The Criminal Court Assessment Tool

Development and Validation

By Sarah Picard-Fritsche, Michael Rempel, Ashmini Kerodal, & Julian Adler

Center for Court Innovation

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January 2018

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Acknowledgements

This study was funded by the Bureau of Justice Assistance (award # 2012-DB-BX-K003). The opinions, findings, conclusions, and recommendations expressed in this report are those of the authors and do not necessarily reflect the positions or policies of the Bureau of Justice Assistance.

We are indebted to many external partners for the success of this project. Specifically, we thank Dr. Edward Latessa of the University of Cincinnati for his invaluable insight into the development and validation of the tool. We are also grateful to Jerry McElroy, Peter Kiers, Richard R. Peterson and Catherine Alexander at the New York City Criminal Justice Agency, and Justin Barry, Chief Clerk of the New York City Criminal Court, without whom the research would not have been practically possible. Finally, for conducting the field research in both the development and validation phases, we thank Suvi Hynynen Lambson and Joseph Spadafore from the research department at the Center for Court Innovation, and the following research assistants: Bettina Muenster, Sara DeConde, Cara Camacho, Kim Dalve, Glenda Folsom, Alison Lazaro, Julia Shuliko, Samantha Duter, Kirby Fowler, Laura Pelcher, Ishara Ruffins, Julia Campregher and Tanya Santiago.

We thank Greg Berman, Director of the Center for Court Innovation, for his comments on an earlier version of the 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.

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Executive Summary

Data-driven risk assessment tools play an increasingly important role in the criminal justice system, influencing decisions as diverse as pretrial release and the conditions of community-based supervision. In addition to providing evidence-based classifications of defendant risk (e.g., low, moderate, or high risk), many tools include needs assessments, which identify underlying problems that may be addressed through therapeutic or social service interventions. Despite their advantages, many risk-need assessment tools require clinical expertise and substantial time with each defendant to effectively administer, making them unrealistic in many criminal justice contexts. To date, there remains a shortage of risk-need assessment tools that cover important needs fueling a defendant's criminal behavior, yet can be efficiently administered in high-volume settings and inform referral to effective intervention. With funding from the Bureau of Justice Assistance, the Center for Court Innovation developed the Criminal Court Assessment Tool (C-CAT) in order to fill this gap. This report summarizes both the development of the C-CAT and the results of a validation study with a sample of defendants drawn from the Brooklyn Criminal Court in New York City.

Development and Structure of the C-CAT

Initial Development

Drawing on Risk-Need-Responsivity theory and input from a panel of external experts, a comprehensive 183-item assessment tool covering 18 risk and need domains was developed. Beginning in February 2013, the comprehensive assessment was pilot-tested with 964 defendants appearing in three misdemeanor diversion programs in New York City.

Ultimately, the tool was reduced to those items statistically associated with recidivism or considered key "responsivity" factors (trauma and mental health). This 30-item risk-need assessment became the first iteration of the Criminal Court Assessment Tool (C-CAT).

Field Testing and Validation

A second sample of 928 defendants awaiting arraignment in Brooklyn, New York were re-assessed using the original C-CAT tool. This second sample, because it consisted of a representative array of felony, misdemeanor, and violation level defendants awaiting arraignment in the Brooklyn Criminal Court, was more generalizable to a general criminal court population. Results with the second, Brooklyn-based sample were analyzed with the primary purpose of confirming the tool's predictive accuracy and refining the tool based on new data.

Specifically, the Brooklyn-based sample was split into two halves, one used for testing and revision of the original tool ("development sample"), and the other used for validation of any revised algorithms that might be produced ("validation sample"). Drawing on the development sample, bivariate and multivariate regression techniques were used to revise algorithms for classifying risk in a general criminal court population. Stated simply, analysis demonstrated that the original C-CAT tool could and should be improved to fit a more diverse defendant population, and the risk algorithm was revised accordingly. Using the validation sample, the revised algorithm was validated, using standard area-under-the-curve (AUC) techniques to assess predictive accuracy.

Revisions to the original tool were also informed by the experience of users, who field-tested the first iteration of the C-CAT in six sites across the country. User feedback has informed both the content and structure of the final tool.

The final C-CAT is intended to support evidence-based decision-making in high-volume criminal justice contexts, such as criminal courts, community courts, and pretrial services agencies. To that end, the content of the tool reflects three primary goals:

1. **Accuracy:** Design a tool that is a stable predictor of re-arrest in a general criminal court population and that reliably classifies defendants into risk categories with meaningfully different re-arrest rates.
2. **Efficiency:** Design a tool that can be administered and scored in 20 minutes or less without requiring extensive training or clinical expertise.
3. **Responsivity:** Design a tool to support practitioners in identifying treatable needs that are either directly linked to recidivism or relevant for correctional intervention.

In terms of structure, the final C-CAT is separated into four distinct sections: Administrative; Criminal Records Review; Defendant Interview; and Scoring Risk and Need. The number of risk points associated with each item in the tool, and the algorithms for calculating risk categories and needs flags, are clearly displayed in the tool. The transparent structure of the tool and its algorithms are intended to facilitate effective administration and to support local research—including local validation studies—for those jurisdictions that are interested.

Findings from the Validation Study

This report is primarily concerned with research findings from the Brooklyn-based validation study and revisions to the final C-CAT that resulted from these findings. Research participants in the Brooklyn sample had an average age of 32, and were largely male (83%) and black (68%) or Hispanic (24%). While the majority of the sample had at least one prior arrest (79%) and nearly half had a prior conviction (43%), few had a prior conviction for a

violent felony offense (13%). Concerning the current charge, 37% were arrested on a felony, and 63% were arrested on a misdemeanor.

- **Re-Arrest Rates:** Almost half of the Brooklyn sample (48%) were re-arrested over the one-year study tracking period, with 26% arrested on a felony, but only 9% arrested on a violent felony charge.

- **Validation of the Original C-CAT Tool:** There was a substantial loss of predictive accuracy when the original C-CAT algorithm was translated from the misdemeanor diversion program sample used in the first phase of research to the general criminal court sample. Specifically, the AUC statistic for the raw risk score dropped from .795 to .705.

- **Revised C-CAT Algorithm:** Using only the "development sample" (i.e., a random selection of half of the cases in the full sample, n = 464), a revised risk algorithm was created to improve the performance of the tool for a general criminal court population. With the exception of a revision to the current charge item, all of the existing criminal history factors were retained in the revised tool, although weights were adjusted. In addition, several need factors were no longer important to risk classification and were removed from the revised tool.

- **Revalidation:** Using only the "validation sample" (i.e., the other randomly selected half of the full sample, n = 464), the revised algorithm was validated and shown to achieve strong predictive accuracy. Specifically, the revised raw risk score produced an AUC statistic of .758. After consolidating the risk score into four categories—low risk, moderate risk, moderate-high risk, and high risk—the AUC was reduced to .748.

- **Risk Distribution:** Just under one-fifth of the full sample fell into the low risk category (18%), approximately two-thirds (66%) fell into the two moderate risk categories (moderate and moderate-high), and 16% fell into the high risk category.

- **Risk Category Precision:** The risk categories created for the revised C-CAT perform well in terms of discrimination, as demonstrated by a substantial increase in average rates of re-arrest at each category. For the full sample over the one-year tracking period, the average re-arrest rates were 17% for the low risk category, 38% for moderate risk, 61% for moderate-high risk, and 76% for high risk.

