Implementing Evidence Based Assessment and Treatment Matching

A Feasibility and Impact Study in Three New York City Drug Courts

By Sarah Picard-Fritsche, Michael Rempel, Warren Reich, Erin Farley, and Ashmini Kerodal

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Acknowledgements

The authors would like to thank the case management staff of the Misdemeanor Brooklyn Treatment Court, the STEP Felony Drug Court (also in Brooklyn), and the Queens Misdemeanor Treatment Court and for their ongoing participation and support of the project. In particular, we are grateful to the two drug court project directors, Mia Santiago (Brooklyn) and Naimah Aiken (Queens), and to the Honorable Joseph Gubbay, the Honorable Betty Williams and the Honorable Toko Serita for their participation in interviews and assistance in the oversight of the study.

From the New York State Unified Court System, we would like to thank the Honorable Judy Kluger, former Chief of Policy and Planning when this study was proposed, planned and designed, as well as Justin Barry, Lisa Lindsay, and Valerie Raine for their support and many contributions throughout.

From the Center for Court Innovation, we thank Christina Ruffino for her assistance in the design and implementation of the study, and Greg Berman for commenting on an earlier version of this report. Finally, we are grateful to Linda Truitt and Donna Davis from the National Institute of Justice for their guidance over the life of the project; and we thank two anonymous peer reviewers at the National Institute of Justice for a number of exceptionally helpful comments on an earlier version of this report.

Data related to criminal history and recidivism was provided by the New York State Division of Criminal Justice Services (DCJS). The opinions, findings, and conclusions expressed in this publication are those of the authors and not those of DCJS. Neither New York State nor DCJS assumes liability for its contents or use thereof.

This project was supported by Grant No. 2010-IJ-CX-0031 awarded by the National Institute of Justice, Office of Justice Programs, U.S. Department of Justice. Opinions, findings, and conclusions or recommendations expressed in this publication are those of the authors and do not necessarily reflect the positions or policies of the U.S. Department of Justice or the New York State Unified Court System.

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Abstract

Introduction

With funding from the National Institute of Justice, the Center for Court Innovation examined the feasibility and impact of introducing an evidence-based risk-need assessment and treatment matching protocol into three New York City (NYC) drug courts. Preexisting practice in all three sites involved the administration of a non-validated bio-psychosocial assessment to inform the professional judgment of court-employed case managers. This report provides findings from a three-year implementation study and randomized controlled trial (RCT) of a structured treatment matching protocol that relied on the use of a validated addiction screener, the Texas Christian University Drug Screen (TCUDS II), and a comprehensive risk-needs assessment tool, the Level of Services Inventory-Revised (LSI-R).

Research Design

Over the 37-month study period, 466 criminal defendants found legally eligible for one of three participating drug courts were randomly assigned either to be clinically assessed with the TCUDS II and LSI-R or with the preexisting non-validated assessment that all three courts had been using for more than a decade. If subsequently enrolled in the drug court, those assessed with the new protocol were then to have their initial treatment modality reflect their scoring on the LSI-R according to a structured treatment matching system. Specifically, high risk participants were to begin in an inpatient treatment modality (either long-term residential treatment or a short-term intensive inpatient rehabilitation program); medium risk participants were to begin in either short-term inpatient rehabilitation or an intensive outpatient modality; and low risk participants were to begin in an outpatient modality. The project involved the intensive training of nine case managers on the treatment matching protocols and study design, as well as baseline and follow-up interviews with eleven drug court staff members regarding the substance and feasibility of the protocols.

Major Findings

The primary goals of the study were threefold: first, to test the validity of the LSI-R instrument in predicting risk of re-offense in the study population; second, to examine the implementation of the two evidence-based assessment tools and the structured treatment-matching protocol; and, third, to examine differences between the experimental and control groups in terms of intermediate (e.g., treatment modality) and long-term outcomes (e.g.,

recidivism), as well as to explore the theoretical effects of the experimental protocols in the event of strong implementation integrity.

Concerning the first goal, findings suggest that risk scores on the LSI-R are a valid predictor of recidivism in the NYC drug court population. These findings offer preliminary evidence that use of a validated risk assessment and structured treatment-matching protocol with the target population has the potential to yield improve outcomes.

However, findings pertaining to the second goal (concerning implementation) were mixed. Drug court staff responded favorably to the evidence-based assessment tools and believed that the tools provided useful information that aided their decision-making. Nonetheless, staff reported that they used the tools largely to confirm or supplement their professional judgments, while failing to adopt the changes in their actual treatment matching decisions that would have been indicated by the new protocol. Indeed, quantitative data confirms that drug court case management staff resisted following the intended treatment matching protocol—frequently assigning participants to either a more or less intensive treatment modality than the protocol had prescribed.

Concerning the third study goal (impacts of the treatment matching protocol), given the mixed implementation results, there were, not surprisingly, no major differences between the study groups in rates of assignment to each possible treatment modality or in intermediate or long-term participant outcomes. However, additional analyses indicate that had drug court staff adhered to the experimental treatment-matching protocol consistently, the treatment recommendations would have differed significantly between the experimental and control groups. In particular, it was found that for low-risk participants, placement in an inpatient setting was counter-productive, significantly increasing the likelihood of program failure and re-arrest. Strict adherence to the experimental protocol would have prevented placement low-risk individuals into inpatient settings, thereby improving outcomes. In short, findings indicate that the protocol itself, irrespective of proper implementation, offered a promising strategy for producing better outcomes, underlining the potential value of an evidence-based approach to treatment planning in drug courts.

Study Implications

The combination of quantitative and qualitative data yield findings with important implications for policy and practice. Specifically, this study underscores the implementation challenges of introducing evidence-based practices into established criminal justice programs

that are administered by staff who are personally and institutionally attached to preexisting decision-making practices. Essentially, study findings indicate that because the experimental protocol was largely not followed wherever it contradicted preexisting decision-making tendencies, the protocol could not realize its potential benefits in the current study. Future research should examine the role of organizational culture in the uptake (or lack thereof) of evidence-based practices. Such research should include further in-depth qualitative research *and* rigorous tests of different strategies to improve the implementation of evidence-based assessment and treatment matching practices. Having added to a growing literature demonstrating that evidence-based practices offer the potential to yield psychosocial benefits for individuals and public safety benefits for society, what remains is to overcome years and decades of traditional routines in order to better realize this potential.

Chapter 1

Introduction to the Evidence-Based Assessment Study

With funding from the National Institute of Justice, the present study sought to examine the feasibility and impact of introducing an evidence-based risk-need assessment and treatment matching protocol into three New York City (NYC) drug courts. Explaining the importance of this inquiry, over the past decade the criminal justice field in the United States has become increasingly focused on incorporating evidence-based principles into decision-making, in particular to inform dosage decisions for therapeutic or clinical treatment programs. At the same time, the concrete translation of evidence-based principles into consistent and successful practice remains a new and urgent topic for research. Accordingly, this study makes a significant contribution to the study of research-to-practice translation via a multi-site study of the implementation and impact of evidence-based decision-making in drug courts.

The Role of Substance Abuse in the Criminal Justice System

The relationship between substance abuse and criminal behavior is an enduring problem in the United States. In both 1997 and 2004, representative surveys of state and federal prisoners found rates of substance use in the month prior to arrest in excess of fifty percent (Mumola & Karberg, 2006). More recently, in 2013, among more than 4.5 million adults sentenced to probation, over 30% reported current illicit substance use (Substance Abuse and Mental Health Administration, 2014). Moreover, where substance abuse is present, it has been repeatedly been linked to re-offending and is therefore commonly identified as one of the "Central Eight" risk/need factors that should be targeted for treatment in order to achieve meaningful reductions in recidivism (Andrews & Bonta, 2010).

Drug Courts as a Popular Policy Solution

To address the known prevalence of drug use and abuse among criminal justice populations, drug courts have emerged as one of the most popular and widely researched alternatives to

traditional court processing. As of 2014, there were nearly 3,000 active drug courts in the United States, approximately half of which serve adult criminal defendants (National Drug Court Institute, 2015). Key elements that distinguish drug courts from traditional court responses to drug-related crime include the provision of court-supervised drug treatment; frequent judicial status hearings designed to review progress in treatment; collaboration between traditionally adversarial court players (defense attorneys and prosecution); and the use of legal coercion to promote treatment compliance.

A sizable body of research evidence generated over the past two decades generally supports the drug court model as an effective and cost-efficient way to reduce re-offense among drug-involved defendants. A recent meta-analysis aggregated effects from more than 90 adult drug court evaluations and concluded that the average effect of drug court participation is analogous to a drop in recidivism of twelve percentage points (Mitchell, Wilson, Eggers, & MacKenzie, 2012). In 2011, *NIJ's Multi-Site Adult Drug Court Evaluation*, a six-year in-depth study of 23 drug courts, found consistently positive effects across a series of key outcomes, including significant reductions in re-arrest and drug use and improved psychosocial outcomes in additional areas including employment, income, and family functioning (Rossman et al., 2011). A series of cost-benefit studies demonstrate tangible justice savings as well (e.g., Aos et al., 2001; Carey et al., 2005; Rossman et al., 2011; Waller et al. 2013).

The Value of Evidence Based Principles and Practices

Despite promising average effect sizes, many of the same meta-analytic studies cited above, and other recent multisite evaluations of adult drug courts (see, especially, Carey, Macklin, & Finigan, 2012; Cissner et al. 2013) point to wide variations in the specific magnitude of impact that different adult drug courts produce, ranging from reducing the recidivism rate in half to, on the other end of the spectrum, having no effect at all. Indeed, recent research has increasingly linked variations in drug court program impact to the adoption of evidence-based practices, including legal pressure (Cissner et al. 2013; Rempel & DeStefano, 2001; Young & Belenko, 2002); judicial status hearings for high risk individuals (Marlowe et al., 2003); procedural fairness (Gottfredson et al., 2007; Rossman et al., 2011); select treatment policies (Carey et al., 2012; Gottfredson et al., 2007); and interagency collaboration (Carey et al., 2012; Cissner et al., 2013; Van Wormer, 2010).

