).

72 *See* CAREY ET AL., *supra* note 63, at 26 fig.5 (finding more than eight times greater cost savings from reduced recidivism for drug courts that required public defender to regularly attend staff meetings).

73 *See id.* at 24 fig.3, 25 fig.4 (finding more than twice the cost savings from reduced recidivism for drug courts that required prosecutors to regularly attend staff meetings, and nearly three times the costs savings when prosecutors were required to regularly attend status hearings).

74 *See id.* at 21 fig.2 (finding nearly nine times greater cost savings for drug courts that required treatment representatives to regularly attend court hearings).

75 *See id.* at 74 fig.32 (finding more than four times greater cost savings for drug courts that included law enforcement officers on their teams).

76 *See* SHANNON M. CAREY ET AL., CALIFORNIA DRUG COURT COST STUDY–PHASE III: STATEWIDE COSTS AND PROMISING PRACTICES, FINAL REPORT (forthcoming 2011) (on file with author).

77 *See generally* A. Thomas McLellan et al., *Drug Dependence, a Chronic Medical Illness*, 284 J. AM. MED. ASS'N. 1689 (2000) (reviewing chronic disease course of addiction).

ciplines, may be minimally necessary to intervene effectively with high-risk, drug-involved offenders.[78]

3. Drug Testing

The success of any program for drug offenders depends, ultimately, on the reliable monitoring of participants' behaviors. If the drug court team does not have accurate information about whether a participant is being compliant or noncompliant in the program, there is no possible way to apply incentives or sanctions correctly, or to adjust treatment and supervision services accordingly.[79]

Research on best practices reveals the most effective drug courts conduct urine drug testing at least twice per week during the first several months of the program.[80] The metabolites of most common drugs of abuse remain detectable in human bodily fluids for only about one to four days,[81] thus, testing less frequently leaves an unacceptable time gap during which participants can abuse drugs and evade detection. In addition, urine drug testing is most effective when it is performed on a random basis.[82] If participants know in advance when they will be drug tested, they can simply adjust their usage accordingly. They can also front-load on water consumption or take other countermeasures in an effort to beat the tests.[83]

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78 *Cf.* CISSNER & REMPEL, *supra* note 10, at 13 (concluding drug courts appear to function better when non-adversarial team model is present).

79 *See* Douglas B. Marlowe, *Application of Sanctions*, *in* QUALITY IMPROVEMENT FOR DRUG COURTS: EVIDENCE-BASED PRACTICES 107, 110 (Carolyn Hardin & Jeffrey Kusher eds., 2008) (stating close monitoring of substance use, treatment attendance and criminal activity is essential for effective results in drug courts); Douglas B. Marlowe & Kimberly C. Kirby, *Effective Use of Sanctions in Drug Courts: Lessons From Behavioral Research*, 2 NAT'L DRUG CT. INST. REV. 1, 13 (1999) (noting undesirable behaviors must be reliably detected for effective results); Douglas B. Marlowe, *Strategies for Administering Rewards and Sanctions*, *in* DRUG COURTS: A NEW APPROACH TO TREATMENT AND REHABILITATION 317, 319–20 (James E. Lessenger & Glade F. Roper eds., Springer 2007) (noting certainty of responses is single most important factor in behavior modification).

80 *See* CAREY ET AL., *supra* note 63, at 43 fig.13 (finding over four times greater cost savings for drug courts that performed urine drug testing at least twice per week during first phase of program).

81 *See, e.g.,* Karl Auerbach, *Drug Testing Methods*, *in* DRUG COURTS: A NEW APPROACH TO TREATMENT AND REHABILITATION 215, 221 tbl.14.1, 222 tbl.14.2 (James E. Lessenger & Glade F. Roper eds., Springer 2007) (listing average detection time-windows for various drugs of abuse and human bodily fluids).

82 *See, e.g., id.* at 219 (concluding unannounced, random drug testing with less than one day advance notice is most effective); Richard L. McIntire et al., *The Drug and Alcohol Testing Process*, *in* DRUG COURTS: A NEW APPROACH TO TREATMENT AND REHABILITATION 234, 234–35, 237–38 (James E. Lessenger & Glade F. Roper eds., Springer 2007) (discussing necessity of conducting completely random drug testing in drug courts).

83 *See, e.g.,* Auerbach, *supra* note 81, at 226–28 (describing common efforts employed by drug court participants to beat urine drug tests).

Although urine drug testing is the most common testing procedure in drug courts, other technologies, which can extend the time window for detection, are becoming more commonplace. For example, the Secure Continuous Remote Alcohol Monitor (SCRAM©) is an anklet device that can detect alcohol vapors in sweat and transmit signals wirelessly to a remote monitoring station. Recent research suggests SCRAM© monitoring might be effective in deterring alcohol consumption among recidivist offenders in drug courts or DWI courts when it is worn for at least ninety days.[84]

4. Sanctions and Rewards

Drug courts administer gradually escalating sanctions for infractions and rewards for accomplishments.[85] Common examples of sanctions include verbal reprimands, writing assignments, community service or brief intervals of jail detention.[86] Common examples of rewards may include verbal praise, reduced supervision requirements or token gifts.[87] Relatively little research has examined the impact of sanctions and rewards on participants' behaviors in drug courts.[88] However, the general perception among both staff members[89] and participants[90] is that sanctions and incentives can be strong motivators of positive behavioral change.[91]

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84 *See generally* Victor E. Flango & Fred L. Cheesman, *The Effectiveness of the SCRAM Alcohol Monitoring Device: A Preliminary Test*, 6 DRUG CT. REV. 109 (2009).

85 *See* KEY COMPONENTS, *supra* note 31, at 23-24; *see generally* Douglas B. Marlowe & Conrad J. Wong, *Contingency Management in Adult Criminal Drug Courts*, *in* CONTINGENCY MANAGEMENT IN SUBSTANCE ABUSE TREATMENT 334 (2008) (Stephen T. Higgins et al. eds., Guilford 2008) (describing how to apply sanctions and rewards effectively in drug courts).

86 *See, e.g.,* Patricia L. Arabia et al., *Sanctioning Practices in an Adult Felony Drug Court*, 6 DRUG CT. REV. 1, 14 (2008) (listing sanctions commonly imposed in felony drug court).

87 *See, e.g.,* Marlowe & Wong, *supra* note 85, at 337–38 (describing how rewards are administered in drug courts contingent upon desirable behaviors).

88 *See, e.g.,* Belenko, *supra* note 41, at 311 (concluding little is known about direct impacts of sanctions and incentives on client compliance or retention in drug courts); CISSNER & REMPEL, *supra* note 10, at 12 (concluding little is known about precisely how or why sanctions work in drug courts).

89 *See* Christine H. Lindquist et al., *Sanctions and Rewards in Drug Court Programs: Implementation, Perceived Efficacy, and Decision Making*, 36 J. DRUG ISSUES 119, 131 (2006) (finding common perception among drug court staff members that sanctions are effective in changing participants' behavior).

90 *See generally* John S. Goldkamp et al., *An Honest Chance: Perspectives on Drug Courts*, 6 FED. SENTENCING REP. 369 (2002) (finding drug court participants perceived thoughtful use of rewards and sanctions to be powerful inducement for compliant behavior and eventual success); Satel, *supra* note 69, at 55–57 (concluding from focus group studies that drug court participants viewed certainty and swiftness of consequences as important for permanent change).

91 *See* Adele Harrell & Mark Kleiman, *Drug Testing in Criminal Justice Settings*, *in* TREATMENT OF DRUG OFFENDERS: POLICIES AND ISSUES 149, 167 (Carl Leukefeld et al.

To date, two controlled experimental studies have examined whether imposing gradually escalating sanctions for drug-positive urine results can significantly reduce substance use and crime among drug-involved offenders.[92] These studies were not conducted in drug courts, but rather in comparable pre-trial supervision or probation programs. In both of the studies, drug offenders were randomly assigned either to receive escalating sanctions—including brief intervals of jail detention—for positive drug tests, or to attend probation or pre-trial supervision as usual. Results of both studies revealed that outcomes from the sanctioning regimen were two to three times better than for the comparison conditions.[93]

The use of jail sanctions, in particular, is a highly controversial matter in drug courts. Although some commentators have argued that the realistic threat of a jail sanction provides the necessary leverage for drug courts to retain recalcitrant offenders in treatment,[94] research on this issue remains sparse for understandable reasons. First, it is very difficult, if not impossible, to study this question in a controlled experiment. Few participants (or research ethics boards, for that matter) would be willing to permit jail to be imposed in a non-individualized and randomized manner. Second, simply correlating the imposition of jail sanctions with outcomes is likely to produce biased results. Jail sanctions are imposed, by design, on individuals who are performing poorly in the program; therefore, the imposition of more jail sanctions should be positively correlated with worse outcomes. This could lead to the unwarranted conclusion that jail sanctions cause poor outcomes, when in fact poor outcomes elicit jail sanctions.