Needs Profile

- **Criminogenic Needs:** Over half of the Brooklyn sample reported current drug use (52%), 48% percent were unemployed at the time of arrest, and 12% reported living on

the streets or in short-term shelters.

- **Responsivity Factors:** In keeping with prior validation research, we found that self-reported symptoms of trauma and mental illness were not directly predictive of re-arrest. Nonetheless, these factors have important implications for correctional treatment and were prevalent in the current sample. Specifically, 46% of the sample flagged on a two-item PTSD screener and 39% reported current symptoms or a history of mental illness.

- **Needs Flags:** Needs flags appearing in the C-CAT are intended to alert practitioners using the tool of *potential* need areas and are not diagnostic. Based on feedback from practitioners piloting the original C-CAT in the field, flags for criminal thinking and youth services were removed from the revised tool while the flag for mental illness was revised to be more specific (flag fewer individuals as potentially needing mental health services).

Conclusion and Implications

Our findings largely support the use of Risk-Need-Responsivity as a theoretical framework for the development of risk-need assessment tools. Ultimately, the goal of the project was to create an accurate and efficient risk *and needs* assessment tool for high-volume environments such as general criminal courts, community courts, or pretrial services agencies. The final structure and content of the tool are influenced both by our quantitative findings and feedback from practitioners field-testing the original C-CAT in Chicago, Los Angeles, Washington state, Oregon, and New York City.

A key finding from the project is the extent to which the best model for classifying risk changed noticeably with the shift from a purely misdemeanor sample participating in diversion programs to a general criminal court sample that was more diverse in terms of current charge severity and criminal history. This finding adds to a growing consensus in the field in favor of the use of locally validated risk assessment tools. In short, jurisdictions considering adoption of the C-CAT—or similarly developed tools—should be cognizant of the need to re-validate the tool and potentially adjust item weights and risk categories to better fit the specific court or program population.

Chapter 1
Introduction

Actuarial risk assessment tools play an increasingly important role in the criminal justice system, influencing decisions as diverse as pretrial release and the conditions of community-based supervision. In contrast to traditional risk assessment, which relies largely on the professional discretion of judges, correctional officers, or other practitioners, actuarial tools draw on large datasets and use statistical prediction methods to classify individuals according to their probability for a new arrest. A growing body of research suggests that high-quality risk assessment tools outperform professional judgment alone in predicting recidivism (Gendreau, Little, and Goggin 1996; Hanson and Morton-Bourgon 2009; Picard-Fritsche et al. 2016; Mori et al. 2017).

A 2013 overview of 19 risk assessment tools reveals significant diversity in form, content and predictive accuracy (Desmarais and Singh 2013). The simplest tools rely exclusively on criminal records, while others add a short defendant interview and produce a single risk score or classification (e.g., low, moderate, or high risk). Still other tools constitute more comprehensive risk and need assessments that require a long interview. Beyond risk classification, these longer tools offer the benefit of identifying treatable needs that are often linked to criminal behavior ("criminogenic needs") and supporting the targeted use of therapeutic or social service interventions for reducing recidivism.

Many risk-need assessment tools also offer the advantage of being grounded in Risk-Need-Responsivity theory, a rehabilitative model of crime prevention supported by more than three decades of research (e.g., see Andrews and Bonta 2010; Andrews et al. 1990; Latessa, Cullen, and Gendreau 2002; Gutierrez 2009; Looman and Abracen 2013). At its core, this theory holds that correctional and clinical resources should focus on higher-risk groups and that intervention should focus on those needs most associated with risk for recidivism, laying out eight "central" factors that increase risk:

1. Criminal History
2. Antisocial Temperament/Impulsivity
3. Criminal Thinking/Antisocial Beliefs
4. Criminal Peer Networks
5. Education/Employment Deficits

6. Family/Relationship Problems
7. Substance Abuse
8. Lack of Prosocial Leisure Activities

Finally, the developers of Risk-Need-Responsivity theory emphasize the importance of linking individuals to correctional treatment that is responsive to their individual need profiles, including factors not directly predictive of recidivism, such as trauma and mental illness. Some risk-need assessment tools, such as the original Level of Services Inventory (LSI), include assessments of mental health or other responsivity factors (Andrews and Bonta 1995; Taxman 2014).

Despite their advantages, comprehensive risk-need assessment tools may require clinical expertise and substantial time with each defendant to effectively administer, making them unrealistic in many criminal justice contexts, such as high volume courts or community supervision agencies. While short, static risk tools—i.e., tools that do not require a defendant interview and are largely based on criminal history factors—have been developed for pretrial settings, these are also insufficient to the larger goals of many decision-makers who are interested in reducing risk through diversion or targeted interventions that address underlying needs. To date, there remains a shortage of risk-need assessment tools that cover important needs, yet can be realistically administered in high-volume settings and inform referral to effective intervention.

The Criminal Court Assessment Tool (C-CAT) is designed to fill this gap and to be validated for general criminal court populations—i.e., populations that are diverse in terms of demographics, charge type, and charge severity. This report provides an overview of the development of the C-CAT and its validity for classifying recidivism risk.

The Criminal Court Assessment Tool (C-CAT)

Development

Originally developed on a sample of misdemeanor defendants appearing in three misdemeanor diversion programs in New York City,[1] the C-CAT is a 25-item risk-need

[1] The initial sample was drawn from three sites: Bronx Community Solutions, the Midtown Community Court in Manhattan, and the Red Hook Community Justice Center in southwest Brooklyn. These programs serve a diverse population of tens of thousands of misdemeanor defendants annually. Because interviews were primarily conducted post-arraignment with individuals mandated to community service or social service, individuals whose cases ended with other disposition types at arraignment (e.g., jail or straight dismissal) are under-represented.

assessment tool grounded in Risk-Need-Responsivity theory. Tool development was guided by three specific goals:

1. **Accuracy:** Design a tool that is a stable predictor of re-arrest in a general criminal court population and reliably classifies defendants into risk categories with meaningfully different re-arrest rates.

2. **Efficiency:** Design a tool that can be administered and scored in 20 minutes or less without requiring extensive training or clinical expertise.

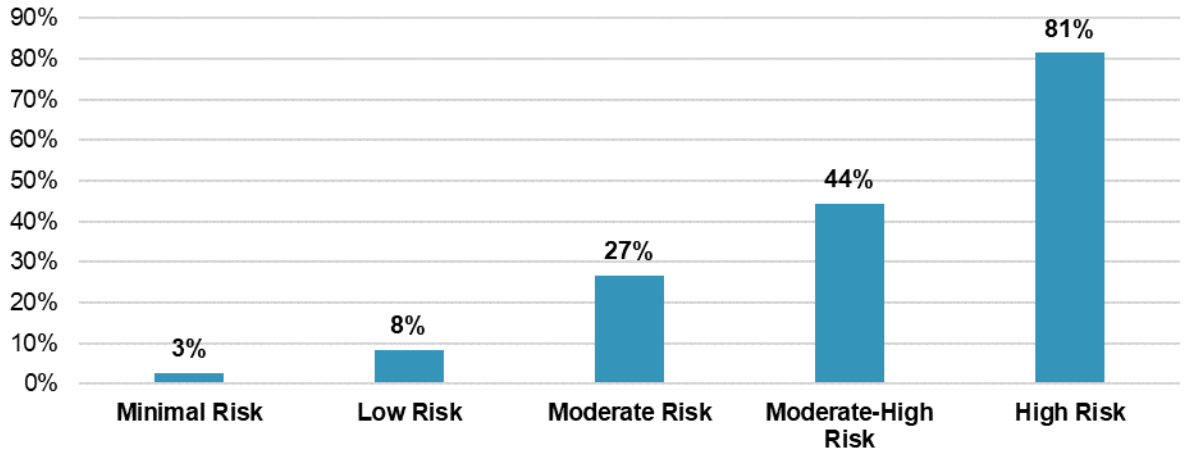
3. **Responsivity:** Design a tool to support practitioners in identifying treatable needs that are either directly linked to recidivism or relevant for successful correctional intervention.

