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Office of Justice Research and Performance

Criminal Justice Research Report

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New York State COMPAS-Probation Risk and Need Assessment Study: Examining the Recidivism Scale's Effectiveness and Predictive Accuracy

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This report presents findings from a study which examined the effectiveness and predictive accuracy of the New York State COMPAS-Probation *Recidivism Scale*. This scale predicts the likelihood of rearrest for any felony or misdemeanor offense over a two-year follow-up period for offenders under probation supervision. The study also examined the prevalence of 19 risk/need factors among study cases and the extent to which these factors were correlated with the likelihood of rearrest. Findings indicated that the Recidivism Scale was both effective and predictively accurate (AUC = 0.71) with respect to the overall probation population. Furthermore, the likelihood of rearrest generally increased with the severity of a given criminogenic risk/need.

Office of Justice Research and Performance
Theresa Salo, Deputy Commissioner

Executive Summary

New York State COMPAS-Probation Risk and Needs Assessment Study: Examining the Recidivism Scale's Effectiveness and Predictive Accuracy

The New York State COMPAS-Probation risk and needs assessment system is used by all 57 probation departments outside New York City. The assessment system helps to better inform probation department supervision planning for adult probationers, as well as court decisions regarding pretrial release and sanctions.

This study had *two primary purposes*. First, it examined the effectiveness and predictive accuracy of the New York State COMPAS-Probation Recidivism Scale with respect to ANY (felony or misdemeanor) rearrest. Second, it examined the prevalence of COMPAS-Probation risk/need factors among probationers and the extent to which these factors were correlated with the likelihood of rearrest.

Study cases were drawn from 2009 probation supervision admission cases representing 56 probation departments outside New York City. Of the 26,315 admission cases from these 56 counties, 16,303 (62%) were included in the study. Study cases were representative of the 2009 admission cases from which they were extracted.

The study found that the Recidivism Scale worked effectively and achieved satisfactory predictive accuracy.

- Case distribution across the scale's 10 decile scores was as expected – each score generally accounted for about 10% of study cases.
- The rates for ANY rearrest increased with each successive decile score (DS) in a linear manner, climbing gradually from 9.1% for DS1 cases to 64.1% for DS10 cases – a span of 55 percentage points.
- Rearrest rates increased substantially with each successive risk level:
  - 16.9% for low risk cases;
  - 32.7% for medium risk cases; and
  - 53.8% for high risk cases.
- Actual and expected rates for ANY rearrest were closely aligned across decile scores.
- The Recidivism Scale achieved an acceptable level of predictive accuracy (0.71 AUC value).

Moreover, COMPAS-Probation effectively partitioned cases by supervision levels. Rates for ANY rearrest increased substantially with the intensity of COMPAS-Probation "recommended" supervision levels:

- 17.5% for *minimum* supervision cases;
- 32.3% for *medium* supervision cases;
- 47.0% for *medium* supervision cases *with a possible override to high*; and
- 57.3% for *high* supervision cases.

As expected, rearrest rates for COMPAS-Probation's 19 base risk/need scales were generally highest for high-risk/need individuals. The five scales most strongly correlated with the likelihood of ANY rearrest included (beginning with the most strongly correlated scale): History of Non-Compliance (with conditions of pretrial release or sentence), Educational/Vocational Problems, Criminal Associates/Peers, Anger and Impulsivity.

Additional Analyses

There was interest in knowing how effectively the scale estimated the likelihood of rearrest with respect to offender age (historically, a strong predictor of rearrest) and two subgroups with substantially different rearrest rates – Penal Law cases (40.9%) and Vehicle and Traffic Law (VTL) cases (15.9%). The Recidivism Scale equation does not control for possible differences in risk for these subgroups. There was also interest in knowing what types of offenses were associated with rearrest events.

With respect to *offender age at assessment*, the study found that the Recidivism Scale somewhat UNDER-estimated the likelihood of rearrest for offenders 16 to 18-years-old and substantially OVER-estimated the likelihood of rearrest for offenders in their mid-forties and onward. Importantly, though, the scale captured the overall downward trend in the likelihood of rearrest as age increased. Consequently, this estimation problem should not reduce confidence in the Recidivism Scale's already proven effectiveness and predictive accuracy. Any adjustments made to the scale's equation to correct this over/under-estimation will increase its predictive accuracy.

With respect to the *Penal Law and VTL subgroups*, the Recidivism Scale achieved acceptable levels of predictive accuracy (though slightly lower than that for the full model) – the AUC value for each was 0.68. However, the study also found that the likelihood of rearrest was somewhat UNDER-estimated for certain Penal Law cases and substantially OVER-estimated for certain VTL cases. Action will be taken to correct this over/under estimation. In the interim, it is important to remember that the Recidivism Scale did a good job identifying those cases of most concern – high-risk cases.

The substantial OVER-estimation of ANY rearrest for VTL cases highlights an important fact – the Recidivism Sale estimates the "general" risk of rearrest – not the risk of rearrest for specific types of offenses. The only risk-specific rearrest scale that is currently available through COMPAS-Probation is the Violence Scale which estimates the likelihood of rearrest for a violent offense. Thus, it is important that COMPAS-Probation users understand that VTL cases represent a special offender population. This means that a specialized assessment tool for predicting the likelihood of rearrest for VTL alcohol-related offenses should be included among the other risk-specific assessment tools (e.g., those targeting mental health problems, substance abuse, young offenders and sex offenders) most probation departments already use in conjunction with COMPAS-Probation.

With respect to *rearrest offenses*, the study found that rearrests for *Penal Law drug offenses* and *VTL alcohol-related offenses* accounted for:

- 10% and 8%, respectively, of the first rearrest events associated with Penal Law non-drug conviction cases;
- 35% and 10%, respectively of the first rearrest events associated with Penal Law drug conviction cases; and
- 12% and 25%, respectively of the first rearrest events associated with VTL conviction cases.

The substantial percentage of drug offenses and VTL alcohol-related offenses associated with each of three probation supervision case types clearly illustrates that conviction-offense type is not the sole indicator for determining whether a risk-specific assessment is warranted. Whether any type of risk-specific assessment needs to be conducted is determined in large part by an offender's overall criminal and, when available, clinical histories.

Acknowledgements

The Division of Criminal Justice Services and the author of this report would like to thank everyone who contributed to its preparation. Special thanks go to Terry Salo, the Division's Deputy Commissioner for the Office of Justice Research and Performance (OJRP), for dedicating the staff and resources required to produce this report. Thanks also go to Robert Maccarone, the Division's Deputy Directory for the Office of Probation and Correctional Alternatives (OPCA), as well as OPCA's Thomas Slater and Gary Govel, for the guidance and invaluable insights each provided regarding the development and implementation of COMPAS-Probation. Northpointe researchers Bill Dieterich and Bill Oliver also deserve special thanks for their support and helpful comments.

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New York State COMPAS-Probation Risk and Needs Assessment Study: Examining the Recidivism Scale's Effectiveness and Predictive Accuracy

INTRODUCTION

New York State (NYS) COMPAS-Probation is a risk and needs assessment software package for use with adult offenders that was customized to address the characteristics of the state's probation population. It helps to inform probation department decisions regarding supervision intensity and service/treatment interventions, as well as court decisions regarding pretrial release and sanctions.

COMPAS-Probation adheres to the three core principles of the risk-needs-responsivity model.[1] The *risk principle* focuses on who should be targeted for intervention and matching the level of offender risk to the intensity of treatment and services. The *needs principle* focuses on accurately identifying and targeting for intervention the personal, family and social deficits (i.e., criminogenic needs) of an offender which research has shown to increase the likelihood of recidivism. The *responsivity principle* focuses on maximizing an offender's ability to benefit from interventions by providing cognitive behavioral treatment that is tailored to the offender's unique profile (e.g., gender, learning style, motivation, strengths and abilities).

COMPAS-Probation was developed by Northpointe Institute for Public Management Inc. in conjunction with the Division of Criminal Justice Services' (DCJS) Office of Probation and Correctional Alternatives (OPCA) (formerly the NYS Division of Probation and Correctional Alternatives). It was fully implemented in December 2007 and is currently used by all 57 county probation departments outside New York City.

Using standardized assessment instruments, COMPAS-Probation gathers information on risk/need factors that past research has found to be associated with three types of *overall* risk – failure to appear for a pretrial hearing, recidivism (i.e., rearrest for a felony or misdemeanor offense), and violence (rearrest for a violent offense).

This study assessed the predictive accuracy of only one of the overall risk scales – *Recidivism*. There are 19 base risk/need scales associated with the Recidivism Scale. These base scales and a description of the Recidivism Scale are highlighted on the next page.

STUDY PURPOSES

This study had two primary purposes.

- First, it examined the effectiveness and predictive accuracy of the New York State COMPAS-Probation Recidivism Scale.
- Second, it examined the prevalence of COMPAS-Probation risk/need factors among probationers and the extent to which these factors were correlated with the likelihood of rearrest.

It did not evaluate the COMPAS-Probation Violence Scale because modifications made to the scale in July 2010 to improve its predictive accuracy did not allow sufficient follow-up time for tracking rearrests.

METHODS

Data Sources

Data for this study were obtained from three databases maintained by DCJS.

- Probation supervision data came from the Integrated Probation Registrant System (IPRS).
- Criminal history data came from the Computerized Criminal History (CCH) System.
- Risk/need assessment data came from the COMPAS-Probation database.

COMPAS-Probation cases were limited to those with assessments conducted using one of the three assessment instruments which gather data needed to calculate the Recidivism Scale. All three instruments also capture data for the Violence Scale, but only one

[1] Andrews, D.A., James Bonta, and R.D. Hoge. (1990). Classification for effective rehabilitation: Rediscovering psychology. *Criminal Justice and Behavior*, 17(1), 19-52. Also see Andrews, D.A. and Dowden, C. (2007). The risk-need-responsivity model of assessment and human service in prevention and corrections: Crime-prevention jurisprudence. *Canadian Journal of Criminology and Criminal Justice, 49(4)* 439-464.

New York State COMPAS-Probation Risk/Need Scales*

OVERALL Risk Scales

- Recidivism

BASE Risk/Need Scales

Criminal History

- Criminal Involvement
- History of Non-Compliance
- History of Violence

Attitudes

- Criminal Attitude
- Resentful/Mistrust
- Responsivity Problems

Associates

- Few Pro-Social Peers
- Criminal Associates/Peers

Personality

- Impulsivity
- Anger

Family

- Few Family Supports
- Family Criminality

Substance Abuse

- Substance Abuse

Social Engagement

- Life Goals/Idleness
- Financial Problems
- Educational/Vocational Problems
- Social Environment
- Social Isolation

Mental Health

- Depression

*As categorized in the offender-based "COMPAS-Probation Risk Assessment Report." An example of this report can be found in Appendix A.

Recidivism Scale: Construction and Interpretation

The *Recidivism Scale* is based on an equation derived from a regression modeling approach. Scores are calculated using a single equation and a single set of decile cut-points. This scale estimates the "general" risk of rearrest – not the risk of rearrest for specific types of offenses. It is derived, in part, from three "base" COMPAS-Probation risk/need scales. These three base scales and the other data elements included in the Recidivism Scale's regression equation follow.

- Criminal Involvement Scale
- Educational/Vocational Problem Scale
- Substance Abuse Problem Scale
- Age at First Arrest
- Age at COMPAS Assessment
- Offender Arrest Rate (total prior arrests/years from first arrest to COMPAS assessment)

Decile Scores. Decile Scores (DS) range from one to 10. The distribution of scale scores (from the regression equation) across the 10 deciles was determined by ranking the scale scores from the normed group from low to high and then dividing the scores into 10 roughly equal sized groups. Consequently, each decile should account for about 10% of all cases.

- A DS1 score indicates a case was in the lowest 10% of the normed score range and identifies those cases least at risk.
- A DS10 score indicates a case was in the highest 10% of the normed score range and identifies those cases most at risk.

Risk Levels. Decile scores were partitioned into three risk levels. These levels, their respective DS ranges, and the expected case distribution across levels follow.

- Low Risk (DS1–DS4) 40% of all cases
- Medium Risk (DS5–DS7) 30% of all cases
- High Risk (DS8–DS10) 30% of all cases

– the *Full COMPAS Assessment* – captures data for all 19 base risk/need scales. The *Screener Input Only with Recidivism Assessment* instrument captures data for 15 base risk/need scales. The *Violence and Recidivism with Substance Abuse Assessment* instrument captures data for seven risk/need scales. The Full COMPAS Assessment is OPCA's preferred instrument.[2] Nonetheless, it is left to each probation department to determine which assessment instrument(s) it uses. The Full COMPAS Assessment instrument can be found in Appendix A.

Case extraction dates for all three data sets spanned the week of July 22, 2012.

Study Cases

Study cases were drawn from 2009 probation supervision admission cases in the IPRS database. Cases were limited to those from 56 of the 57 probation departments outside New York City (NYC). COMPAS-Probation is not used by the NYC Probation Department. Suffolk County Probation Department accounted for a substantial proportion of admission cases, but only a small number of the assessment cases because it had not fully implemented COMPAS-Probation as of 2009.

Of the 26,315 probation supervision cases (from 56 counties) with 2009 admission dates, 16,303 (62%) were included in the study. Case-inclusion percentages by county/department can be found in Appendix B, Table B1.

A case was included when it met all three of the following selection criteria:

- An IPRS case record was matched to a COMPAS assessment record.
- The COMPAS assessment date was no more than six months before or two months after the probation admission date and preceded the rearrest date.
- The IPRS and COMPAS case records matched on name, gender and birth date (within a 12 month range) and were not associated with an out-of-state transfer or reported death.

[2] New York State Division of Criminal Justice Services, Office of Probation and Correctional Alternatives (formerly the NYS Division of Probation and Correctional Alternatives) (Revised October 2008). *Guidance for the New York Correctional Offender Management Profiling for Alternative Sanctions (NYCOMPAS) Risk/Needs Assessment Instrument*. (p. 8). Albany, NY: Author.

The boundaries established for valid COMPAS assessment dates – six months before to two months after the probation admission date – were based on proposed *New York State Probation Rules* pertaining to the currency and timeliness of assessments. With regard to the currency of information, Section 351.7(6) specifies that reassessments should be conducted every six months. With regard to timeliness, Section 351.5 states that initial assessments and case plans should be completed within 30 business days following initial interviews and that initial interviews must be conducted within eight business days of case assignments. Collectively, these time frames span a period of almost two months. When there were multiple assessments per case (about 10% of cases), the assessment with the date nearest the probation supervision admission date was selected.

Reasons for case exclusion follow in the order cases were removed from the base file:

- 18% of the 26,315 admission cases had no matching COMPAS records;
- 6% had COMPAS matches, but *first rearrest* dates preceded COMPAS assessment dates;
- 13% had COMPAS matches, but COMPAS assessment dates were more than six months before or two months after probation admission dates; and
- 2% of cases were associated with reported deaths (144 cases); transfers out of NYS (63 cases); or inconsistent data (e.g., name, gender, age) across databases (267 cases).

Measures

This study focused on one outcome measure – rearrest for ANY offense classified as a fingerprintable felony or misdemeanor arrest that occurred within two years following the probation admission date. (All felony offenses and practically all misdemeanor offenses are fingerprintable in NYS.) This outcome measure was examined with respect to the Recidivism Scale; the 19 base risk/need scales by decile scores and risk levels; and COMPAS-Probation recommended supervision levels.

Analyses

The study's principal focus was the effectiveness and predictive accuracy of the Recidivism Scale with respect to *all cases* and *ANY rearrest* during the two-year follow-up period. This is because the empirically validated, normed Recidivism Scale was

calculated using this outcome measure and follow-up period. This normed scale was calculated using a single logistic regression equation and single set of decile cut-points (see p. 2).

Additional analyses focused on the Recidivism Scale's effectiveness and predictive accuracy with respect to offender age and two subgroups with substantially different rearrest rates: Penal Law cases and Vehicle and Traffic Law (VTL) cases. First rearrest events were also examined with respect to rearrest offense types.

All quantitative analyses were conducted with *PASW Statistics 17.0*.[3] Statistical methods included descriptive statistics (frequency and percentage distributions, cross-tabulations and means) and point bi-serial correlations. Sheffe's test was used to determine whether differences in rearrest rates across risk/needs levels were statistically significant ($p<.05$). With respect to the Recidivism Scale, the t-test was used to determine whether differences in actual and expected rearrest rates were statistically significant ($p<.05$). Expected rates were calculated by regressing Recidivism Scale decile scores on the binary (0,1) rearrest outcome measure using logistic regression models.

The area under the receiver operator character (ROC) curve, commonly referred to as the area under the curve (AUC) was used to measure *model discrimination*. This is the most widely used and accepted measure in risk classification research for assessing model discrimination.[4] Conceptually, the AUC value shows the extent to which a scale is able to accurately discriminate between case outcomes – in this instance, rearrest and no rearrest – by assessing the degree to which cases rank appropriately based on their predicted scores. AUC values can range from 0.50 to 1.00. Values in the 0.50s are considered to have no to little predictive accuracy; those in the 0.60s are viewed as having low to moderate predictive accuracy; those approaching or reaching the 0.70s are considered to have satisfactory predictive accuracy; and those 0.80 or above provide evidence of strong predictive accuracy. Criminal justice studies concerning COMPAS and other risk-classification systems generally report AUC values ranging from 0.65 to 0.75.

A separate analysis for cases involving recommendation "overrides" was not conducted because only 1% of study cases involved overrides.

Key Definitions

A *probation supervision case* was defined as any case under pre/post-sentence probation supervision. The types of sentences associated with cases in this study included probation and probation-jail sentences and, for a small percentage (1%) of cases, conditional discharge sentences

A *rearrest event* was defined as the first new fingerprintable felony or misdemeanor arrest event during the two-year follow-up period.

The *two-year follow-up period* for a new arrest began on the first day following the probation admission date. This period was not equivalent to "time at risk" because it may have included (1) jail-time for those who received split sentences; (2) jail-time for technical probation violations; and (3) jail/prison-time resulting from resentencing or concurrent cases. The data required to measure such periods of incarceration were not readily available. Importantly, these jail/prison data were not available for the construction of the normed model. Thus, in this respect, the normed and current validation models are comparable.

[3] PASW Statistics 17.0, Release 17.0.2 (March 11, 2009).
[4] Gottfredson, S. D. and Moriarty, L. J. (2006). Statistical risk assessment: Old problems and new application. *Crime and Delinquency*, 52, 178-200. Also see Brennan, T., Dieterich, W. and Beate, E. (2009). Evaluating the predictive validity of the COMPAS risk and needs assessment system. *Criminal Justice and Behavior*, 36, 21-40.

CASE REPRESENTATIVENESS

Table 1 shows that study cases were representative of the 2009 admission cases from which they were extracted.