The most practical way to study this question is to compare outcomes between similarly situated drug court participants who did or did not face the realistic possibility of receiving a jail sanc-

eds., Springer 2002) (concluding drug testing without sanctions for test failures is ineffective in reducing subsequent offending); John A. Carver, *Drug Testing: A Necessary Prerequisite for Treatment and for Crime Control*, *in* DRUG TREATMENT: WHAT WORKS? 142, 151 (Philip Bean & Teresa Nemitz eds., Routledge 2004) (concluding frequent drug testing combined with sanctions for positive results is effective in reducing drug use and subsequent arrests).

92 *See generally* Adele Harrell & John Roman, *Reducing Drug Use and Crime Among Offenders: The Impact of Graduated Sanctions*, 31 J. DRUG ISSUES 207 (2001); ANGELA HAWKEN & MARK KLEIMAN, MANAGING DRUG INVOLVED PROBATIONERS WITH SWIFT AND CERTAIN SANCTIONS: EVALUATING HAWAII'S HOPE (Nat'l Inst. Just., 2009) *available at* http://www.ncjrs.gov/pdffiles1/nij/grants/230444.pdf.

93 Harrell & Roman, *supra* note 92, at 218.

94 *See generally* KATHLEEN R. SNAVELY, THE CRITICAL NEED FOR JAIL AS A SANCTION IN THE DRUG COURT MODEL, DRUG CT. PRACTITIONER FACT SHEET, NAT'L DRUG CT. INST. (2000).

tion. So far, such studies have yielded mixed findings. One study reported better outcomes when drug court participants faced the possibility of jail,[95] whereas another study found no differences in outcomes regardless of whether jail could be imposed.[96]

A second way to address this question is to interview the drug court participants themselves. A consistent finding emerging from focus group studies is that drug court participants view the threat of jail as a highly motivating factor to keep them engaged in treatment and committed to their sobriety.[97]

To date, two experimental studies have investigated the effects of enhancing the positive rewards that were available to drug court participants for productive achievements.[98] The enhanced rewards were delivered in the form of payment vouchers or gift certificates for drug-negative urine samples and other desired accomplishments. Neither study found significantly improved outcomes, apparently due to what is called a statistical ceiling effect. Outcomes were generally so good for both of the drug courts that it was difficult to improve any further upon those outcomes.[99]

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95 *See* SHANNON M. CAREY ET AL., NPC RES., OFFICE OF RES. AND EVAL., NAT'L INST. OF JUST., DRUG COURTS AND STATE MANDATED DRUG TREATMENT PROGRAMS: OUTCOMES, COSTS AND CONSEQUENCES 58 (2008), *available at* www.npcresearch.com/Files/Prop36_Drug_Court_Final_Report_0308.pdf (finding drug court participants facing possibility of jail had significantly lower recidivism three years after entry than comparable drug offenders not facing prospect of jail, thus providing "clear evidence of the efficacy of the ability to use jail as a sanction").

96 *See* John R. Hepburn & Angela N. Harvey, *The Effect of the Threat of Legal Sanction on Program Retention and Completion: Is That Why They Stay in Drug Court?*, 53 CRIME & DELINQ. 255, 273-74 (2007) (concluding threat of jail as legal sanction may not be effective hammer to motivate program retention and completion).

97 As one scholar concluded from focus group interviews with drug court participants:

> The fair and selective use of incarceration as a sanction had a clear and powerful effect on the drug court participants, with few exceptions. The drug offenders, regardless of prior experience with the criminal justice system, nearly universally did not like jail, feared jail, and would go to great lengths to avoid it. This fear motivated them both to enter the drug court program and to try to succeed while in the program.

Goldkamp et al., *supra* note 90, at 371; *see also* Farole & Cissner, *supra* note 69, at 69 (finding drug court participants acknowledged threat of jail motivated them to stay in treatment and meet other program requirements).

98 *See generally* Michael L. Prendergast et al., *Use of Vouchers to Reinforce Abstinence and Positive Behaviors Among Clients in a Drug Court Treatment Program*, 35 J. SUBSTANCE ABUSE TREATMENT 125 (2008); Douglas B. Marlowe et al., *An Effectiveness Trial of Contingency Management in a Felony Pre-Adjudication Drug Court*, 41 J. APPLIED BEHAV. ANALYSIS 565 (2009).

99 *See* Prendergast et al., *supra* note 98, at 133 (suggesting strong effects of drug court model might override impact of other effective treatment approaches); Marlowe et al., *supra* note 98, at 574 (concluding high rates of abstinence and counseling attendance among all drug court participants likely contributed to ceiling effect).

In one of those studies, however, there was some evidence that high-risk offenders who had more serious criminal histories might have performed better in the enhanced rewards conditions.[100] This preliminary finding could suggest that when drug courts treat their optimal target population of high-risk drug offenders,[101] positive rewards may make significant additive contributions to outcomes. More research is needed to gain a better handle on this important question.

5. Substance Abuse Treatment

Arguably, substance abuse treatment forms the core of a drug court program. The basic assumption underlying drug courts is that drug abuse or addiction fuels criminal activity; therefore, it is believed to be essential to treat this pathology in order to reduce crime and improve the psychosocial functioning of offenders.[102] It is surprising, therefore, that relatively little attention has been paid to the quality and impact of substance abuse treatment within drug court programs.[103]

It is no secret that, in general, substance abuse treatment is sparsely available and of notoriously poor quality in the criminal justice system,[104] and these problems may extend to drug courts

100 Marlowe et al., *supra* note 98, at 574–75 (finding drug court participants with more serious criminal backgrounds provided fewer drug-positive urines when eligible to earn enhanced rewards).

101 For a discussion of the optimal target population for drug courts, *see supra* notes 53–59 and accompanying text.

102 *See* KEY COMPONENTS, *supra* note 31, at 13 (defining key component of providing substance abuse treatment in drug courts promptly after arrest).

103 *See, e.g.*, Belenko, *supra* note 41, at 316 (noting little attention given to impact of treatment process or organization of service delivery on drug court clients' compliance, retention or outcomes).

104 *See generally* Faye S. Taxman et al., *Drug Treatment Services for Adult Offenders: The State of the State*, 32 J. SUBSTANCE ABUSE TREATMENT 239 (2007) (finding less than twenty-five percent of prison and jail inmates and less than ten percent of probationers and parolees have regular access to substance abuse treatment, and most services are low intensity and non-clinical in nature); Peter D. Friedmann et al., *Evidence-based Treatment Practices for Drug-Involved Adults in the Criminal Justice System*, 32 J. SUBSTANCE ABUSE TREATMENT 267 (2007) (finding most correctional treatment programs do not provide evidence-based services or follow evidence-based practices). Regrettably, these problems are not limited to the criminal justice system. Substance abuse treatment services delivered in most community-based programs are characterized as non-evidence-based, one-size-fits-all, administered by poorly trained and credentialed staff members, and subject to unduly high staff turnover. *See generally* A. Thomas McLellan et al., *Can the National Addiction Treatment Infrastructure Support the Public's Demand for Quality Care?*, 25 J. SUBSTANCE ABUSE TREATMENT 117 (2003) (finding in national study of 175 substance abuse treatment programs that fifteen percent of facilities closed within sixteen months, fifty-three percent of staff positions turned over, few programs had regular access to professionally credentialed staff, and most services were abstinence-based group counseling); Rose M. Etheridge et al., *Treatment Services in Two National Studies of Community-Based Drug Abuse Treatment Programs*, 7 J. SUBSTANCE ABUSE 9 (1995) (finding

as well.[105] Treatment services within some drug courts have been characterized as non-evidence-based, lacking in a coherent focus or structure, and delivered by inadequately trained staff.[106] The services also tended to be indistinguishable from those routinely offered to non-criminal justice involved populations, and thus might not have adequately addressed the unique needs and risk factors presented by offenders.[107] It remains unclear, however, whether these problems are characteristic of many drug courts, or limited to certain programs or geographic regions.

It also remains unclear the degree to which substance abuse treatment influences outcomes in drug courts. Although evidence is convincing that substance abuse treatment can reduce criminal re-offending as a general matter,[108] the additive value of treatment above and beyond the other elements of the drug court model—court hearings, urine monitoring, probation supervision, sanctions and incentives—is unknown. Some commentators have argued that formal treatment may be dispensed with, at least for some types of drug offenders, so long as the offenders

marked decrease over a decade in number and variety of services offered in community drug abuse treatment programs, and increasing number of unmet service needs).