Particularly germane to the current project, one meta-analysis of 25 prior evaluations detected significantly greater effect sizes in drug courts whose policies are better aligned with the Risk-Need-Responsivity (RNR) model (Gutierrez & Bourgon, 2009). Rooted in behavioral psychology, the RNR model is an increasingly well-known crime prevention theory that includes three core principles: (1) the Risk Principle, which holds that interventions should focus on higher-risk defendants and, indeed, may have counter-productive effects with those who are lower-risk; (2) the Need Principle, which holds that interventions should assess and treat those criminogenic needs that, if unaddressed, are particularly likely to increase risk of future offending; and (3) the Responsivity Principle, which holds that therapeutic programming should employ cognitive-behavioral approaches adapted to the strengths and challenges of the individual. RNR theory is now supported by more than three decades of empirical research (e.g., Andrews et al., 1990; McGuire, 2004; Lipsey et al., 2007).

The RNR principles support the use of validated assessments and evidence-based treatment approaches that reliably classify defendants by risk level and criminogenic needs and then match them to a suitable treatment plan (e.g., see also Bonta & Andrews 2007; Looman & Abracen, 2013; Marlowe, 2011). However, no study to date has involved a rigorous test of competing approaches to screening, assessment, and treatment matching in the drug court context.

The Challenge of Quality Implementation

Recognizing that many drug courts were established in the 1990s and early 2000s and do not use validated assessment tools or evidence-based strategies for applying assessment information to the selection of a suitable treatment modality, another particularly pressing question concerns implementation: Can institutions and staff successfully adopt and use new assessment tools and strategies that are supported by evidence in the abstract but require quality implementation in the real-world? Preexisting research strongly suggests that training and implementation factors are key to the successful translation of validated assessment tools to real-world practice in correctional programs *and* that many programs fail to properly implement such tools (e.g., Greene & Mears, 2003; Flores et al., 2006; Haas & Detardo-Bora, 2009; Taxman & Belenko, 2012). Indeed, two independent studies of the LSI-R risk-need assessment tool have found that although the instrument was consistently administered, assessment results were not consistently used for treatment planning and therefore the

evidence-based assessment tools had little to no practical effect (Flores et al., 2006; Haas & Detardo-Bora, 2009).

About the Present Study

Responding to the aforementioned research, including gaps in knowledge concerning how to change practice on the ground, the present study is a randomized controlled trial designed to assess the effects of introducing an evidence-based assessment and treatment-matching protocol into three established drug courts in New York City (see Appendix A for a description of the participating drug courts). Preexisting practice in all three sites involved the administration of a non-validated bio-psychosocial assessment to inform the professional judgment of court-employed case managers. In other words, whereas there were decision-making algorithms and routines in the preexisting status quo, clinical judgments were not guided by a structured decision-making system that was consistently employed across courts or case managers. The study sought to test the feasibility and impact of consistently incorporating two validated assessment tools, the TCUDS II (a brief addiction screener) and the LSI-R (a comprehensive risk-need assessment) into the participating court's assessment and treatment planning practices. The Level of Services Inventory-Revised (LSI-R) was explicitly linked to a structured treatment matching protocol.

The experimental treatment matching protocol explicitly incorporated the Risk Principle of the RNR model by attempting to accurately classify drug court participants by risk of re-offense and to respond with an appropriate treatment intensity. Specifically, the LSI-R risk score was used to divide participants into low, medium, and high risk subgroups. Risk level was then linked to specific recommendations for a first treatment modality—with the general intent of guiding drug court staff to assign higher risk participants to a more intensive treatment modality (e.g., a residential or short-term inpatient modality) and lower risk participants to a less intensive modality (e.g., intensive or regular outpatient treatment).

Research Questions

The study was designed to answer three research questions:

1. **Validity of the LSI-R Tool:** Are the cumulative LSI-R scores and/or LSI-R based risk categories valid predictors of recidivism in the drug court population? Are subdomains of the LSI-R valid predictors of recidivism and, if so, which subdomains are particularly important?

2. **Implementation of an Evidence-Based Assessment and Treatment Matching Protocol:** How receptive were drug court staff members to the experimental assessment tools and to the utilization of those tools to inform eligibility and treatment matching decisions? Based on study data, with what level of fidelity was the treatment matching protocol implemented?
    - What was the perspective of drug court staff on the overall substance, quality and efficiency of the validated addiction screener (TCUDS II) and the chosen risk-need assessment (LSI-R)?
    - Did their experience incorporating the new assessment tools and treatment matching protocol affect staff perceptions of what types of individuals are generally appropriate for one or another initial treatment modality (residential, short-term inpatient rehabilitation, intensive outpatient, or regular outpatient)?
    - Were the experimental protocols implemented with fidelity—i.e., based on study data, to what extent did the drug court staff follow the experimental treatment matching protocol?

3. **Impacts on Intermediate and Long-Term Participant Outcomes:** Did implementation of the experimental protocol in fact yield different outcomes, as compared to the control group, with respect to eligibility decisions; treatment recommendation (e.g., residential v. outpatient treatment); and established drug court participant success indicators, including retention and re-arrest rates?
    - In the event that implementation integrity was strong (i.e., assuming perfect adherence to the recommended treatment matching protocol), does the quantitative data suggest that proper implementation of the tools could have affected drug court participant outcomes?

Consistent with current expectations on all projects funded by the National Institute of Justice, this report is not intended to serve as a comprehensive technical report. Instead, this report constitutes a brief overview of the research questions and their importance (this chapter); the study methodology (next chapter) and the major findings that emerged (the following chapter). A final chapter briefly reviews the most essential conclusions and their implications.

Chapter 2

Study Design and Methodology

Three well-established drug courts in New York City participated in the current study: the Queens Misdemeanor Treatment Court (QMTC), the Misdemeanor Brooklyn Treatment Court (MBTC) and the Brooklyn (felony) STEP court (STEP). All three drug courts receive referrals from the general criminal courts in Queens (the first program) or Brooklyn (the second and third programs). The three programs serve a large number of both first-time and repeat offenders charged with an array of eligible drug and property offenses to drug court.

Participating Stakeholders and Staff

The study was launched with the support and consent of the three judges of the respective participating drug courts and senior officials with the New York State Unified Court System—including both the statewide drug court coordinator in New York State and the Chief of Policy and Planning for the state, the latter of whom ultimately oversees all statewide problems-solving initiatives. With their support, 11 drug court staff members employed by the three participating courts were trained to administer the experimental assessment tools and oriented to the treatment matching protocol and study design. Of trained staff, nine case managers were actively involved in implementing the study—i.e., assessing drug court referrals—whereas the two remaining staff were drug court project directors who did not themselves conduct clinical assessments. In effect, besides the drug court participants, the nine case managers were also among the subjects of the study, responsible for changing (or not changing) their eligibility determination and treatment matching practices in response to the evidence-based strategies that the researchers sought to introduce. The two drug court project directors were, in turn, responsible for supervising the case managers, ostensibly in order to maximize fidelity to those evidence-based strategies.

Screening and Assessment Instruments

The study hinged on the incorporation of two evidence-based assessment tools into the treatment matching decisions of the nine case managers.

The Texas Christian University Drug Screen (TCUDS II)

The Texas Christian University Drug Screen (see Appendix B) is a 15-item screening tool based on a combination of DSM IV criteria for substance abuse and dependence. It is the first short drug-use screener to be designed specifically for use with criminal justice populations and is currently the most widely used in correctional settings (Taxman et al., 2007). Developed in 1999, it was validated one year later with more than 18,000 offenders in the Texas correctional facilities. Researchers found that a score of three or higher was a valid predictor of "a serious drug problem" based on test-retest measures, and found that the TCUDS II possessed inter-rater reliability comparable with other short screeners then in use. The screener includes 15 questions and results in a cumulative score between 0 and 9, with a score of 3 or higher indicating a likely diagnosis of substance abuse or dependence (Knight, Simpson, & Morey, 2000).

The Level of Services Inventory (LSI-R)

The Level of Services Inventory (see Appendix C) is an actuarial risk-need assessment tool designed by Canadian psychologists who also first proposed Risk-Need-Responsivity theory as a theory of crime prevention (Andrews & Bonta, 1995). Since its initial development, the LSI has been revised multiple times and is now widely applied across a range of criminal justice settings. The revised tool used in the current study (the LSI-R) was published in 1995. It includes 54 items across ten domains. LSI-R domains include the "Central Eight" criminogenic risk-need factors now widely accepted to be the primary predictors of recidivism: criminal history; antisocial personality and cognitions; pro-criminal peers and networks; problems with education and employment; marital or family problems; social isolation; and substance abuse. While not explicitly included in the Central Eight, residential and financial instability are also consistent predictors of risk that are addressed by the LSI-R (and other comparable validated tools).

Use of the LSI-R culminates in a cumulative score between 0 and 54, which is typically divided into at least three risk categories (e.g., low-risk, medium risk, and high-risk). Because it contains subscales addressing both criminal risk and criminogenic need domains, the LSI-R is commonly recommended for a wide range of case management decisions, such as level of supervision, program eligibility, and program placement. Multiple studies have found the tool to be a powerful predictor of recidivism among general offender populations (Dowdy et al., 2001; Flores, Lowenkamp, & Latessa, 2006; Holsinger, Lowenkamp, & Latessa, 2004; Listman et al., 2008) and specific subgroups: women, racial and ethnic

minorities, drug offenders (Kelly & Welsh, 2008); and mentally ill offenders (Ferguson, Ogloff & Thompson, 2009; Holsteter & Cupp, 2007).