In order to ensure that the final C-CAT would provide robust information about both risk and need, a comprehensive assessment instrument was created, which included 183 items within 16 domains considered relevant to understanding criminal risk or developing effective interventions for justice-involved individuals.[2] Appendix A provides an overview of the domains included in the comprehensive assessment and model tools considered in its development. Using the comprehensive assessment, data were collected from 964 misdemeanor defendants in New York City over a one-year period from February 2013 to February 2014.

After the data were collected, the research team used descriptive statistics and multivariate regression techniques to reduce the comprehensive assessment to only those factors that were found to be either: (a) predictive of re-arrest; or (b) prevalent in the defendant population and important to responsive correctional intervention (e.g., trauma, mental health). The resulting shortened tool became the "original" C-CAT, a copy of which is included in Appendix B of this report. As the seen in the original tool, our analysis produced five recidivism risk categories, ranging from minimal to high. Figure 1.1 displays the re-arrest rates for each risk category in the original sample, illustrating the tool's ability to distinguish risk categories with meaningfully different re-arrest rates.

[2] For further details on the Phase One research, please see: Rempel, Michael, Suvi Hynynen-Lambson, Sarah Picard-Fritsche, Julian Adler, and Warren Reich. 2017. *Understanding Risk and Need in Misdemeanor Populations: A Case Study form New York City.* New York: Center for Court Innovation.

Figure 1.1 C-CAT (Development Sample)
Re-Arrest Rate by Risk Category



Note: Re-arrest tracked over a 6-month perod. Total sample size=666 (298 cases were dropped due to administrative matching issues).

To assess the validity of the original C-CAT for predicting re-arrest, researchers conducted an area-under-the curve (AUC) analysis, a standard procedure for determining the accuracy of risk scales within and outside the field of criminal justice. AUC statistics range from .5 to 1, with higher statistics reflecting lower rates of error (e.g., classifying someone who is high risk as low risk or vice versa). By current industry standards, an AUC statistic of .70 or higher is considered "good", while an AUC in the .60 to .70 range is considered "acceptable." As Table 1.1 shows, the original C-CAT demonstrated strong predictive accuracy. However, it should be noted that AUC statistics are often higher on development samples. In other words, it is normal for the predictive accuracy of a tool to diminish somewhat when re- tested on new samples, since the tool is expressly designed to maximize performance on the original sample. Additionally, because the original sample used to develop the C-CAT was not truly representative of New York City, but was instead drawn from three programs that tend to serve higher risk and need misdemeanor offenders, it was assumed some revisions might be necessary to achieve good predictive accuracy in a more general population.

Table 1.1 Area Under the Curve Statistics

Total Sample Size	666
Raw Risk Score[1]	0.795
Risk Categories[2]	0.783

[1] 298 cases were dropped due to administrative matching issues.

[2] Range of possible risk scores: 0-59

[3] Minimal, Low, Moderate, Moderate-high, High

Structure of the C-CAT

The C-CAT assessment tools (both the original and the final, validated tool) were designed for ease of administration and transparency in terms of how the raw risk score, risk categories, and needs flags are calculated. Specifically, the tool is separated into four distinct sections:[3]

1. **Administrative Information:** Allows for the collection of administrative data commonly collected by courts or supervision agencies (e.g., case number, arrest date, arrest charge), which can facilitate case-level research, including local validation studies.

2. **Criminal Record Review:** Allows the user to create a subtotal risk score based on static factors that do not require a defendant interview (i.e., criminal history factors). The number of risk points associated with each criminal history factor is clearly displayed in parentheses next to the item and instruction for scoring are at the top of the section.

3. **Defendant Interview:** Includes a short interview, with detailed instructions for the administrator. The interview items primarily correspond to the dynamic variables (e.g., education, substance use) that are also predictors of recidivism ("criminogenic needs"). Like the previous section, the risk points associated with each factor are clearly displayed and the section allows a subtotal risk score to be calculated. A separate, clearly delineated portion of the defendant interview asks about need factors not directly related to re-arrest (i.e., mental illness and trauma).

4. **Scoring Risk and Needs:** This final section clearly lays out the steps for calculating the raw risk score and placing the defendant into the appropriate risk category. Additionally, instructions are provided for calculating indicators of need in important areas (e.g., substance abuse, employment, mental health, trauma). Each of these "need flags" draws on one or more items in the risk assessment tool and should not be

[3] The original C-CAT (30 items) is included with this report as Appendix B. The final, validated C-CAT (25 items) is published separately.

considered diagnostic, but instead an indicator of *potential* need in that area.

Field Testing

Creating a practical and informative tool for a variety of high-volume contexts was another important goal for the project. To assess the utility of the tool from the practitioner perspective, the original C-CAT has been field-tested in multiple settings since its development was complete in late 2014:

Cook County Misdemeanor Enhanced Diversion Project

From February 2015 to September 2016, the Cook County State Attorney's office used the C-CAT to inform length and type of mandate for first-time misdemeanants diverted from prosecution to community-based services in two geographically-defined courts within Cook County.

Specifically, defendants who were assessed as moderate- or high-risk are tracked to community service or short term cognitive behavioral interventions, respectively, while low-risk participants receive a one-day referral for further assessment. The validity of the C-CAT for assessing recidivism risk in a sample of 260 misdemeanor defendants in Cook County is currently being conducted as a component of a larger impact evaluation of the program.

Los Angeles Neighborhood Justice Panels

In September 2015, the Los Angeles (LA) City Attorney's office expanded its neighborhood restorative justice program to two new neighborhoods (West Hollywood and South Los Angeles) and integrated the C-CAT into the program. Case managers administer the C-CAT at intake and use needs flags to refer defendants to appropriate services. Additionally, project managers plan to use a risk profile of their participants, generated by the C-CAT, as a basis for expanding eligibility criteria beyond first-time offenders.

Spokane, Olympia, and Eugene Community Courts

Three community courts have adopted the C-CAT over the last year—Eugene, Oregon (August, 2016), Spokane, Washington (December 2016), and Olympia, Washington (January 2017). In all three sites, the courts are using results of the tool to track higher risk defendants into more intensive case management and to inform types of social service or clinical mandates. The Spokane Community Court has partnered with Washington State University to conduct a local validation of the C-CAT.

Center for Court Innovation Demonstration Sites (New York City)

Beginning in March 2016, the C-CAT has been in use in several of the Center's NYC-based alternative-to-incarceration (ATI) and supervised release programs, including Brooklyn Justice Initiatives (ATI and supervised release) and supervised release programs in the Bronx and Staten Island. The results of the C-CAT are being used to inform the level of follow up and types of referrals for supervised release programs, and the types of service mandates for ATI.

User feedback highlighted the importance of customization of the tool on a site-by-site basis. For example, in Cook County, risk categories were revised to accommodate the lower average risk score of defendants referred to pretrial diversion. In Spokane, Olympia, and Eugene, the substance use section of the tool was revised to accommodate changes in state marijuana laws. In New York City, revisions were made to the criminal history section of the tool to increase the efficiency of administration.