105 *See generally* Faye S. Taxman & Jeffrey A. Bouffard, *Substance Abuse Counselors' Treatment Philosophy and the Content of Treatment Services Provided to Offenders in Drug Court Programs*, 25 J. SUBSTANCE ABUSE TREATMENT 75 (2003) (finding treatment services in four drug courts were not evidence-based and were delivered by counselors lacking advanced credentials or coherent treatment philosophy); *see also* Faith E. Lutze & Jacqueline G. van Wormer, *The Nexus Between Drug and Alcohol Treatment Program Integrity and Drug Court Effectiveness: Policy Recommendations for Pursuing Success*, 18 CRIM. JUST. POL'Y REV. 226, 228 (2007) (questioning whether substance abuse treatment providers administer evidence-based services in drug courts or merely the convenience of business as usual); NAT'L INST. JUST., *supra* note 40, at 13–14 (finding treatment services in drug courts were not individualized and staff had low levels of education); Steven Belenko et al., *Drug Courts*, *in* HANDBOOK OF FORENSIC MENTAL HEALTH WITH VICTIMS AND OFFENDERS: ASSESSMENT, TREATMENT, AND RESEARCH 385, 399 (David W. Springer & Albert R. Roberts eds., 2007) (noting drug courts can have difficulty accessing effective treatment, and staff are not always adequately trained to identify effective and well-managed treatment providers).

106 *See* Taxman & Bouffard, *supra* note 105, at 82–83.

107 *See* Faye S. Taxman & Jeffrey A. Bouffard, *Treatment Inside the Drug Treatment Court: The Who, What, Where, and How of Treatment Services*, *in* DRUG COURTS: CURRENT ISSUES & FUTURE PERSPECTIVES 193, 200 (Lana Harrison et al. eds., 2002) (finding treatment services in drug courts reflected those of general substance abuse treatment and did not address specific needs of drug-involved offenders).

108 *See* Katy R. Holloway et al., *The Effectiveness of Drug Treatment Programs in Reducing Criminal Behavior*, 18 PSICOTHEMA 620, 623 (2006) (concluding drug abuse treatment reduces odds of re-offending by twenty-nine to thirty-six percent); Prendergast et al., *supra* note 9, at 61, 63 (concluding drug abuse treatment reduces crime by six percentage points); Michael Gossop et al., *Reductions in Criminal Convictions After Addiction Treatment: 5-Year Follow-up*, 79 DRUG & ALCOHOL DEPENDENCE 295, 298 (2005) (finding significantly lower conviction rates 5 years after addiction treatment).

are closely monitored and held meaningfully accountable for their misbehavior.[109]

Much of the evidence for the contribution of treatment in drug courts is inferential: longer tenure in substance abuse treatment predicts better outcomes,[110] and drug courts keep offenders in treatment longer;[111] ergo, treatment must be responsible for at least some of the positive effects of drug courts. It is equally plausible, however, that obedient or higher-functioning individuals are simply more likely both to attend treatment and to refrain from further misconduct. Thus, better treatment attendance could merely be an indicator of better overall compliance with supervision conditions, rather than the cause of improved outcomes. Nevertheless, it is safe to conclude that greater treatment attendance in drug courts portends a better prognosis for the future, irrespective of the precise mechanism of cause and effect.[112]

Improving the quality of substance abuse treatment has also been shown to improve outcomes in drug courts. For example, better outcomes have been achieved when drug courts adopted evidence-based treatments, including standardized cognitive-behavioral counseling,[113] family-based therapy[114] and culturally

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109 *See generally* MARK A. R. KLEIMAN ET AL., CAL. POL'Y RES. CTR., OPPORTUNITIES AND BARRIERS IN PROBATION REFORM: A CASE STUDY OF DRUG TESTING AND SANCTIONS (2003) (describing rationale for "coerced-abstinence" regimen for drug offenders, which provides graduated sanctions for drug use often without necessity of treatment); CISSNER & REMPEL, *supra* note 10, at 8 (noting some commentators have made "sacrilege" argument that treatment does not contribute to drug court outcomes) (citing Mark A. R. Kleiman, *Controlling Drug Use and Crime With Testing, Sanctions, and Treatment*, in DRUG ADDICTION AND DRUG POLICY: THE STRUGGLE TO CONTROL DEPENDENCE (Philip Heymann & William Brownsberger eds., Harvard 2001).

110 *See generally* D. Dwayne Simpson et al., *Treatment Retention and Follow-up Outcomes in the Drug Abuse Treatment Outcome Study (DATOS)*, 11 PSYCHOL. ADDICTIVE BEHAV. 294 (1997) (finding in national study of substance abuse treatment programs that longer tenure in treatment predicted better outcomes).

111 *See* Christine H. Lindquist et al., *An Exploration of Treatment and Supervision Intensity Among Drug Court and Non-Drug Court Participants*, 48 J. OFFENDER REHABILITATION 167, 184 (2009) (finding drug court participants significantly more likely to receive substance abuse treatment than matched non-drug court participants); Steven Belenko, *Research on Drug Courts: A Critical Review*, 1 DRUG CT. REV. 1, 18–19 (1998) (concluding from review of research evidence that drug courts engage and retain felony drug offenders in treatment considerably longer than other criminal justice programs).

112 *See, e.g.,* NAT'L INST. JUST., *supra* note 40, at 19 (finding drug court participants with low treatment attendance had greater likelihood of being rearrested after discharge); Denise C. Gottfredson et al., *How Drug Treatment Courts Work: An Analysis of Mediators*, 44 J. RES. CRIME & DELINQ. 3, 26 (2007) (finding drug court was associated with increased duration of treatment, which in turn was associated with increased social controls and improved outcomes); SHAFFER, *supra* note 39, at 182 (finding drug courts that kept participants in substance abuse treatment longer were more effective).

113 *See, e.g.,* Cary Heck, *MRT: Critical Component of a Local Drug Court Program*, 17 COGNITIVE BEHAV. TREATMENT REV. 1, 2 (2008) (concluding addition of Moral Reconation Therapy [MRT] contributed to better outcomes in drug court program); Robert A. Kir-

proficient services.[115] If enhancing treatment can improve drug court outcomes, then logically, treatment is likely to be making at least some contribution to the effects of drug courts.

Research on best practices suggests that outcomes were better for drug courts that contracted with a single coordinating agency to serve as the primary case manager for treatment services.[116] The coordinating agencies did not necessarily provide all of the clinical services, but rather were responsible for assessing the participants, referring them to the appropriate treatment programs, and providing routine progress reports to the judge and drug court team. This arrangement appears to be superior to sending all participants to the same treatment provider,[117] perhaps because a lack of market competition can lead to greater complacency in the provision of services. It also appears to be superior to referring participants out to a myriad of different agencies without engaging a primary agency to coordinate the referrals. It can be exceedingly difficult to keep abreast of participants' progress when they have been referred out to numerous providers. Having a specially trained and qualified case manager to coordinate the referrals may be essential for maintaining an accurate flow of up-to-date information, and administering consistent and timely consequences to participants for their performance in treatment.

In sum, although the specific contribution of treatment to drug court outcomes is not yet proven, the available findings do suggest that treatment is likely to play a meaningful role. It is probably safe to assume that high quality, evidence-based treatment can make a unique and valuable contribution to drug court

chner & Ellen Goodman, *Effectiveness and Impact of Thurston County, Washington Drug Court Program*, 16 COGNITIVE BEHAV. TREATMENT REV. 1, 4 (2007) (finding completion of each additional step of MRT curriculum was associated with eight percent reduction in recidivism).

114 *See, e.g.*, Scott W. Henggeler et al., *Juvenile Drug Court: Enhancing Outcomes by Integrating Evidence-Based Treatments*, 74 J. CONSULTING & CLINICAL PSYCHOL. 42, 51 (2006) (finding addition of Multi-Systemic Therapy [MST] and contingency management [CM] improved outcomes in juvenile drug court).

115 *See, e.g.*, Gennaro F. Vito, Ph.D. & Richard A. Tewksburg, Ph.D., *The Impact of Treatment: The Jefferson County (Kentucky) Drug Court Program*, 62 FED. PROBATION 46, 49 (1998) (finding better outcomes for African-American participants when drug court provided culturally proficient services delivered by African-American staff).

116 *See* CAREY ET AL., *supra* note 63, at 20 (finding drug courts that contracted with single coordinating treatment agency had twelve times greater net cost savings).

117 *See* SHAFFER, *supra* note 39, at 4 (finding better outcomes for drug courts that were able to refer participants to multiple treatment providers to meet their needs, rather than single provider).

outcomes,[118] and that outcomes can be further improved upon to the extent that such treatments are presently lacking.