- Gender percentage distributions were identical. Males accounted for 77% of cases in both the source and study data sets.
- Age-at-admission distributions varied one percentage point. Cases involving offenders 19 to 35-years-old comprised over half (54%) of each data set.
- Conviction charge (type and seriousness) distributions varied by one percentage point.
  - Penal Law cases accounted of 72% of all study cases and VTL cases the remaining 28%.
  - Misdemeanor cases accounted for 65% of study cases and felony cases the remaining 35%.

Table 1
Admission Cases (Source File) and Study Cases: Comparison of Case Characteristics

Case Characteristics	Percent Distributions: Admission Cases (n=26,315)	Study Cases (n=16,303)
Total	**100%**	**100%**
Gender		
Male	77%	77%
Female	23%	23%
Unknown	0%	0%
Age at Admission		
Ages 16-18	14%	15%
Ages 19-25	30%	29%
Ages 26-35	24%	25%
Ages 36-45	18%	17%
Ages 46-55	11%	11%
Ages 56+	3%	3%
Conviction Charge Type		
Penal Law	**72%**	**72%**
Personal/Weapon	18%	18%
Property	33%	34%
Drug	12%	12%
Other PL	9%	8%
Vehicle and Traffic La	**28%**	**28%**
DWI (VTL 1192)	26%	26%
Other VTL	3%	2%
Conviction Charge Seriousness		
Misdemeanor	66%	65%
Felony	34%	35%

Note: Percentages may not add to 100% due to rounding.

Data Source: NYS Division of Criminal Justice Services IPRS database.

Source: NYS Division of Criminal Justice Services, *New York*

RECIDIVISM SCALE

The Recidivism Scale is an indicator of the overall risk of ANY rearrest for cases under probation supervision in New York State. The construction and interpretation of this scale were discussed on page 2.

This study assessed the Recidivism Scale's effectiveness (i.e., calibration) and predictive accuracy (i.e., discrimination). This Scale had to meet four statistical criteria to be considered "effective" and a fifth criterion to be considered "predictively accurate." To be considered effective:

1. Cases must near or achieve even distribution across the 10 decile scores.
2. Rearrest rates must increase with each successive decile score in a linear manner.
3. Rearrest rates must increase substantially ($p<.05$) with each successive risk level.
4. Actual and expected (i.e., predicted) rearrest rates must be closely aligned across decile scores.

To be considered predictively accurate:

5. The scale must produce an AUC value that nears or achieves a value of 0.70 or higher (see Methods).

The study found that the Recidivism Scale was both effective and predictively accurate – it met all five statistical criteria. Findings are presented below.

Effectiveness

Frequency distributions. The first criterion specified that cases must near or achieve even distribution across the 10 decile scores. Table 2 displays the overall frequency and percentage distributions for the Recidivism Scale by decile scores. Each decile score should account for about 10% of all cases (see p. 2).

- Eight of the 10 decile scores each accounted for 9% to 11% of all cases. DS2 accounted for 7% and DS10 for 12% of cases.

Table 3 displays the overall frequency and percentage distributions for the Recidivism Scale's three risk levels – low, medium and high – and the expected case distribution of 40%, 30% and 30%, respectively.

- Case distribution percentages for the three Recidivism Scale risk levels were similar to those expected – low-risk, 37%; medium-risk, 29%; and high-risk 34%.

County/department-level distributions are presented by risk-levels in Appendix B, Table B1. These frequency distributions were not expected to adhere to those expected for the overall model because the Recidivism Scale equation does not control for differences in the distribution of risk across counties/probation departments

Table 2
Frequency and Percent Distributions by Recidivism Scale Decile Scores

Recidivism Scale Decile Scores		Expected Percent Distribution	Actual Percent Distribution	Number of Cases
Low	DS-1	10%	10%	1,634
	DS-2	10%	7%	1,156
	DS-3	10%	9%	1,513
	DS-4	10%	11%	1,757
Medium	DS-5	10%	9%	1,465
	DS-6	10%	10%	1,595
	DS-7	10%	10%	1,661
High	DS-8	10%	10%	1,694
	DS-9	10%	11%	1,797
	DS-10	10%	12%	2,031
Total		**100%**	**100%**	**16,303**

Table 3
Frequency and Percent Distributions by Recidivism Scale Risk Levels

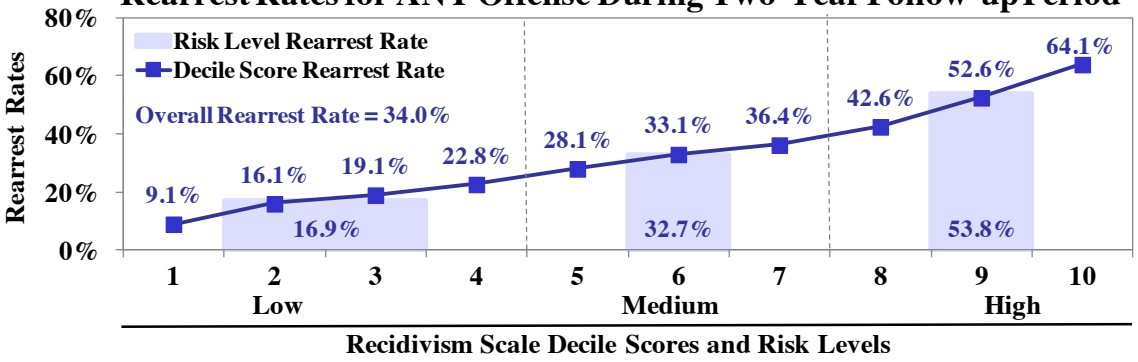
Recidivism Scale Risk Levels	Expected Percent Distribution	Actual Percent Distribution	Number of Cases
Low	40%	37%	6,060
Medium	30%	29%	4,721
High	30%	34%	5,522
Total	**100%**	**100%**	**16,303**

Note: Percentages may not add to 100% due to rounding.

Data Sources: NYS Division of Criminal Justice Services IPRS, COMPAS-Probation and CCH databases.

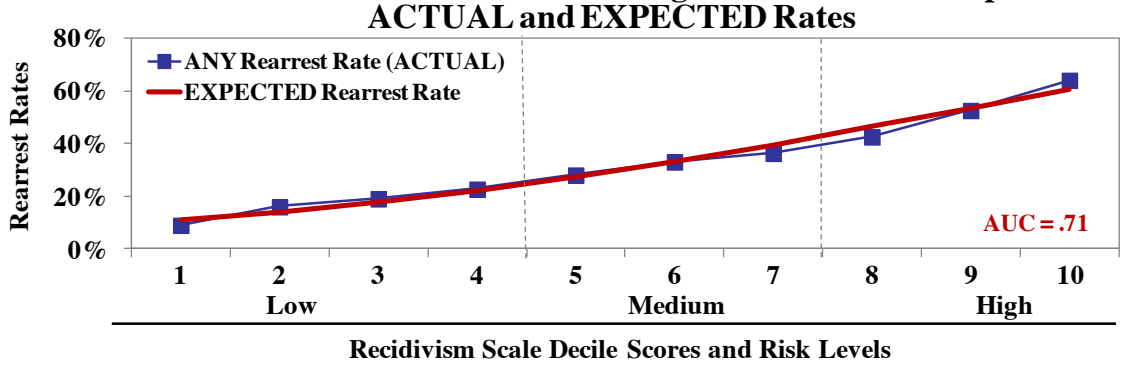
Source: NYS Division of Criminal Justice Services, *New York State COMPAS-Probation Risk and Needs Assessment Study* (2012).

Figure 1
Rearrest Rates for ANY Offense During Two-Year Follow-up Period



Source: NYS Division of Criminal Justice Services, *NYS COMPAS-Probation Risk and Needs Assessment Study* (2012).

Figure 2
Rearrest Rates for ANY Offense During Two-Year Follow-up Period: ACTUAL and EXPECTED Rates



Source: NYS Division of Criminal Justice Services, *NYS COMPAS-Probation Risk and Needs Assessment Study* (2012).

Rearrest rates. Criteria two and three specified that (1) the likelihood of rearrest must increase with each successive decile score in a linear manner and (2) actual and expected (predicted) rearrest rates must closely align across decile scores.

Figure 1 displays rearrest rates for ANY rearrest that occurred during the two-year follow-up period.

- The likelihood of ANY rearrest increased in a linear manner with each successive decile score. Rates gradually climbed from 9.1% for DS1 cases to 64.1% for DS10 cases – a span of 55 percentage points.
- Rates for ANY rearrest also increased significantly ($p<.05$) and substantially with each successive Recidivism Scale risk level:
  - 16.9% for low-risk cases;
  - 32.7% for medium-risk cases; and
  - 53.8% for high-risk cases.

As expected, there was substantial variation in rearrest rates across county probation departments. These county/department-level statistics can be found in Appendix B, Table B2.

The fourth criterion specified that ACTUAL and EXPECTED (i.e., predicted) rearrest rates must closely align across decile scores. Figure 2 shows that these rates achieved this objective.

Predictive Accuracy

The fifth criterion stipulated that the Recidivism Scale must produce an AUC value that nears or achieves a value of 0.70 or higher.

The Scale's AUC value of 0.71 allowed it to be classified as having "satisfactory" predictive accuracy (see Methods).

SUPERVISION CLASSIFICATION MATRIX

The *COMPAS-Probation Classification Matrix for Supervision-Level Recommendations* in Figure 3 brings together the Recidivism Scale with the Violence Scale. This matrix is used to guide decisions regarding supervision levels.

This two-dimensional classification matrix provides a more discriminating measure of the risk of rearrest for supervision purposes in that it also considers whether a rearrest event is likely to involve the commission of a violent crime such as robbery or assault.

Matrix cells were statistically partitioned to divide cases among four "recommended" supervision levels (Figure 3).

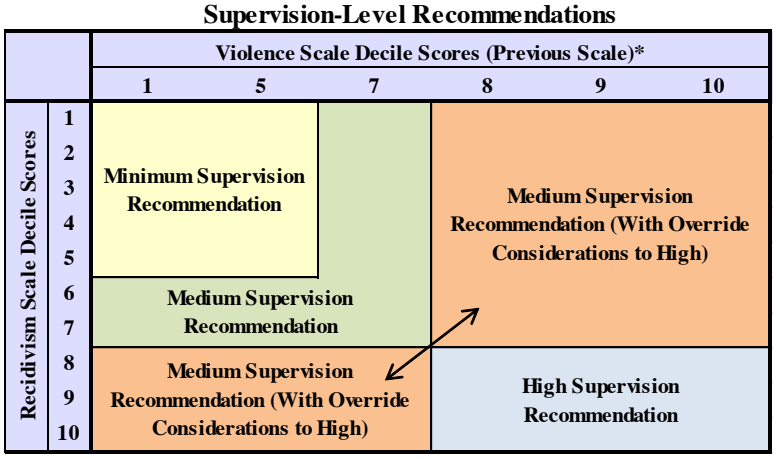
- Minimum supervision
- Medium supervision
- Medium supervision – with override considerations to High
- High supervision

The decile scores for the *Recidivism Risk Scale* (scores 1-10) define matrix rows,[5] while the decile scores for the *Violence Risk Scale* (scores 1, 5 and 7-10) define matrix columns. Violence Scale decile scores reflect the fact that violence is a less likely outcome for most offenders. The scale jumps from decile score 1 to 5 because the 9,687 offenders with no history of violence were all assigned to DS1 (see Table 4).

Case Distributions

Table 4 shows the number of cases assigned to each matrix cell based on both their Recidivism Scale and

Figure 3
COMPAS-Probation Classification Matrix for Supervision-Level Recommendations



* The Violence Scale was modified in July 2010.
Source: NYS Division of Criminal Justice Services, *NYS COMPAS-Probation Risk and Needs Assessment Study* (2012).

Table 4
Supervision Classification Matrix: Number of Cases

Recidivism Scale Decile Scores	Violence Scale Decile Scores (Previous Version)* 1	5	7	8	9	10	Overall
1	1,307	138	76	53	25	35	1,634
2	873	114	60	45	28	36	1,156
3	1,061	185	96	70	51	50	1,513
4	1,168	213	128	90	64	94	1,757
5	947	174	129	103	53	59	1,465
6	955	203	152	121	66	98	1,595
7	933	250	169	115	74	120	1,661
8	900	288	144	130	87	145	1,694
9	827	307	203	140	101	219	1,797
10	716	339	269	191	159	357	2,031
Overall	9,687	2,211	1,426	1,058	708	1,213	16,303

* The Violence Scale was modified in July 2010.
Data Sources: NYS Division of Criminal Justice Services: IPRS, COMPAS-Probation and CCH databases.
Source: NYS Division of Criminal Justice Services, *NYS COMPAS-Probation Risk and Needs Assessment Study* (2012).

[5] Unlike the Recidivism Scale's low-risk category which includes decile scores 1-4, the "minimum supervision recommendation" category includes Recidivism Scale deciles scores 1-5.

Violence Scale decile scores. Case percentage distributions across the four "recommended" supervision levels (not shown) were:

- 38%, minimum supervision;
- 19%, medium supervision;
- 33%, medium supervision – with override consideration to high; and
- 9%, high supervision.

Rates for ANY Rearrest

Rates for ANY rearrest increased with each recommended supervision level (Figure 4) and spanned 40 percentage points:

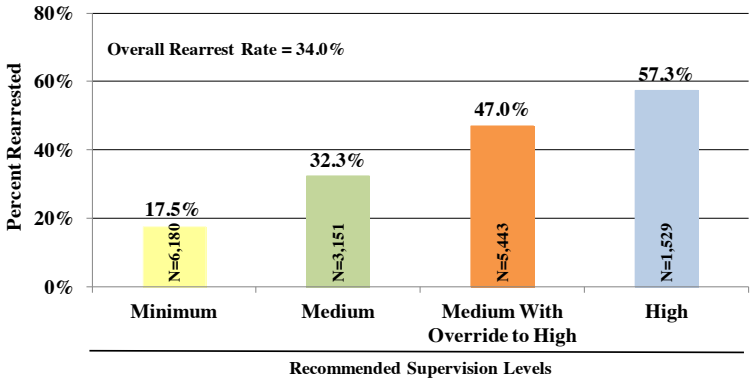
- 17.5%, minimum supervision;
- 32.3%, medium supervision;
- 47.0%, medium supervision – with possible override to high; and
- 57.3%, high supervision.

Rates differed significantly ($p<.05$) and substantially (10 to 15 percentage points) across each recommended supervision level.

Matrix cells. Rearrest rates are presented by matrix cells in Table 5. The most straight-forward way to evaluate the discriminatory ability of the supervision classification matrix with respect to the likelihood of ANY rearrest is to compare rearrest rates along the diagonal cells beginning with the Recidivism DS1 and Violence DS1 cell (cell 1/1). These diagonal cells are circled in Table 5. Moving along this diagonal path from cell 1/1 to cell 10/10 the rates for ANY rearrest steadily increase: 7.6%, 27.0% 40.2%, 44.6%, 49.5% and 66.1%.

The relatively smaller increases in rates from cells 7/7 to 8/8 (40.2% to 44.6%, 4 percentage points) and cells 8/8 to 9/9 (44.6% to 49.5%, 5 percentage points) reflect the shortcomings in the effectiveness and predictive accuracy of the previous Violence Scale.

Figure 4
ANY Rearrest Rates at Two Years by Recommended Supervision Levels



Source: NYS Division of Criminal Justice Services, *NYS COMPAS-Probation Risk and Needs Assessment Study* (2012)

Table 5
Supervision Classification Matrix: Rates for Any Rearrest at Two Years

Recidivism Scale Decile Scores	Violence Scale Decile Scores (Previous Version)*						
	1	5	7	8	9	10	Overall
1	7.6%	14.5%	17.1%	13.2%	12.0%	17.1%	9.1%
2	14.4%	20.2%	15.0%	28.9%	28.6%	19.4%	16.1%
3	17.8%	18.9%	22.9%	27.1%	15.7%	32.0%	19.1%
4	20.7%	22.5%	22.7%	33.3%	40.6%	26.6%	22.8%
5	26.7%	27.0%	31.8%	32.0%	32.1%	35.6%	28.1%
6	29.6%	38.4%	37.5%	36.4%	40.9%	39.8%	33.1%
7	34.8%	37.6%	40.2%	33.0%	37.8%	42.5%	36.4%
8	40.0%	42.0%	53.5%	44.6%	41.4%	48.3%	42.6%
9	50.9%	53.1%	58.6%	57.1%	49.5%	51.6%	52.6%
10	59.9%	62.8%	71.0%	67.0%	66.0%	66.1%	64.1%
Overall	28.2%	38.1%	43.9%	42.5%	43.5%	48.1%	34.0%

* The Violence Scale was modified in July 2010.

Data Sources: NYS Division of Criminal Justice Services: IPRS, COMPAS-Probation and CCH databases.

Source: NYS Division of Criminal Justice Services, *NYS COMPAS-Probation Risk and Needs Assessment Study* (2012).

BASE RISK/NEED SCALES

This section of the report focuses on the COMPAS-Probation 19 base risk/need scales. Concise explanations of scale meanings and treatment implications can be found in Appendix A.

The base risk/need scales are considered descriptive scales rather than predictive like the Recidivism Scale. All but one of these scales (Depression) are considered *criminogenic* indicators in that the likelihood of rearrest is expected to increase with the seriousness of the risk/need.[6]

This study examined (1) the prevalence of COMPAS-Probation risk/need factors among probationers and (2) the extent to which rates for ANY rearrest increased with each successive risk/need level during the two-year follow-up period.

The analysis of risk/need scales was limited to the 11,289 cases with "Full COMPAS" assessments – the only assessment instrument that collects the data needed to calculate all 19 base risk/need scales.[7]

Factor analysis was used to identify base scales that were moderately to strongly correlated with each other. Scales were partitioned into seven contextual categories based on findings from this analysis.

- Criminal History
- Personality Profile
- Personal Development
- Personal Support Network
- Social Environment
- Cooperative Stance
- Depression

These categories differ from those in the case-specific assessment report (see page 2) produced by COMPAS-Probation in that the latter categories were subjectively, rather that statistically, determined. A sample assessment report can be found in Appendix A.

Case Distributions

Table 6 presents frequency and percentage distributions for the Recidivism Scale and the 19 base scales by risk level (low, medium and high rearrest likelihood) and need level (unlikely, probable and highly probable likelihood of rearrest if no intervention).

The decile cut-points that determined case assignment to risk/need levels are also presented in Table 6 for each scale. As Table 6 shows, there are fewer than 10 decile scores for some scales. This is because there was less overall variation in raw scores for some base scales, making it impossible to divide cases into 10 equal-sized groups.[8] For example, 71% of cases were assigned to DS1 for the *History of Violence* Scale because the assessment found no history of violence associated with these cases. A statistical algorithm was used to determine how cases with some history of violence were distributed across the remaining nine decile scores, In this instance, the algorithm distributed cases across four additional decile scores, resulting in a scale with five decile scores (1, 5, 8, 9 and 10) rather than all 10 scores.