The Experimental Assessment and Treatment Matching Protocol

This section provides the most critical details concerning the study design, as respectively applied to randomized experimental and control groups.

The Randomization Process

Randomization and study intake took place over 37 months from April 1, 2011 to April 30, 2014. To achieve proper randomization, researchers utilized a numeric identifier assigned by New York's statewide drug court database, known as the Universal Treatment Application ("UTA"), to all drug court referrals throughout New York State. Specifically, all referred defendants at the three study sites who were assigned an even-numbered UTA identifier were placed in the experimental group and all referred defendants assigned an odd-numbered UTA identifier were placed in the control group. For most analytic purposes, only those referred defendants who were found legally and clinically eligible, and who then voluntarily agreed to become a drug court participant, were included in the final study sample.

Assessment and Treatment Matching for the Control Group

Those defendants who were randomly assigned to the control group were subject to preexisting assessment and treatment matching practices. In all three participating courts, these practices were inherited and adapted from the first drug court opened in New York City in 1996 (the Brooklyn Treatment Court).

Preexisting practice in New York City drug courts may be summarized as follows: Case managers create treatment plans, primarily composed of an initial referral to a residential, intensive outpatient, or regular outpatient treatment modality, based on the results of a reasonably comprehensive bio-psychosocial assessment tool that was built into the statewide Universal Treatment Application (UTA) database (see Appendix D for assessment domains). The UTA was originally designed in 1996 and updated in 2000. With the slightest modifications, questions included in the UTA assessment were largely those input into the original 1996 version. The UTA does not produce explicit treatment recommendations, but is

instead used to support the professional discretion of case managers as the primary basis for treatment planning.

Importantly, while the UTA enables collecting a great deal of psychosocial information relevant to clinical decision-making, the UTA is not a scored actuarial tool and results of the assessments are definitively *not* employed to classify defendants into risk categories or other classifications based on need. At the time that the current study was initiated, there were also no documented prescriptions or guidelines for matching defendants to particular levels of treatment (i.e., modalities) in any of the participating drug courts. Finally, it is also notable that the UTA, while covering some of the "Central Eight" risk predictors such as substance use and employment or education problems, overlooks some of the strongest predictors of recidivism identified in the empirical literature—including criminal background, antisocial peer networks, and criminal thinking. Therefore, use of the UTA is not conducive, in and of itself, to the consistent placement of drug court defendants in treatment modalities in keeping with RNR principles.

Assessment and Treatment Matching for the Experimental Group

For those drug court participants assigned to the experimental group, case managers were trained in an experimental assessment and treatment-planning protocol that involved three distinct steps: (1) Administration of the short addiction screener (TCUDS-II) prior to making an eligibility decision; (2) Administration and scoring of the comprehensive risk-need assessment tool (LSI-R) prior to treatment planning; and (3) Utilization of a treatment-matching grid which assigned drug court participants to initial treatment modalities based on their LSI-R risk score.

Importantly, only the LSI-R results, but not the results obtained from the brief TCUDS II screen, were explicitly intended to be incorporated into decision-making among those in the experimental group. Researchers believed that drug court staff might find the information in the TCUDS II to be valuable and that the results obtained from using the tool might influence the decision of whether a referral was found clinically eligible. However, researchers did not incorporate the TCUDS II into a structured decision-making protocol—in part for legal reasons, so that the research study did not obligate or pressure program staff to include or exclude certain individuals from the opportunity to participate in drug court. Nonetheless, even though application of TCUDS II results to eligibility decisions was not an explicit protocol of the study, it was hypothesized that regular utilization of the screening tool with experimental group clients could influence patterns in clinical eligibility decisions.

In contrast, an explicit treatment matching protocol was instituted for the experimental group, to be based on results from the full-length LSI-R risk-need assessment. Table 2.1 (below) presents the protocol in the form of a partially prescriptive treatment matching grid.[1] In creating the grid, the researchers turned to existing "norms" provided by Multihealth Systems, publisher of the LSI-R at the time the study was initiated. Based on this standard, the research team created three risk categories: low (cumulative LSI-R risk score below 15); medium (cumulative LSI-R risk score between 15 and 29); and high (cumulative LSI-R risk score above 30). Having created these risk categories, the nine case managers who were participating in the study were asked to match participants according to the grid in Table 1. Notably, the research protocol allowed for selective overrides from the structured decision making grid, although as the results to follow will make clear, overrides exceeded what could credibly have resulted were the LSI-R scores integrated as intended. Moreover, because the proposed research was intended as a field experiment with the purpose of assessing both the *feasibility and uptake* of the evidence-based protocol as well as the *impact* of the protocol when properly applied, researchers did not seek to overturn or flatly prevent deviations from the protocol. Researchers monitored study implementation closely and provide strong and repeated information to program staff that was designed to increase fidelity. Indeed, it was precisely an empirical question of interest to what extent program staff would or would not shift their practices in response to training and information about the protocol. Hence, the implementation study, whose methods are described below, was designed to anticipate and explore deviations from the protocols.

[1] The term "partially prescriptive" refers both to the fact that some discretion was built into the treatment matching grid and to the fact that overrides were presumed in certain cases (e.g., the client was a Spanish-only speaker or had special treatment needs unsuited to the treatment recommended by the grid).

Table 2.1. Experimental Treatment Matching Protocol

Treatment Modality	LSI-R Score >30 **(High Risk)**	LSI-R Score 15-29 **(Medium Risk)**	LSI-R Score <15 **(Low Risk)**
Residential Treatment ***or*** Short Term Rehabilitation followed by Intensive Outpatient	X		
Short-Term Rehabilitation followed by Intensive Outpatient treatment ***or*** Intensive Outpatient Treatment Only		X	
Intensive Outpatient Treatment (with a gradual step-down to less intensive)			X

Note: Treatment matching guidelines were based on findings from previous studies of the LSI-R (Kelly and Welsh, 2008; Listman et al., 2008), as well as information on the range of most typical treatment modalities in the three participating courts (personal communication with drug court staff members).

Execution of the Randomization and Other Study Protocols

A central goal of the current study was to understand the effect of two substantively different assessment and treatment planning protocols on the initial treatment modality, and the long and short-term outcomes, of two equivalent groups of drug court participants. To support this goal, compliance to the randomization protocols was intensively monitored by research staff. Specifically, data regarding group assignment, utilization of the experimental assessment tools and first treatment modality were tracked on a quarterly basis. Rates and reasons for "miss-assignments" (i.e., assignment of participants with experimental numeric identifiers to the control group or vice-versa) were regularly investigated by the researchers via phone calls or in-person discussions with drug court staff. When instances of miss-assignment that

could not be attributed to refusal to participate by the drug court participant were identified, these data were dropped from the study. Despite these monitoring efforts, the study encountered several implementation challenges that were not intended or desired—although as indicated below, the final randomized groups were statistically equivalent, as one would expect from a RCT design.

Deviations from the Intended Research Design

Concerning major deviations from the planned design, of particular concern was the rate of study enrollment. Enrollment proceeded over 37 months, whereas the anticipated data collection period was originally one year. The original one-year estimate was based on applying annual participant volume from the two years prior to study implementation (2009 and 2010) and incorporating an assumption that two-thirds of potential study participants would voluntarily consent to participate. Intake was extended for several reasons. First, case volume in drug courts across New York City declined over the study period (coinciding with an underlying decline in drug arrests). In total, the three courts assessed fewer defendants and enrolled an average of 391 drug court participants per year over the 37-month intake period, compared with enrolling 528 participants per year in 2009 and 2010. Additionally, because the study involved potentially different treatment plans based on random group status, drug court participants were required to provide informed consent to participate. In the early months of the study, rates of consent to participate were sometimes lower than 50% of those recruited.

Finally, in two of the three sites, there was a non-negligible number of cases that were dropped from the study during the first six months of data collection by individual case managers without specific justification—i.e., the case managers flatly did not administer the experimental assessment tools, a necessary condition for basic fidelity to the randomization process to have occurred. As a result, the first six months of data in two sites were dropped entirely due to potential systematic bias introduced during early implementation. Whereas the decision to drop the first six months of data from two sites avoided a potential threat to internal study validity, the decision obviously extended the study intake period. At this point, all case managers participating in the study were also retrained on the randomization, consent, and assessment and treatment matching protocols. Rates of miss-assignment to the experimental and control groups decreased considerably following retraining in October 2011 (as described below).

Another important implementation challenge concerned accurate implementation of the two experimental assessment tools and complete data entry by program case managers. In particular, a non-negligible number of cases that were ostensibly randomly assigned to the experimental group did not generate usable assessment data due to an extensive array of missing fields, requiring them to be dropped from the analysis.

Final Sample Equivalency

Comparisons of baseline characteristics between the final samples (t-tests and chi-square tests) found that despite the aforementioned concerns regarding implementation of the randomization process, the treatment and control groups significantly differed on only two of almost 40 criminal history, sociodemographic, and drug use history variables. Specifically, members of the experimental group were more likely to be homeless and be arraigned on a misdemeanor rather than a felony charge. Considering that a total of two of close to 40 significant differences corresponds with chance—i.e., due to chance variation one would naturally expect approximately one out of every 20 parameters to be significantly different at the .05 level—it is reasonable to conclude that the randomization protocol succeeded in achieving comparable groups. Table 3.1, presented in the following chapter, provides many of the specific comparisons underlying this conclusion.