D. The Verdict on Adult Drug Courts

Returning to the scientific standards of proof described earlier,[119] it may be concluded that the efficacy of adult drug courts has been established to a degree which is commensurate with the legal standard of beyond a reasonable doubt. Five meta-analyses involving randomized, experimental studies and dozens of quasi-experimental studies have concluded adult drug courts significantly reduce crime,[120] and cost/benefit analyses have estimated net dollar savings from drug courts several times the initial investments.[121] The optimal target population for drug courts has been identified,[122] and fidelity to several key components of the drug court model has been shown to be necessary for favorable results.[123] One would be hard pressed to name any other correctional program or substance abuse treatment program with comparable supporting evidence.

Of course, this does not mean that the effects of adult drug courts are proven beyond any shadow of a doubt. There is always the chance that new findings could undermine confidence in the model; however, the same would be true of any treatment program. To the extent practitioners and policymakers must act on the basis of currently available information to select evidence-based dispositions for drug offenders, no model deserves a more favorable verdict than adult drug courts.[124]

III. VARIANTS OF THE DRUG COURT MODEL

The extraordinary success of adult drug courts has spawned a wide array of other types of problem-solving court programs. One category of problem-solving courts continues to focus primarily on treating drug abuse or addiction, and maintains relatively strict adherence to the key components of the drug court model. Common examples of such direct variants of the drug court model include, but are not limited to, family dependency treatment

118 *Cf.* CISSNER & REMPEL, *supra* note 10, at 8–9 (concluding evidence indicates treatment can make a difference in drug courts, but little is known about which modalities are most appropriate).

119 For a discussion of how scientific standards of proof might be analogized to legal burdens of proof, *see supra* notes 2–30 and accompanying text.

120 *See supra* notes 38–46 and accompanying text.

121 *See supra* notes 48–52 and accompanying text.

122 *See supra* notes 53–59 and accompanying text.

123 *See supra* notes 64–118 and accompanying text.

124 *Cf.* Douglas B. Marlowe, *The Verdict on Adult Drug Courts*, 51 ADVOCATE 14, 15 (2008) (concluding effects of adult drug courts are proven beyond a reasonable doubt).

courts,[125] driving while intoxicated (DWI) courts,[126] juvenile drug courts,[127] tribal healing-to-wellness courts,[128] campus drug courts,[129] reentry drug courts[130] and veterans drug treatment courts.[131] A second category of problem-solving courts focuses primarily on conditions other than addiction, such as mental illness, domestic violence, gambling, prostitution, illegal handguns or truancy.[132] These latter programs may be more likely to substantially alter the core ingredients of the drug court model.

Compared to adult drug courts, considerably less research has been conducted, to date, on these newer types of problem-solving courts. However, promising evidence is beginning to emerge in favor of some of these programs, and new studies are being initiated every day to learn more about how the programs work and how to enhance their effects. The remainder of this article reviews the available research evidence on the first category of problem-solving court programs, which are direct variants of the original adult drug court model.

A. Family Dependency Treatment Courts (FDTCs)

Parental substance abuse is a substantial causative factor in approximately sixty to eighty percent of child abuse and neglect cases.[133] Continued substance abuse on the part of a parent or guardian poses a direct and immediate threat to a child's wel-

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125 For a discussion of family dependency treatment courts, *see infra* notes 133–47 and accompanying text.

126 For a discussion of DWI courts, *see infra* notes 148–67 and accompanying text.

127 For a discussion of juvenile drug courts, *see infra* notes 168–89 and accompanying text.

128 *See* C. WEST HUDDLESTON ET AL., NAT'L DRUG CT. INST., PAINTING THE CURRENT PICTURE: A NATIONAL REPORT CARD ON DRUG COURTS AND OTHER PROBLEM-SOLVING COURT PROGRAMS IN THE UNITED STATES 23 (2008) (defining tribal healing-to-wellness courts); *see generally* TRIBAL LAW & POL'Y INST., OFF. JUST. PROGRAMS, U.S. DEPT. JUST., HEALING TO WELLNESS COURTS: A PRELIMINARY OVERVIEW OF TRIBAL DRUG COURTS (1999) (describing philosophy, structure and practices of tribal healing-to-wellness courts).

129 *See* Huddleston et al., *supra* note 128 at 21 (defining campus drug courts, also known as Back on TRAC: Treatment, Responsibility & Accountability on Campus).

130 *Id.* at 23 (defining reentry drug courts); *see generally* JEFF TAUBER & C. WEST HUDDLESTON, NAT'L DRUG CT. INST., REENTRY DRUG COURTS (1999) (describing structure and practices of reentry drug courts).

131 *See generally* Robert T. Russell, *Veterans Treatment Court: A Proactive Approach*, 35 NEW ENG. J. ON CRIM. & CIV. CONFINEMENT 357 (2009) (describing philosophy, structure and practices of veterans drug treatment courts).

132 *See, e.g.*, Huddleston et al., *supra* note 128 at 21–23 (defining various other types of problem-solving court programs).

133 *See generally* Bridgett A. Besinger et al., *Caregiver Substance Abuse Among Maltreated Children Placed in Out-of-Home Care*, 78 CHILD WELFARE 221 (1999); NANCY K. YOUNG ET AL., CHILD WELFARE LEAGUE AM., RESPONDING TO ALCOHOL AND OTHER DRUG PROBLEMS IN CHILD WELFARE: WEAVING TOGETHER PRACTICE AND POLICY (1998).

fare[134] and seriously jeopardizes the likelihood of successful reunification.[135] Unfortunately, parental compliance with substance abuse treatment is the exception rather than the rule in family dependency proceedings. Over eighty percent of parents in dependency proceedings fail to comply–even minimally–with substance abuse treatment conditions.[136]

Family dependency treatment courts (FDTCs) were created in direct response to the poor outcomes derived from traditional family reunification programs.[137] These specialized civil court

134 *See generally* Patricia Bijttebier et al., *Parental Drinking as a Risk Factor for Children's Maladjustment: The Mediating Role of Family Environment*, 20 PSYCHOL. ADDICTIVE BEHAV. 126 (2006) (finding parental alcohol problems associated with low family cohesion, poor family organization and low global self-worth of the child); Marija G. Dunn et al., *Origins and Consequences of Child Neglect in Substance Abuse Families*, 22 CLINICAL PSYCHOL. REV. 1063 (2002) (concluding parental substance abuse mediates development of substance abuse in children through neglectful parenting); M. Chaffin et al., *Onset of Physical Abuse and Neglect: Psychiatric, Substance Abuse, and Social Risk Factors From Prospective Community Data*, 20 CHILD ABUSE & NEGLECT 191 (1996) (finding children of substance abusers several times more likely to be abused or neglected); L. Kelleher et al., *Alcohol and Drug Disorders Among Physically Abusive and Neglectful Parents in a Community-Based Sample*, 84 AM. J. PUB. HEALTH 1586 (1994) (same).

135 *See generally* Toni Terling, *The Efficacy of Family Reunification Practices: Reentry Rates and Correlates of Reentry for Abused and Neglected Children Reunited With Their Families,* 23 CHILD ABUSE & NEGLECT 1359 (1999) (finding majority of children who reentered foster care system after unsuccessful reunification were returned to parents who relapsed to drugs or alcohol); Tina L. Rzepnicki, *Recidivism of Foster Children Returned to Their Homes: A Review and New Directions for Research*, 61 SOC. SERVICES REV. 56, 63 (1987) (same); M. S. Jellinek et al., *Serious Child Mistreatment in Massachusetts: The Course of 206 Children Through the Courts* 16 CHILD ABUSE & NEGLECT 179 (1992) (finding substance abuse to be major factor in termination of parental rights); Curtis & McCullough, *The Impact of Alcohol and Other Drugs on the Child Welfare System*, 72 CHILD WELFARE 533, 536–537 (1993) (same); Murphy et al., *Substance Abuse and Serious Child Mistreatment: Prevalence, Risk, and Outcome in a Court Sample,* 15 CHILD ABUSE & NEGLECT 197(1991) (same).