With respect to the interview content, users across multiple sites reported specific challenges to collecting reliable data on some of the needs items, in particular:

- Items regarding defendant attitudes in the original C-CAT are difficult to administer in high-volume settings (more appropriate for a longer assessment);
- Items regarding intimate partner relationships and relationship stress are perceived as intrusive and are not relevant to effective intervention or case management;
- Items that ask about the symptomology of mental health problems are difficult for non-clinically trained staff and may not be reliable;
- Items that add risk points based on the number of residential moves may be unfair to younger participants, a population for whom frequent moves are normal;
- The current structure of the mental health "needs flag" is too broad (flagging to many people) and should be more conservative;
- From a practical perspective, users from several sites reported that the C-CAT was still too long to be an efficient tool prior to arraignment and can only be used after a case is resolved, limiting its utility for supervision dosage decisions.

The Present Study

The remainder of this report is focused on the validation phase of the research, which involved reexamining the original short assessment tool in a general criminal court population; revising the tool based on these findings; and validating the revised tool on a separate sample of cases. Specifically, we present analysis addressing the following three research questions:

1. **Validation:** Is the C-CAT an accurate predictor of re-arrest in a general criminal court population in New York City?

    a. Does a revised C-CAT algorithm, developed using a general criminal court sample in New York City, accurately predict recidivism?

2. **Risk Profile:** What is the distribution of risk for re-arrest, as calculated by the revised C-CAT, among a general criminal court population in New York City? Do the C-CAT risk categories represent meaningful differences in re-arrest probabilities?

3. **Needs Profile:** Which of the C-CAT needs flags are most prevalent in a general criminal court population in New York City?

The report is organized as follows: Chapter 2 describes the methodology utilized for validation of the C-CAT; Chapter 3 presents findings for each research question; and Chapter 4 concludes the report by discussing the implications of the findings for policy and practice.

Chapter 2
Methods

The present research took place in a pre-arraignment holding facility in the centralized Brooklyn Criminal Court in Brooklyn, New York, and represents a collaboration between researchers with the Center for Court Innovation and staff with the New York City Criminal Justice Agency (CJA). For over 40 years, CJA has conducted pretrial assessments of individuals detained prior to arraignment—generally for about 24 hours until the arraignment takes place—in order to inform subsequent release decisions. During the current study, CJA staff introduced the study to potential participants as part of the course of their usual assessment process, and routed study volunteers to Center for Court Innovation staff to be interviewed. Study participants included approximately 1,100 defendants who were arrested and detained prior to arraignment in Brooklyn, NY between May and December 2015.[4]

Data Collection

The findings presented draw on two distinct data sources. The first is the aforementioned interview data collected directly from defendants awaiting arraignment in the Brooklyn Criminal Court over an eight-month period. Interviews were conducted 2-3 days per week, during which times all defendants awaiting arraignment—including those charged with violation, misdemeanor, or felony offenses—were eligible to participate. Participation was voluntary, required informed consent, and all participants were provided a $10 stipend for participation. The interview instrument was designed to reflect the interview portion of the original C-CAT assessment (Appendix B), including all demographic, criminogenic need, and other responsivity (i.e., trauma and mental health) items. Interviews were conducted orally by trained research assistants and entered directly into laptops via QDS software. Research assistants also collected individual identifiers (e.g., name, date of birth, NYSID) for the purposes of matching data to individual criminal records.

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[4] Brooklyn is New York City's largest borough and is economically and demographically diverse. In 2015, over 82,000 arraignments (29% of the City total) were conducted in Brooklyn, with top charge, severity, and arraignment outcome characteristics similar to those in the other boroughs (see CJA annual report from 2015, available at: http://www.nycja.org/library.php). These statistics suggest that findings regarding individual risk and recidivism in a Brooklyn sample are relevant to New York City defendants as a whole.

The second data source is official criminal records data provided by the New York State Division of Criminal Justice Services (DCJS). After all interviews were complete, researchers submitted the interview dataset, including unique identifiers for each study participant, to DCJS for matching to criminal records data. DCJS returned to the researchers a de-identified dataset including complete criminal history for each research participant.

DCJS data were utilized for two purposes: (1) to complete the criminal history portion of the C-CAT assessment tool (items R1-R7, Appendix B) for each participant; and (2) to compute the outcome variable for the validation study (i.e., any re-arrest over the year following the interview). After data matching, the final dataset included 928 unique participants with complete C-CAT assessment and criminal history data.[5]

Analysis

Our analysis begins with a summary of the demographic and criminal history characteristics of the full study sample, including one-year re-arrest statistics. We then proceed in order through the research questions outlined in Chapter 1, beginning with assessing the validity of the algorithm created for the original C-CAT for predicting our outcome of interest (one-year re-arrest), using an area-under-the-curve analysis. Based on a substantial reduction in predictive accuracy of the original tool when applied to the general criminal court sample, we decided on a split-sample approach to completing the validation study. This means that we divided the sample recruited from the Brooklyn Criminal Court in half and used only one of the halves (the "development sample") to develop a revised C-CAT tool, after which the revised tool was then validated with the other half (the "validation sample").

Appendix C includes a table comparing the two samples on demographics, risk level and recidivism outcomes, and confirms that the two groups are equivalent in terms of characteristics relevant to the study.

Drawing on a random selection of half of the sample (the development sample), multivariate regression analyses were used to create a revised algorithm that is a better fit for the more diverse population. We present the revised measures and weights for the final C-CAT tool.[6] Next, the predictive validity of the revised C-CAT was assessed using the validation sample, again using an area-under-the-curve approach. AUC statistics are presented, which reflect the

[5] Although 1,064 unique individuals were interviewed for the study, 136 participants had to be dropped because unique identifiers could not be linked to criminal records or complete criminal records were not available from the New York State Division of Criminal Justice Services.
[6] The final C-CAT tool is published separately.

accuracy of the final tool for predicting re-arrest in the validation sample, as well as among misdemeanor and felony subsamples.

We then present the distribution of cases, drawing on the full sample, into each C-CAT risk level (low, moderate, moderate-high, high) and present re-arrest rates for each category.

Finally, we present statistics regarding the prevalence of criminogenic needs and responsivity factors (trauma and mental health problems).

Chapter 3

Findings

Table 3.1 shows demographic and criminal history diagnostic characteristics for the full sample. More than two-thirds of the sample were black (68%), one-quarter were Hispanic (24%) and less than one-tenth were white (7%). Research participants were largely male (83%) with an average age of 32. Just under two-thirds of the sample reported having earned a high school diploma at the time of the interview, with 61% reporting current employment or enrollment in an education or vocational program. The vast majority of the sample had at least one prior arrest (79%), though less than half had a prior conviction (43%). In terms of the case for which the defendant was held at the time of the interview ("instant case"), nearly two-thirds were charged with a misdemeanor (63%), with the most common top charge falling under the property or "other" offense category (less than 10% were charged with drug offenses). Less than one-fifth were charged with violent felony offenses. Overall, Table 3.1 paints a picture of a general criminal court population that is relatively young, largely black or Hispanic, with a history of primarily nonviolent criminal activity.

Re-arrest Rates

Re-arrest, the primary outcome of interest, was tracked over one year from the time of the interview. As shown in Table 3.2, nearly half of the sample (48%) was re-arrested over this period, with time to re-arrest averaging four months. Despite high general recidivism in the sample, only 9% were re-arrested on violent felony charge. Due to the current study's focus on predicting general recidivism (any new arrest), new felony arrest and new violent felony arrest are excluded from subsequent analyses.