Implementation Study

The uptake and implementation of evidence-based approaches comprised the subject of the second of this study's three research questions (as outlined above in Chapter 1). As noted in Chapter 1, implementation quality is a particularly important topic in light of multiple studies pointing to training and implementation integrity as crucial factors in the concrete utilization of evidence-based assessment tools. Flores et al.'s (2006) study, for example, showed a marked decrease in the predictive validity of the LSI-R when used by untrained staff; and Haas and DeTardo-Bora (2009) demonstrated that administration of the LSI-R does not necessarily mean that it will guide treatment planning. To date, there is little-to-no qualitative data regarding the exigencies of court and correctional practices that interfere with implementation of validated assessment and treatment matching protocols. A notable exception is interview-based research conducted by the Urban Institute with case managers and treatment providers in correctional settings, which found that some major barriers to implementation integrity include lack of proper training, inaccessibility of research findings, an over-reliance on recidivism as an outcome measure, and lack of appropriate treatment options in correctional and community-based treatment environments (Moore & Meares,

2003). Given the complexity of implementation, the present study sought to understand, rather than strictly prescribe, the translation of research to practice in the drug court environment.

In the present study, for drug court participants assigned to the experimental group, the implementation of the treatment matching protocol was examined through a straightforward quantitative analysis designed to determine to what extent the treatment modalities selected by case managers did or did not factually conform to what the matching protocol would have prescribed. In addition to this quantitative analysis, researchers also conducted a qualitative implementation study utilizing in-depth interviews (see Appendix E for the original interview protocol) and observations of the ways that participating court staff used the TCUDS II and LSI-R in their treatment and placement recommendations. Specifically, semi-structured interviews were conducted with case management and supervisory staff in each of the three courts at the outset of the study (focusing on preexisting practices) and again between six months and one year into implementation (focusing on the experimental protocol). Seven of the eleven case managers included in the original training were interviewed at both baseline and follow up. Two more case managers were hired and trained in the protocol subsequent to baseline (after April 2011) and were interviewed on a staggered schedule. Interview and observation data were thematically coded by two members of the research team, who were not the original interviewers. Thematic findings were compared to ensure interrater reliability.

Chapter 3
Major Study Findings

Findings are organized into three major sections that each provide results pertaining to one of the three research questions that motivate the study. By way of review, the research questions respectively concern: (1) the validity of the LSI-R assessment tool; (2) the implementation of the experimental assessment and treatment matching protocol; and (3) the intermediate and long-term impacts of the experimental protocol on treatment placement decisions and participant outcomes, and the theoretical validity of the risk-based treatment matching protocol.

For quantitative-analytic purposes, the final sample included 466 drug court participants across the three New York City program sites, with 180 participants assigned to the experimental group and 286 participants assigned to the control group. Table 3.1 shows the sociodemographic, criminal justice, and drug use profile of the sample, distinguished by group assignment. The sample was four-fifths male; primarily African-American or Latino (75% combined); and faced significant socioeconomic and housing instability (73% unemployed at baseline and 45% reporting homelessness at some point in their lifetime). Whereas all drug court participants in the study were presumed to have a clinical substance abuse or dependence problem, patterns of drug use varied, with participants variously identifying as their primary drug of choice marijuana, cocaine or crack, heroin, or alcohol.

For the purpose of more qualitative analyses related to the implementation and uptake of the evidence-based approaches that were introduced in the course of the study, the research sample effectively consisted of the nine participating case managers and two participating project directors (one director for the two Brooklyn programs and one for the Queens program).

Table 3.1. Demographic, Drug Use and Criminal Justice Profile of the Final Sample (N=466)[a]			
	Control Group	**Experimental Group**	**Total**
N	**286**	**180**	**466**
Median Age (years)	35	36	35
Male	79% (227)	82% (146)	80% (373)
Race/Ethnicity			
Black/African American	48% (137)	47% (85)	48% (222)
Latino/Hispanic	29% (83)	28% (51)	29% (134)
Caucasian	21% (60)	21% (38)	21% (98)
Asian Pacific Islander / Other	2% (6)	3% (6)	3% (12)
Marital Status			
Married/Life Partner	8% (24)	9% (14)	9% (38)
Divorced/Separated	8% (22)	7% (11)	7% (33)
Single/Never Married	83% (235)	82% (132)	82% (367)
Widowed	1% (4)	2% (3)	2% (7)
Ever Homeless	40% (113)	55% (88)	45% (201)***
Currently Unemployed	74% (211)	74% (132)	74% (343)
Completed 11th Grade or Lower	51% (145)	64% (114)	56% (259)
Drug of Choice (Self-Report)			
Marijuana	33% (93)	21% (36)**	28% (129)
Cocaine/Crack	23% (65)	28% (50)	25% (115)
Heroin	24% (67)	21% (37)	23% (104)
Alcohol	13% (37)	17% (29)	14% (66)
Other/None	7% (21)	13 % (24)	10% (45)
Current Arraignment Charge			
Felony	44% (111)	37% (54)	41% (165)
Misdemeanor	56% (140)	64% (94)	59% (234)
Drug Offense	47% (117)	49% (73)	48% (190)
Property Offense	40% (100)	39% (58)	40% (158)
Prior Convictions			
Violent Felony	10% (28)	7% (12)	9% (40)
Felony	39% (110)	40% (72)	39% (182)
Misdemeanor	62% (176)	69% (124)	65% (300)

**p<.01 ***p<.001

Predictive Validity of the LSI-R Assessment Tool

The first substantive research question of interest concerned the predictive accuracy of the LSI-R risk scores. The extent to which the LSI-R is a valid predictor of recidivism is a question of general interest to the field of evidence-based assessment and to drug court practitioners in particular. Notably, the LSI-R was previously validated with offenders referred to drug treatment prisons in Pennsylvania (Kelly & Welsh, 2008). However, this study provides another important opportunity to test the predictive accuracy of the LSI-R with substance abusing criminal defendants—as well as a first-ever opportunity to test the tool specifically with participants in the highly popular drug court model. Moreover, only if the LSI-R demonstrates its predictive value would it, ostensibly, be logical or appropriate to test the effects of incorporating the LSI-R into an evidence-based treatment matching protocol.

Table 3.2 presents three logistic regression models that address the predictive accuracy of the LSI-R summary risk scores. The outcome variable is any re-arrest, and the control variable is the number of days tracked—time of "exposure" to re-arrest. As shown in Model 1, the cumulative LSI-R score was a significant predictor of recidivism in the studied population, in keeping with prior validation studies of the instrument. The Area Under the Curve (AUC), a standard measure of predictive accuracy, was an acceptable (although not exceptional) .68. Model 2 breaks the instrument by domain and shows that selected subdomains[2]—specifically criminal history and lack of prosocial leisure activities (with the latter subdomain sometimes referred to as connoting "social isolation")—accounted for a large share of the instrument's

[2] *Notes on LSI-R sub-domains*: The criminal history domain measures prior convictions, age at first conviction and institutional misconduct; the employment/educational domain includes items regarding current employment status, highest education achieved and interactions with peers/authority; the financial domain includes items regarding current financial management problems and reliance on public assistance; the family/marital domains includes items regarding satisfaction with current family and intimate relationships and involvement of family in criminal activity; the accommodation domain addresses satisfaction with current living situation, residential stability and perceptions of neighborhood crime; The leisure domain contains questions regarding participation in prosocial activities and use of free time; The companions domain addresses social isolation and number or criminal versus noncriminal acquaintances; The alcohol & drugs domain addresses or current use and degree of interference of drug use in daily activities; The emotional/personal addresses history of mental health treatment, and current symptomology; The attitudes/orientation domain measures attitudes toward current crime and sentence.

predictive strength. Interestingly, the accuracy of the criminal history domain alone (AUC=.74) was superior to the cumulative LSI-R risk score for predicting recidivism. Model 3 shows that partitioning the sample by risk categories (rather than total score) almost completely retains the instrument's validity and predictive accuracy.

Table 3.2. Predicting Re-Arrest Using the LSI-R

	Model 1	Model 2	Model 3
N	180	171	180
Days Tracked	1.00**	1.00**	1.00**
LSI-R Subcomponents			
Criminal history		1.48**	
Employment/Educational		1.02	
Financial		0.99	
Family/Marital		0.89	
Accomodation		1.00	
Leisure		2.18*	
Companions		0.87	
Alcohol & Drugs		1.01	
Emotional/Personal		0.84	
Attitudes/Orientation		1.29	
Risk Level (ref = low)			
Medium			1.65
High			5.76**
LSI-R Total Score	1.09**		
Nagelkerke R^2	**0.17**	**0.31**	**0.15**
AUC	**0.68**	[a]	**0.64**

Note: Odds ratios presented. *p<.05, **p<.01.

[a]AUC for criminal history = .74. AUC for leisure is .60.

To summarize, the answer to the first research question is that the LSI-R is a valid predictor of recidivism in the drug court population, making it a logical next step to explore whether or how the LSI-R might be effectively incorporated as part of a structured treatment matching protocol.

Implementation and Uptake of the Treatment Matching Protocol

The second research question concerned the implementation and uptake of the experimental protocols—specifically whether, how, and why program staff did or did not use the LSI-R assessment results and the treatment matching grid to inform their initial treatment planning (i.e., assignment to a long-term residential, short-term intensive inpatient rehabilitation, intensive outpatient, or regular outpatient treatment modality). Despite the provision of training and retraining to participating case managers, including training in the principles of the RNR model and evidence concerning the effectiveness of the model when it is properly applied, quantitative analysis makes clear that the treatment matching protocol was inconsistently applied at best. Researchers examined, separately for low, medium, and high risk drug court participants as scored by the LSI-R, the percent of the time that case managers assigned participants to a modality that fell within the range of prescribed modalities according to the treatment matching grid. Results of this analysis show non-adherence to the treatment matching protocol was in excess of 20% at each risk level (22% for low-risk, 48% for medium-risk, and 29% for high-risk individuals). The direction of noncompliance to the protocol varied, with 22% of low-risk participants and 33% of medium risk participants miss-assigned to an overly intensive residential setting, whereas 29% of high-risk participants were undertreated (miss-assigned to an outpatient modality).