Case percentage distributions were often largest for low-risk/need cases because the assessment more often found no or little evidence of a given risk/need. Conversely, the Substance Abuse scale had the largest percentage of cases (65%) classified as high risk/need. This is because five decile scores (5-10) comprised this high-need level rather than the three deciles scores (8-10) that comprised the high-need level for most other scales.

There were five scales where the highest risk level accounted for more than one-third of all cases (Table 5):

- Substance Abuse (65%),
- Educational/Vocational Problems (41%),
- Financial Problems (38%),
- Responsivity Problems (38%), and
- Family Criminality (35%).

[6] See Brennan, T., Dieterich, W. and Oliver, W. (2004). The COMPAS scales: Normative data for males and females in community and incarcerated samples. Northpointe Institute for Public Management, Traverse City Michigan.

[7] Case distributions across risk/need levels for the other two instruments – the *Screener Input Only with Recidivism* and *Violence and Recidivism with Substance Abuse* – were similar to those for the *Full COMPAS*.

[8] See note 4 above. According to Northpointe, this was "due to the granularity or "bunching" together of the sampling distribution of the raw scores…" for some scales (p. 13).

Table 6
Study Cases With "Full COMPAS" Assessments (n=11,289):*
Risk/Need Scale Decile Score (DS) Cut-Points and
Percent and Frequency Distributions by Risk/Need Levels

	Decile Cut-Points for Risk Levels			Percent Distributions			Frequency Distributions		
	Risk/Need Level			Risk/Need Level			Risk/Need Level		
Risk Categories and Scales	**Low**	**Medium**	**High**	**Low**	**Medium**	**High**	**Low**	**Medium**	**High**
Any Rearrest (Overall Risk)	1-4	5-7	8-10	35%	30%	34%	3,991	3,431	3,867
Criminal History									
History of Non-compliance	1	5-7	8-10	46%	31%	23%	5,167	3,523	2,599
History of Violence	1	5	8-10	71%	11%	17%	8,066	1,284	1,939
Criminal Involvement	1-4	5-7	8-10	52%	26%	22%	5,920	2,903	2,466
Criminogenic Need Categories and Scales	**Unlikely**	**Probable**	**Highly Probable**	**Unlikely**	**Probable**	**Highly Probable**	**Unlikely**	**Probable**	**Highly Probable**
Personality Profile									
Anger	1,4,5	7	8-10	66%	11%	23%	7,490	1,208	2,591
Impulsivity	1,2,3,5	6-7	8-10	62%	12%	27%	6,949	1,348	2,992
Resentment/Mistrust	1-5	6-7	8-10	62%	13%	25%	6,944	1,479	2,866
Social Isolation	1,5	6-7	8-10	60%	23%	17%	6,778	2,646	1,865
Personal Development									
Educational/Vocational Problems*	1-5	6-7	8-10	40%	19%	41%	4,519	2,175	4,595
Idleness/Absence of Life Goals	1-5	6-7	8-10	56%	21%	23%	6,316	2,391	2,582
Financial Problems	1,3,4,5	6-7	8-10	44%	18%	38%	5,016	2,020	4,253
Personal Support Network									
Criminal Associates/Peers	1	5,6	8	43%	35%	22%	4,812	3,975	2,502
Family Criminality	1,5	6-7	8-10	51%	14%	35%	5,793	1,592	3,904
Substance Abuse	1-2	3-4	5-10	16%	18%	65%	1,860	2,079	7,350
Social Environment									
Neighborhood Crime/Disorganiztion	1-5	6-7	8-10	60%	17%	24%	6,717	1,911	2,661
Few Family Supports	1,5	6-7	8-10	58%	18%	24%	6,507	2,018	2,764
Few Pro-Social Peers	1,4	6-7	–	55%	45%	NA	6,195	5,094	NA
Cooperative Stance									
Responsivity Problems	1,2,3,5	6-7	8-10	35%	27%	38%	3,918	3,070	4,301
Criminal Attitude	1	6	8-10	49%	19%	32%	5,491	2,192	3,606
Non-Criminogenic Need Scale	**Unlikely**	**Probable**	**Highly Probable**	**Unlikely**	**Probable**	**Highly Probable**	**Unlikely**	**Probable**	**Highly Probable**
Depression	1,5	6-7	8-10	65%	12%	23%	7,355	1,312	2,622

* Cases with *Screener Input Only* or *Violence and Recidivism* assessments were excluded from the analysis presented in this table because they do not assess all risks/needs.

Data Sources: NYS Division of Criminal Justice Services, IPRS, COMPAS-Probation and CCH databases.

Source: NYS Division of Criminal Justice Services, *NYS COMPAS-Probation Risk and Needs Assessment Study* (2012).

Rates for ANY Rearrest

Figure 5 through Figure 10 show that, as expected, the rates for ANY rearrest during the two-year follow-up period increased with each successive risk/need level for most scales. These rates are presented in a tabular format in Appendix B, Table B4.

- The overall rearrest rate for Full-COMPAS assessment cases, 34.9%, was similar to that for all study cases, 34.0%.

The individual scales were ordered within scale categories based on the magnitude of rearrest rates for "high" risk and "highly probable" need levels. Generally, differences across levels in rearrest rates were statistically significant ($p<.05$) when rates differed by four or more percentage points.

The scales most strongly correlated with the ANY rearrest outcome were generally those with the largest percentage-point span between the lowest and highest scale levels.[9]

The two scales most strongly correlated with ANY rearrest were *Non-Compliance History* and *Educational/Vocational Problems*. The magnitude of correlations were the same for both (r = .21). The percentage-point differences between low and high-risk rearrest rates were:

- 25-percentage points for the *Non-Compliance History Scale* (25.0% and 50.0%, respectively) (Figure 5); and

- 21-percentage-points for the *Educational/ Vocational Problems Scale* (24.5% and 45.4%, respectively) (Figure 7).

The three next most important scales were *Criminal Associates/Peers*, *Anger* and *Impulsivity*. The magnitude of correlations with ANY arrest were similar for all three scales (r = .16 to .17). Percentage-point differences between low and high-risk rearrest rates for each follow:

- 21 percentage points for the *Criminal Associates/Peers Scale* (26.7% and 47.4%, respectively) (Figure 8);

[9] Correlations were measured using decile scores – not scale levels.

Figure 5
Rates for ANY Rearrest at Two Years for Criminal History Scales by Risk Levels

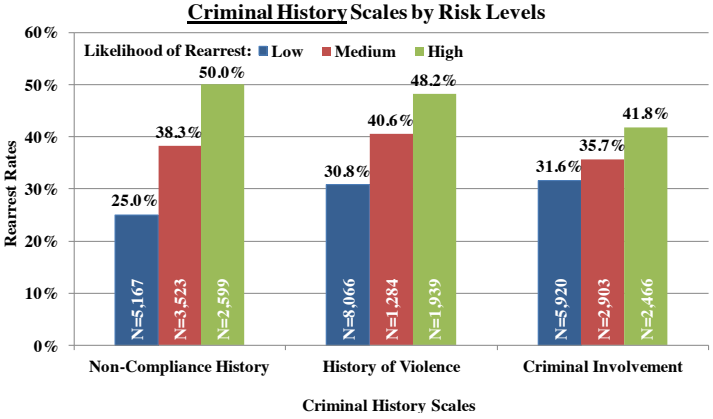


Figure 6
Rates for ANY Rearrest at Two Years for Personality Profile Scales by Need Levels

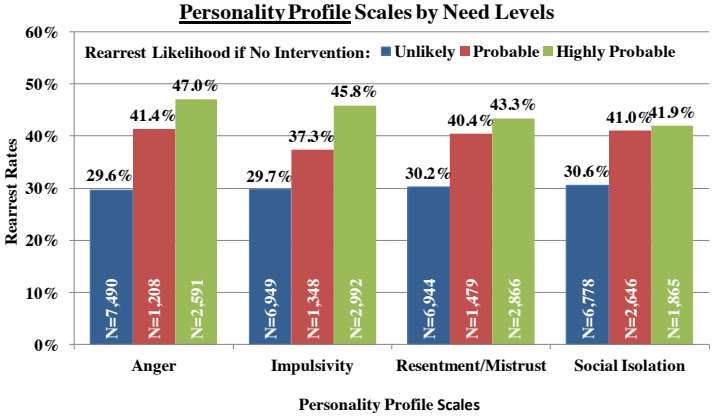
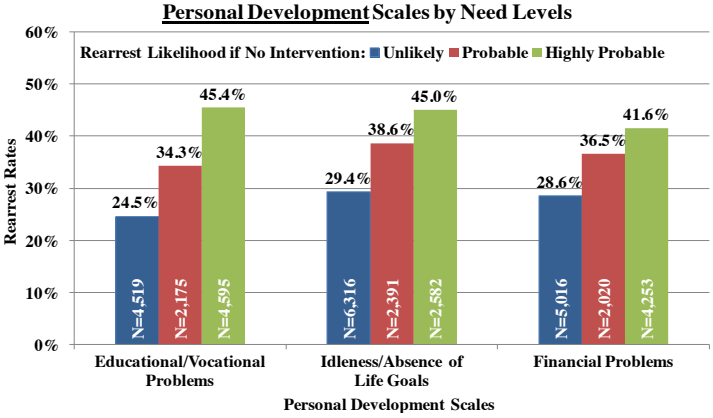


Figure 7
Rates for ANY Rearrest at Two Years for Personal Development Scales by Need Levels



- 17 percentage points for the *Anger Scale* (29.6% and 47.0%, respectively) (Figure 6); and

- 16-percentage-points for the *Impulsivity Scale* (29.7% and 45.8%, respectively) (Figure 6).

Correlations for scales within the same categories were generally moderate to high, while those for scales across categories were generally weak. Correlation statistics can be found in Appendix B, Table B5).

Figure 8
Rates for ANY Rearrest at Two Years for Personal Support Network Scales by Need Levels

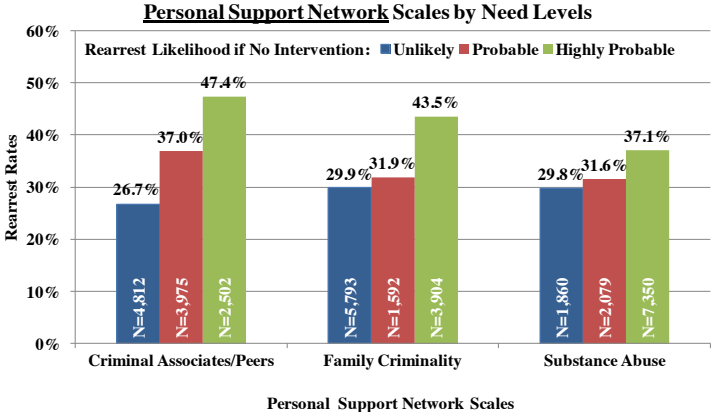


Figure 9
Rates for ANY Rearrest at Two Years for Social Environment Scales by Need Levels

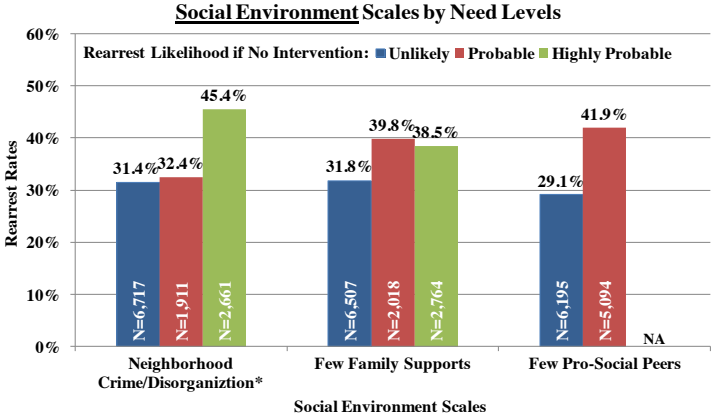
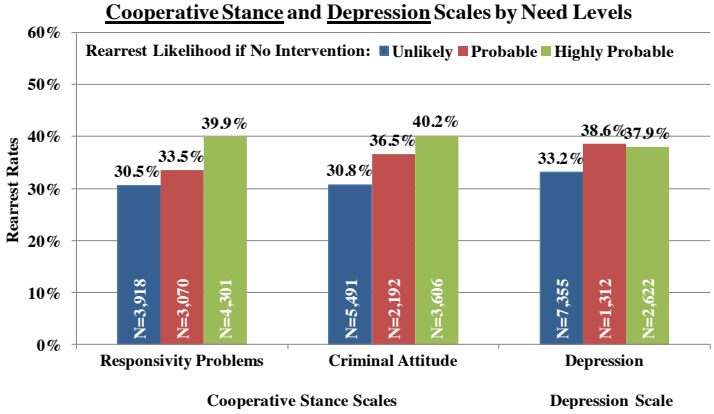


Figure 10
Rates for ANY Rearrest at Two Years for Cooperative Stance and Depression Scales by Need Levels



Note: Percentages may not add to 100% due to rounding.
* Labeled as "Social Environment" in COMPAS-Probation Risk Assesment Report (see Appendix A; also referenced on page 2).

Data Sources: NYS Division of Criminal Justice Services IPRS, COMPAS-Probation and CCH databases.

Source: NYS Division of Criminal Justice Services, *New York State COMPAS-Probation Risk and Needs Assessment Study* (2012).

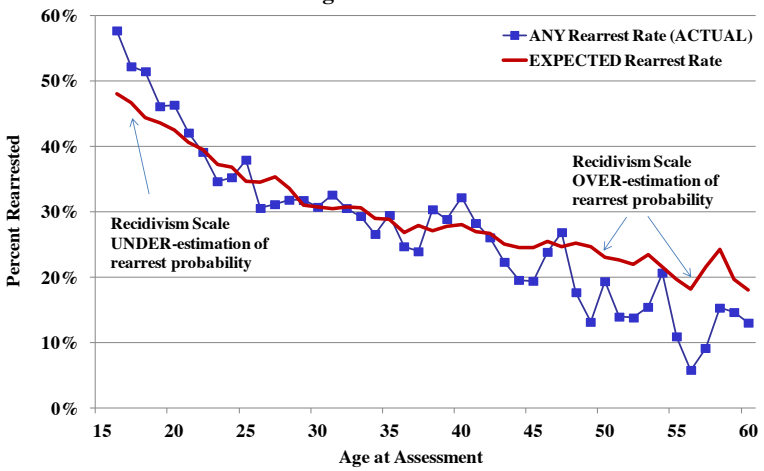
ADDITIONAL ANALYSES

The Recidivism Scale was found to be a good predictor for the likelihood of ANY rearrest for the *overall-case model* – the Recidivism Scale logistic regression model that included all study cases. There was interest, though, in knowing how effectively the scale would be able to estimate rearrest with respect to offender age and subgroups with substantially different rearrest rates. There was also interest in looking at the types of offenses for which offenders were rearrested.

Age at Assessment

The purpose of the age-based analysis was to determine how effectively the Recidivism Scale was able to estimate the likelihood of ANY rearrest by age at assessment.

Figure 11
ACTUAL and EXPECTED Rates for ANY Rearrest at Two Years by Age at Assessment



Source: NYS Division of Criminal Justice Services, *NYS COMPAS-Probation Risk and Needs Assessment Study* (2012).

Findings. Because age at assessment is a factor that is included in the Recidivism Scale equation, the expectation was that *actual rates* and *overall-case model expected rates* would closely align. The percentage point differences between expected and actual rates for each age category were used to measure the extent to which the Recidivism Scale accurately estimated the likelihood of rearrest by age at assessment.

Figure 11 displays the actual and expected rates for ANY rearrest during the two-year follow-up period by age at assessment. The study found that rearrest rates were:

- UNDER-estimated for cases involving very young offenders 16 to 18-years-old with differences spanning 6 to 10 percentage points;
- generally on-target for cases involving offenders 19 to 43-years-old; and
- OVER-estimated for cases involving offenders age 44 or older with differences generally spanning up to 12 percentage points.

Despite this over/under estimation, it is important to recognize that the Recidivism Scale captured the overall downward trend in the likelihood of rearrest as age increased**.** The expected rates were highest for young-offender cases, declining gradually with each successive age category. Similarly, the expected rates for older-offender cases generally declined with each successive age category – just not as sharply as the actual rates. Actual and expected rates and percentage point differences are presented by age categories in Appendix B, Table B7).

Discussion. The over/under-estimation of rearrest for certain age categories may be due in part to the limited criminal histories of very young offenders and the interaction between criminal history and age for older offenders. Specifically, given the importance of criminal history in predicting rearrest, the UNDER-estimation of rearrest rates for young-offender cases is explained in part by the fact that youth have no or limited criminal histories.[10]

The OVER-estimation of the likelihood of rearrest for older-offender cases may be due in part to the fact that the importance of criminal history as a predictor diminishes as an offender's age increases – as he or she "ages out" of offending.[11] The Recidivism Scale equation does not directly control for this interaction between criminal history and age. Instead, this

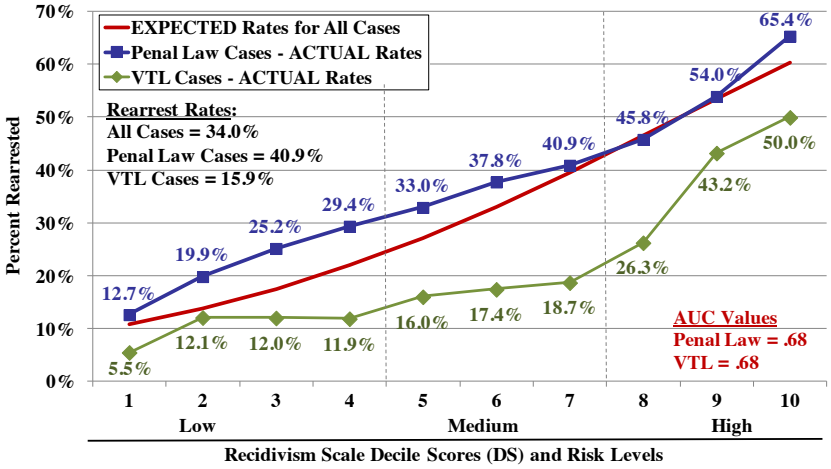
[10] Even those youth with extensive histories of delinquent or criminal activity may appear to have no or very limited arrest and adjudication/conviction histories because of record sealing and destruction laws governing Juvenile Delinquent cases (e.g., FCA §354.1) and the confidentiality (equivalent to sealing) of Youthful Offender cases (see CPL Article 720).