Table 3.1 Study Sample Characteristics

Total Sample Size	928
Demographics	
Average Age	32
Male	83%
Race[1]	
Black/African American	68%
White/Caucasian	7%
Hispanic/Latino/Spanish	24%
Asian/Pacific Islander	1%
Other	1%
High School Diploma / GED[2]	64%
Employed at time of Arrest	61%
Criminal History	
Any Prior Arrest	79%
Misdemeanor Arrest	75%
Felony Arrest	63%
Violent Felony Arrest	46%
Drug Arrest	58%
Weapons Arrest	43%
Any Prior Conviction	43%
Misdemeanor Conviction	37%
Felony Conviction	26%
Violent Felony Conviction	13%
Drug Conviction	27%
Weapons Conviction	14%
Instant Case	
Arrest Severity	
Misdemeanor	63%
Felony	37%
Violent Felony	*14%*
Arrest Charge Type	
Property	39%
Drug	9%
Other	53%
Weapon	*11%*

[1] Two persons (<1% of total sample) refused to answer this question.

[2] One person (<1% of total sample) refused to answer this question.

Table 3.2 Study Sample Re-Arrest

Total Sample Size	928
Re-Arrest at 1 Year	
Any Re-arrest	48%
Felony Re-arrest	26%
Violent Felony Re-arrest	9%
Average Time to Re-Arrest (days)	
Any New Arrest (N=449)	130 days (4.28 months)

Validation

Research Question 1: Is the C-CAT an accurate predictor of re-arrest in a general criminal court sample in New York City?

As indicated in the introduction, a primary goal of this project was to create a short assessment tool that could reliably predict re-arrest in a general criminal court population. As a first step toward validating the tool, we re-tested the risk algorithm created from the original three-site research on the study sample obtained from the Brooklyn Criminal Court. Table 3.3 shows area-under-the-curve statistics produced by this analysis. There was a substantial loss of predictive accuracy when applying the original raw risk scale (-.09) and the risk categories (-.093) to the new sample. Further, the table shows that the original algorithm is generally a better predictor for misdemeanants as compared to felony defendants, which is unsurprising since the original tool was created on a purely misdemeanor sample. Performance with misdemeanors remains "good," with an AUC of .704 for the risk categories, but the AUC of .665 for the risk categories with felony defendants is merely in the middle of the "acceptable" range.

Although some reduction in AUC was anticipated when the tool was applied to a new sample, the research team concluded that greater accuracy could be achieved with a slightly revised risk algorithm for the more diverse and representative sample recruited in the Brooklyn Criminal Court. To accomplish this, bivariate correlation and multivariate regression methods were used to quantify the strength of the each of the original C-CAT risk

factors for predicting re-arrest in a random selection of *half* of the Phase 2 sample (N=464). All items initially correlated with re-arrest were entered into a logistic regression model and then "weighted" according to their relative strength in predicting the outcome.[7] Table 3.4 displays the weighted items included in the revised model and the possible range of risk points assigned to each item based on regression analyses.

Table 3.3 Validity of the Original CCAT Risk Scale & Categories for the General Criminal Court Sample

	AUC Statistics
All Valid Cases	**N=928**
Risk Scale	0.705
Risk Categories[1]	0.690
Misdemeanor Cases	**N=581**
Risk Scale	0.715
Risk Categories[1]	0.704
Felony Cases	**N=347**
Risk Scale	0.687
Risk Categories[1]	0.665

[1] Risk categories coded: Minimal Risk=0-15; Low Risk=16-21; Moderate Risk=22-26; Moderate-High Risk=27-32; High Risk=33-59.

[7] Multivariate approaches to creating risk scales have been shown to create more accurate tools, when compared to bivariate or "Burgess" methods that assign a single point to each significant predictive factor (see Hamilton et al., 2016). The specific method utilized involved taking the unstandardized multivariate regression coefficients, dividing by .200, and then rounding to the nearest whole number. Division by a constant of .200 was simply a pragmatic step that had the practical effect of producing many base weights of one (1). Notably, the revised weights developed for the C-CAT are not determined solely by results obtained with the new Brooklyn- based development sample. Where weights fell approximately in between two whole numbers prior to rounding, the research team in a few instances opted to retain the weight of the original C-CAT tool in order to avoid over-fitting to the new Brooklyn sample. However, acknowledging that the Brooklyn sample was indeed more generalizable to a general criminal court population than the original diversion program sample, we did make substantial modifications to the initial C-CAT weights at this stage.

Table 3.4 Criminal Court Assessment Tool (Revised)
Items Descriptions and Weights for Scoring and Classification

Final C-CAT Risk Factors	Weighted Response Option	Weight (# of Risk Points)
Current charge is a weapons charge	Yes	1
Current charge is a felony drug charge	Yes	3
Current charge is a misdemeanor property charge	Yes	2
Prior felony conviction	Yes	1
Prior misdemeanor/violation conviction, past 3 years	0,1,2,3 or more	Up to 3
10+ misdemeanor/violation convictions, past 3 years	Yes	3
Prior jail or prison sentence	Yes	2
Prior case with failure to appear	Yes	2
Current open case	Yes	2
Age >60=0 50-59=1 40-49=2 30-39=3 25-29=4 20-24=5 <19=6	6 Categories	Up to 6
Ages 16-24	Yes	1
High school degree or GED	No	1
Currently legally employed, in school, or in vocational training program	No	1
Currently homeless or living in a shelter	Yes	3
Current drug use (not currently using[1] vs. using)	Yes	1
Male gender	Yes	1

Notes: The following dynamic risk factors that appeared in the original C-CAT were removed from the revised model because they did not contribute to accurate risk classification in the general court population and were judged by practitioners in the field to not be useful to treatment or case management planning: (1) employment/firing history; (2) currently married or in an intimate relationship; (3) recent divorce/separation; (4) two scaled criminal thinking items; (5) time at current address.

[1] Includes using drugs only a few times in a year.

Once the revised risk algorithm was created, it was then tested on the validation sample. As shown in Table 3.5, AUCs for the revised risk score (.758) and risk categories (.748) suggest that the revision created a better-fit tool for a general criminal court population, and that the final C-CAT has strong predictive accuracy by industry standards. Moreover, the fact that the

predictive accuracy of the tool remains strong despite the removal of several dynamic needs variables suggests that the bulk of the tool's explanatory power rests primarily with static variables such as age and criminal history.

As the lower portion of the table shows, the revised tool remains a moderately better predictor for those defendants charged with a misdemeanor (rather than a felony) offense on the current case. However, differences in performance on the revised C-CAT are relatively modest (AUC for the risk categories = .754 for misdemeanors and .739 for felonies), as compared to the sizable gap in performance with the original C-CAT (see Table 3.3 above).

Table 3.5 Predictive Validity of the Revised C-CAT (Split Sample)

Predictor	AUC Statistic
All Valid Cases	**N=464**
Risk Scale	0.758
Risk Categories[1]	0.748
Misdemeanor Cases	**N=289**
Risk Scale	0.767
Risk Categories[1]	0.754
Felony Cases	**N=175**
Risk Scale	0.748
Risk Categories[1]	0.739

[1] General Risk Categories Coded: Low Risk=0-6; Moderate Risk=7-10; Moderate-High Risk=11-15; High Risk=16-33.

Risk Profile

Research Question 2: What is the distribution of risk for re-arrest, as calculated by the revised C-CAT, among a general criminal court population in New York City?