Whereas the quantitative data suggests significant non-adherence to the intended protocol, only more qualitative evidence—as well as an understanding of the preexisting decision-making routines that informed preexisting decisions—could fully answer what the case managers were relying on to make treatment plans over the course of the study. Such an analysis explains, at least in part, *why* the observed deviations from the experimental protocol took place and to what extent case managers were intentionally abiding by or contradicting the new assessment protocols.

Table 3.3. Comparison of Actual versus LSI-R Recommended Treatment Plans (Experimental Group Only)[a]

LSI-R Risk Category	Residential Treatment	Short-Term Inpatient Rehabilitation	Intensive Outpatient or Outpatient	Total
Low Risk[b]				**23**
Recommended	0% (0)	0% (0)	100% (23)	100% (23)
Actual	22% (5)	0% (0)	78% (18)	100% (23)
Medium Risk[c]				**94**
Recommended	0% (0)	46% (43)	0% (0)	100% (94)
Actual	33% (31)	13% (12)	19% (37)	100% (94)
High Risk[d]				**42**
Recommended	57% (24)	43% (18)	0% (0)	100% (42)
Actual	57% (24)	14% (6)	29% (12)	100% (42)

[a]Whereas the decision making grid shown in Table 2.1 allowed for some case manager discretion, the "recommended" placement for this table was coded as that which most closely corresponded to the actual placement, without deviating from the grid.

[b]22% of low-risk participants were over-treated (assigned to an inpatient setting).

[c]33% of medium-risk participants were over-treated (assigned to a long-term inpatient setting).

[d]29% of high-risk participants were under-treated (assigned to outpatient treatment).

Factors Influencing Treatment Placement Recommendations at Baseline

In order to contextualize the implementation of the *new* protocol introduced in the study, it was first necessary to understand the *preexisting* decision-making algorithms and routines that the researchers were, in effect, seeking to replace. Our findings indicate that prior to the current study, drug court case managers administered clinical assessment questions included in the preexisting bio-psychosocial assessment (the UTA assessment, described above) prior to creating an initial treatment plan for participants. While the clinical assessment results were then used to support the case managers in making appropriate treatment plans, there were no definitive guidelines associated with the application of UTA results to treatment modality assignments.

To provide hard evidence concerning the nature of preexisting practice, a quantitative analysis of the distribution of treatment modalities under preexisting practice (2009-2010) was conducted at the outset of the current study and was recently published as a companion report to this one (see Farley, Rempel, and Picard-Fritsche 2016). The results suggested that the two most utilized treatment modalities at the outset of the study were outpatient treatment (intensive or non-intensive), which accounted for 50% of total placements, and residential treatment, which accounted for 41% of total placements. A multivariable analysis of UTA assessment items associated with treatment modality suggested that the *most* important considerations contributing to an initial placement to residential or short-term inpatient treatment—as distinguished from outpatient—included unemployment at the time of arrest, a drug of choice other than marijuana, older age, being unmarried, current homelessness, and lack of a high school education. Table 3.4 shows the multivariate regression analysis predicting residential treatment under pre-existing practices in the three courts.

Supplementing the quantitative analysis, interviews were conducted as part of the same exploration of preexisting practices with all nine case managers in April 2011 to gain a more in-depth understanding of baseline treatment matching trends. Interview results were mostly in keeping with the quantitative analysis, suggesting that while full UTA assessments are routinely conducted on each drug court participant, treatment planning hinges primarily on three factors gleaned from the assessment: (1) drug use history (type, frequency, length of use); (2) current education and employment status; and (3) housing stability. Motivation was also cited as an influential factor in placement decisions, although this factor is not operationalized in either the UTA or the experimental protocols.

Table 3.4. Logistic Regression Isolating Factors that Influence Residential Treatment Placement Under Preexisting Drug Court Practice (2009-2010)	
N	**548**
	Odds Ratio
Constant	6.393*
Demographics	
Age	.931**
Male Sex	1.211
High School Graduate	.382***
Employed	.161***
Years of Drug Use	1.084**
Currently Homeless	6.806***
Married/Life Partner	.438*
Primary Drug	
Alcohol	1.005
Marijuana	0.231**
Heroin	2.094
Cocaine	.86
Crack	.928
Nagelkerke R^2	**0.386**

Note: *p<.05 **p<.01 **p<.001.

Selected quotes from baseline interviews and observations of assessments further demonstrate the discrete nature of the primary factors used in treatment matching prior to the current study:

> *Heroin users almost always get residential recommendation unless they have a stable residence…. Sometimes I will recommend residential* [to other drug type users] *if the person is homeless or has a chaotic home environment.*

> *He uses heroin, so I will recommend residential especially since he does not have stable housing, he lives alone. Also, he's worried about his job but it sounds like the kind of job he could go back to after treatment. So if he decides he wants drug court, I would recommend residential.*

Leaning towards intensive outpatient based on discussion with mother, defendant employed, defendant in school and defendant was negative on all drug tests.

Factors Influencing Placement Recommendations at Follow-up

Staff were re-interviewed using a similar interview protocol at follow-up, in part to ascertain whether exposure to the experimental assessment tools and treatment-matching protocols qualitatively influenced how the case managers made treatment plans. These interviews also illuminate the critical question of whether, at follow-up, the LSI-R risk-need assessment and related treatment matching protocol were exerting any influence on how case managers thought about treatment planning.

As the quotes below indicate, the core factors of drug use patterns, education and employment status, and housing stability remained relatively unchanged following implementation.

Interviewer: *Now that you have been using the LSI-R for awhile….what factors do you use to decide if they are appropriate for inpatient treatment?*

Case Manager 1: *You know….if the person is homeless, not employed, has a severe drug problem…that pretty much gives me an idea.*

Case Manager 2: *If they are using….the extent…If I'm putting daily use and it's like heroin, PCP, methamphetamines, that's a flag right there.*

Interviewer: *Now that you have been using the LSI-R for awhile….what factors do you use to decide if they are appropriate for outpatient treatment?*

Case Manager 1: *If they have the support [at home] they need, their education is a little better, if they have more motivation…*

Case Manager 2: *Well someone who has stable living, stable employment, someone who can show they're responsible enough to be in an outpatient setting.*

It is notable that no case manager made reference to the TCUDS II or LSI-R scores as key factors in treatment planning at follow up. To understand this more clearly, case managers were asked about their technique in administering and scoring the experimental instruments.

Some trends in the interview data suggest that rather than the score being utilized in keeping with the prescribed treatment protocol, it was primarily used to confirm treatment-matching decisions made prior to calculating the score. These findings suggest weak implementation and may be important explanatory reasons for the substantial non-adherence to the treatment matching protocol that was documented above. They also echo prior research pointing to implementation deficits as a major obstacle in translating evidence-based strategies to practice settings.

One case manager described making the treatment recommendation based on professional discretion and qualitative answers to the LSI-R recorded on paper, prior to scoring.

Case Manager 1*: Because of the [court's] timeframe…it's difficult to make the treatment recommendation based on what the numbers are within the LSIR computerized results…so I would say most of our assessments are based on our clinical knowledge of what the client's needs are… [and] they seem to coincide to some degree with what the computer may spit out for us.*

In a later follow-up interview, a second case manager independently confirmed this trend toward using the LSI-R scores to "confirm" clinical judgments. However, no interviewee suggested that scores that did not coincide with clinical judgment would ultimately result in a reversion to the structured treatment matching protocol.

Case Manager 2*: I use the LSI-R as a reference…and also jot down notes….when [I] finally look at the numbers…I will think to myself, 'yeah, I kind of had an idea that was going to be the case' [referring to the defendant's risk score or level on the experimental protocol].*

Case Manager Perceptions of the Evidence-Based Tools

Despite clear limitations in the incorporation of LSI-R-based information in to treatment planning, themes emerged from interviews suggesting that factors introduced by the LSI-R were useful to the case managers in thinking qualitatively about treatment. Of the ten primary domains covered in the LSI-R instrument, five domains--Criminal History, Financial, Marital/Family, Attitudes, Leisure/Recreation and Companions—can be considered substantively "new" to the assessment process in the three participating courts. Several of these domains emerged at least once as factors in the interviewee's explanation of their treatment planning during follow-up interviews.

[Financial domain]

> *... if you've had a bank account [or] credit card ... it kind of leads to know[ing] ... what a client can achieve because it takes a level or responsibility to have a credit card or a banking service ...*

[Family/Marital domain]

> *If you are living in this environment where you're constantly arguing, how are you going to have some peace of mind needed in order for you to complete your treatment process?*
>
> *I usually look at the family relations…so if there is not that much structure in the home ... I would tend to lean more so towards residential so that way they would have the structure and the basic needs are being met as well.*

[Attitudes domain]

> *[I find the question] 'how do you feel about the crimes you have committed?' [useful]. It gives you an idea of what the client considers normal.*

In addition to introducing new information relevant to clinical decision-making, interviewees almost unilaterally held positive attitudes toward the new assessment tools, especially the LSI-R. In particular, they liked asking the more detailed questions about their clients' personal histories and felt that it opened conversations that would not have been possible with the preexisting UTA assessment.

Furthermore, there was little indication that the LSI-R was a time burden, with only one interviewee indicating that it took longer due to lack of familiarity or was practically more difficult than preexisting protocols. Indeed, of a subgroup of six case managers that completed comparative time tracking forms assessing the time needed to complete an LSI-R versus a UTA assessments, the average time needed for each assessment was 30-40 minutes, *across* case manager respondents. The primary complaint about the LSI-R was that it was worded awkwardly, but this issue was balanced out by its structural and content advantages, as the quotes below suggest.