[11] See Kurlychek, M., Brame, R. and Bushway, S. D. (2006). Scarlet letters and recidivism: Does an old criminal record predict future offending? *Criminology & Public Policy*, 5(3), 483-504.

phenomenon was addressed indirectly with a variable – "offender arrest rate" (total prior arrests/years from first arrest to COMPAS assessment) – which measured movement toward desistance.
This estimation problem may also be due in part to the fact that very young offenders and older offenders were under-represented in the probation admissions data set used to construct the Recidivism Scale equation.

This over/under-estimation will be addressed through adjustments to the Recidivism Scale equation. Again, it is important to remember that the current equation does a good job of capturing the inverse relationship between age and rearrest. Consequently, this estimation problem should not reduce confidence in the Recidivism Scale's effectiveness.

Figure 12
ACTUAL and EXPECTED Rates for ANY Rearrest at Two Years by Conviction Charge Law Type and Recidivism Scale Decile Scores



Source: NYS Division of Criminal Justice Services, *NYS COMPAS-Probation Risk and Needs Assessment Study* (2012).

Furthermore, it is important to remember that young adult offenders – because of their youth – comprise a special population with needs not fully addressed by COMPAS-Probation. In fact, the state recommends that COMPAS-probation not be administered to persons under the age of 17 because it is oriented toward more independent adults. The NYS Youth Assessment Screening Instrument (YASI) is the preferred assessment instrument for offenders under 17 years of age. The YASI is valid, reliable and used for offenders up to age 18 in most other states. Thus, the use of YASI in conjunction with COMPAS-Probation is recommended for young adult offenders.

Conviction Charge Laws

The purpose of the law-based analysis was twofold. One purpose was to determine to what extent, if any, the *overall-case model* was over/under estimating the likelihood of rearrest for two subgroups – Penal Law cases and VTL cases – with substantially different rates for ANY rearrest (40.9% and 15.9%, respectively). The other purpose was to examine the predictive accuracy of the Recidivism Scale with respect to Penal Law and VTL cases using subgroup-level regression models.

Findings. For this analysis, there was no expectation of a close alignment between actual subgroup rates and *overall-case model* expected rates, because conviction charge law was not among the factors included in the Recidivism Scale equation.[12] Similarly, there was no expectation that cases would be evenly distributed across decile scores. Frequency distributions, which can be found in Appendix C, Figure C1, show that the number of Penal Law cases associated with each decile score increased with each successive score, while the number of VTL cases generally declined with each successive decile score.

The percentage point differences between the *overall* expected rates and each subgroup's actual rates, as well as the AUC values, were used to measure the extent to which the Recidivism Scale accurately estimated the likelihood of rearrest for cases in each subgroup.

Figure 12 displays *expected overall* rearrest rates, as well as the *actual* rearrest rates for Penal Law and VTL cases, by Recidivism Scale decile scores. The magnitude of the differences between the actual subgroup rates and the expected rates from the overall-case model are highlighted below and presented by decile scores in Appendix B, Table B7.

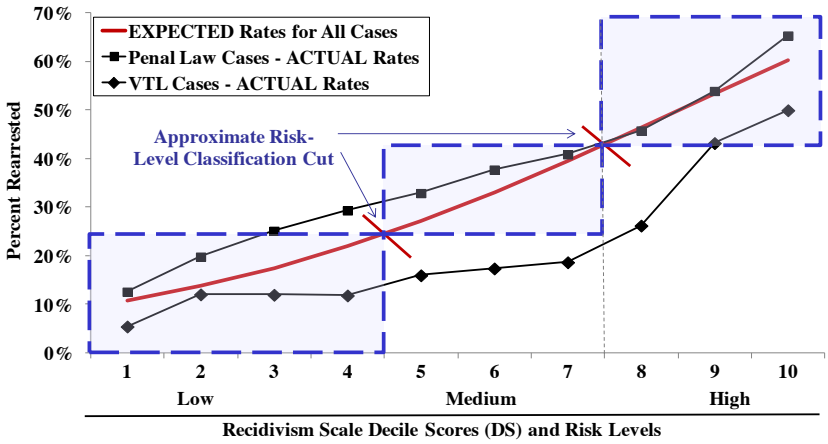
- For Penal Law cases, the study found that the Recidivism Scale somewhat UNDER-estimated ($p<.05$) the likelihood of ANY rearrest for cases with decile scores DS2 though DS6 and DS10. Actual and expected rates differed by 4 to 7 percentage points

[12] Rates would be similar only if the actual rates for a given subgroup were similar to those for cases overall.

- For VTL cases, the study found that the Recidivism Scale substantially OVER-estimated the likelihood of rearrest for all but DS2 cases. Actual and expected rates differed by 5 to 22 percentage points; DS4 through DS10 differences exceeded 10 percentage points.

While there was some UNDER-estimation of the likelihood of rearrest for Penal Law cases, actual rearrest rates for Penal Law cases *increased* with each successive decile score. However, as Figure 13 illustrates, DS3 and DS4 cases fell outside the expected range for low-risk cases. (In Figure 13, decile rates that fell within the correct risk level and percentile range – determined by risk-level cut points, fell within the shaded boxes.) [13]

Figure 13
ACTUAL and EXPECTED Rates for ANY Rearrest at Two Years and Expected Risk-Level Ranges



Note: Decile scores with rearrest rates falling within shaded risk-level boxes represent cases correctly classifed by COMPAS-Probation, while those falling outside the shaded boxes represent misclassified cases.
Source: NYS Division of Criminal Justice Services, *NYS COMPAS-Probation Risk and Needs Assessment Study* (2012).

For VTL cases, though, actual rearrest rates *did not increase* with each successive decile score. Furthermore, as Figure 13 illustrates, the rearrest rates for cases classified DS5 through DS8 fell outside the expected range for medium and high-risk cases. These deciles accounted for four of the six deciles with rates exceeding 10 percentage points.

Predictive accuracy. Although there was over/under estimation of the likelihood of ANY rearrest for the Penal Law and VTL subgroups, the study found that the Recidivism Scale achieved "moderate" (but acceptable) levels of predictive accuracy within both subgroups with an AUC value of 0.68 for each. These values fall within the lower half of acceptable AUC value ranges (0.65 to 0.75) reported in other criminal justice risk-classification studies.

Discussion. Determining the reasons for the over/under-estimation of rearrest likelihood for certain Penal Law and VTL cases will require further analysis.

With respect to VTL cases, it is important to remember that the Recidivism Scale estimates the "general" risk of rearrest – not the risk of rearrest for specific types of offenses. Probation departments routinely use risk-specific assessment tools for special populations (e.g., sex offenders, young offenders and offenders with mental health problems) in conjunction with the COMPAS-Probation general risk assessment instruments. Recognizing that offenders with alcohol-dependency problems comprise one of these special populations, the state provides probation departments with guidance in the selection of an assessment instrument designed to predict the likelihood of arrest for an *alcohol-related driving offense*.[14]

[13] For example, with respect to medium-risk decile scores 5-7, the Penal Law rearrests rates associated with these three scores all fall within the appropriate range for these three scores. Conversely, the VTL rates associated with these medium-risk decile scores all fall below the acceptable range for these scores – indicating that the Recidivism Scale OVER-estimated the likelihood of rearrest for VTL cases with decile sores 5-7.

[14] New York State Division of Criminal Justice Services, Office of Probation and Correctional Alternatives (formerly the NYS Division of Probation and Correctional Alternatives) (May 2008). *Abbreviated Summary of Alcohol-Related Risk Assessment Instruments*. Albany, NY: Author.

Rearrest Offenses

The purpose of this analysis was to examine the types of offenses – Penal Law person/weapon, property, drug and public safety/other and VTL alcohol-related offenses – for which probationers were rearrested. The analysis also controlled for original conviction charge type: Penal Law non-drug, Penal Law drug, and VTL. Penal Law articles are listed by offense type in Appendix D.

Penal Law drug cases were not examined apart from other Penal Law cases in preceding analyses because the rearrest rate for each was similar. As shown in Figure 14, rates for ANY rearrest were 41.4% for non-drug cases and 38.4% for drug cases. Drug conviction cases were examined separately here because a drug conviction can be strong indicator of drug dependency.

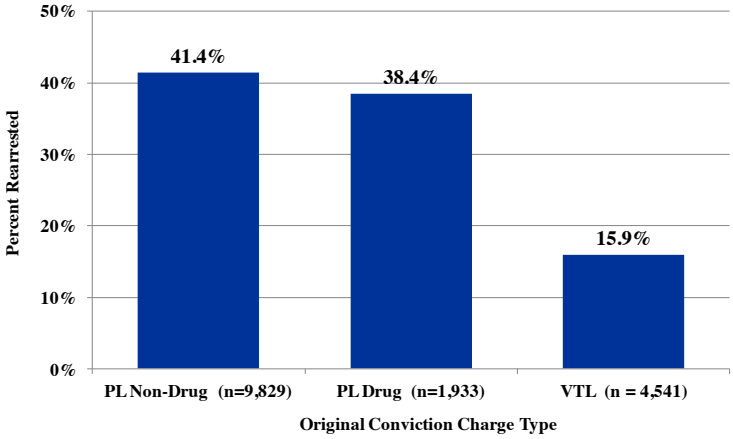
Findings. Figure 15 displays percentage distributions of *first*-rearrest offense types by probation supervision subgroups.

- Rearrests associated with *Penal Law non-drug cases* more often involved property offense rearrests (43%).
- *Penal Law drug cases* more often involved drug rearrests (35%).
- For *VTL cases*, Penal Law rearrest offenses (drug, property, person/weapon and public safety/other) collectively comprised 75% of first rearrests. VTL alcohol-related offenses accounted for the remaining 25% of rearrests.
- The percentage of person/weapon and public safety/other rearrests were similar across all three subgroups:
  - 21%, 18% and 21%, respectively, for person/weapon offenses; and
  - 16%, 12% and 15%, respectively for public safety/other offenses.

Discussion

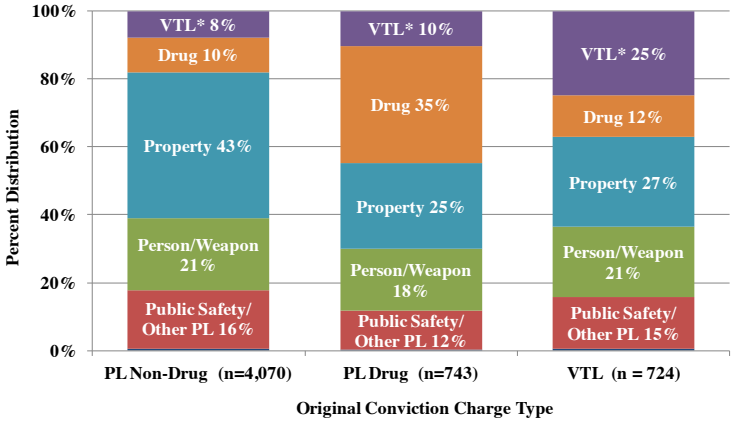
When considered against the backdrop of findings from the preceding analysis concerning law type, the substantial percentages of cases across all three subgroups involving drug and VTL alcohol-related rearrests help to emphasize the

Figure 14
All COMPAS-Probation Study Cases:
Rates for ANY Rearrest at Two Years by Original Conviction Charge Type



Source: NYS Division of Criminal Justice Services, *NYS COMPAS-Probation Risk and Needs Assessment Study* (2012).

Figure 15
Study Cases Involving Rearrests: Percent Distributions for
FIRST Rearrest Offense Type by Original Conviction Charge Type



* VTL alcohol related charges.
Source: NYS Division of Criminal Justice Services, *NYS COMPAS-Probation Risk and Needs Assessment Study* (2012).

importance of using specialized risk assessment tool whenever warranted by an offender's history of drug or alcohol dependency.

SUMMARY OF KEY FINDINGS

The study found that the Recidivism Scale worked effectively with respect to study cases overall.

- Case distributions across decile scores and risk levels were largely as expected.
- The likelihood of ANY rearrest increased with each successive decile score in a linear manner.
- Furthermore, the likelihood of rearrest increased substantially with each successive risk level.
- Actual and expected rearrest rates were closely aligned across decile scores.
- The scale achieved "satisfactory" predictive accuracy with an AUC value of 0.71.

The Supervision Classification Matrix effectively partitioned cases by supervision level. Rates for ANY rearrest increased substantially with each "recommended" supervision level: 16.2% for minimum supervision cases; 31.6% for medium supervision cases; 45.3% for medium supervision with a possible override to high cases; and 54.4% for high supervision cases.

As expected, rearrest rates for the 19 base risk/need scales were generally highest for high-risk/need individuals. The five scales most highly correlated with the likelihood of ANY rearrest included (beginning with the most strongly correlated scale): History of Non-Compliance, Vocational/Educational Problems, Criminal Associates/Peers, Anger and Impulsivity.

Additional Analyses

There was interest in knowing how effectively the Recidivism Scale would be able to estimate rearrest with respect to offender age and two subgroups with substantially different rearrest rates: Penal Law cases and VTL cases. The types of offenses for which probationers were rearrested were also examined.

With respect to the age-based analysis, the study found that the likelihood of rearrest was UNDER-estimated for 16 to 18-year-olds and OVER-estimated for offenders in their mid-forties and onward. While these findings warrant modification of the Recidivism Scale equation, this over/under-estimation should not reduce confidence in the scale's overall effectiveness and predictive accuracy in that it effectively captured the overall downward trend in the likelihood of rearrest as age increased**.**

With respect to the conviction charge law analysis, the study found that there was some UNDER-estimation of the likelihood of rearrest for certain Penal Law cases and substantial OVER-estimation of this likelihood for certain VTL cases. This was largely due to the fact that NYS COMPAS-Probation was designed to serve as a *general* risk assessment tool. Among possible solutions are modification of the Recidivism Scale equation and the construction and implementation of a risk-specific COMPAS-Probation assessment tool for predicting the likelihood of alcohol-related driving offenses.

The last special analysis focused on types of rearrest offenses. The study found that substantial percentages of cases across all three subgroups conviction charge categories – Penal Law non-drug, Penal Law drug, and VTL – involved drug and VTL alcohol-related rearrests. This finding helps to emphasize the importance of using specialized risk assessment tools whenever warranted by an offender's history of drug or alcohol dependency.

Appendices

Appendix A – COMPAS-Probation Documents

Appendix B – Additional Tables

Appendix C – Additional Figures

Appendix D – Offense Categories

Appendix A:
COMPAS-Probation Documents

Full COMPAS Assessment Instrument

Sample Case Report

Risk/Need Scale Meanings and Treatment Implications

Appendix A: Full COMPAS-Probation Assessment Instrument

COMPAS Probation Risk and Needs Assessment Questionnaire

OFFENDER NAME:	NYSID:	STATUS:
RACE:	SEX:	DOB:
DATE OF ASSESSMENT:	MARITAL STATUS:	
SCALE SET: Full COMPAS Assessment v2	AGENCY/COUNTY NAME:	

PART ONE: CRIMINAL HISTORY / RISK ASSESSMENT

CURRENT CHARGES

What offenses are covered by the current charges (check all that apply)?

Homicide	Arson	Property/Larceny
Assault	Weapons	Fraud
Robbery	Drug Sales	DWI / DWAI
Sex Offense (with force)	Drug Possession	AUO
Sex Offense (without force)	Burglary	Other

1 Do any of the current offenses involve domestic violence?

Yes No

2 What offense category represents the most serious current charge?

Misdemeanor Non-Assault Felony Assaultive Felony

3 Was there any degree of physical injury to a victim in the current offense?

Yes No

4 Based on your judgment, after reviewing the history of the offender from all known sources of information (PSI, police reports, prior supervision, victim, etc.) does the defendant demonstrate a pattern of violent behavior against people resulting in physical injury?

Yes No

5 If yes, does the defendant demonstrate a pattern of violent behavior against people resulting in physical injury involving family or household members (spouses/significant others, children, elders)?

Yes No

6 What is the number of other pending warrants, holds or charges (include criminal, family court and Immigration Customs Enforcement (ICE) actions)?

None 1 2 3 4+

7 Was this person under Probation or Parole supervision at time of current offense?

Probation Parole Both Neither

OFFENSE HISTORY DO NOT INCLUDE CURRENT OFFENSE

8 Indicate the number of adult/JO arrests, JD petitions, and convictions/adjudications (including JD and YO). Count each arrest date or petition date once, regardless of the number of arrest charges or level, in each category.

	Number of Arrests or Petitions	Number of Convictions or Adjudications
Total Felony and Misdemeanor Offenses		
All Felony Offenses		
Adult Violent Felony Offenses (see note)		
Juvenile Felony		
Juvenile Violent Felony (see note)		

Note: Record the number of assaultive type felony arrest or convictions. Assaultive offenses are defined as crimes of violence which have the potential to result in personal injury, whether or not such injury actually occurs (i.e. robbery, homicide, sex offenses with force, felonious assaults, arson of occupied dwelling, etc.)