The revised C-CAT produces a possible raw risk score range of 0-33 points. The sample being studied has a total risk range between one and 23, with a median risk score of 11 (see Appendix C for detail). Using the development sample, the research team studied the distribution of raw risk scores and re-arrest rates at each point in the scale and created four risk categories for the final tool. Cut-points for categories were assigned where substantial increases in average re-arrest rates in the sample were observed. Table 3.6 shows the score

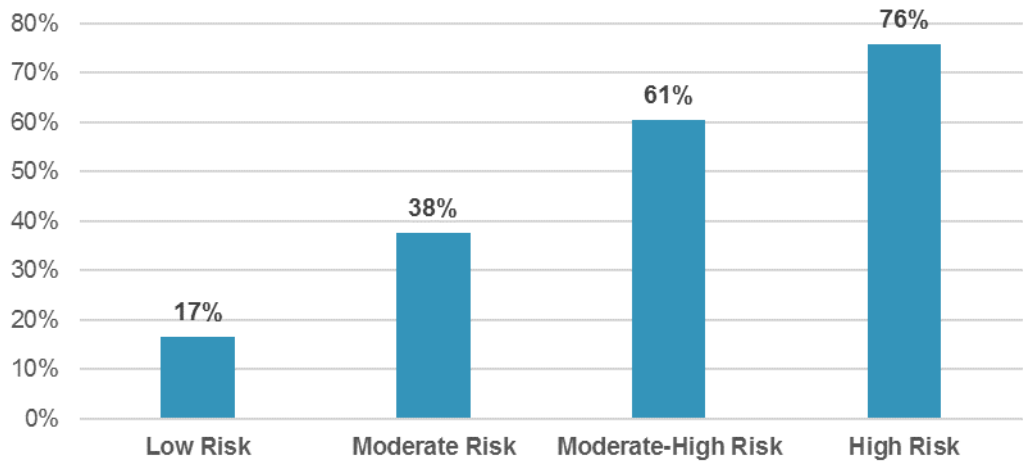
ranges that define each risk category and the distribution of the full sample falling into each risk category. The table shows a relatively normal distribution of cases, with most falling into the moderate and moderate-high categories.

Table 3.6 Criminal Court Assessment Tool (Revised)
Defintion and Distribution of Risk Categories

All Valid Cases	N=928	
CCAT Risk Categories	Score Range	% Sample falling in Category
Low risk	0-6	18%
Moderate risk	7-10	30%
Moderate-high risk	11-15	36%
High risk	16-25	16%

The most effective risk assessment tools are those in which the categories draw strong distinctions in the outcome of interest, in this case re-arrest for any offense over a one-year period. Figure 3.1 displays re-arrest rates for the full sample by C-CAT risk category, confirming substantial increases in re-arrest at each level.

Figure 3.1. C-CAT (Revised)
One Year Re-arrest Rates by Risk Category

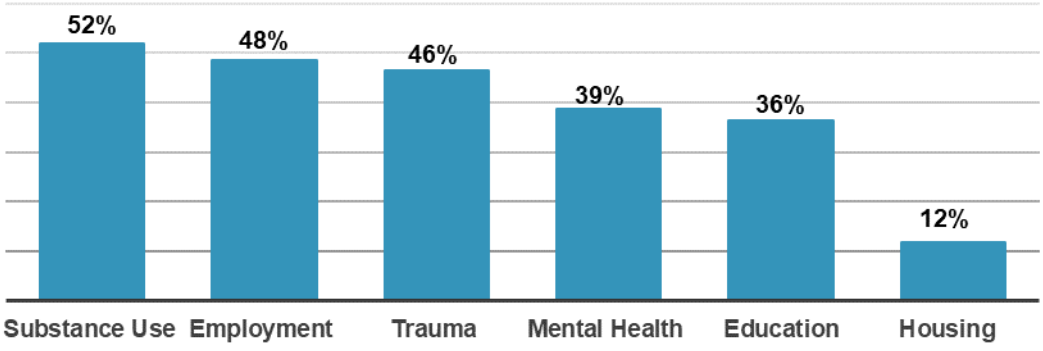


Needs Profile

Research Question 3: Which of the C-CAT needs flags are most prevalent in a general criminal court population in New York City?

Our final research question asks whether the needs flags originally developed in the first phase of the research remain relevant for the general criminal court population. Figure 3.2 displays the prevalence of six needs flags: substance use, employment, trauma, mental health, education and housing. Due to implementation feedback from various sites, "criminal thinking" and "youth services" flags, included in the original C-CAT, were removed from the revised tool. Otherwise, the figure shows a high prevalence of criminogenic needs such as substance abuse (52%), unemployment (48%), education deficits (36%), and housing needs (12%). Additionally, a significant portion of the sample presents with potential problems in the areas of trauma and mental health. In short, the need for social and clinical services to treat underlying needs was significant in both phases of the study.

Figure 3.2 C-CAT (Revised)
Needs Flags Distribution, Full Sample N=928



Chapter 4
Conclusion and Implications

Our findings largely support the use of Risk-Need-Responsivity as a theoretical framework for the development of risk-need assessment tools. Recidivism patterns were largely driven by criminal history, though dynamic factors such as education and employment deficiencies, substance abuse, family and marital problems, and antisocial beliefs may also influence probability of re-arrest. In a slight departure from the traditional risk-need model, we also found that homelessness, male gender, and younger age are relatively stable predictors of re- arrest, at least in the New York City context.

Ultimately, the goal of the project was to create an accurate and efficient risk *and needs* assessment tool for high-volume environments such as general criminal courts, community courts, or pretrial services agencies. The importance of early needs assessment was confirmed by the high prevalence of both criminogenic needs, as well as needs related to the development of responsive interventions, in both of the samples that we studied. The revised C-CAT assessment tool includes those static and dynamic factors that improve our ability to accurately classify risk *and* those that support responsive interventions aimed toward reducing future involvement in the justice system. The final structure and content of the tool are influenced both by our quantitative findings and feedback from practitioners field-testing the original C-CAT in Chicago, Los Angeles, Washington State, Oregon and New York City.

Implications

A key finding from the project is the extent to which the best model for classifying risk changed noticeably with the shift from a purely misdemeanor, diversion program sample to a general criminal court sample that was more diverse in terms of charge severity and criminal history. One policy implication of this finding is that it adds to a growing consensus in the field in favor of the use of locally validated risk assessment tools (Casey, Warren and Elek, 2011; Hamilton et al. 2016, Picard-Fritsche et al. 2017). In short, jurisdictions considering adoption of the C-CAT—or similarly developed tools—should be cognizant of the need to re-validate the tool and potentially adjust item weights and risk categories to better fit the specific court or program population.

Finally, our research sends a strong message in terms of the prevalence of underlying clinical and social service needs in justice system involved populations. Specifically, high levels of need in the areas of substance use, employment, housing, trauma and mental health were observed in both phases of the study. Looking beyond accurate risk assessment, assessment tools that allow for the early identification of needs may facilitate targeted diversion or intervention to reduce future justice system involvement.

Limitations

Recent research has raised concerns regarding the potential for risk assessment tools to produce disparate impacts for women or racial minorities in the justice system. In response, validation studies have begun to emerge that separately examine the predictive accuracy of risk assessment tools by race and gender (e.g., see Danner, Van Nostrand and Spruance 2016). An important limitation of the current study is that small sample sizes of both female and white defendants precluded a reliable analysis of the predictive validity of the C-CAT by race and gender subgroups. Depending on the extent to which the C-CAT continues to be used in various field sites, analysis of the race and gender equity of the tool may be possible in the future.