With the UTA you get a picture but it's not everything, whereas sometimes we'll have clients and we'll wonder what happened here in their life—with the LSI-R you have their life story.

I would say that it is more in-depth, more detailed, as opposed to the UTA…it accesses more detailed information, you know, as far as within the last year what was your frequency of use like in the last year, which is good to know because someone may not report what they are using now but you want to know.

Summary

Results from the implementation and feasibility study revealed that case managers responded positively to the new assessment tools, believing that they were not onerous to administer and yielded additional information of value that the preexisting assessment did not contain. At the same time, both quantitative and qualitative study data pointed to significant nonadherence to the treatment matching protocol as a means to align treatment placement decisions with LSI-R-based risk information. Case managers utilized information generated by the new assessment tools to confirm or supplement their prior inclinations regarding treatment matching but appeared unwilling to fundamentally alter prior decision-making routines in order to increase alignment to the new tools. Hence, the results of the implementation study ultimately confirm prior research regarding the challenges of achieving effective uptake of evidence-based practices in criminal justice settings, while opening new questions regarding the underlying reasons for implementation failure. If nonadherence is not directly tied to inadequate training or support from program administrators, as in the current case, it suggests a need for more in-depth study of the relationship between organizational culture and adaptation of new practices, as well as specific tests of strategies to support better uptake of evidence-based practices (e.g., collaborative models where line staff and researchers work together to create new protocols that incorporate RNR principles).

Impact of the New Tools on Intermediate and Long-Term Participant Outcomes

The third research question of interest concerned the quantifiable impacts of the experimental assessment and treatment matching protocol on eligibility, treatment recommendations, program retention rates, and recidivism.

Impact on Clinical Eligibility Decisions

Even though application of TCUDS II results to eligibility decisions was not an explicit protocol in the study—i.e., case managers were not asked or encouraged to change their eligibility decisions per se—it was hypothesized that regular utilization of the TCUDS II screening tool could influence patterns in clinical eligibility decisions. Table 3.5 below shows patterns in legal and clinical eligibility, as well as other reasons for non-participation in the drug court, for defendants referred to one of the participating courts and receiving a clinical assessment from a drug court case manager. As shown, a negligible number of drug court candidates were found to be ineligible based on a lack of a substance abuse or dependence problem. Specifically, of 698 defendants who reached the clinical assessment stage (were not found legally ineligible prior to assessment), only 5% in the experimental group and 8% in the control group were found clinically ineligible due to no discernable addiction, a modest but non-significant difference between the two groups. Additionally, among the experimental group, approximately 22% who became drug court participants were found eligible *despite* being scored below the TCUDS II threshold for an addiction or a substance use disorder. Results suggest that the TCUDS II, therefore, did not have an appreciable influence on case manager decisions concerning drug court eligibility.

Table 3.5. Legal & Clinical Eligibility Patterns among Defendants Referred to the Participating Drug Courts over the Study Period (April 2011-May 2014)

	Control Group	Experimental Group	Total
Referred to Drug Court[a]	**439**	**259**	**698**
Drug Court Participants	65% (287)	69% (180)	67% (467)
Non-Participants	34% (152)	30% (79)	33% (231)
Defendant refused drug court	60% (92)	52% (41)	58% (133)
Ineligible for criminal justice reasons[b]	18% (27)	22% (18)	19% (45)
Ineligible due to no discernable addiction	8% (12)	5% (4)	7% (16)
Ineligible for other clinical reasons[c]	6% (9)	10% (8)	7% (17)
Other reason for nonparticipation	8% (12)	10% (8)	9% (20)

[a] Includes all defendants who were referred by the general criminal court and reached the stage of clinical assessment by a drug court case manager.

[b] Most common CJ ineligibility reasons include DA determination, open case in another jurisdiction, or open bench warrant.

[c] Includes mental health history, medical reasons and current enrollment in methadone maintenance.

Impact on Treatment Matching

Essentially, for the experimental protocol to influence longer-term program retention and recidivism outcomes, the hypothesized mechanism of change first necessitated an impact on treatment placements—i.e., the initial treatment modality assignments among enrolled drug court participants. Yet, the implementation study whose findings were previously summarized already provided strong evidence that case managers did not successfully incorporate the intended treatment matching protocol into their decision-making. Thus, confirming the anticipated null findings, and as shown in Table 3.6, the distribution of treatment modality assignments was statistically identical in both groups. The most common initial treatment modalities were long-term residential treatment (38% experimental group v. 37% control group) and intensive outpatient treatment (35% in both study groups). As can be further seen in Table 3.4, among drug court participants in the experimental group, 22% of low risk participants received residential treatment—essentially constituting an "over-treatment"—whereas 29% of high risk participants received intensive outpatient or outpatient treatment—essentially constituted an "under-treatment." Further, participants in the medium risk group were spread across all four treatment modalities, whereas the intent of the experimental treatment matching protocol had been to influence placement decisions towards the two middle categories (short-term inpatient rehabilitation or intensive outpatient).

Table 3.6. Initial Treatment Modality by Risk Level (N=425)

LSI-R Risk Category	Residential Treatment	Short-Term Intensive Rehabilitation	Intensive Outpatient	Outpatient	Total
All experimental participants[a]	**38% (60)**	**11% (18)**	**35% (56)**	**16% (25)**	**159**
Low Risk	22% (5)	0% (0)	39% (9)	39% (9)	23
Medium Risk	33% (31)	13% (12)	39% (37)	15% (14)	94
High Risk	57% (24)	14% (6)	24% (10)	5% (2)	42
All control participants[b]	**37% (99)**	**9% (23)**	**35% (93)**	**19% (51)**	**266**

[a] First modality data missing for 21 experimental participants.

[b] Pre-existing assessment practices in the participating courts preclude the creation of comparable risk categories for the control group.

Impact on Treatment Matching Under the Assumption of Strong Implementation

Whereas in point of fact, treatment placement decisions did not vary between the experimental and control groups, the more interesting research question is arguably whether decisions *would have changed* had the treatment matching protocol been implemented with fidelity in every case. This analysis speaks to the theoretical validity of the experimental treatment matching protocols, rooted in RNR theory, in the target population. Accordingly, Table 3.7 is based on a hypothetical re-assignment of the experimental group to treatment modalities in the fashion that the experimental protocol would have recommended. Where the experimental protocol allows for one of two possible modalities (e.g., either residential treatment or short-term inpatient rehabilitation for the high risk group), participants are placed in the modality that is closest to where case managers in fact placed them.

As shown in Table 3.7 below, perfect compliance with the treatment matching grid would have also resulted in sizable major differences between the experimental and control groups in terms of the distribution of initial treatment modality. Specifically, compliance would have shifted a significant number of participants in the experimental group toward the moderate intensity modalities (short-term inpatient and intensive outpatient). The projected shift *away* from residential treatment is particularly notable, given that additional analyses (reported below) suggested that residential treatment has a negative long-term impact on lower risk participants. In short, this portion of the study revealed that treatment matching practice *would have* significantly changed if the case managers had utilized the LSI-R-based risk categories as part of a structured decision-making and treatment matching process. LSI-R-based decision making could have meaningfully altered business-as-usual in our three sites—but failures of implementation precluded seeing those changes.

Table 3.7. Difference in Initial Treatment Modality by Group Under the Assumption of Full Adherence to Experimental Protocols				
	Residential Treatment	**Short-Term Intensive Rehabilitation**	**Intensive Outpatient or Outpatient**	**Total**
All experimental participants[a]	**15% (60)**	**38% (61)**	**37% (60)**	**159**
All control participants[b]	**37% (99)**	**9% (23)**	**54% (144)**	**266**

[a] First modality data missing for 21 experimental participants.

[b] Pre-existing assessment practices in the participating courts preclude the creation of comparable risk categories for the control group.

Impact on Drug Court Program and Recidivism Outcomes

Program retention rates were relatively similar between the two groups, with 79% retained at 90 days (77% of the experimental group and 80% of the control group) and 61% retained at one year (56% of the experimental group and 65% of the control group). Fifty-nine percent of drug court participants graduated in both groups. Table 5.6 shows that there were no significant differences by group status in graduation versus failure amongst participants whose cases were closed at the time of this report.

Recidivism results are also displayed in Table 5.6, restricted to those cases that were tracked for the corresponding time period (12 months and 24 months). As the bottom sections of Table 5.6 shows, there were no significant differences between the two groups in the re-arrest rate at the 12-month mark, and the greater 24-month arrest rate for the experimental group only approached significance ($p < .10$). The differences in recidivism should be interpreted with caution, given that none reach a valid significance threshold, and most of the results presented in Table 5.6 do not even approach significance.

Table 3.8. Drug Court Program Outcomes and Recidivism by Group			
	Control Group	**Experimental Group**	**Total[a]**
Drug court outcomes			
Graduated	60% (149)	58% (85)	59% (234)
Failed[b]	33% (82)	35% (51)	34% (133)
Final Warrant[c]	6% (15)	7% (10)	6% (25)
Re-arrest 12 months			
Any	46% (115)	53% (78)	48% (193)
Felony	20% (51)	18% (26)	20% (77)
Violent Felony	3% (8)	7% (10)	5% (18)+
Re-arrest 24 months			
Any	58% (125)	67% (76)	61% (201)+
Felony	32% (69)	33% (37)	32% (106)
Violent Felony	6% (12)	10% (11)	7% (23)
Days to first re-arrest			
Any[6]	207.62 (186.07)	207.80 (192.74)	207.70 (188.45)
Felony[7]	274.73 (217.75)	330.08 (225.87)	295.77 (221.59)

+p<.10 *p<.05

[a] Outcome analyses exclude 67 cases that whose that were still open at the time of arrest and 4 with missing data.