Appendix A: Full COMPAS-Probation Assessment Instrument

COMPAS Probation Risk and Needs Assessment Questionnaire – *Continued*

9 How many times has the offender been sentenced to jail or prison in the past?
0 1 2 3-7 8-12 13+

10 Was the offender ever placed by a court into a juvenile residential facility, *not including foster care*?
Yes No Unknown

11 Record the number of previous arrests for each of the following offense types (DO NOT include the current offense):**An arrest can count in more than one category:**

Offense Types	
Homicide	0 1 2 3+
Assault	0 1 2 3+
Robbery	0 1 2 3+
Sex Offense (with force)	0 1 2 3+
Sex Offense (without force)	0 1 2 3+
Arson	0 1 2 3+
Weapons	0 1 2 3+
Drug Sales	0 1 2 3+
Drug Possession	0 1 2 3+
Burglary	0 1 2 3+
Property/Larceny	0 1 2 3+
Fraud	0 1 2 3+
DWI / DWAI	0 1 2 3+
AUO	0 1 2 3+
Other	0 1 2 3+

12 What was the age (in years) of the offender when he or she was first arrested for a criminal/delinquency offense?
Age

13 How many times has the offender been arrested while other charges were pending?
0 1 2 3+

14 How many times has the offender been on probation or parole?
0 1 2 3 4 5+

15 How many times has the offender been arrested while on probation or parole?
0 1 2 3+

16 How many times has the offender 's probation or parole been revoked?
0 1 2 3 4 5+

Appendix A: Full COMPAS-Probation Assessment Instrument

COMPAS Probation Risk and Needs Assessment Questionnaire – *Continued*

PART TWO: NEEDS ASSESSMENT

A. ASSOCIATES / PEERS

17 The offender has peers and associates who *(check all that apply)* :

- Use illegal drugs
- Have been arrested
- Have been incarcerated
- None
- Lead law-abiding lifestyles
- Are gainfully employed
- Are involved in pro-social activities

18 What is the gang affiliation status of the offender :

- Current gang membership
- Previous gang membership
- Not a member but associates with gang members
- None

19 Does the offender have a criminal alias, a gang-related or street name?

Yes No

20 Does unstructured idle time contribute to the opportunity for the offender to commit criminal offenses?

Yes Unsure No

21 Does offender report boredom as a contributing factor to his or her criminal behavior?

Yes Unsure No

B. FAMILY

22 Are the offender 's family or household members able and willing to support a law abiding lifestyle?

Yes Unsure No

23 Is the offender's current household characterized by *(check all that apply)* :

Arrests	Yes	No	Unknown
Incarceration	Yes	No	Unknown
Mental Health Issues	Yes	No	Unknown
Substance Abuse Issues	Yes	No	Unknown
Violence	Yes	No	Unknown

24 With whom or where does offender currently reside or plan to reside while under supervision?

- Spouse
- Parent or person who raised the probationer
- Children
- Other relative
- Boy/Girl friend (relationship less than 1 year)
- Boy/Girl friend (relationship greater than 1 year)
- Friend(s)
- Alone
- Residential treatment program
- Other

Appendix A: Full COMPAS-Probation Assessment Instrument

COMPAS Probation Risk and Needs Assessment Questionnaire – *Continued*

25 What kind of relationship does the offender have with parents/caretakers or immediate family?

A. Gets/got along well with them?
Yes No Unsure N/A, no parents/contact

B. Can rely on parents/caretakers/family when in trouble?
Yes No Unsure N/A, no parents/contact

C. In contact with them regularly?
Yes No Unsure N/A, no parents/contact

26 Was the offender's family of origin characterized by:

Arrests	Yes No
Incarceration	Yes No
Mental Health Issues	Yes No
Substance Abuse Issues	Yes No
Violence	Yes No

C. FINANCIAL STATUS

27 Is the offender's income adequate to meet his or her basic needs?
Yes Unsure No

28 Does the offender appropriately manage their income to adequately handle their financial
Yes Unsure No

D. LEISURE / RECREATION

29 Does the offender frequently engage in impulsive high risk or sensation seeking behavior?
Yes Unsure No

E. RESIDENTIAL STABILITY

30 Does the offender *(check one)* :
Own residence
Rent with lease
Rent without lease (month to month)
Stay with others
Have no home or verifiable address

31 How many times has the offender moved in the last twelve months?
0 1 2 3 4 5+

32 How many years has the offender lived in the community or neighborhood?
Less than 1 year 1 2 3 4 5+

F. SOCIAL ENVIRONMENT

33 Do any of the following characterize the area immediately surrounding the offender's residence *(check*
Drug availability
Gangs
Weapons
Violent crime
Most people are employed in regular jobs
It's safe at night
People look out for each other
People are law abiding

Appendix A: Full COMPAS-Probation Assessment Instrument

COMPAS Probation Risk and Needs Assessment Questionnaire – *Continued*

G. VOCATION

34 Employment status *(check one)*:
Full-time
Part-time
Unemployed, actively seeking employment
Unemployed, failing to seek employment
Not in labor force: student, inmate, disabled, retired, homemaker, etc.

35 Does the offender have skills that can lead to or assist in maintaining gainful employment?
Yes Unsure No

36 Has the offender been steadily employed for the past five years?
Yes Unsure No

H. EDUCATION

37 Educational Background *(check one)*:
Did not finish high school
Currently attending high school
GED
High school diploma
Currently attending college
Associates Degree
Bachelors Degree
Graduate Degree (MA, MS)
Professional Degree (MD, JD/LLM, Ph.D., etc.)

I. MENTAL HEALTH

38 Has the offender ever been or is the offender currently in treatment for any of the following: *(check all*

Aggression/Anger Management	Yes	No
Depression	Yes	No
Disruptive Disorder (ADHD, Conduct	Yes	No
Suicidal	Yes	No
Anxiety	Yes	No
Bipolar	Yes	No
Schizophrenia	Yes	No
Other Mental Health Related	Yes	No

39 Has the offender ever been prescribed psychotropic drugs?
Yes No

40 Is the offender currently taking prescribed psychotropic drugs?
Yes No

41 Does the offender have a history of suicide attempts or depression?
Yes No

42 Was the offender ever assessed as developmentally disabled or mentally retarded?
Yes No

Appendix A: Full COMPAS-Probation Assessment Instrument

COMPAS Probation Risk and Needs Assessment Questionnaire – *Continued*

J. SUBSTANCE ABUSE

43 Substance Abuse Treatment History *(check all that apply)* :

Drug/Alcohol Treatment		
Outpatient	Formerly Currently 90 days or more	Currently Less than 90 days Never
Inpatient	Formerly Currently 90 days or more	Currently Less than 90 days Never

44 Abuse History *(check all that apply)*

Tobacco	Formerly	Currently	Never
Alcohol	Formerly	Currently	Never
Marijuana	Formerly	Currently	Never
Hard/Illegal Drugs (Heroin, Cocaine,	Formerly	Currently	Never
Injected Drugs	Formerly	Currently	Never

45 If offender has used drugs how old was he/she at first use? *(leave blank if age is unknown)*

	Age at First
Marijuana	
Alcohol	
Tobacco	
Hard/Illegal Drugs	

K. CRIMINAL ATTITUDES THINKING

46 The defendant/probationer : *(Check all that apply)*

- Understands true extent of harm caused by his/her actions
- Admits wrongdoing
- Expresses remorse
- Has empathy for victim
- Is willing to make reparation/pay restitution
- Is willing to perform community service
- Is acceptant of/participates in treatment
- Accepts consequences
- None of the above

47 The defendant/probationer : *(Check all that apply)*

- Minimizes wrongdoing
- Blames victim/others
- Blames the criminal justice system
- Thinks conviction/sentence is unfair
- Excuses own behavior
- Reinterprets the facts to own benefit
- Justifies behavior as being the only option
- None of the above

Appendix A: Full COMPAS-Probation Assessment Instrument

COMPAS Probation Risk and Needs Assessment Questionnaire – *Continued*

PART THREE: OFFENDER QUESTIONNAIRE

NYSID : Name : DOB :

Please look at the following areas and let us know which of them you think will present the greatest problems for you. *Please check one response for each question in the column provided* .

	Please answer questions as either No, Yes or Don't Know	No	Yes	Don't Know
48	Do you feel you need assistance with finding or maintaining a steady job?			
49	Do you feel you need assistance with finding or maintaining a place to live?			
50	Will money be a problem for you over the next several months?			

	How difficult will it be for you to...	Not Difficult	Somewhat Difficult	Very Difficult
51	manage your money?			
52	keep a job once you have found one or if you currently have one?			
53	find or keep a steady place to live?			
54	have enough money to get by?			
55	find or keep people that you can trust?			
56	find or keep friends who will be a good influence on you?			
57	avoid risky situations?			
58	learn to control your temper?			
59	find things that interest you?			
60	learn better skills to get or keep a job?			
61	find a safe place to live where you won't be hassled or threatened?			
62	get along with people?			
63	avoid spending too much time with people that could get you into trouble?			
64	avoid risky sexual behavior?			
65	keep control of yourself when other people make you mad?			
66	discover positive goals or purposes for your life?			
67	find a job that pays more than minimum wage?			
68	avoid slipping back into illegal activities?			
69	deal with loneliness?			
70	avoid places or situations that may get you into trouble?			
71	learn to be careful about choices you make?			
72	find people to do things with?			
73	learn to avoid saying things to people that you later regret?			

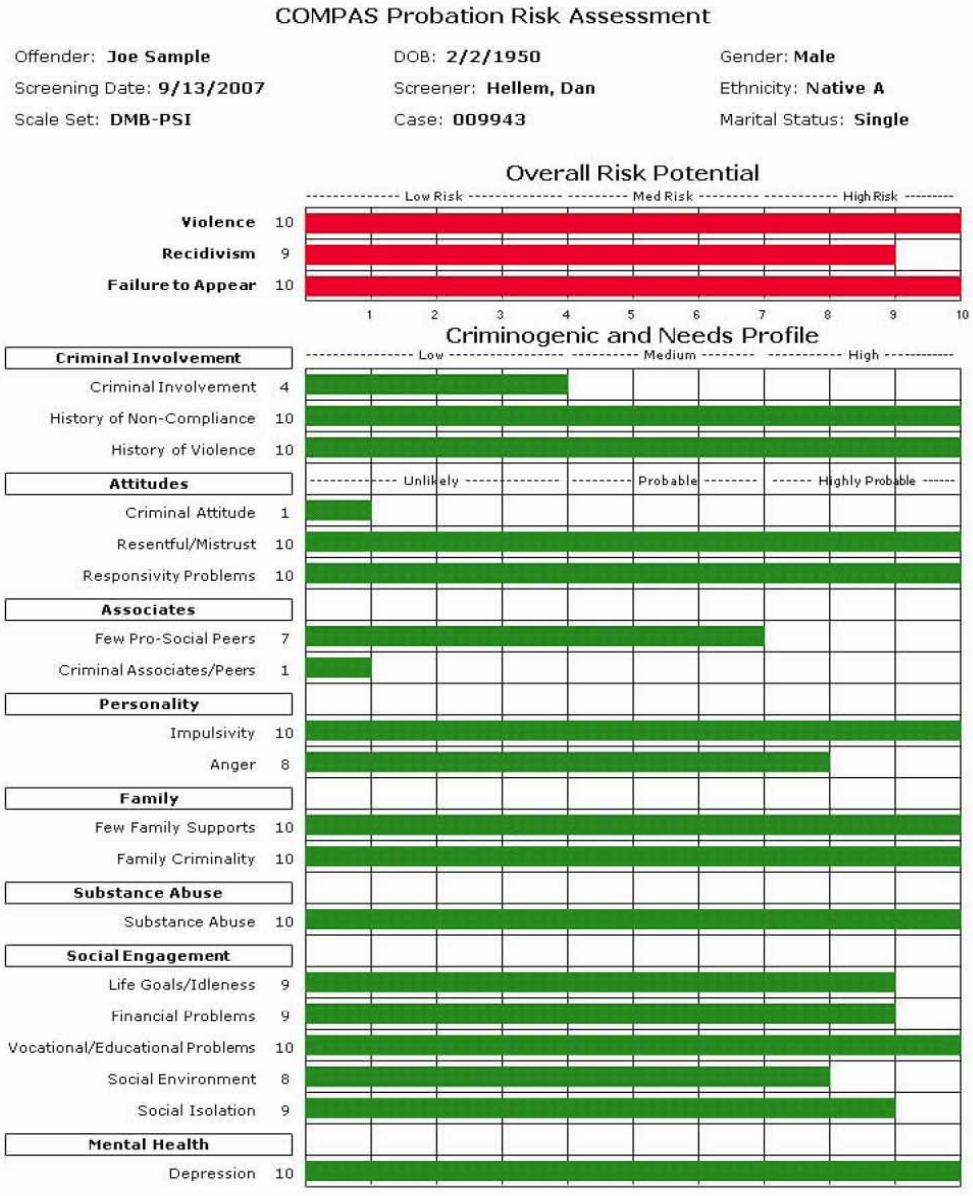
Appendix A: Full COMPAS-Probation Assessment Instrument

COMPAS Probation Risk and Needs Assessment Questionnaire – *Continued*

	How do you feel about the following?	Mostly Disagree	Uncertain Don't Know	Mostly Agree
74	I have found a type of job or career that appeals to me.			
75	When I think of my future, my life feels empty and without meaning.			
76	I have found a central purpose for my life.			
77	I attend religious activities regularly.			
78	I have found a religion or spiritual path that I truly believe in.			
79	I feel other people get more breaks than me.			
80	People have let me down or disappointed me.			
81	or said something without stopping to think.			
82	When I get angry I say nasty things to people.			
83	I feel that people are talking about me behind my back.			
84	I feel it is best to trust nobody.			
85	I have taken risks in the past.			
86	I often lose my temper.			
87	I get mad at other people easily.			
88	I feel I have been mistreated by other people.			
89	I often feel that I have enemies that are out to hurt me in some way.			
90	I do little to control my risky behaviors.			
91	I often feel a lot of anger inside myself.			
92	I feel that life has given me a raw deal.			
93	When people are being nice, I worry about what they really want.			
94	I often say things without thinking.			
95	I often get angry quickly, but then get over it quickly.			

Note: From "COMPAS Probation Risk and Needs Assessment Questionnaire." Northpointe Center for Criminal Justice, Golden, CO. Copyright 2011 by the Northpointe Center for Criminal Justice. Adapted with permission; pagination revised and check boxes "□" excluded.

Appendix A: COMPAS-Probation Sample Risk Assessment Case Report



Appendix A: Risk/Need Scale Meanings and Treatment Implications

NYS COMPAS-Probation: Scale Meanings, Treatment Implications and Needs Scale Items

Scale Name	How is this scale measured?	Notes and treatment Implications
Violence	■ This scale uses a set of items covering a history of juvenile violence, history of assaultive offenses, history of weapons offenses, history of injury, arrest for a current assaultive offense, a tendency to fail while on probation/parole, and affiliating with criminal peers. Thus the central themes involve history of violence, current violence, criminal associates, and probation/parole failure.	■ *Percentile scores* 1-4 may be regarded as low risk since they are clearly lower than "average". Decile Scores from 5-7 may be regarded as medium risk since they are in the middle of the distribution and represent cases that are very close to "average" for the total population of the agency. Decile Scores of 8 and above may be regarded as high risk since they are in the top third of the distribution. ■ *Key stakeholders* for each agency and/or community will need to find their "comfort levels" (risk decile score) for each risk scale. Our experience has shown, for example, that rural community criminal justice systems in general have a lower comfort level (tolerance) for risk of violence or recidivism than urban criminal justice systems. In addition, it is likely that the cutting point (community placement comfort level) for risk of violence will be less than that for the risk of recidivating or risk of flight/FTA. These two scales in turn may have lower cutting points (risk thresholds) than the risk of community non-compliance (technical rules violations).
Recidivism	■ The primary factors making up this scale involve prior criminal history, criminal associates, drug involvement, and early indicators of juvenile delinquency problems. Each of these risk factors are well known predictors of recidivism.	
Failure to Appear	■ This scale is based largely on prior history of a failure to appear, current charges for failure to appear, prior recidivism on community placement, general criminal involvement, and unstable residential ties and transience. A high-scoring person would exhibit multiple combinations of these kinds of features.	
Criminal Involvement: 1-4 Low 5-7 Medium 8-10 High	■ This scale is defined by the extent of involvement in the criminal justice system. A high score indicates a person who has had multiple arrests, multiple convictions, and prior incarcerations. The items centrally defining this scale are the number of arrests and number of convictions. A low score identifies the person who is either a first-time arrest or has minimal criminal history. Thus the central meaning of this scale is the extensiveness of the criminal history.	■ Scores of 8 and greater suggest an extensive criminal history. High scores on criminal history scales will be linked to certain patterns of risk factors.
History of Non-Compliance: 1-4 Low 5-7 Medium 8-10 High	■ This scale focuses on the number of times the offender has failed when he or she has been placed in a community status. The central defining item is the number of times probation or parole has been suspended or revoked. Related items include the number of times the offender has failed to appear for a court hearing, the number of times a new charge/arrest or technical rules violation has occurred while on probation, parole and prior community corrections program placement failures (i.e. electronic monitoring, community service work, day reporting, etc.) Thus the scale involves the risk of technical rules violation failure leading to revocation of probation, pretrial release, or community corrections placement status.	■ Scores of 8 and above indicate a high risk of rules infractions, or technical violation if placed in the community. These offenders have failed multiple times in the past and have other failure characteristics present. A highly structured supervision and case management plan may be in order.
History of Violence: 1-4 Low 5-7 Medium 8-10 High	■ The aim of this scale is to reflect the seriousness and extent of violence in an offender's criminal history. It focuses on the frequency with which violent felony offenses have occurred, the use of weapons, and the frequency of injuries to victims. The frequency of several specific violent offenses are also included in the scale e.g. robbery, homicide, and assaultive offenses.	■ Multiple violence may suggest the need for more detailed psychological evaluation. Additionally, if the offender is to be released to the community, requirements regarding victim notification may be important. Anger management training and problem-solving skills may be relevant. Programs regarding social cognition to reduce feelings of hostility etc. may also be relevant.

Continued on next page.

Appendix A: Risk/Need Scale Meanings and Treatment Implications

NYS COMPAS-Probation: Scale Meanings, Treatment Implications and Needs Scale Items – *Continued*

Scale Name	How is this scale measured?	Notes and treatment Implications
Criminal Associates/ Peers: 1-4 Low 5-7 Medium 8-10 High	■ This scale assesses the degree to which a person associates with other persons who are involved in drugs, criminal offenses, gangs, and whether they have a history of arrests and incarceration. A high score would identify persons who are involved in a network of highly delinquent friends and associates.	■ A high score for this scale may indicate the need to restrict the offender's contact with current friends and associates. This would typically associate with case management strategies for minimizing criminal opportunity.
Substance Abuse: 1-2 Low 3-4 Medium 5-10 High	■ The present scale is a general indicator of substance abuse problems. A high score suggests the person who has drug or alcohol problems and may need substance abuse treatment intervention. The items in this scale cover prior treatment for alcohol or drug problems, drunk driving arrests, whether the person blames drugs or alcohol for their present problems, using drugs as a juvenile, and so on.	■ Given the high incidence of alcohol and drug problems in offender samples, it is likely that offenders with scores of 6 and above have serious alcohol or drug problems. It will be important to assess the extent of previous treatments, current attitudes to treatment, and the responsivity of the offender. Relapse prevention plans may be critical for such offenders. Given the very high frequency of substance abuse problems among offenders, a score of 4 and above indicates a definite need for a more specialized substance abuse assessment inventory (i.e. ASI, SASSI, etc.).
Financial Problems/ Poverty: 1-5 Low 6-7 Medium 8-10 High	■ This scale assesses the degree to which a person experiences poverty and financial problems. It assesses whether the person worries about financial survival, has trouble paying bills, and has conflicts with friends or family over money.	■ Scores of 6 and above (given the overall frequency) on this scale may suggest a strong need for a focus on financial management, finding and keeping jobs, negotiating social assistance, welfare, and so forth. The person may require help in understanding the use of food stamps, unemployment compensation, and other ways of negotiating government social assistance. Counseling on money management and addressing outstanding child support issues may be required. Coupled with vocational/employment information, the case plan may call for priority in stabilizing the person's income, and developing budgeting skills.
Vocational/ Educational Problems: 1-5 Low 6-7 Medium 8-10 High	■ This higher order scale assesses the degree of success or failure in the areas of work and education. A high score represents a lack of resources. Those who score high will present a combination of failure to complete high school, being suspended, or expelled from school, poor grades, no job skills, no current job, poor employment history, access only to minimum wage jobs, etc. Thus, the scale represents a lack of educational and/or vocational resources.	■ Scores of 6 and more may suggest that vocational, employability and educational skills training would be beneficial. Additionally, help may be required in both job seeking and job maintenance. It is important to establish the specific training that is required.
Criminal Attitudes: 1-5 Low 6-7 Medium 8-10 High	■ This scale brings together several cognitions that serve to justify, support, or provide rationalizations for the person's criminal behavior. These dimensions include moral justification, refusal to accept responsibility, blaming the victim, and rationalizations (excuses) that minimize the seriousness and consequences of their criminal activity. These include items such as: seeing drug use as harmless because it doesn't hurt anybody else, excusing criminal behavior because of social pressures, they won't misswhat was taken, etc.	■ Scores of 7 and above may suggest a need for cognitive restructuring intervention as part of the case management plan. Failure may be high if the offender continues to excuse and rationalize his behaviors. A high score in this scale may also indicate the need for close supervision of the case. For very high scoring cases, cognitive interventions, coupled with substance abuse treatment (for example), may best begin in a controlled setting that is separated from all of the community/peer distractions. This might be sequenced prior to other community placement/probation program conditions.