136 *See* R. Famularo et al., *Parental Compliance to Court-ordered Treatment Interventions in Cases of Child Maltreatment*, 13 CHILD ABUSE & NEGLECT 507, 510–11(1989) (finding only twenty-one percent of parents in court-ordered substance abuse treatment showed up for half of sessions, and less than ten percent showed up for two-thirds of sessions); Barbara Rittner & Cheryl Davenport-Dozier, *Effects of Court-ordered Substance Abuse Treatment in Child Protective Services Cases,* 45 SOC. WORK 131, 136 (2000) (reporting forty-eight percent of mothers and forty-one percent of fathers were noncompliant with court-ordered treatment, and additional twelve percent of mothers and thirteen percent of fathers were only partially compliant); CHILD WELFARE PARTNERSHIP, A STUDY OF FAMILIES WITH CHILDREN ENTERING FOSTER CARE IN OREGON BETWEEN MID-1992 AND 1995 29 (1998) (finding eighty percent of parents of children in foster care failed to attend half of their scheduled treatment appointments); U.S. GOV'T ACCT. OFF., GAO/HEHS-98-182, FOSTER CARE: AGENCIES FACE CHALLENGES SECURING STABLE HOMES FOR CHILDREN OF SUBSTANCE ABUSERS 16 (1998), *available at* http://www.gao.gov/archive/1998/he98182.pdf (finding forty-one percent of mothers of children in foster care failed to attend a single substance abuse treatment session and additional forty-one percent failed to complete treatment; and fifty-five percent of fathers failed to attend a single session and additional twenty-eight percent failed to complete treatment).

137 *See generally* DRUG CT. CLEARINGHOUSE & TECH. ASSISTANCE PROJECT, U.S. DEPT. JUST., OFF. JUST. PROGRAMS, JUVENILE AND FAMILY DRUG COURTS: AN OVERVIEW, (1999), *available at* http://www.ncjrs.gov/html/bja/jfdcoview/dcpojuv.pdf [hereafter JFDC

dockets were adapted from the drug court model.[138] As with drug courts, substance abuse treatment and case management services form the core of the intervention.[139] In addition, parents or guardians are required to attend frequent status hearings in court, during which the judge reviews their progress in treatment and may administer escalating sanctions for infractions and rewards for accomplishments.[140] The ultimate incentive for success is permanent family reunification, and the ultimate consequence for failure may be termination of parental rights.[141]

1. Effectiveness of FDTCs

A four-year, quasi-experimental study was recently completed of four FDTCs located in three different states around the country.[142] Outcomes were compared against those similarly situated families who were not served by the FDTCs due to lack of available slots or referrals.[143]

The parents in the FDTCs attended an average of approximately twice the number of substance abuse treatment sessions and were approximately twice as likely to complete treatment as

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OVERVIEW] (describing development of family dependency treatment courts); ADELE HARRELL & ALICE GOODMAN, URBAN INST., REVIEW OF SPECIALIZED FAMILY DRUG COURTS: KEY ISSUES IN HANDLING CHILD ABUSE AND NEGLECT CASES (1999) unpublished report *available at* http://www.ncjrs.gov/pdffiles1/nij/grants/179281.pdf; Molly Merrigan, *Family Drug Courts: Assisting Jurisdictions in Expediting Child Abuse & Neglect Cases and Reuniting Families*, 3 NAT'L. DRUG CT. INST. REV. 101 (2000) (describing development of FDTC in Missouri); James R. Milliken & Gina Rippel, *Effective Management of Parental Substance Abuse in Dependency Cases*, 5 J. CENTER FOR FAM. CHILD. & CTS. 95, 98–99 (2004) (describing development of FDTC in San Diego).

138 *See generally* MEGHAN M. WHEELER & CARSON L. FOX, NAT'L. DRUG CT. INST., FAMILY DEPENDENCY TREATMENT COURT: APPLYING THE DRUG COURT MODEL IN CHILD MALTREATMENT CASES (2006) (describing application of drug court model to family dependency proceedings through development of FDTCs).

139 *See, e.g.*, JFDC OVERVIEW, *supra* note 137 at 11 (describing role of substance abuse treatment and other clinical services in FDTCs); Merrigan *supra* note 137 at 110–11 (describing treatment services in Missouri FDTC); Milliken & Rippel, *supra* note 137 at 101 (describing treatment services in San Diego FDTC).

140 *See* HARRELL & GOODMAN, *supra* note 137 at 12 (describing "contingency contracts" in FDTCs, which provide for sanctions in response to noncompliance in treatment); JFDC OVERVIEW, *supra* note 137 at 13 (describing administration of sanctions and incentives in FDTCs); Merrigan, *supra* note 137 at 111–13 (describing use of sanctions and incentives in Missouri FDTC).

141 *See, e.g.*, JFDC OVERVIEW, *supra* note 137 at 13 (discussing sanctions of last resort in FDTCs); HARRELL & GOODMAN, *supra* note 137 at 18 (describing final dispositions in FDTCs).

142 *See generally* Beth L. Green et al., *Building the Evidence Base for Family Drug Treatment Courts: Results From Recent Outcome Studies*, 6 DRUG CT. REV. 53 (2009). The programs were located in San Diego, CA; Santa Clara County (San Jose), CA; Suffolk County (Long Island), NY; and Washoe County (Reno), NV. *Id.* at 63.

143 *Id.* at 62. "At the San Diego site, all eligible substance-using families were served by the FDTC program. Therefore contrasts were made against a matched comparison group recruited from an immediately adjacent geographically matched county." *Id.* at 62, n.3.

the comparison parents in three out of the four study sites.[144] Outcomes for the dependent children were also generally better in the FDTCs. Children in the FDTCs were reunified with their families significantly more often in three of the four sites.[145] They also spent significantly less time in out-of-home foster placements in two of the sites.[146]

2. The Verdict on FDTCs

Referring to the scientific criteria described earlier, one might conclude the efficacy of FDTCs is proven to a degree which is roughly comparable to the legal standard of clear and convincing evidence.[147] Superior outcomes for parents, and their dependent children, have been reported in quasi-experimental studies conducted in at least three FDTCs located in different jurisdictions around the country. Unlike adult drug courts, however, there have been no randomized, experimental studies of FDTCs. Moreover, no research has yet been reported that has identified the optimal target population for these programs, or confirmed whether fidelity to the full model is essential for favorable outcomes.

It also remains unclear why parental outcomes were relatively less favorable in one of the four FDTC sites and child outcomes were less favorable in another of the sites. Perhaps those programs showed lesser adherence to the FDTC model. If so, that might tend to confirm the importance of fidelity to the model. Alternatively, there may have been something different about the characteristics of the families who were treated in those pro-

144 *Id.* at 73. "The FDTC parents averaged approximately ten months in substance abuse treatment at three of the sites, whereas comparison parents averaged only about five months in treatment" at those sites. *Id.* "Approximately one third of the comparison parents completed at least one treatment episode, whereas approximately two-thirds of the FDTC parents completed at least one treatment episode." *Id.* Similar findings were reported in a study in Pima County, AZ, in which parents "participating in a FDTC had higher rates of treatment completion and were more likely to be reunified [with their children] compared to parents who refused to participate in the FDTC." *Id.* at 60 (citing J. Ashford, *Treating Substance Abusing Parents: A Study of the Pima County Family Drug Court Approach*, 55 JUV. & FAM. CT. J. 27 (2004)).

145 Green et al., *supra* note 142 at 76 (2009). For example, in Washoe County, ninety-one percent of the families who participated in the FDTC were reunified, compared with only forty-five percent in the comparison group. *Id.* Similar results were reported in a recent evaluation of the Sacramento Dependency Drug Court. *Id.* at 62 (citing Sharon Boles et al., *The Sacramento Dependency Drug Court: Development and Outcomes*, 12 CHILD MALTREATMENT 161(2007)). In that study, children whose parents participated in the FDTC were more likely to be reunified (42% vs. 27%) and more than half of those children spent less time in out-of-home care (average of 683 days vs. 993 days). *Id.*

146 *Id.* at 76.

147 For a discussion of how scientific standards of proof may be analogized to the legal evidentiary burden of clear and convincing evidence, *see supra* notes 15–18 and accompanying text.

grams. If so, that might contribute information about the best target population for FDTCs. More research is needed to determine which components of the FDTC model are essential for favorable outcomes, how best to administer those services in practice, and who should be targeted for treatment in these programs.

B. Driving While Impaired (DWI)[148] Courts

Approximately forty percent of traffic accidents and fatalities in the U.S. are alcohol related[149] and a partially overlapping twenty percent involve abuse of illicit drugs alone or in combination with alcohol.[150] Although the majority of individuals arrested for DWI do not go on to repeat the offense, between twenty and thirty-five percent become recidivist DWI offenders.[151] Unfortunately, compliance with substance abuse treatment and other supervision conditions is unacceptably poor among DWI offenders, as evidenced by high rates of premature dropout from treatment,[152] failure to install ignition interlock devices,[153] and continued driving on a suspended or revoked license.[154]

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148 The term driving while impaired (DWI) is used generically in this article to include comparable offense terminology, such as driving under the influence (DUI) and driving while intoxicated (DWI).