[b] Includes voluntary and involuntary failures.

[c] Refers to cases where participants failed to comply with the program resulting in arrest warrant being issued as their "final" program status.

Theoretical Validity of a Risk-based Approach to Treatment Planning

A core underlying premise of the current study was that a risk-based approach to treatment planning would improve the long-term outcomes of drug court participants. In a final analysis, we sought to test this premise. To achieve this, we analyzed the effect of initial treatment modality on re-arrest rates—after controlling for participant risk level (low,

medium, or high).[3] The findings indicate that placement in a residential setting proved counter-productive for low-risk program participants—significantly increasing the likelihood re-arrest. Indeed, as shown in Table 3.9 below, a residential placement approximately *doubled* the rate of re-arrest for those at low baseline risk. Conversely, placement of low-risk participants in a less restrictive treatment modality—e.g., an outpatient setting—lowered the likelihood of re-arrest significantly. Exploratory multivariable analyses (results not shown) that added a finer array of baseline participant characteristics as control variables did not change the significant and dramatic finding depicted below among *low risk participants* (whereas the apparent differences suggested in Table 3.9 at other risk levels were statistically non-significant in a multivariable framework).

Beyond showing that case managers' treatment planning decisions indeed have long-term consequences, this final analysis confirms and expands on the applicability of the Risk Principle to drug-involved offenders, demonstrating that it is generally beneficial to place low-risk participants in a less restrictive substance abuse treatment modality—and that it can be harmful to place low risk participants in a residential setting. These findings are presented in full in a separate publication (Reich, Picard-Fritsche, Rempel, and Farley 2016).

Table 3.9. Effect of Treatment Modality on Re-arrest among Low, Moderate and High Risk Drug Court Participants[a]

	Residential Treatment[a]	Outpatient Treatment[b]
Low Risk	67%	33%
Moderate Risk	76%	71%
High Risk	92%	77%

[a] Chi-sq=12.87, p<.001

[b] Includes long-term resdiential and short-term inpatient treatement modalities.

c Includes intensive and non-intensive outpatient modalities.

[3] For this analysis, the experimental and control groups were combined and risk category was based on an empirically derived risk scale which included the following six factors: prior felony arrest, prior drug arrest, prior convictions, current property charge, current charge severity, and lack of a high-school diploma/GED. Additional details on the methodology for this analysis may be found in Reich, Picard-Fritsche, Rempel, and Farley 2016).

Chapter 4
Conclusions and Policy Implications

In combination, the quantitative and qualitative data suggest some important general conclusions and new research directions with respect to each of our three research questions.

In terms of assessment validity, quantitative analyses confirm that the LSI-R is a valid predictor of re-arrest in the drug court population, in keeping with a growing body of prior literature on both general and specific "subgroups" of offenders. Findings regarding the validity of the LSI-R also support the applicability of Risk-Need-Responsivity theory to the drug court population, with important policy implications including that RNR-based assessment and treatment-matching protocols could improve treatment plans and reduce subsequent criminal justice involvement. Further, our investigation of the validity of each of the LSI-R subdomains suggests that risk in the drug court population is driven in large part by prior justice system involvement. This also has implications, at minimum for drug courts across New York State, which have typically not explicitly integrated consideration of criminal history into treatment planning. Technical assistance and training provision to drug courts would therefore benefit from a focus on the interaction between criminogenic needs such as substance use and static factors such as criminal history when crafting supervision and treatment plans for drug-involved offenders.

With respect to the feasibility and implementation questions, qualitative findings suggest that whereas drug court staff found substantive value in the evidence-based assessment tools introduced by the study, they were simultaneously reluctant to apply an actuarial or rules-based approach to treatment planning. This finding adds to a growing body of literature underlining the challenging nature of translating evidence-based strategies to complex practice environments reliant on traditional decision routines that were established long ago. Several prior studies have focused on isolating the primary obstacles to proper implementation, identifying insufficient training, variation in the interpretation of risk and need scores, and limited support among providers for using such scores to determine treatment plans. The current study offers additional evidence for the theory of limited support among providers and further suggests that the source of resistance may be embedded in the organizational environment of the drug courts, given that unwillingness to depart from existing algorithms and routines was consistent across the participating case managers in

each of the three sites. Future research should examine possible factors underlying failure of implementation of risk assessment tools in ways that were outside the scope of the current study to explore, in particular the influence of organizational or court culture on resistance to the adoption of new practices.

Null findings regarding differences in intermediate and long-term outcomes of participants assigned to the experimental and control conditions in the present study were unsurprising given significant nonadherence to the treatment-matching protocol, which had been the primary theoretical mechanism underlying expected differences.

More interesting, secondary analyses of the quantitative data provide empirical support both for the premise that use of a validated, risk-based assessment protocol would significantly alter treatment placement patterns among drug court participants *and* that treatment modality has a potentially crucial impact on long-term outcomes, particularly for low-risk participants. These findings suggest that to improve outcomes, drug court planners and practitioners should be attentive to the Risk Principle and should seek to overcome obstacles to the integration of evidence-based strategies into drug court operations.

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Appendix A. Study Setting

The three drug courts in this study are located in New York City: two in Brooklyn and one in Queens. They serve a wide range of drug-involved defendants charged with felony and misdemeanor crimes, including drug sales, drug possession, and select nonviolent property and "other" offenses. These courts provide an ideal setting for producing generalizable findings and lessons. First, they serve a representative array of candidates for alternatives to incarceration, incorporating felony and misdemeanor severities and a wide range of specific charges. Second, their assessment protocols (the statewide Universal Treatment Application) are consistent across site and so provide an appropriate control condition. Although the statewide application (the "UTA") gathers important demographic and drug use data, it does not contain statistically validated risk-needs measures. Thus, clinical recommendations are loosely based on UTA questions, combined with structured clinical judgment. This approach prevails in all three sites, in virtually all of the more than 90 adult drug courts in New York State, and, in all likelihood, in most drug courts nationwide. Third, the participating courts are situated in environments where a full range of treatment modalities (i.e., residential treatment, short-term rehabilitation, outpatient treatment) are available for as many drug court participants as may need them; these sites do not have their matching options pre-constrained by issues of treatment availability. A brief description of each specific site is included below.

Brooklyn STEP Felony Drug Court: Opening in January 2003, the Brooklyn STEP court (STEP) focuses on first-time felony offenders of any age and young offenders ages 16-19. Through 2009, the court enrolled 1,441 participants, averaging 199 per year over the most recent five years. The court is staffed by a dedicated judge, a project director, a resource coordinator, four full-time case managers, and a probation officer.

Misdemeanor Brooklyn Treatment Court: The Misdemeanor Brooklyn Treatment Court (MBTC), also opened in January 2003, serves chronic misdemeanor offenders with 10 or more prior felony or misdemeanor convictions, indicating a far more criminally involved population than a typical misdemeanor court. On average, MBTC participants are older and have longer addiction histories than in STEP. Through 2009, the court enrolled 1,728 participants, including 218 per year over the past five years. The court is staffed by a dedicated judge, a project director (shared with the STEP court), a resource coordinator, and

four full-time case managers (one of whom is shared with the STEP court).

Queens Misdemeanor Drug Court: Opening in January 2002, like MBTC, the Queens Misdemeanor Treatment Court (QMTC) focuses on chronic misdemeanor offenders, in this case with at least three prior convictions. The court has enrolled 901 participants, including 128 per year over the past five years. The court is staffed by a dedicated judge, a project director, resource coordinator, and three full-time case managers.

Appendix B. TCUDS II

Texas Christian University Drug Screen-- Instrument and Scoring Guide

TCU DRUG SCREEN II

During the last 12 months (before being locked up, if applicable) – Yes No

1. Did you use larger amounts of drugs or use them for a longer time than you planned or intended?..... 🕘 🕘
2. Did you try to cut down on your drug use but were unable to do it?..... 🕘 🕘
3. Did you spend a lot of time getting drugs, using them, or recovering from their use?..... 🕘 🕘
4. Did you get so high or sick from drugs that it –
   a. kept you from doing work, going to school, 🕘 🕘
   b. caused an accident or put you or others in danger?.....
   🕘 🕘
5. Did you spend less time at work, school, or with friends so that you could use drugs?..... 🕘 🕘
6. Did your drug use cause –
   a. emotional or psychological problems?.....
   🕘 🕘
   b. problems with family, friends, work, or police?.....
   🕘 🕘
   c. physical health or medical problems?.....
   🕘 🕘
7. Did you increase the amount of a drug you were taking so that you could get the same effects as before?..... 🕘 🕘
8. Did you ever keep taking a drug to avoid withdrawal symptoms or keep from getting sick?..... 🕘 🕘
9. Did you get sick or have withdrawal symptoms when you quit or missed taking a drug?..... 🕘 🕘
10. Which drug caused the most serious problem? [CHOOSE ONE]
    - 🕘 *None*
    - 🕘 *Alcohol*
    - 🕘 *Marijuana/Hashish*
    - 🕘 *Hallucinogens/LSD/PCP/Psychedelics/Mushrooms*

- *Inhalants*
- *Crack/Freebase*
- *Heroin and Cocaine (mixed together as Speedball)*
- *Cocaine (by itself)*
- *Heroin (by itself)*
- *Street Methadone (non-prescription)*
- *Other Opiates/Opium/Morphine/Demerol*
- *Methamphetamines*
- *Amphetamines (other uppers)*
- *Tranquilizers/Barbiturates/Sedatives (downers)*

Scoring for the TCU Drug Screen II

Page 1 of the TCU Drug Screen is scored as follows:

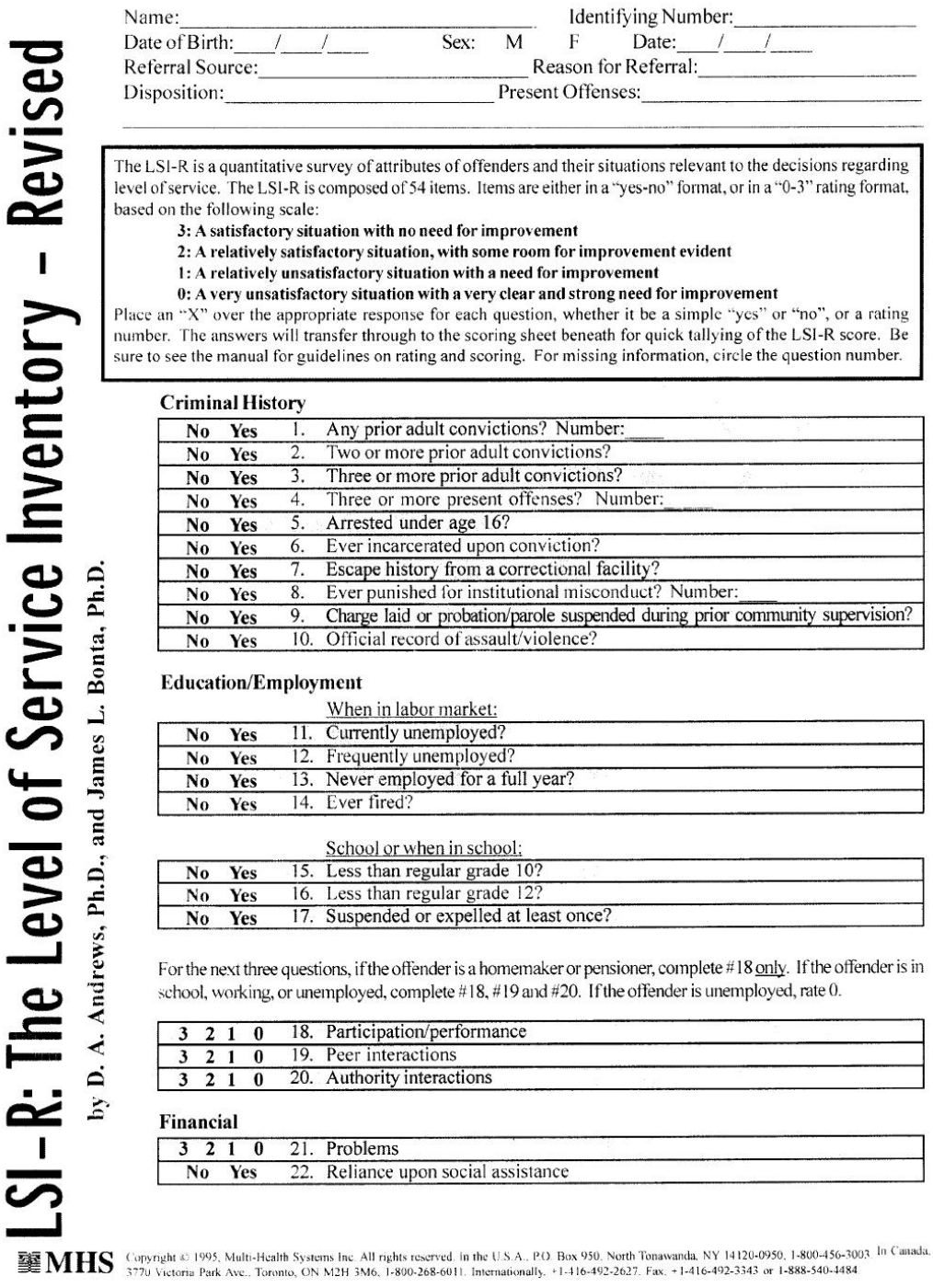
1. Give 1-point to each "yes" response to 1-9 (Questions 4 and 6 are worth one point each if a respondent answers "yes" to any portion).
2. The total score can range from 0 to 9; score values of 3 or greater indicate relatively severe drug-related problems, and correspond approximately to DSM drug dependence diagnosis.

3. Responses to Question 10 indicate which drug (or drugs) the respondent feels is primarily responsible for his or her drug-related problems.

The TCU Drug Screen II was developed as part of NIJ Grant 1999-MU-MU-K008, *Assessment of a Drug Screening Instrument*.

For more information on the TCU Drug Screen II, please contact:
Institute of Behavioral Research
Texas Christian University
TCU Box 298740
Fort Worth, TX 76129
(817) 257-7226
(817) 257-7290 FAX
Email: ibr@tcu.edu
Web site: www.ibr.tcu.edu

Appendix C. LSI-R Scoring



LSI-R: The Level of Service Inventory – Revised

by D. A. Andrews, Ph.D., and James L. Bonta, Ph.D.

Name:_____ Identifying Number:_____

Date of Birth:___/___/___ Sex: M F Date:___/___/___

Referral Source:_____ Reason for Referral:_____

Disposition:_____ Present Offenses:_____

The LSI-R is a quantitative survey of attributes of offenders and their situations relevant to the decisions regarding level of service. The LSI-R is composed of 54 items. Items are either in a "yes-no" format, or in a "0-3" rating format, based on the following scale:

3: A satisfactory situation with no need for improvement
2: A relatively satisfactory situation, with some room for improvement evident
1: A relatively unsatisfactory situation with a need for improvement
0: A very unsatisfactory situation with a very clear and strong need for improvement

Place an "X" over the appropriate response for each question, whether it be a simple "yes" or "no", or a rating number. The answers will transfer through to the scoring sheet beneath for quick tallying of the LSI-R score. Be sure to see the manual for guidelines on rating and scoring. For missing information, circle the question number.

Criminal History

No	**Yes**	1.	Any prior adult convictions? Number:___
No	**Yes**	2.	Two or more prior adult convictions?
No	**Yes**	3.	Three or more prior adult convictions?
No	**Yes**	4.	Three or more present offenses? Number:___
No	**Yes**	5.	Arrested under age 16?
No	**Yes**	6.	Ever incarcerated upon conviction?
No	**Yes**	7.	Escape history from a correctional facility?
No	**Yes**	8.	Ever punished for institutional misconduct? Number:___
No	**Yes**	9.	Charge laid or probation/parole suspended during prior community supervision?
No	**Yes**	10.	Official record of assault/violence?

Education/Employment

When in labor market:

No	**Yes**	11.	Currently unemployed?
No	**Yes**	12.	Frequently unemployed?
No	**Yes**	13.	Never employed for a full year?
No	**Yes**	14.	Ever fired?

School or when in school:

No	**Yes**	15.	Less than regular grade 10?
No	**Yes**	16.	Less than regular grade 12?
No	**Yes**	17.	Suspended or expelled at least once?

For the next three questions, if the offender is a homemaker or pensioner, complete #18 only. If the offender is in school, working, or unemployed, complete #18, #19 and #20. If the offender is unemployed, rate 0.

3 2 1 0	18.	Participation/performance
3 2 1 0	19.	Peer interactions
3 2 1 0	20.	Authority interactions

Financial

3 2 1 0	21.	Problems
No **Yes**	22.	Reliance upon social assistance

LSI-R: The Level of Service Inventory – Revised

by D. A. Andrews, Ph.D., and James L. Bonta, Ph.D.

Remember, the rating scale is as follows:

3: A satisfactory situation with no need for improvement
2: A relatively satisfactory situation with some room for improvement evident
1: A relatively unsatisfactory situation with a need for improvement
0: A very unsatisfactory situation with a very clear and strong need for improvement

		Question Numbers
Family/Marital		
Dissatisfaction with marital or equivalent situation	3 2 1 0	23.
Non-rewarding, parental	3 2 1 0	24.
Non-rewarding, other relatives	3 2 1 0	25.
Criminal-Family/Spouse	No Yes	26.
Accommodation		
Unsatisfactory	3 2 1 0	27.
3 or more address changes last year	No Yes	28.
High crime neighborhood	No Yes	29.
Leisure/Recreation		
Absence of recent participation in an organized activity	No Yes	30.
Could make better use of time	3 2 1 0	31.
Companions		
A social isolate	No Yes	32.
Some criminal acquaintances	No Yes	33.
Some criminal friends	No Yes	34.
Few anti-criminal acquaintances	No Yes	35.
Few anti-criminal friends	No Yes	36.
Alcohol/Drug Problem		
Alcohol problem, ever	No Yes	37.
Drug problem, ever	No Yes	38.
Alcohol problem, currently	3 2 1 0	39.
Drug problem, currently Specify type of drug:_____	3 2 1 0	40.
Law violations	No Yes	41.
Marital/Family	No Yes	42.
School/Work	No Yes	43.
Medical	No Yes	44.
Other indicators Specify:_____	No Yes	45.
Emotional/Personal		
Moderate interference	No Yes	46.
Severe interference, active psychosis	No Yes	47.
Mental health treatment, past	No Yes	48.
Mental health treatment, present	No Yes	49.
Psychological assessment indicated Area:_____	No Yes	50.
Attitudes/Orientation		
Supportive of crime	3 2 1 0	51.
Unfavorable toward convention	3 2 1 0	52.
Poor, toward sentence	No Yes	53.
Poor, toward supervision	No Yes	54.

Appendix D.
Universal Treatment Application Domains

i. Demographics
ii. Identification
iii. Residence and Contacts
iv. Education and Employment
v. Finance and Services
vi. Social Environment
vii. Children
viii. Physical Health
ix. Medical
x. Mental Health
xi. Drug and Alcohol Use
xii. Treatment History
xiii. Summary
xiv. Assessment