Continued on next page.

Appendix A: Risk/Need Scale Meanings and Treatment Implications

NYS COMPAS-Probation: Scale Meanings, Treatment Implications and Needs Scale Items – *Continued*

Scale Name	How is this scale measured?	Notes and treatment Implications
Family Criminality: 1-5 Low 6-7 Medium 8-10 High	■ This scale assesses the degree to which the person's family members (mother, father, and siblings) have been involved in criminal activity, drugs, or alcohol abuse. The items cover: arrests of each family member, whether they have been in jail or prison, and whether the parent or parental figure has a history of alcohol or drug problems.	■ A high score in this scale may indicate the need to minimize or structure the contact with certain members of the family to minimize adverse sibling or parental influence and/or exposure to inappropriate substance use. It may further assist in understanding the clients own criminal involvement.
Neighborhood Crime/ Disorganization (renamed from Social Environment): 1-5 Low 6-7 Medium 8-10 High	■ This scale focuses on the amount of crime, disorder, and victimization potential in the neighborhood in which a person lives. High crime is indicated by the presence of gangs, ease of obtaining drugs, the likelihood of being victimized, a belief that a weapon is needed for protection, and so on.	■ Offenders with scores of 7 and above may require help in relocating to a lower risk neighborhood if this is possible, or finding safety in their residential area. This scale often links to other high risk factors (e.g. residential instability, poverty, criminal opportunity, etc.) Therefore, the multi-modal treatment approach may be appropriately aimed at improving residential arrangements, lifestyle issues, and to upgrade conventional skills (i.e. employability).
Social Isolation: 1-5 Low 6-7 Medium 8-10 High	■ This scale assesses the degree to which the person has a supportive social network and is both accepted and well integrated into this network. The scale is scored such that a high score represents an absence of supports and feelings of social isolation and loneliness. The defining items include: feeling close to friends, feeling left out of things, the presence of companionship, having a close best friend, feeling lonely, etc.	■ The case management strategy for offenders scoring high in this scale may include emphasis on working within the family and community (i.e. church, support groups, etc.), to mend or strengthen bonds. Social skills improvements may be appropriate; and work on social cognitions related to negative perceptions and rejection may be important.
Few Family Supports: 1-5 Low 6-7 Medium 8-10 High	■ This is a simple screening scale assessing family support. It includes items such as: degree of family contact, getting along with family, degree support/reliance on family, and so on.	■ The case management strategy may be to see if family bonds can be strengthened or reestablished if appropriate.
Few Pro-social Peers: 1-5 Low 6-7 Medium 8-10 High	■ Peer relations enters into several explanatory theories of crime and has emerged in meta-analytic studies as one of the most important predictors of recidivism. The present short scale consists of only three items. These indicate whether the peers are law-abiding, whether they are employed or not, and whether they are basically pro-social. Both factor analysis and scaling analysis indicate that these three items strongly cohere into a reliable and unidimensional scale with an alpha coefficient over 0.70 and a single strong first principal component.	■ A high score here, similar to the criminal associates scale, would indicate the need to try and establish more pro-social friends.

Continued on next page.

Appendix A: Risk/Need Scale Meanings and Treatment Implications

NYS COMPAS-Probation: Scale Meanings, Treatment Implications and Needs Scale Items – *Continued*

Scale Name	How is this scale measured?	Notes and treatment Implications
Impulsivity: 1-5 Low 6-7 Medium 8-10 High	■ The present scale includes elements of impulsivity, sensation seeking and avoidance of risky behaviors. It includes items reflecting the ability to carefully monitor and avoid risky or thoughtless choices or casual actions that might take the person into risky sexual behavior, high risk situations and to avoid high risk persons. ■ Impulsivity is one of several sub-dimensions that collectively assess „low self-control" or "anti-social personality". It is consistently identified as one of the more powerful personality predictors of criminal behavior and plays a key role in general theories of crime (Gottfredson and Hirschi 1990). The present scale is clearly somewhat "hybrid" containing elements of sensation seeking, risk avoidance and impulsivity. However, all 12 items correlate strongly together, the first eigenvalue is over twice the size of the second, most of the items correlate highly with the overall scale, and Cronbach"s alpha supports the internal reliability of the scale.	■ Treatment interventions may include counseling and/or cognitive behavioral interventions to address thought processes, choices and consequences, etc.
Resentful/ Mistrust: 1-5 Low 6-7 Medium 8-10 High	■ This scale is reminiscent of the "negative mental maps" or negative social attributions that have been found to be predictive of violent behavior (Borum 2000). It identifies persons who tend to assume that others are disrespecting them, out to hurt them, or have low opinions of them. It represents a cognitive map of the social world that is relatively bleak and unsupportive. ■ This scale consists of eight items – each reflecting the persons assumptions and subjective experiences of the social world i.e. others are out to hurt me, people are not trustworthy, they let me down, they get better breaks than I do, and so on. The psychometrics of this scale are quite strong. All items load heavily on the first principal component, unidimensionality is indicated by a large first eigenvalue, and Cronbach"s alpha is in a highly acceptable range.	■ Treatment interventions may include counseling and/or cognitive behavioral interventions to address thoughts of mistrust, suspicion of others, paranoia, etc. A mental health assessment may also be useful.
Responsivity Problems (Cooperative stance to programming): 1-5 Low 6-7 Medium 8-10 High	■ The items in this scale assess whether an offender appears willing to enter treatment, is willing to perform restitution or community service, accepts the consequences of their actions, shows remorse, accepts responsibility and generally appears cooperative. ■ This dimension of responsivity primarily reflects a "cognitive" or attitudinal stance to treatment. It does not address broader aspects of responsivity such as the history of treatment success/failure or specific patterns of needs and risks that are used for matching the offender to specific treatments. However, this general cooperative stance may be used in conjunction with the overall pattern of risk / needs and treatment history to help guide program matching. ■ All eight items in this scale load strongly on the first factor. This factor, in turn, subsumes most of the information within these items. It thus appears to be a single dimension. These findings are consistent with the very high Alpha coefficient indicating high inter-item correlations and reliability.	

Continued on next page.

Appendix A: Risk/Need Scale Meanings and Treatment Implications

NYS COMPAS-Probation: Scale Meanings, Treatment Implications and Needs Scale Items – *Continued*

Scale Name	How is this scale measured?	Notes and treatment Implications
Life/Goals Idleness: 1-5 Low 6-7 Medium 8-10 High	■ Positive commitments, life goals and future aspirations reflect a major theme within the concept of "attachment bonds" in the social control theory of crime. Positive aspirations and attachment bonds may be contrasted to idleness, boredom and an absence of positive goals. The present short scale focuses on the presence of positive life goals, commitment and interest in a career or job, a positive future, commitment to a religion in contrast to a life that is purposeless and characterized by idleness and boredom. ■ This scale is somewhat heterogeneous in it"s item content (covering job, career, religion, and general boredom). However, most of the items load positively on the same first principal component and have reasonably positive correlations with the scale. However, the heterogeneity of the item content is such that the Alpha barely reaches 0.60. This suggests that the scale is not truly unidimensional and that care must be taken in it"s interpretation.	■ A high score on this scale may indicate the need for cognitive intervention to address goal setting, develop aspirations for the future (work, family, etc) and assisting in developing interest in pro-social activites.
Anger: 1-5 Low 6-7 Medium 8-10 High	■ A tendency toward anger is also often included in general measures of criminal personality or low self-control (Blackburn and Fawcett 1999). The present scale therefore focuses on this specific dimension. It"s seven items address difficulty in controlling the temper, easily losing one"s temper, feeling angry at others, getting angry quickly, saying nasty things when angry, and so on. ■ The scale is unidimensional as indicated by high factor loadings for all items on the first factor, the dominance of this first factor and the high Cronbach"s alpha.	■ Mid to high scores on this scale may indicate the need for anger management counseling and/or cognitive behavioral programs. It may also be appropriate to check for a history of domestic violence.
Depression: 1-5 Low 6-7 Medium 8-10 High	■ Large percentages of offenders are characterized by mental health problems. Depression, anxiety and treatment for prior mental health treatments are common indicators. The present short screener focuses on a history of depression, anxiety and several other mental health history indicators. It is not meant to replace more elaborated mental health assessments and is not designed to diagnose any specific diagnostic category or to prescribe treatment. It simply provides a general summary of a prior history of mental health problems. ■ The items in this short scale address prior attempts or treatment for suicide, depression, anxiety and current or prior prescriptions or use of psychotropic drugs. The psychometric properties of this short scale are surprisingly good. All items load highly on the first principal component (most over 0.50), Alpha is satisfactory and over 0.70. Thus, it appears to provide a good general measure of mental health history.	■ A high score on this scale may indicate the need for a more in depth mental health assessment.

Note: From "DPCA Scale Meanings, Treatment Implications and Needs Scale Items of COMPAS." Northpointe Center for Criminal Justice, Golden, CO. Adapted with permission; chart title revised.

Appendix B:
Additional Tables

Table B1
Percent of 2009 Probation Supervision Admission Cases Included in Study and Recidivism Scale Percent Distributions by Probation Departments and Risk Levels

2009 Admission Cases for Study Sites				Recidivism Scale					
Probation Department Study Sites	Number of 2009 Admission Source Cases	Number of Cases in Study	Percent of Source Cases in Study	Probation Department Study Sites	Number of Cases in Study	Percent Distributions by Recidivism Scale Risk Levels			
						Total	Low	Medium	High
ALL COUNTIES	**26,315**	**16,303**	**62%**	**ALL COUNTIES**	**16,303**	**100%**	**37%**	**29%**	**34%**
ALBANY	904	716	79%	ALBANY	716	100%	32%	28%	39%
ALLEGANY	175	128	73%	ALLEGANY	128	100%	32%	31%	37%
BROOME	686	556	81%	BROOME	556	100%	33%	32%	35%
CATTARAUGUS	243	191	79%	CATTARAUGUS	191	100%	34%	36%	30%
CAYUGA	266	169	64%	CAYUGA	169	100%	37%	31%	32%
CHAUTAUQUA	758	382	50%	CHAUTAUQUA	382	100%	32%	32%	36%
CHEMUNG	377	296	79%	CHEMUNG	296	100%	32%	33%	35%
CHENANGO	160	139	87%	CHENANGO	139	100%	25%	44%	31%
CLINTON	374	293	78%	CLINTON	293	100%	36%	40%	24%
COLUMBIA	190	156	82%	COLUMBIA	156	100%	42%	27%	31%
CORTLAND	213	149	70%	CORTLAND	149	100%	36%	27%	37%
DELAWARE	91	56	62%	DELAWARE	56	100%	29%	32%	39%
DUTCHESS	813	84	10%	DUTCHESS	84	100%	46%	29%	25%
ERIE	1,992	1,357	68%	ERIE	1,357	100%	33%	27%	40%
ESSEX	129	23	18%	ESSEX	23	100%	48%	43%	9%
FRANKLIN	248	205	83%	FRANKLIN	205	100%	21%	28%	50%
FULTON	132	103	78%	FULTON	103	100%	35%	25%	40%
GENESEE	241	207	86%	GENESEE	207	100%	37%	27%	37%
GREENE	202	112	55%	GREENE	112	100%	42%	23%	35%
HAMILTON	4	0	0%	HAMILTON	0	–	–	–	–
HERKIMER	147	128	87%	HERKIMER	128	100%	23%	34%	42%
JEFFERSON	421	370	88%	JEFFERSON	370	100%	33%	35%	32%
LEWIS	62	45	73%	LEWIS	45	100%	47%	40%	13%
LIVINGSTON	217	146	67%	LIVINGSTON	146	100%	32%	39%	29%
MADISON	182	147	81%	MADISON	147	100%	29%	34%	37%
MONROE	2,597	758	29%	MONROE	758	100%	32%	27%	41%
MONTGOMERY	135	101	75%	MONTGOMERY	101	100%	37%	42%	22%
NASSAU	2,600	1,894	73%	NASSAU	1,894	100%	54%	24%	22%
NIAGARA	594	507	85%	NIAGARA	507	100%	41%	32%	27%
ONEIDA	684	458	67%	ONEIDA	458	100%	40%	31%	29%

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Table B1 – *Continued*

2009 Admission Cases for Study Sites				Recidivism Scale					
Probation Department Study Sites	Number of 2009 Admission Source Cases	Number of Cases in Study	Percent of Source Cases in Study	Probation Department Study Sites	Number of Cases in Study	Percent Distributions by Recidivism Scale Risk Levels			
						Total	Low	Medium	High
ONONDAGA	1,427	632	44%	ONONDAGA	632	100%	23%	24%	53%
ONTARIO	419	334	80%	ONTARIO	334	100%	34%	35%	31%
ORANGE	787	658	84%	ORANGE	658	100%	35%	25%	40%
ORLEANS	140	121	86%	ORLEANS	121	100%	44%	27%	29%
OSWEGO	332	280	84%	OSWEGO	280	100%	32%	31%	37%
OTSEGO	125	73	58%	OTSEGO	73	100%	36%	25%	40%
PUTNAM	177	107	60%	PUTNAM	107	100%	56%	21%	22%
RENSSELAER	467	389	83%	RENSSELAER	389	100%	32%	31%	37%
ROCKLAND	374	227	61%	ROCKLAND	227	100%	48%	24%	29%
ST LAWRENCE	321	263	82%	ST LAWRENCE	263	100%	26%	26%	48%
SARATOGA	460	333	72%	SARATOGA	333	100%	49%	24%	27%
SCHENECTADY	402	307	76%	SCHENECTADY	307	100%	41%	33%	26%
SCHOHARIE	69	60	87%	SCHOHARIE	60	100%	30%	37%	33%
SCHUYLER	70	57	81%	SCHUYLER	57	100%	53%	26%	21%
SENECA	124	51	41%	SENECA	51	100%	35%	31%	33%
STEUBEN	308	238	77%	STEUBEN	238	100%	40%	32%	28%
SUFFOLK*	–	–	–	SUFFOLK*	–	–	–	–	–
SULLIVAN	269	176	65%	SULLIVAN	176	100%	39%	24%	37%
TIOGA	145	89	61%	TIOGA	89	100%	29%	31%	39%
TOMPKINS	263	178	68%	TOMPKINS	178	100%	32%	33%	35%
ULSTER	613	403	66%	ULSTER	403	100%	38%	27%	35%
WARREN	324	198	61%	WARREN	198	100%	36%	37%	27%
WASHINGTON	252	89	35%	WASHINGTON	89	100%	37%	31%	31%
WAYNE	296	220	74%	WAYNE	220	100%	38%	30%	32%
WESTCHESTER	2,060	762	37%	WESTCHESTER	762	100%	40%	26%	34%
WYOMING	167	116	69%	WYOMING	116	100%	24%	32%	44%
YATES	87	66	76%	YATES	66	100%	33%	36%	30%

Note: Percentages may not add correctly due to rounding.

* Suffolk Probation Department was excluded from the study because it had not fully implemented COMPAS-Probation as of 2009 and accounted for a substantial number of admission cases statewide.

Data Sources: NYS Division of Criminal Justice Services, IPRS, Probation-COMPAS and CCH databases.

Source: NYS Division of Criminal Justice Services, *New York State COMPAS-Probation Risk and Needs Assessment Study* (2012).