149 *See, e.g.*, Terry L. Schell et al., *Predicting DUI Recidivism: Personality, Attitudinal, and Behavioral Risk Factors*, 82 DRUG & ALCOHOL DEPENDENCE 33, 33 (2006) (noting alcohol is contributing factor in forty-one of U.S. traffic fatalities); James W. Cornish & Douglas B. Marlowe, *Alcohol Treatment in the Criminal Justice System*, *in* HANDBOOK OF CLINICAL ALCOHOLISM TREATMENT 197, 202 (Bankole Johnson et al. eds., Lippincott 2003) (noting forty percent to forty-five percent of traffic accidents and fatalities in U.S. are alcohol related).

150 *See* Thomas H. Nochajski & Paul R. Stasiewicz, *Relapse to Driving Under the Influence (DUI): A Review*, 26 CLINICAL PSYCHOL. REV. 179, 180 (2006) (reviewing findings that between seventeen and fifty-three percent of drivers involved in car crashes, arrested for reckless driving, or hospitalized in trauma units tested positive for illicit drugs and/or alcohol).

151 *See, e.g.*, David S. Timken, *What Works: Effective DWI Interventions*, *in* WHAT WORKS–RISK REDUCTION: INTERVENTIONS FOR SPECIAL NEEDS OFFENDERS 27, 30 (Harry E. Allen ed., Am. Correctional Ass'n. 2002) (concluding approximately thirty-five percent of DWI convictions are for drivers with prior DWI convictions in past five years); Janet C'de Baca et al., *A Multiple Risk Factor Approach for Predicting DWI Recidivism*, 21 J. SUBSTANCE ABUSE TREATMENT 207, 207 (2001) (noting "one third of drivers arrested for DWI are repeat offenders"); Schell et al., *supra* note 149 at 33 (noting "approximately 35% of DWI convictions are for drivers with another DUI in the prior seven years"); Cornish & Marlowe, *supra* note 149 at 202 (concluding twenty percent to thirty-five percent of DWI offenders go on to repeat the offense).

152 *See, e.g.*, Michael J. Stark, *Dropping Out of Substance Abuse Treatment: A Clinically Oriented Review*, 12 CLIN. PSYCHOL. REV. 93, 94 (1992) (noting majority of investigators reported over fifty percent attrition within first month of drug abuse treatment and fifty-two to seventy-five percent attrition from alcoholism treatment); Samuel A. Ball et al., *Reasons for Dropout From Drug Abuse Treatment: Symptoms, Personality, and Motivation*, 31 ADDICTIVE BEHAV. 320, 320–21 (2006) (concluding approximately fifty percent of substance abuse clients drop out of treatment within first month); Yih-Ing Hser et al., *Effects of Program and Patient Characteristics on Retention of Drug Treatment Patients*,

DWI courts were created to improve DWI offenders' compliance with substance abuse treatment and other supervisory conditions.[155] Modeled after drug courts, DWI courts require participants to attend on-going status hearings in court, complete an intensive regimen of substance abuse treatment and indicated adjunctive services, and undergo random or continuous biological testing for substance ingestion.[156] Participants receive negative sanctions for program infractions and positive rewards for achievements that steadily increase in magnitude over successive instances.[157] The majority of DWI courts are post-adjudication programs for recidivist offenders, requiring participants to serve some portion of an incarcerative sentence, with the remainder of detention being suspended pending completion of treatment. Failure to graduate successfully from the DWI court ordinarily results in a return to custody to complete the full sentence.

1. Effectiveness of DWI Courts

A systematic review of the research literature on DWI courts was conducted through April 30, 2007.[158] The results were generally disappointing. Only one evaluation was determined by trained raters to be methodologically good,[159] and an additional four evaluations were determined to be marginally acceptable.[160]

24 EVAL. & PROG. PLANNING 331, 336–37 (2001) (finding in study of over 26,000 clients that approximately eighty-two percent in residential substance abuse treatment and seventy-three in outpatient treatment failed to complete treatment).

153 *See, e.g.*, ROBYN ROBERTSON ET AL., TRAFFIC INJURY RES. FOUND., 10 STEPS TO A STRATEGIC REVIEW OF THE DWI SYSTEM: A GUIDEBOOK FOR POLICYMAKERS 8 (2007) (noting less than ten percent of DWI offenders install ignition interlocks).

154 *See id.* (estimating seventy percent of DWI offenders continue to drive on suspended or revoked license); *see generally* A. T. MCCARTT ET AL., U.S. Dep't of Transp., Nat'l Highway Traffic Safety Admin., OBSERVATIONAL STUDY OF THE EXTENT OF DRIVING WHILE SUSPENDED FOR ALCOHOL-IMPAIRED DRIVING (2002).

155 *See generally* KAREN FREEMAN-WILSON & C. WEST HUDDLESTON, Nat'l Drug Ct. Inst., DWI/DRUG COURTS: DEFINING A NATIONAL STRATEGY (1999) (describing genesis and philosophy of DWI court model).

156 *See id.* at 7-10 (describing how key components of drug courts may be adapted for DWI courts); *see generally* NAT'L DRUG CT. INST., THE TEN GUIDING PRINCIPLES OF DWI COURTS (2006), *available at* www.dwicourts.org/sites/default/files/nadcp/Guiding_Principles_of_DWI_Court.pdf (describing key components for fidelity to DWI court model).

157 *See, e.g.*, FREEMAN-WILSON & HUDDLESTON, *supra* note 155, at 9 (describing use of sanctions and incentives in DWI courts).

158 *See generally* Douglas B. Marlowe et al., *A Systematic Review of DWI Court Program Evaluations*, 6 DRUG CT. REV. 1 (2009).

159 *Id.* at 26 (citing RALPH K. JONES, MID-AM. RESEARCH INST., FINAL REPORT: EVALUATION OF THE DUI COURT PROGRAM IN MARICOPA COUNTY, ARIZONA (New Eng., 2005). That randomized, experimental study found that graduates of a DWI court had significantly lower recidivism rates for alcohol-related offenses than completers of DWI probation. *Id.*

160 *Id.* at 27-31 (citing James F. Breckenridge et al., *Drunk Drivers, DWI "Drug Court" Treatment, and Recidivism: Who Fails?*, 2 JUST. RES. & POL'Y 87 (2000); James M. MacDonald et al., *The efficacy of the Rio Hondo DUI Court: A 2-Year Field Experiment*, 31 EVAL. REV. 4 (2007); Sandra C. Lapham et al., *Impaired-Driving Recidivism Among Re-*

Many of the evaluations were found to have had serious methodological shortcomings, including reporting outcomes only for graduates, failing to account for participant dropout, employing inadequate statistical techniques, and evaluating potentially immature programs.[161] Although the results hinted at emerging evidence potentially favoring the effects of DWI courts, it was not possible at that time to reach scientifically defensible conclusions about the effects of DWI courts due to the inadequate state of the evaluation literature.[162]

Since the completion of that systematic review, at least one quasi-experimental study has been published on three DWI courts in Michigan,[163] which had acceptable scientific merit.[164] That study compared outcomes for DWI court participants in three counties to those of matched DWI offenders from the same counties who would have been eligible for the DWI courts, but had been arrested in the year immediately prior to the founding of the programs.[165]

Results revealed that the participants in the DWI courts were significantly less likely in two out of the three counties to be arrested for any new criminal offense within two years of entry, and significantly less likely to be arrested for a new DWI offense in one of the counties.[166] In most of the outcome comparisons, the trends favored better performance for the DWI court participants; however, small sample sizes appear to have contributed to statistically insignificant results in some instances, due to inadequate statistical power. This means that if larger numbers of participants had been included in the study, the results are likely to have consistently favored the DWI courts in all three counties. This study provided perhaps the first firm test and reliable evidence for the promising effects of DWI courts.

2. The Verdict on DWI Courts

At this juncture, the efficacy of DWI courts can be said to be

peat Offenders Following an Intensive Court-Based Intervention, 38 ACCIDENT ANALYSIS & PREVENTION 162 (2006); TAMMY MEREDITH, APPLIED RES. SERVICES, GEORGIA'S DUI COURT PROGRAMS REDUCE RECIDIVISM (2007).

161 *Id.* at 32.

162 *Id.* at 37.

163 *See generally* MICH. STATE CT. ADMIN. OFFICE & NPC RESEARCH, MICHIGAN DUI COURTS OUTCOME EVALUATION: FINAL REPORT (2008) [hereafter MICHIGAN DUI COURTS STUDY], *available at* http://www.npcresearch.com/Files/MI_DUI_Outcome_Evaluation_FINAL_REPORT-Re-Release_March_2008.pdf.

164 *See* Marlowe et al., *supra* note 158, at 48 (concluding Michigan DUI courts study was methodologically good, and would have been included in systematic review had it been published before closing date of 4/30/07).