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Appendix A:

Overview of Comprehensive Assessment

Comprehensive Risk-Needs Assessment Tool: Domains and Models

Assessment Tool Domain	# of items	RNR Domains(s)	Model Tools	Scale Replication
1. Criminal History	12	Criminal History	LSI-R; TCU CRHSFORM; GAIN; ORAS	None
2. Employment	8	Education and Employment	COMPAS; GAIN	None
3. Education	8	Education and Employment	GAIN; WRNA; ORAS Self-Report	None
4. Housing/Neighborhood	12	Not in RNR model	ORAS-CST; COMPAS	None
5. Peer Associations	8	Antisocial peer networks	COMPAS	Partial scale
6. Impulsivity	7	Antisocial temperament	UPPS-P	Partial scale
7. Intimate Relationships	6	Family relationships and intimate partner relationships	WRNA; TCU A-FMFRFORM; GAIN	Partial scale
8. Finances and Money	8	Not in RNR model		None
9. Mental Health	13	Not in RNR model	WRNA; BJMHS	Full scale
10. Substance Abuse	20	Substance abuse	TCUDS II; WRNA: Substance Abuse; COMPAS; GAIN	None
11. Family Relationships	13	Family relationships and history	WRNA; TCU A-FMFRFORM; COMPAS	Partial scale
12. Trauma	17	Not in RNR model	PCL -C	Full scale
13. Violent Victimization	2	Not in RNR model		None
14.Legal Cynicism	15	Criminal Thinking	TCU CTS	Partial scale
15. Criminal Thinking	15	Criminal Thinking	TCU CTS; COMPAS Criminal Attitudes	Partial scale
16. Leisure Time/Social Isolation	8	Leisure time and social isolation	COMPAS	Partial scale

Propietery S ources for model tools and scales: BJM HS: Brief Jail M ental Health Screen, by Policy Research Associates, Inc.; GAIN: Global Assessment of Individual Needs, owned by Lighthouse Institute, gaincc.org; COM PAS: Correctional Offender M anagement Profiling for Alternative Sanctions, developed by Northpointe, owned by Equivant, http://www.equivant.com/; GAIN: Global Assessment of Individual Needs, owned by Lighthouse Institute, gaincc.org; LSI-R: Level of Service Inventory, owned by M HS.com; ORAS: Ohio Risk Assessment System and WRNA, developed at the University of Cincinnati, available through Ohio Department of Rehabilitation and Corrections: http://www.drc.ohio.gov/oras; PCL-C: PTSD Checklist - Civilian version, ptsd.va.gov ; Texas Christian University Scales (TCUDS, TCU CTS, TCU CHR), available at: https://ibr.tcu.edu/; UPPS-P: Urgency, Premeditation, Perseverance, Sensation-seeking, Positive Urgency Measure, by the Nathan Kline Institute.

Appendix B:
C-CAT (Original)

CENTER FOR COURT INNOVATION
Criminal Court Assessment Tool
Short Screener (C-CAT-S)

The C-CAT consists of ten (A1-A10) administrative items collected for data tracking purposes and 25 items that make up the core risk and needs assessment. Section one includes seven core items (R1-R7) that are based on a review of official criminal justice records. These items contribute to an overall risk score but do not concern the underlying needs of the defendant. Section two includes eighteen items (R8-R25) which contribute both to the overall risk score *and* to an understanding of important needs. In Section three, the final five items (N1-N5) are exclusively used to understand clinical needs that may warrant further assessment or referral. They do not contribute to the risk score. Care should be taken *not* to count the final five items of the tool in the risk score.

Administrative/Case Information
[Record the following information for the purpose of data tracking. This section is not a part of the formal risk and need screening tool.]

A1. First name _____

A2. Last name _____

A3. Date of Birth _____

A4. Interviewer Initials _____

A5. State Identifier _____

A6. Case Number _____

A7. Arrest Date ____ ____ _____
MO DAY YR

A8. Arrest Charge _____

A9. Charge Severity ☐ Felony ☐ Misdemeanor ☐Violation/Other

A10. Program name _____

Section I. Criminal Record Review

[Section I is where the scored risk assessment begins. Answers for Section I can be found on the official rap sheet or case record. For each question, select the appropriate answer and then write the corresponding number—the number in parentheses next to the answer—in the far right column. This can be done before or after the defendant interview portion of the assessment. If the requested information cannot be obtained with the rap sheet, select "u" for unknown. Three or more unknowns will result in not being able to obtain a valid risk score].

		Circle One		***Points***
R1.	Top arrest charge.	Involves a drug offense that is NOT a marijuana offense. Involves a property offense (e.g. petit larceny, criminal possession of stolen property). Other Unknown	(3) (5) (0) (u)	
R2.	Prior felony conviction(s), <u>past three years</u>.	No (0) Yes (0) Unknown (u)	*Please circle the correct answer, but do not score.*	
R3.	Number of prior misdemeanor or violation convictions <u>in the past three years</u>.	Zero One Two Three+ Unknown	*(0) Skip R4* *(1) Skip R4* *(2) Skip R4* *(3) Go to R4* (u) *Skip R4*	
R4.	<u>Ten or more</u> misdemeanor or violation convictions <u>in past three years</u>.	No Yes Unknown N/A	(0) (7) (u) (0)	
R5.	Any prior sentence to jail or prison.	No Yes Unknown	(0) (1) (u)	
R6.	Number of warrants for failure to appear in court.	Zero One Two Three+ Unknown	(0) (1) (2) (3) (u)	

R7.	Number of currently open cases (not including the current case).	Zero (0) One (1) Two (2) Three+ (3) Unknown (u)	
		Section I Subtotal	

Section II. Defendant Interview

[Section II is also part of the scored risk assessment. For each question, select the appropriate answer and then write the corresponding number or letter—the number or letter in parentheses next to the answer—in the far right column. If the interviewee declines to answer a particular item, select "r" for refusal. Four or more refusals will result in not being able to obtain a valid risk score.]

Introduction: I'm going to ask you a number of questions—questions we ask everyone coming to this court [program]. The first set of questions will focus on demographics, your education and employment history, your living situation, and your personal relationships.

		Circle One	***Points***
R8.	What is your gender?	Male (2) Female (0) Trans-woman (0) Trans-man (0) Refuse to answer (r)	
R9.	What race or ethnicity do you identify with?	Black/African American (0) White/Caucasian (0) Hispanic/Latino/Spanish (0) Asian/Pacific Islander (0) Native American (0) Multiracial (0) Refuse to answer (0) Other (0) Other/Multiracial (specify):_____	*Please circle the correct answer, but do not score.*
R10.	How old are you today?	Up to 19 years old (6) 20-24 years old (5) 25-29 years old (4) 30-39 years old (3) 40-49 years old (2) 50-59 years old (1) 60+ years old (0)	

		Circle One	*Points*
R11.	Have you either graduated high school or received a GED?	No (2) Yes (0) Currently Enrolled (0) Refusal (r)	
R12.	Were you either employed (not including illegal activities), attending school, or attending a vocational training program at the time of your arrest?	No (1) Yes (0) Refusal (r)	
R12a.	Have you ever been legally employed?	No (1) *Go to R13* Yes (0) *Go to R12b* Refusal (r)	
R12b.	Have you ever been fired from a job?	No (0) Yes (1) Refusal (r) N/A (never employed) (0)	
R13.	How would you describe your current living situation (the place you were living at the time of your arrest)? *(Choose one)* Homeless (on the streets, in a car, in a drop-in shelter) (4) Living in a long-term shelter (transitional housing) *(N/A on R 14)* Living in a halfway house (2) Living in an apartment, house, or room (own/rent) (0) Living in public housing (0) Living with friends or family (0) Other: _____ (0) Refusal (r)		
R14.	How long have you been at your current address? *(Choose one)* Less than 1 year 1-3 years (2) 4 or more years (1) N/A (0) homeless (0) Refusal (r)		