Table B2
COMPAS-Probation Study Cases:
Rearrest Rates for ANY Offense by Probation Department, Law and Recidivism Scale Risk Level

Probation Department		Top Charge Laws and Recidivism Scale Risk Levels											
		All Cases				Penal Law Conviction Charge Cases				VTL Conviction Charge Cases			
		Total	Low	Medium	High	Total	Low	Medium	High	Total	Low	Medium	High
OVERALL	**Rate**	**34.0%**	**16.9%**	**32.7%**	**53.8%**	**40.9%**	**22.5%**	**37.5%**	**56.0%**	**15.9%**	**10.1%**	**17.3%**	**37.9%**
	Cases	**16,303**	**6,060**	**4,721**	**5,522**	**11,762**	**3,314**	**3,594**	**4,854**	**4,541**	**2,746**	**1,127**	**668**
ALBANY	Rate	38.4%	21.1%	32.2%	57.1%	43.7%	24.2%	36.1%	60.0%	17.8%	15.7%	13.9%	29.6%
	Cases	716	232	202	282	570	149	166	255	146	83	36	27
ALLEGANY	Rate	35.9%	17.1%	32.5%	55.3%	40.4%	20.0%	39.4%	58.5%	10.5%	0.0%	0.0%	33.3%
	Cases	128	41	40	47	109	35	33	41	19	6	7	6
BROOME	Rate	37.8%	20.4%	36.9%	54.6%	42.0%	22.0%	39.4%	57.1%	18.2%	17.5%	20.8%	16.7%
	Cases	556	181	179	196	457	118	155	184	99	63	24	12
CATTARAUGUS	Rate	25.1%	10.8%	20.6%	46.6%	30.4%	15.8%	23.4%	48.0%	12.5%	3.7%	14.3%	37.5%
	Cases	191	65	68	58	135	38	47	50	56	27	21	8
CAYUGA	Rate	30.8%	9.5%	38.5%	48.1%	38.1%	17.1%	44.2%	47.9%	9.3%	0.0%	11.1%	50.0%
	Cases	169	63	52	54	126	35	43	48	43	28	9	6
CHAUTAUQUA	Rate	42.1%	26.8%	35.5%	61.6%	50.0%	37.1%	43.2%	62.9%	22.2%	13.2%	15.2%	54.5%
	Cases	382	123	121	138	274	70	88	116	108	53	33	22
CHEMUNG	Rate	27.4%	16.8%	15.3%	48.5%	36.2%	27.3%	19.7%	54.7%	6.7%	2.5%	6.3%	17.6%
	Cases	296	95	98	103	207	55	66	86	89	40	32	17
CHENANGO	Rate	37.4%	11.4%	34.4%	62.8%	40.2%	13.6%	35.3%	61.5%	25.9%	7.7%	30.0%	75.0%
	Cases	139	35	61	43	112	22	51	39	27	13	10	4
CLINTON	Rate	29.0%	19.0%	36.4%	31.4%	32.6%	21.3%	42.1%	31.7%	15.0%	13.3%	13.0%	28.6%
	Cases	293	105	118	70	233	75	95	63	60	30	23	7
COLUMBIA	Rate	40.4%	24.2%	45.2%	58.3%	44.3%	27.7%	46.2%	60.0%	20.0%	15.8%	33.3%	33.3%
	Cases	156	66	42	48	131	47	39	45	25	19	3	3
CORTLAND	Rate	32.9%	18.5%	35.0%	45.5%	38.3%	23.1%	40.6%	44.9%	19.0%	14.3%	12.5%	50.0%
	Cases	149	54	40	55	107	26	32	49	42	28	8	6
DELAWARE	Rate	25.0%	25.0%	11.1%	36.4%	30.2%	40.0%	13.3%	38.9%	7.7%	0.0%	0.0%	25.0%
	Cases	56	16	18	22	43	10	15	18	13	6	3	4
DUTCHESS	Rate	33.3%	20.5%	33.3%	57.1%	44.2%	28.6%	41.7%	58.8%	22.0%	16.0%	25.0%	50.0%
	Cases	84	39	24	21	43	14	12	17	41	25	12	4
ERIE	Rate	38.8%	18.5%	36.7%	57.3%	46.0%	22.2%	43.1%	58.7%	20.9%	14.9%	20.4%	45.6%
	Cases	1,357	453	365	539	969	225	262	482	388	228	103	57
ESSEX	Rate	21.7%	9.1%	20.0%	100.0%	21.4%	0.0%	25.0%	100.0%	22.2%	16.7%	0.0%	100.0%
	Cases	23	11	10	2	14	5	8	1	9	6	2	1
FRANKLIN	Rate	41.5%	20.5%	29.3%	57.3%	47.1%	25.8%	34.2%	60.2%	22.9%	7.7%	20.0%	40.0%
	Cases	205	44	58	103	157	31	38	88	48	13	20	15
FULTON	Rate	37.9%	25.0%	34.6%	51.2%	45.6%	38.1%	38.1%	54.1%	12.5%	6.7%	20.0%	25.0%
	Cases	103	36	26	41	79	21	21	37	24	15	5	4
GENESEE	Rate	42.0%	28.9%	34.5%	60.5%	47.6%	35.2%	37.5%	62.9%	20.9%	13.6%	26.7%	33.3%
	Cases	207	76	55	76	164	54	40	70	43	22	15	6
GREENE	Rate	31.3%	10.6%	30.8%	56.4%	37.7%	17.2%	31.3%	59.4%	17.1%	0.0%	30.0%	42.9%
	Cases	112	47	26	39	77	29	16	32	35	18	10	7
HAMILTON	Rate	–	–	–	–	–	–	–	–	–	–	–	–
	Cases	–	–	–	–	–	–	–	–	–	–	–	–
HERKIMER	Rate	35.9%	10.0%	31.8%	53.7%	41.2%	5.6%	37.5%	55.8%	15.4%	16.7%	16.7%	0.0%
	Cases	128	30	44	54	102	18	32	52	26	12	12	2
JEFFERSON	Rate	44.3%	30.1%	33.8%	70.9%	47.5%	35.8%	33.9%	73.1%	26.8%	10.7%	33.3%	53.8%
	Cases	370	123	130	117	314	95	115	104	56	28	15	13
LEWIS	Rate	28.9%	9.5%	38.9%	66.7%	36.7%	7.7%	50.0%	80.0%	13.3%	12.5%	16.7%	0.0%
	Cases	45	21	18	6	30	13	12	5	15	8	6	1
LIVINGSTON	Rate	24.7%	8.5%	22.8%	45.2%	32.7%	16.7%	30.0%	47.1%	8.3%	0.0%	5.9%	37.5%
	Cases	146	47	57	42	98	24	40	34	48	23	17	8
MADISON	Rate	31.3%	19.0%	32.0%	40.0%	39.3%	26.3%	37.5%	45.8%	10.0%	13.0%	10.0%	0.0%
	Cases	147	42	50	55	107	19	40	48	40	23	10	7
MONROE	Rate	36.0%	11.8%	34.8%	55.9%	45.5%	17.4%	42.7%	59.4%	15.5%	6.9%	15.5%	38.0%
	Cases	758	246	201	311	519	115	143	261	239	131	58	50
MONTGOMERY	Rate	23.8%	8.1%	28.6%	40.9%	28.2%	8.3%	35.7%	42.1%	13.3%	7.7%	14.3%	33.3%
	Cases	101	37	42	22	71	24	28	19	30	13	14	3
NASSAU	Rate	24.8%	12.5%	29.0%	50.6%	35.1%	19.6%	33.2%	52.4%	13.0%	8.9%	19.9%	40.6%
	Cases	1,894	1,021	462	411	1,010	347	316	347	884	674	146	64
NIAGARA	Rate	34.9%	17.2%	36.3%	60.1%	42.3%	22.5%	40.0%	61.9%	16.6%	11.2%	22.9%	41.7%
	Cases	507	209	160	138	362	111	125	126	145	98	35	12

Continued on next page.

Table B2 – *Continued*

Probation Department		Top Charge Laws and Recidivism Scale Risk Levels											
		All Cases				Penal Law Conviction Charge Cases				VTL Conviction Charge Cases			
		Total	Low	Medium	High	Total	Low	Medium	High	Total	Low	Medium	High
ONEIDA	Rate	34.1%	18.8%	36.4%	52.2%	39.4%	21.4%	41.4%	54.2%	17.3%	14.5%	14.8%	35.7%
	Cases	458	181	143	134	348	112	116	120	110	69	27	14
ONONDAGA	Rate	37.2%	13.6%	25.3%	52.8%	40.9%	18.1%	28.9%	53.7%	15.2%	2.4%	4.5%	42.9%
	Cases	632	147	150	335	540	105	128	307	92	42	22	28
ONTARIO	Rate	29.9%	18.3%	24.8%	49.0%	32.9%	22.1%	26.6%	47.8%	20.7%	12.8%	17.4%	58.3%
	Cases	334	115	117	102	252	68	94	90	82	47	23	12
ORANGE	Rate	34.0%	11.7%	35.8%	52.7%	40.1%	14.3%	41.1%	54.0%	18.1%	8.6%	19.5%	44.4%
	Cases	658	231	165	262	476	126	124	226	182	105	41	36
ORLEANS	Rate	27.3%	13.2%	36.4%	40.0%	31.9%	17.2%	39.3%	38.2%	13.3%	8.3%	20.0%	100.0%
	Cases	121	53	33	35	91	29	28	34	30	24	5	1
OSWEGO	Rate	35.0%	20.0%	32.6%	50.0%	39.0%	23.5%	35.8%	50.0%	22.9%	15.4%	21.1%	50.0%
	Cases	280	90	86	104	210	51	67	92	70	39	19	12
OTSEGO	Rate	42.5%	34.6%	50.0%	44.8%	48.1%	38.1%	63.6%	50.0%	26.3%	20.0%	28.6%	28.6%
	Cases	73	26	18	29	54	21	11	22	19	5	7	7
PUTNAM	Rate	32.7%	16.7%	47.8%	58.3%	44.3%	22.2%	50.0%	72.2%	17.4%	12.1%	42.9%	16.7%
	Cases	107	60	23	24	61	27	16	18	46	33	7	6
RENSSELAER	Rate	38.0%	22.4%	43.4%	47.2%	42.1%	25.6%	48.1%	48.8%	18.2%	14.3%	12.5%	33.3%
	Cases	389	125	122	142	323	90	106	127	66	35	16	15
ROCKLAND	Rate	35.7%	18.5%	44.4%	56.9%	41.4%	19.6%	46.8%	57.6%	21.5%	17.3%	28.6%	50.0%
	Cases	227	108	54	65	162	56	47	59	65	52	7	6
ST LAWRENCE	Rate	41.8%	20.3%	36.8%	56.3%	46.4%	27.1%	40.0%	58.3%	23.1%	4.8%	23.1%	44.4%
	Cases	263	69	68	126	211	48	55	108	52	21	13	18
SARATOGA	Rate	36.0%	26.5%	39.5%	50.0%	45.9%	38.9%	45.6%	54.4%	13.7%	9.0%	25.0%	18.2%
	Cases	333	162	81	90	231	95	57	79	102	67	24	11
SCHENECTADY	Rate	34.2%	23.0%	29.7%	57.5%	38.4%	27.5%	34.2%	58.1%	13.5%	4.2%	13.6%	50.0%
	Cases	307	126	101	80	255	102	79	74	52	24	22	6
SCHOHARIE	Rate	16.7%	5.6%	9.1%	35.0%	23.5%	14.3%	15.4%	35.7%	7.7%	0.0%	0.0%	33.3%
	Cases	60	18	22	20	34	7	13	14	26	11	9	6
SCHUYLER	Rate	15.8%	10.0%	33.3%	8.3%	16.2%	5.9%	50.0%	0.0%	15.0%	15.4%	0.0%	50.0%
	Cases	57	30	15	12	37	17	10	10	20	13	5	2
SENECA	Rate	17.6%	0.0%	6.3%	47.1%	28.6%	0.0%	14.3%	50.0%	4.3%	0.0%	0.0%	33.3%
	Cases	51	18	16	17	28	7	7	14	23	11	9	3
STEUBEN	Rate	27.7%	9.5%	31.2%	50.0%	35.3%	14.3%	33.3%	62.3%	7.7%	0.0%	25.0%	0.0%
	Cases	238	95	77	66	173	63	57	53	65	32	20	13
SUFFOLK	Rate	–	–	–	–	–	–	–	–	–	–	–	–
	Cases	–	–	–	–	–	–	–	–	–	–	–	–
SULLIVAN	Rate	27.8%	5.9%	32.6%	47.7%	35.9%	6.1%	37.5%	53.8%	11.9%	5.7%	18.2%	23.1%
	Cases	176	68	43	65	117	33	32	52	59	35	11	13
TIOGA	Rate	36.0%	26.9%	39.3%	40.0%	46.2%	40.0%	50.0%	46.7%	8.3%	9.1%	12.5%	0.0%
	Cases	89	26	28	35	65	15	20	30	24	11	8	5
TOMPKINS	Rate	32.0%	12.3%	25.9%	55.6%	43.2%	20.0%	31.6%	64.6%	13.4%	6.3%	15.0%	26.7%
	Cases	178	57	58	63	111	25	38	48	67	32	20	15
ULSTER	Rate	38.7%	23.5%	32.7%	59.4%	45.0%	29.0%	37.2%	61.2%	16.7%	15.0%	14.3%	33.3%
	Cases	403	153	107	143	313	93	86	134	90	60	21	9
WARREN	Rate	33.8%	19.7%	32.9%	53.7%	38.9%	26.5%	34.4%	57.1%	11.1%	4.5%	22.2%	20.0%
	Cases	198	71	73	54	162	49	64	49	36	22	9	5
WASHINGTON	Rate	33.7%	24.2%	32.1%	46.4%	41.5%	33.3%	42.1%	48.0%	12.5%	8.3%	11.1%	33.3%
	Cases	89	33	28	28	65	21	19	25	24	12	9	3
WAYNE	Rate	30.0%	15.5%	27.7%	49.3%	35.2%	21.4%	31.9%	48.2%	20.0%	9.5%	16.7%	53.3%
	Cases	220	84	65	71	145	42	47	56	75	42	18	15
WESTCHESTER	Rate	33.7%	11.4%	33.0%	60.9%	42.6%	15.3%	38.4%	62.9%	13.1%	7.7%	16.3%	41.7%
	Cases	762	306	200	256	533	150	151	232	229	156	49	24
WYOMING	Rate	31.9%	14.3%	21.6%	49.0%	37.8%	16.7%	30.8%	50.0%	11.5%	10.0%	0.0%	40.0%
	Cases	116	28	37	51	90	18	26	46	26	10	11	5
YATES	Rate	37.9%	22.7%	41.7%	50.0%	40.0%	21.1%	50.0%	50.0%	27.3%	33.3%	16.7%	50.0%
	Cases	66	22	24	20	55	19	18	18	11	3	6	2

Note: Percentages may not add correctly due to rounding.

* Suffolk Probation Department was excluded because it had not fully implemented COMPAS-Probation as of 2009 and accounted for a substantial number of admission cases statewide. None of the Hamiltion Probation Department's four 2009 admission cases met the selection critiera for inclusion in the study.

Data Sources: NYS Division of Criminal Justice Services IPRS, Probation-COMPAS and CCH databases.

Source: NYS Division of Criminal Justice Services, *New York State COMPAS-Probation Risk and Needs Assessment Study* (2012).

Table B3

Study Cases With "Full COMPAS" Assessments (n=11,289):*

Rearrest Rates at Two Years for ANY Offense by Scale Levels and Highest Risk/Need Decile Scores (DS)

	Decile Distributions Across Scale Levels			Rearrest Rates at Two Years for ANY (Felony/Misdemeanor) Offense					
	Risk/Need Levels			Risk/Need Levels			"High" Decile Scores		
Risk Categories and Scales	**Low**	**Medium**	**High**	**Low**	**Medium**	**High**	**DS 8**	**DS 9**	**DS 10**
Any Rearrest (Overall Risk)	1-4	5-7	8-10	18.9%	32.9%	53.2%	42.5%	53.2%	63.0%
Criminal History									
History of Non-compliance	1	5-7	8-10	25.0%	38.3%	50.0%	49.1%	47.1%	52.7%
History of Violence	1	5	8-10	30.8%	40.6%	48.2%	47.6%	47.5%	49.5%
Criminal Involvement	1-4	5-7	8-10	31.6%	35.7%	41.8%	36.8%	42.1%	46.0%
Criminogenic Need Categories and Scales	**Unlikely**	**Probable**	**Highly Probable**	**Unlikely**	**Probable**	**Highly Probable**	**DS 8**	**DS 9**	**DS 10**
Personality Profile									
Anger	1,4,5	7	8-10	29.6%	41.4%	47.0%	43.3%	45.6%	51.0%
Impulsivity	1,2,3,5	6-7	8-10	29.7%	37.3%	45.8%	40.9%	49.4%	50.4%
Resentment/Mistrust	1-5	6-7	8-10	30.2%	40.4%	43.3%	41.1%	43.0%	46.9%
Social Isolation	1,5	6-7	8-10	30.6%	41.0%	41.9%	42.1%	39.1%	43.7%
Personal Development									
Educational/Vocational Problems*	1-5	6-7	8-10	24.5%	34.3%	45.4%	39.8%	47.2%	49.4%
Idleness/Absence of Life Goals	1-5	6-7	8-10	29.4%	38.6%	45.0%	43.4%	46.2%	45.4%
Financial Problems	1,3,4,5	6-7	8-10	28.6%	36.5%	41.6%	37.1%	40.6%	46.2%
Personal Support Network									
Criminal Associates/Peers	1	5,6	8	26.7%	37.0%	47.4%	47.4%	NA	NA
Family Criminality	1,5	6-7	8-10	29.9%	31.9%	43.5%	39.5%	41.7%	51.0%
Substance Abuse	1-2	3-4	5-10	29.8%	31.6%	37.1%	37.6%	41.3%	44.1%
Social Environment									
Neighborhood Crime/Disorganiztion	1-5	6-7	8-10	31.4%	32.4%	45.4%	42.3%	44.1%	49.6%
Few Family Supports	1,5	6-7	8-10	31.8%	39.8%	38.5%	36.7%	36.9%	43.3%
Few Pro-Social Peers	1,4	6-7	–	29.1%	41.9%	NA	NA	NA	NA
Cooperative Stance									
Responsivity Problems	1,2,3,5	6-7	8-10	30.5%	33.5%	39.9%	28.7%	39.2%	45.1%
Criminal Attitude	1	6	8-10	30.8%	36.5%	40.2%	37.4%	40.0%	43.5%
Non-Criminogenic Need Scale	**Unlikely**	**Probable**	**Highly Probable**	**Unlikely**	**Probable**	**Highly Probable**	**DS 8**	**DS 9**	**DS 10**
Depression	1,5	6-7	8-10	33.2%	38.6%	37.9%	38.5%	39.6%	36.0%

* Cases with *Screener Input Only* or *Violence and Recidivism* assessments were excluded from the analysis presented in this table because they do not assess all risks/needs.

Data Sources: NYS Division of Criminal Justice Services, IPRS, COMPAS-Probation and CCH databases.

Source: NYS Division of Criminal Justice Services, *NYS COMPAS-Probation Risk and Needs Assessment Study* (2012).