165 MICHIGAN DUI COURTS STUDY, *supra* note 163, at 42.

166 *Id.* at 49.

proven to a degree that is commensurate with the legal standard of a preponderance of the evidence.[167] One quasi-experimental study, employing a good scientific design, reported superior outcomes for DWI court participants as compared to matched DWI offenders on probation. Unfortunately, the sample sizes were too small in that study to permit separate comparisons to be performed in each of the three counties for purposes of replication. More research is needed to reproduce the findings across different settings. However, one good quality study makes it more likely than not that DWI courts can be effective. This satisfies the standard of a preponderance of the evidence as it was previously operationalized.

It remains uncertain, however, what the optimal target population is for a DWI court program, and what components of the intervention may be essential for positive outcomes. Considerably more research is needed before the effects of DWI courts may be confidently relied upon.

C. Juvenile Drug Courts

Juvenile arrests for drug-related offenses have more than doubled in the past two decades.[168] In a national sample of U.S. booking facilities, roughly one-half of the juvenile arrestees tested positive for at least one illegal drug at arrest,[169] and more than half of all juvenile offenders are estimated to be in need of substance abuse treatment.[170] There is a strong positive association between continued substance abuse and recidivist acts of de-

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167 For a discussion of how scientific standards of proof may be analogized to the legal evidentiary burden of preponderance of the evidence, *see supra* notes 19–23 and accompanying text.

168 *See, e.g.*, Jeffrey A. Butts & John Roman, *Drug Courts in the Juvenile Justice System*, in JUVENILE DRUG COURTS AND TEEN SUBSTANCE ABUSE 1, 11–12 & Fig.1.3 (Jeffrey A. Butts & John Roman eds., Urban Inst. 2004) (noting juvenile arrests for drug offenses more than doubled between 1990 and 1997); Douglas W. Young et al., *A National Survey of Substance Abuse Treatment for Juvenile Offenders*, 32 J. SUBSTANCE ABUSE TREATMENT 255, 255 (2007) (noting arrest rates for juvenile drug abuse violations increased thirteen percent for males and fifty-three percent for females between 1994 and 2003).

169 *See* Young et al., *supra* note 168, at 255–56 (reporting forty-two percent to fifty-five percent of male juvenile arrestees and twenty-six to sixty-five of female juvenile arrestees were drug-positive at arrest) (citing Z. ZHANG, U.S. DEP'T OF JUSTICE, NAT'L INST. OF JUSTICE, DRUG AND ALCOHOL USE AND RELATED MATTERS AMONG ARRESTEES, 2003 (2004)); Butts & Roman, *supra* note 168, at 14 tbl.1.2 (reporting forty-five to sixty-nine of male juvenile arrestees tested positive for at least one illegal drug at arrest) (citing NAT'L INST. OF JUSTICE, 1999 ANNUAL REPORT ON DRUG USE AMONG ADULT AND JUVENILE ARRESTEES 133 (2000)).

170 *See, e.g.*, Craig E. Henderson et al., *Program Use of Effective Drug Abuse Treatment Practices for Juvenile Offenders,* 32 J. SUBSTANCE ABUSE TREATMENT 279, 279 (2007) (estimating over sixty percent of youths in juvenile justice system need treatment for substance abuse problems).

linquency.[171] Unfortunately, the treatments that are typically available to juvenile drug-involved offenders are of notoriously poor quality.[172]

Juvenile drug courts were created to address the specific needs of drug-involved juvenile delinquents. Modeled after adult drug courts, these programs provide intensive judicial supervision via ongoing status hearings, an array of treatment and social services to address substance abuse and related problems, and escalating incentives for achievements and sanctions for violations.[173] There are a few noteworthy differences, however, between adult and juvenile drug courts. Juvenile drug courts tend to focus more on the role of the family in the development and maintenance of substance abuse and delinquency, are more likely to reach out to family members and schools when rendering services, and attempt to tailor their interventions to the cognitive and maturational levels of the participants.[174]

1. Effectiveness of Juvenile Drug Courts

Two meta-analyses of juvenile drug court evaluations were published in 2006, which analyzed the results of studies through the early to mid 2000s. Results of both of those meta-analyses concluded that the average effects of juvenile drug courts were not reliably better than that of juvenile probation.[175] Some good-

171 *See, e.g.*, Young et al., *supra* note 168, at 255 (noting association between juvenile drug use and crime is well established); Henderson et al., *supra* note 170, at 279–80 (noting untreated substance-using adolescents often show increasingly severe substance use and criminal activity over time).

172 *See* Young et al., *supra* note 168, at 264 (concluding from national survey of juvenile correctional facilities that allocation of treatment resources appears "shortsighted," agencies' decisions may be driven by immediate priorities of cost and security rather than long-range benefits, and interventions are often not evidence-based); Henderson et al., *supra* note 170, at 286 (finding few programs for juvenile offenders were designed to meet unique developmental needs of adolescents and most lacked continuing care services).

173 *See* Shelli B. Rossman et al., *What Juvenile Drug Courts Do and How They Do It*, *in* JUVENILE DRUG COURTS AND TEEN SUBSTANCE ABUSE 55, 57–58 (Jeffrey A. Butts & John Roman eds., Urb. Inst. 2004) (describing how juvenile drug courts operate in practice); Butts & Roman, *supra* note 168, at 7-8 (noting characteristics shared by juvenile drug courts and adult drug courts); CAROLINE S. COOPER, U.S. DEP'T OF JUSTICE, OFFICE OF JUV. JUSTICE & DELINQ. PREVENTION, JUVENILE DRUG COURT PROGRAMS 3–7 (2001) (describing key elements of juvenile drug courts); BUREAU OF JUST. ASSISTANCE, U.S. DEP'T OF JUST., JUVENILE DRUG COURTS: STRATEGIES IN PRACTICE 7–8 (2003) (describing how juvenile drug courts work).

174 *See, e.g.*, Butts & Roman, *supra* note 168, at 8 (discussing how juvenile drug courts differ from adult drug courts).

175 *See* Wilson et al., *supra* note 39, at 476 tbl. 8 (finding non-significant average effect of juvenile drug courts on recidivism to drug offenses or any offenses); SHAFFER, *supra* note 39, at 149-51 & tbl. 4.17 (concluding average effect of juvenile drug courts was statistically significant, but confidence interval included zero, which means effects might not be reliably significant); *see also* NAT'L INST. OF JUSTICE, *supra* note 40, at iii, 24 (concluding neither general treatment research nor drug court evaluations have produced definitive information on juveniles).

quality, quasi-experimental studies reported superior effects for juvenile drug courts over conventional juvenile probation,[176] whereas other studies reported no differences in outcomes.[177]

More recently, promising findings have been emerging that more definitively favor the effects of juvenile drug courts. In one well-controlled experimental study,[178] juvenile drug-involved offenders were randomly assigned either to traditional family court services, to juvenile drug court, or to juvenile drug court augmented with additional evidence-based treatments.[179] The results revealed significantly lower rates of substance use and delinquency for the juvenile drug court participants as compared to the family court participants, and the effects were further enhanced through the addition of evidence-based treatments.[180]

A newer quasi-experimental study was also recently completed in Ohio, which compared outcomes between juvenile drug court participants and those of matched comparison samples of juvenile drug offenders.[181] Again, the results revealed that participants in the juvenile drug courts had significantly lower re-arrest rates than the comparison juvenile offenders.[182]

Finally, preliminary evidence is beginning to identify the processes by which juvenile drug courts may elicit superior effects over traditional programs.[183] Several key risk factors have been reliably associated with adolescent delinquency and substance abuse in numerous research studies. These risk factors include ineffective supervision and inconsistent

176 *See generally* Nancy Rodriguez & Vincent J. Webb, *Multiple Measures of Juvenile Drug Court Effectiveness: Results of a Quasi-Experimental Design*, 50 CRIME & DELINQ. 292 (2004); DAVE CRUMPTON ET AL., NPC RESEARCH, MARYLAND DRUG TREATMENT COURTS: INTERIM REPORT OF THE EFFECTIVENESS OF JUVENILE DRUG COURTS (2006), *available at* www.npcresearch.com/Files/MD%20juvenile%20drug%20court%20interim%20report%20final%202-9-06.pdf.

177 *See generally* D. WRIGHT & B. CLYMER, CRIM. JUSTICE RES. CTR., EVALUATION OF OKLAHOMA DRUG COURTS, 1997-2000 (2000); DONALD ANSPACH ET AL., EVALUATION OF MAINE'S STATEWIDE JUVENILE DRUG TREATMENT COURT PROGRAM (Univ. of S. ME., 2003).