R15.	Do you currently have a primary or "main" intimate partner? By intimate partner we mean a girlfriend, boyfriend, wife, or husband.	No (2) Yes (0) Refusal (r)	
R16.	Have you been through a breakup or divorce in the last year?	No (0) Yes (2) Refusal (r)	
R17.	Do you have any children under the age of 18?	No (0) Yes (0) Refusal (r)	*Please circle the correct answer, but do not score.*
Introduction: *Now, I have a few questions about your use of drugs and alcohol.*			
R18.	Have you ever used drugs such as marijuana, cocaine, or heroin or used prescription pills like Xanax, uppers or pain killers without a prescription?	Yes (0) No (0) *Go to R21* Refusal (r)	*Please circle the correct answer, but do not score.*
R19.	How old (in years) were you when you first used drugs? Less than 10 years (4) 10 to 14 years old (3) 15 to 19 years old (2) 20 to 24 years old (1) 25 or older (0) Refusal (r) N/A: never used illegal drugs (0)		
R20.	About how often do you currently use drugs? Not currently using (0) About every day (five or more times a week) (6) One or a few times per week (5) One or a few times per month (5) Only a few times each year (5) Refusal (r) N/A: never used illegal drugs (0)		

R21.	About how often do you currently have four or more drinks of an alcoholic beverage in a single day? Not currently drinking alcohol (0) Never (0) About every day (a) One or a few times per week (a) One or a few times per month (a) Only a few times each year (0) Refusal (r)	

<u>Introduction:</u> Now, I have just a few questions about your attitudes and behavior. There are no right or wrong answers, just give your best answer or your opinion. First I am going to read a statement, then you tell me how much you agree or disagree.

R22.	When I am very sad, I tend to do things that cause problems in my life. *(Choose one)* Strongly Agree (0) Agree (0) Neutral (0) Disagree (0) Strongly Disagree (0) Refusal (r)	*Please circle the correct answer, but do not score.*
R23.	When I am really excited, I tend to not think of the consequences of my actions. *(Choose one)* Strongly Agree (0) Agree (0) Neutral (0) Disagree (0) Strongly Disagree (0) Refusal (r)	*Please circle the correct answer, but do not score.*
R24.	The trouble with getting close to people is that they start making demands on you. *(Choose one)* Strongly Agree (2) Agree (2) Neutral (2) Disagree (1) Strongly Disagree (0) Refusal (r)	

R25.	Some people must be beaten up or treated roughly just to send them a clear message. *(Choose one)* Strongly Agree (2) Agree (2) Neutral (2) Disagree (1) Strongly Disagree (0) Refusal (r)	
	Section II Subtotal	

Section III. Defendant Interview *(Continued)*

[*Section III is not a part of the formal risk assessment. In other words, the following questions DO NOT contribute to the risk score, but the answers should be used to inform the selection of appropriate supervision, treatment, or diversion tracks. As in the previous sections, please select the appropriate answer and then write the corresponding number—the number in parentheses next to the answer—in the far right column. If the interviewee declines to answer a particular item, select "r" for refusal.*]

<u>Introduction:</u> Now I have a few questions about your mental and emotional health. Some of these questions may be personal in nature or make you feel upset. If that happens, let me know and we can pause. You do not have to answer any question you do not wish to answer.

		Circle One	***Points***
N1.	Have you ever been in a hospital for emotional or mental health problems?	No (0) Yes (1) Don't know (0) Refusal (r)	
N2.	Do you currently feel that other people know your thoughts and can read your mind?	No (0) Yes (1) Don't know (0) Refusal (r)	
N3a.	Have there recently been a few weeks where you often felt empty or sad?	No (0) Yes (1) Don't know (0) Refusal (r)	
N3b.	In the last few weeks, have there been some days where you have had a lot more energy than normal?	No (0) Yes (1) Don't know (0) Refusal (r)	

N4.	In the past month, how often have you had repeated disturbing memories, thoughts, or images of a stressful experience? *(Choose one)* Not at all (1) A little bit (2) Moderately (3) Quite a bit (4) Extremely (5) Refusal (r)	
N5.	In the past month, how often have you felt very upset when something reminded you of a stressful experience? *(Choose one)* Not at all (1) A little bit (2) Moderately (3) Quite a bit (4) Extremely (5) Refusal (r)	

A. **Calculating the Risk Score.** ***First, add up the numbers indicated in the far right column for Questions R1-R25 (except that there is no score for R2, R9, R17, R18, R22 or R23). Alternatively, simply add the Section I subtotal and the Section II subtotal. This is the raw risk score. Next, count the number of "r" and "u" responses indicated in the far right for questions R1-R25. If there are more than 4 "r" responses or 3 "u" responses, a valid risk score cannot be calculated. DO NOT count any of the answers to Section III (N1-N5) in the risk score.***

Raw Score:_____

Number of "u" responses in Section I:_____

Number of "r" responses in Section II:_____

Risk Classification. *Circle the appropriate risk classification based on the raw risk score.*

Minimal Risk	(0-15)
Low Risk	(16-21)
Moderate Risk	(22--26)
Moderate-High Risk	(27-32)
High Risk	(33-highest)

B. **Need Flags.** *Compute need flags as indicated below. Need flags indicate a possible need for further assessment, treatment, or social services. Positive need flags do not conclusively demonstrate the presence of the given problem or diagnosis.*

Youth Services	Yes	*(Circle if R10 is 5 or higher)*
Education	Yes	(*Circle if R11* score=2)
Employment	Yes	*(Circle if R12 score = 1)*
Housing	Yes	*(Circle if R13 score = 4)*
Substance Use	Yes	*(Circle if R20 = 5 or higher OR R21 = "a")*
Criminal Thinking	Yes	(*Circle if R24 + R25 > 2)*
Mental Health	Yes	*(Circle if N1+N2+N3a+N3b is 1 or higher)*
Trauma	Yes	*(Circle if N4+N5 is 4 or higher)*

Criminal Justice Supervision and Treatment Recommendation
(devise a risk-need informed supervision and/or service plan and briefly summarize here):

Appendix C:
Split Sample Comparison

Split Sample: Comparison of Groups on Risk Level, Demographic Characteristics, Charge, and Recidivism Outcomes

Sample Size	Development Sample 464	Validation Sample 464
Risk Distribution		
Risk score		
Mean	10.90	10.88
Median	11.00	11.00
Minimum	1.00	2.00
Maximum	23.00	23.00
Risk Categories		
Low Risk	17%	18%
Moderate Risk	32%	29%
Moderate-High Risk	34%	39%
High Risk	18%	15%
Re-Arrest at 1 Year		
Any New Arrest	48%	48%
New Felony Arrest	27%	25%
New Violent Felony Arrest	10%	9%
Demographics		
Average Age	32.49	31.78
Gender		
Male	82%	83%
Female	18%	17%
Race		
Black/African American	70%	66%
White/Caucasian	7%	7%
Hispanic/Latino/Spanish	22%	25%
Asian/Pacific Islander	1%	0%
Other	0%	1%
Instant Case		
Arrest Severity		
Misdemeanor	63%	62%
Felony	37%	38%
Violent Felony	*13%*	*15%*

+p<.10,* p<.05, ** p<.01, ***p<.001