178 *See generally* Scott W. Henggeler et al., *Juvenile Drug Court: Enhancing Outcomes by Integrating Evidence-Based Treatments*, 74 J. CONSULTING & CLINICAL PSYCHOL. 42 (2006).

179 *Id.* at 43–44. The enhanced evidence-based treatments were Multi-Systemic Therapy (MST) and contingency management (CM), alone and in combination. *Id.* at 44.

180 *Id.* at 51–52.

181 *See generally* Deborah K. Shaffer et al., *Examining the Differential Impact of Drug Court Services by Court Type: Findings From Ohio*, 6 DRUG CT. REV. 33 (2008).

182 *Id.* at 59. The re-arrest rates were sixty-two percent for the juvenile drug court participants and seventy-eight percent for the comparison sample. *Id.* at 55.

183 *See generally* Cindy M. Schaeffer et al., *Mechanisms of Effectiveness in Juvenile Drug Court: Altering Risk Processes Associated with Delinquency and Substance Abuse*, 7 DRUG CT. REV. 57 (2010).

disciplinary practices on the part of the juveniles' parents, as well as frequent associations with deviant peers and low engagement in prosocial activities, such as school or sports, on the part of the juveniles.[184] In the experimental study described above, the investigators learned that the juvenile drug court did a substantially better job than the traditional family court of improving parental supervision and discipline of the juveniles, as well as reducing the juveniles' associations with deviant peers.[185] More importantly, evidence suggested these short-term improvements might have mediated[186] (that is, go on to further influence) longer-term reductions in substance use and delinquency.[187]

These findings suggest that juvenile drug courts have the potential to significantly out-perform conventional juvenile probation and family court services; however, this may only be true to the extent that they use their leverage over both the juveniles and their guardians to enhance parental supervision, improve parental disciplinary practices, and reduce the juveniles' associations with delinquent peers. If juvenile drug courts do not focus their attention and efforts on these key risk processes, they may be unlikely to achieve significant improvements in outcomes.

2. The Verdict on Juvenile Drug Courts

It is difficult to characterize the current state of the literature on juvenile drug courts. On one hand, two meta-analyses failed to detect reliably significant effects for juvenile drug courts, and a few quasi-experimental evaluations reported null findings. On the other hand, at least one well-controlled experimental study and a few quasi-experimental studies have reported superior effects for juvenile drug courts over juvenile probation or traditional family court services. In addition,

184 *See generally* T. J. Dishion & Gerald R. Patterson, *The Development and Ecology of Antisocial Behavior in Children and Adolescents*, *in* DEVELOPMENTAL PSYCHOPATHOLOGY: VOLUME 3: RISK, DISORDER, AND ADAPTATION 503 (D. Cicchetti & D. J. Cohen eds., Wiley & Sons 2d ed. 2006); L. C. Mayes & N. E. Suchman, *Developmental Pathways to Substance Abuse*, in DEVELOPMENTAL PSYCHOPATHOLOGY: VOLUME 3: RISK, DISORDER, AND ADAPTATION 599 (D. Cicchetti & D. J. Cohen eds., Wiley & Sons 2d ed. 2006).

185 *See* Schaeffer et al., *supra* note 184, at 30 (finding youths in juvenile drug court reported decreased association with delinquent peers, decreased association with drug-using peers and increased caregiver supervision as compared to non-drug court counterparts).

186 *See generally* Reuben M. Baron & David A. Kenny, *The Moderator-Mediator Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations*, 51 J. PERSONALITY & SOC. PSYCHOL. 1173 (1986) (describing how mediating variables are statistically identified and interpreted).

187 Schaeffer et al., *supra* note 184, at 31–32.

preliminary evidence is beginning to identify the mechanisms of action by which juvenile drug courts can elicit superior effects.

These mixed results are probably instructive. Given that newer studies are tending to uncover better effects than older studies, it is conceivable that the programs are getting better at their operations with increasing experience, or perhaps are showing better fidelity to the model. If so, this might shed light on best practices for juvenile drug courts or highlight the importance of adherence to the drug court model. Alternatively, however, the discrepant findings might simply reflect multiple failures at replication, which would suggest that the effects of the programs may be unstable.

As discussed earlier, in light of mixed or ambiguous findings, any conclusions that are drawn must be viewed cautiously.[188] There is certainly ample tantalizing evidence to justify the cost and effort of pursuing further research on juvenile drug courts to sort out any confusion. In legal terminology, there is probable cause to gather additional evidence.[189] If, in fact, the research findings continue to move in the same positive direction that they have been moving in, then a favorable verdict might be forthcoming for juvenile drug courts in the not-too-distant future. Until then, no definitive verdict appears warranted.

D. Other Variants of Drug Courts

There are other types of problem-solving court programs that focus primarily on substance abuse or addiction, and are philosophically compatible with the original adult drug court model. Examples include tribal healing-to-wellness courts, campus drug courts, reentry drug courts and veterans' drug treatment courts.

At present, research evidence is generally lacking to prove the efficacy of these other drug court models. Support for these programs is essentially derived from anecdotes, analogies or logic. Proponents of the programs may, for example, cite unconfirmed case histories of individual participants who reportedly responded well to the programs, as proof of their effectiveness. Alternatively, they may reason, by analogy, that since these programs are derived from the adult drug court model, and adult drug courts have been proven to be effective, these programs should also be expected to succeed comparably. Lacking scientifically supportive data, such arguments amount to little more

188 *See supra* note 27 and accompanying text.

189 For a discussion of how scientific standards of evidence may be analogized to the legal standard of probable cause, *see supra* notes 24–27 and accompanying text.

than a reasonable suspicion in legal terminology,[190] or an educated hypothesis in scientific terminology. Assertions such as these may encourage investigators and practitioners to explore potentially fruitful areas for new inquiry, but they do not justify a current investment of confidence from practitioners, policymakers or the public.

CONCLUSION

Criminal justice practitioners and policymakers are responsible for making critical decisions that influence the lives of countless individuals coming before the courts. These professionals must act on the basis of currently available information to decide which programs are worthy of political support and a substantial infusion of resources, and which programs require considerably more study before being widely disseminated. Unfortunately, relatively few criminal justice professionals were formally trained to interpret scientific findings, and painfully few scientists have the interest or ability to make their data accessible to those people who require the information the most for their daily decision-making.

This article offers a current snapshot of the research on drug courts and similar types of problem-solving court programs, and considers the question of whether the efficacy of these programs is sufficiently established to satisfy various legal evidentiary burdens of proof. The goal was to reach tentative "verdicts" concerning the proven or unproven effects of these programs, in language that criminal justice professionals would be likely to find familiar and instructive.

It is concluded from this review of the research evidence that the effectiveness of adult criminal drug courts is proven to a degree that is roughly analogous to the legal standard of beyond a reasonable doubt. If one were to conclude otherwise from the research data that adult drug courts remain unproven, then the same conclusion would need to be reached about virtually every other correctional rehabilitation program and substance abuse treatment program. Few behavioral interventions, if any, have comparable empirical support.

Relatively less can be confidently concluded at this point in time concerning the effects of other variants of the drug court model. Family dependency treatment courts and DWI courts have been validated to a lesser degree; comparable, perhaps, to

190 For a discussion of how scientific standards of evidence may be analogized to the legal standard of reasonable suspicion, *see supra* notes 28–30 and accompanying text.

the legal evidentiary standards of clear and convincing evidence and a preponderance of the evidence, respectively. As for juvenile drug courts, the findings are mixed, but are becoming increasingly more promising with time. At this juncture, one might conclude that there is probable cause to believe juvenile drug courts will prove to be effective in due course, and further research is called for to learn more about this promising model.

Still newer off-shoots of the drug court model, such as reentry drug courts and veterans' drug treatment courts, have not, as yet, been adequately studied to reach conclusions about their merits. Logically speaking, one might have a reasonable suspicion that these programs may turn out to be successful upon investigation, but there is no justifiable basis at present for considering them proven.

Science is an ever-evolving enterprise, and new research findings are being reported all the time on problem-solving courts. It is anticipated that the "verdicts" reached in this article will, in due course, be rendered obsolete or incomplete in light of new information. Unlike courtroom verdicts, scientific conclusions are not intended to be static or inviolate. They are expected to yield to new data. To the extent, however, that practitioners and policymakers must act in the absence of full knowledge, there is ample justification for pursuing the following courses of action given what we now know:

1. We should greatly extend the reach of adult drug courts, given their proven effectiveness.

2. We should invest substantial resources in randomized experimental studies, matching studies, and fidelity studies to identify the optimal target populations and evidence-based practices for FDTCs, DWI courts and juvenile drug courts.

3. We should invest moderate resources in quasi-experimental studies to determine whether other types of problem-solving courts show sufficient promise to justify more intensive scientific investigation.