Table B4

Study Cases With "Full COMPAS" Assessments (n=11,289):[a]

Percent of Cases Classified as High Risk/Need by Probation Department and Risk/Need Scale Type and Scale

Probation Department	Number of Cases	Percent of "High Risk" Cases by Scale Type and Scale			Percent of "High Probability" Cases by Scale Type and Scale														
		Criminal History			Personality Profile				Personal Development			Personal Support Network			Social Environment			Cooperative Stance		Depression
		History of Non-Compliance	History of Violence	Criminal Involvement	Anger	Impulsivity	Resentment/ Mistrust	Social Isolation	Educ/Vocation Problems	Idleness/ No Life Goals	Financial Problems	Criminal Assoc./Peers	Family Criminality	Substance Abuse	Neighborhood Crime/Disorder	Few Family Supports	Few Pro-Social Peers[b]	Responsivity Problems	Criminal Attitudes	Depression
OVERALL	**11,289**	**23%**	**17%**	**22%**	**27%**	**23%**	**25%**	**17%**	**41%**	**23%**	**38%**	**22%**	**35%**	**65%**	**24%**	**24%**	–	**38%**	**32%**	**23%**
ALBANY	648	34%	27%	32%	28%	25%	32%	20%	48%	28%	43%	29%	44%	69%	38%	28%	–	48%	42%	29%
ALLEGANY	121	22%	22%	21%	13%	12%	16%	12%	36%	18%	44%	15%	40%	54%	13%	30%	–	43%	26%	25%
BROOME	458	23%	12%	20%	24%	28%	33%	17%	40%	21%	40%	14%	25%	65%	26%	30%	–	50%	23%	22%
CATTARAUGUS	184	21%	15%	18%	31%	20%	23%	13%	31%	22%	32%	15%	46%	83%	4%	16%	–	38%	32%	26%
CAYUGA	166	22%	8%	23%	13%	16%	18%	12%	31%	15%	22%	10%	27%	65%	3%	12%	–	16%	11%	19%
CHAUTAUQUA	381	28%	17%	29%	32%	26%	27%	18%	43%	27%	41%	12%	37%	66%	51%	26%	–	47%	39%	28%
CHEMUNG	273	24%	15%	28%	28%	27%	25%	18%	46%	25%	38%	21%	35%	55%	29%	33%	–	39%	29%	25%
CHENANGO	134	26%	23%	22%	42%	29%	26%	18%	49%	45%	43%	42%	49%	71%	12%	25%	–	46%	56%	22%
CLINTON	287	17%	22%	22%	20%	16%	19%	13%	32%	21%	22%	17%	29%	59%	8%	23%	–	38%	18%	26%
COLUMBIA	155	26%	13%	16%	28%	28%	28%	18%	34%	13%	27%	23%	43%	81%	13%	7%	–	26%	12%	29%
CORTLAND	94	15%	9%	18%	35%	23%	26%	23%	43%	26%	30%	19%	35%	55%	7%	26%	–	26%	17%	18%
DELAWARE	56	16%	9%	20%	30%	25%	20%	13%	39%	36%	38%	29%	38%	64%	50%	43%	–	54%	39%	29%
DUTCHESS	45	40%	7%	24%	16%	4%	4%	2%	16%	7%	20%	18%	18%	69%	7%	22%	–	40%	38%	36%
ERIE	1,330	20%	20%	23%	23%	17%	19%	12%	39%	16%	34%	14%	20%	61%	31%	25%	–	34%	35%	16%
ESSEX	23	13%	4%	13%	26%	30%	26%	26%	39%	22%	17%	35%	17%	39%	0%	35%	–	30%	26%	13%
FRANKLIN	132	30%	21%	33%	16%	20%	17%	9%	44%	29%	42%	46%	45%	61%	30%	38%	–	48%	39%	10%
FULTON	99	18%	16%	17%	29%	34%	30%	21%	46%	32%	48%	25%	28%	62%	15%	40%	–	59%	42%	18%
GENESEE	195	24%	16%	17%	26%	28%	31%	19%	46%	22%	44%	28%	39%	75%	16%	42%	–	53%	42%	26%
GREENE	104	31%	17%	33%	22%	16%	24%	17%	40%	25%	35%	35%	48%	77%	14%	18%	–	18%	16%	35%
HAMILTON[c]	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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Table B4 – *Continued*

Probation Department	Number of Cases	Percent of "High Risk" Cases by Scale Type and Scale			Percent of "High Probability" Cases by Scale Type and Scale														
		Criminal History			Personality Profile				Personal Development			Personal Support Network			Social Environment			Cooperative Stance		Depres-sion
		History of Non-Compliance	History of Violence	Criminal Involvement	Anger	Impulsivity	Resentment/ Mistrust	Social Isolation	Educ./Vocation Problems	Idleness/ No Life Goals	Financial Problems	Criminal Assoc./Peers	Family Criminality	Substance Abuse	Neighborhood Crime/Disorder	Few Family Supports	Few Pro-Social Peers [b]	Responsivity Problems	Criminal Attitudes	Depression
HERKIMER	53	11%	23%	11%	32%	32%	38%	23%	55%	42%	57%	34%	47%	72%	4%	17%	–	26%	28%	36%
JEFFERSON	365	23%	17%	16%	22%	24%	22%	13%	34%	19%	27%	29%	39%	70%	10%	17%	–	21%	15%	28%
LEWIS	44	16%	7%	16%	18%	25%	30%	20%	20%	16%	30%	43%	20%	64%	11%	11%	–	34%	43%	16%
LIVINGSTON	140	19%	5%	19%	22%	17%	20%	11%	36%	25%	39%	17%	25%	58%	8%	24%	–	59%	38%	24%
MADISON	145	30%	12%	24%	30%	34%	29%	16%	56%	28%	51%	23%	34%	70%	3%	16%	–	29%	30%	20%
MONROE	109	28%	13%	17%	26%	24%	31%	25%	41%	27%	50%	12%	36%	65%	24%	30%	–	39%	33%	28%
MONTGOMERY	95	17%	16%	20%	33%	17%	31%	19%	46%	18%	40%	35%	46%	66%	35%	23%	–	31%	45%	17%
NASSAU	21	29%	14%	19%	29%	43%	38%	10%	38%	29%	29%	10%	24%	67%	19%	14%	–	33%	10%	10%
NIAGARA	487	22%	18%	17%	23%	17%	18%	12%	39%	16%	38%	18%	36%	75%	29%	28%	–	42%	32%	21%
ONEIDA	453	12%	12%	16%	35%	27%	28%	22%	48%	32%	42%	17%	31%	53%	36%	27%	–	38%	28%	19%
ONONDAGA	624	34%	26%	31%	28%	29%	34%	20%	50%	27%	42%	30%	37%	65%	42%	27%	–	42%	27%	22%
ONTARIO	252	15%	10%	15%	28%	25%	31%	20%	46%	29%	39%	18%	45%	71%	21%	21%	–	51%	34%	33%
ORANGE	255	21%	9%	15%	20%	15%	21%	19%	34%	18%	33%	24%	33%	65%	27%	17%	–	27%	33%	29%
ORLEANS	119	21%	9%	11%	39%	29%	29%	24%	40%	23%	50%	31%	34%	61%	33%	31%	–	51%	63%	17%
OSWEGO	276	24%	16%	20%	35%	27%	26%	18%	43%	24%	44%	29%	45%	72%	4%	17%	–	40%	29%	24%
OTSEGO	69	22%	9%	22%	45%	28%	36%	25%	42%	29%	55%	42%	42%	65%	13%	26%	–	45%	26%	23%
PUTNAM	84	14%	4%	8%	18%	11%	13%	15%	23%	15%	35%	27%	20%	73%	10%	12%	–	44%	25%	25%
RENSSELAER	369	30%	28%	24%	24%	25%	31%	17%	41%	22%	37%	20%	56%	69%	17%	18%	–	42%	48%	27%
ROCKLAND	210	16%	14%	13%	21%	15%	20%	14%	42%	20%	37%	19%	29%	46%	15%	21%	–	24%	26%	19%
ST LAWRENCE	122	25%	16%	29%	25%	21%	25%	14%	50%	28%	29%	35%	41%	78%	14%	20%	–	20%	21%	26%

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Table B4 – *Continued*

Probation Department	Number of Cases	Percent of "High Risk" Cases by Scale Type and Scale			Percent of "High Probability" Cases by Scale Type and Scale															
		Criminal History			Personality Profile				Personal Development			Personal Support Network			Social Environment			Cooperative Stance		Depres-sion
		History of Non-Compliance	History of Violence	Criminal Involvement	Anger	Impulsivity	Resentment/ Mistrust	Social Isolation	Educ./Vocation Problems	Idleness/ No Life Goals	Financial Problems	Criminal Assoc./Peers	Family Criminality	Substance Abuse	Neighborhood Crime/Disorder	Few Family Supports	Few Pro-Social Peers[b]	Responsivity Problems	Criminal Attitudes	Depression
SARATOGA	318	21%	19%	22%	29%	23%	22%	15%	30%	21%	36%	22%	24%	65%	10%	23%	–	35%	34%	27%
SCHENECTADY	294	20%	13%	19%	25%	21%	26%	18%	41%	20%	43%	26%	41%	60%	33%	19%	–	29%	40%	26%
SCHOHARIE	60	32%	7%	22%	27%	28%	20%	12%	42%	20%	42%	17%	37%	80%	8%	23%	–	27%	30%	18%
SCHUYLER	53	11%	8%	15%	15%	15%	17%	13%	36%	25%	34%	13%	9%	68%	2%	19%	–	42%	32%	36%
SENECA	47	21%	11%	32%	28%	36%	23%	28%	36%	34%	36%	30%	19%	79%	13%	36%	–	55%	40%	17%
STEUBEN	68	25%	19%	31%	18%	15%	31%	21%	44%	16%	43%	16%	34%	51%	7%	19%	–	44%	22%	22%
SULLIVAN	161	19%	24%	17%	32%	19%	23%	17%	41%	24%	43%	29%	37%	59%	48%	30%	–	39%	30%	14%
SUFFOLK[c]	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
TIOGA	80	14%	10%	19%	34%	24%	30%	24%	38%	24%	39%	19%	38%	61%	5%	8%	–	15%	16%	29%
TOMPKINS	150	25%	25%	26%	52%	39%	35%	31%	43%	39%	45%	32%	38%	68%	18%	36%	–	39%	55%	26%
ULSTER	118	24%	11%	23%	16%	25%	17%	22%	35%	23%	36%	15%	37%	68%	19%	24%	–	32%	31%	24%
WARREN	196	16%	20%	19%	29%	27%	26%	16%	30%	27%	35%	29%	41%	69%	13%	28%	–	40%	36%	26%
WASHINGTON	89	18%	10%	20%	35%	26%	28%	16%	38%	24%	33%	17%	31%	73%	3%	31%	–	37%	27%	21%
WAYNE	190	26%	13%	21%	29%	29%	27%	10%	47%	26%	34%	25%	43%	58%	6%	32%	–	36%	26%	24%
WESTCHESTER	221	21%	18%	23%	16%	14%	26%	12%	40%	18%	35%	23%	26%	58%	34%	11%	–	26%	25%	13%
WYOMING	23	48%	26%	17%	22%	13%	13%	4%	39%	4%	35%	9%	39%	26%	4%	22%	–	30%	26%	22%
YATES	44	16%	7%	9%	34%	27%	27%	11%	36%	16%	32%	23%	32%	66%	0%	20%	–	36%	34%	41%

Note: Percentages may not add correctly due to rounding.

[a] Cases with *Screener Input Only* or *Violence and Recidivism* assessments were excluded from the analysis presented in this table because they do not assess all risks/needs.

[b] The *Few Pro-Social Peers* needs scale has only two need levels – "unlikely" and "probable". It does not have a "highly probable" need level.

[c] Suffolk Probation Department was excluded from the study because it had not fully implemented COMPAS-Probation as of 2009 and accounted for a substantial number of admission cases statewide. None of the Hamiltion Probation Department's four 2009 admission cases met the selection critiera for inclusion in the study.

Data Sources: NYS Division of Criminal Justice Services, IPRS, COMPAS-Probation and CCH databases.

Source: NYS Division of Criminal Justice Services, *New York State COMPAS-Probation Risk and Needs Assessment Study* (2012).

Table B5

Study Cases With "Full COMPAS" Assessments (n=11,289):[a]
Pearson Correlations for ANY Rearrest at Two Years, Recidivism Scale and Base Risk/Need Scales

Data Elements	Any Rearrest at 2 Years	COMPAS-Prob. Overall Risk: DecileScore.Recidivism	COMPAS-Probation Base Risk/Need Categories and Scales						
			Criminal History			Personality Profile			
			DecileScore. NonComp	DecileScore. HistVio	DecileScore. CrimInv	DecileScore. Anger	DecileScore. Impluse	DecileScore. ResMistrust	DecileScore. SocIso
Any Rearrest at 2 Years	1.000	.322**	.214**	.142**	.097**	.167**	.164**	.135**	.103**
DecileScore.Recidivism	.322**	1.000	.522**	.318**	.416**	.309**	.363**	.266**	.230**
DecileScore.NonComp	.214**	.522**	1.000	.414**	.705**	.118**	.192**	.092**	.079**
DecileScore.HistVio	.142**	.318**	.414**	1.000	.455**	.111**	.107**	.085**	.053**
DecileScore.CrimInv	.097**	.416**	.705**	.455**	1.000	0.001	.076**	-0.013	0.004
DecileScore.Anger	.167**	.309**	.118**	.111**	0.001	1.000	.581**	.620**	.469**
DecileScore.Impulse	.164**	.363**	.192**	.107**	.076**	.581**	1.000	.479**	.470**
DecileScore.ResMistrust	.135**	.266**	.092**	.085**	-0.013	.620**	.479**	1.000	.522**
DecileScore.SocIso	.103**	.230**	.079**	.053**	0.004	.469**	.470**	.522**	1.000
DecileScore.VocEd	.208**	.588**	.149**	.105**	-0.012	.361**	.339**	.363**	.330**
DecileScore.LifeGoals	.147**	.358**	.081**	.031**	-.030**	.355**	.362**	.316**	.359**
DecileScore.FinProb	.137**	.394**	.131**	.079**	0.013	.319**	.344**	.366**	.378**
DecileScore.CrimAssoc	.169**	.386**	.236**	.139**	.117**	.196**	.280**	.183**	.172**
DecileScore.FamCrim	.121**	.251**	.167**	.139**	.100**	.191**	.191**	.192**	.172**
DecileScore.SubstAbuse	.090**	.253**	.277**	.126**	.284**	.134**	.247**	.092**	.122**
DecileScore.Neighborhood	.114**	.233**	.127**	.160**	.094**	.139**	.143**	.159**	.129**
DecileScore.FamSup	.070**	.124**	.174**	.159**	.185**	.112**	.130**	.137**	.126**
DecileScore.SocPeers	.132**	.264**	.132**	.110**	.087**	.177**	.201**	.153**	.135**
DecileScore.RespProb	.093**	.130**	.107**	.137**	.080**	.081**	.076**	.108**	.050**
DecileScore.CrimAtt	.092**	.101**	.117**	.160**	.069**	.091**	.076**	.142**	.070**
DecileScore.Depression	.044**	.062**	.105**	.049**	.075**	.203**	.179**	.185**	.208**

Continued on next page.

Table B5 - *Continued*

Data Elements	COMPAS-Probation Base Risk/Need Categories and Scales											
	Personal Development			Personal Support Network			Social Environment			Cooperative Stance		Depression
	DecileScore. VocEd	DecileScore. LifeGoals	DecileScore. FinProb	DecileScore. CrimAssoc	DecileScore. FamCrim	DecileScore. SubstAbuse	DecileScore. Neighborhood	DecileScore. FamSup	DecileScore.S ocPeers	DecileScore. RespProb	DecileScore. CrimAtt	DecileScore. Depression
Any Rearrest at 2 Years	.208**	.147**	.137**	.169**	.121**	.090**	.114**	.070**	.132**	.093**	.092**	.044**
DecileScore.Recidivism	.588**	.358**	.394**	.386**	.251**	.253**	.233**	.124**	.264**	.130**	.101**	.062**
DecileScore.NonComp	.149**	.081**	.131**	.236**	.167**	.277**	.127**	.174**	.132**	.107**	.117**	.105**
DecileScore.HistVio	.105**	.031**	.079**	.139**	.139**	.126**	.160**	.159**	.110**	.137**	.160**	.049**
DecileScore.CrimInv	-0.012	-.030**	0.013	.117**	.100**	.284**	.094**	.185**	.087**	.080**	.069**	.075**
DecileScore.Anger	.361**	.355**	.319**	.196**	.191**	.134**	.139**	.112**	.177**	.081**	.091**	.203**
DecileScore.Impulse	.339**	.362**	.344**	.280**	.191**	.247**	.143**	.130**	.201**	.076**	.076**	.179**
DecileScore.ResMistrust	.363**	.316**	.366**	.183**	.192**	.092**	.159**	.137**	.153**	.108**	.142**	.185**
DecileScore.SocIso	.330**	.359**	.378**	.172**	.172**	.122**	.129**	.126**	.135**	.050**	.070**	.208**
DecileScore.VocEd	1.000	.497**	.681**	.286**	.240**	.114**	.260**	.164**	.278**	.150**	.123**	.147**
DecileScore.LifeGoals	.497**	1.000	.393**	.238**	.146**	.132**	.149**	.138**	.229**	.132**	.096**	.112**
DecileScore.FinProb	.681**	.393**	1.000	.227**	.195**	.118**	.234**	.194**	.244**	.152**	.139**	.144**
DecileScore.CrimAssoc	.286**	.238**	.227**	1.000	.291**	.294**	.233**	.153**	.138**	.104**	.147**	.037**
DecileScore.FamCrim	.240**	.146**	.195**	.291**	1.000	.218**	.129**	.210**	.100**	.061**	.103**	.184**
DecileScore.SubstAbuse	.114**	.132**	.118**	.294**	.218**	1.000	.025**	.077**	.051**	-0.003	.028**	.180**
DecileScore.Neighborhood	.260**	.149**	.234**	.233**	.129**	.025**	1.000	.276**	.455**	.306**	.172**	-0.017
DecileScore.FamSup	.164**	.138**	.194**	.153**	.210**	.077**	.276**	1.000	.291**	.250**	.182**	.084**
DecileScore.SocPeers	.278**	.229**	.244**	.138**	.100**	.051**	.455**	.291**	1.000	.330**	.151**	.042**
DecileScore.RespProb	.150**	.132**	.152**	.104**	.061**	-0.003	.306**	.250**	.330**	1.000	.513**	-.029**
DecileScore.CrimAtt	.123**	.096**	.139**	.147**	.103**	.028**	.172**	.182**	.151**	.513**	1.000	.028**
DecileScore.Depression	.147**	.112**	.144**	.037**	.184**	.180**	-0.017	.084**	.042**	-.029**	.028**	1.000

Note: *Correlation is statistically significant at the 0.05 level (two tailed). **Correlation is statistically significant at the 0.01 level (two tailed).

[a] Cases with Screener Input Only or Violence and Recidivism assessments were excluded from the analysis presented in this table because they do not assess all risks/needs.

Data Sources: NYS Division of Criminal Justice Services, IPRS, COMPAS-Probation and CCH databases.

Source: NYS Division of Criminal Justice Services, *NYS COMPAS-Probation Risk and Needs Assessment Study* (2012).

Table B6
COMPAS-Probation Study Cases: Actual and Expected Rearrest Rates for ANY Offense by Age at Assessment

Age at Assessment	Number of Cases	Rates for ANY Rearrest		
		Actual	Expected[a]	Difference
16	444	57.7%	48.1%	9.6% [b]
17	945	52.2%	46.7%	5.5% [b]
18	1,025	51.4%	44.4%	7.0% [b]
19	927	46.1%	43.5%	2.6%
20	715	46.3%	42.4%	3.9% [b]
21	709	42.0%	40.5%	1.5%
22	673	39.1%	39.5%	-0.5%
23	607	34.6%	37.2%	-2.6%
24	588	35.2%	36.8%	-1.6%
25	549	37.9%	34.6%	3.3%
26	531	30.5%	34.5%	-4.0% [b]
27	489	31.1%	35.3%	-4.2% [b]
28	466	31.8%	33.5%	-1.7%
29	454	31.7%	31.0%	0.7%
30	401	30.7%	30.6%	0.0%
31	381	32.5%	30.4%	2.1%
32	364	30.5%	30.7%	-0.2%
33	345	29.3%	30.5%	-1.3%
34	294	26.5%	29.0%	-2.4%
35	282	29.4%	28.7%	0.7%
36	280	24.6%	26.8%	-2.2%
37	289	23.9%	27.9%	-4.0%
38	297	30.3%	27.1%	3.2%
39	295	28.8%	27.8%	1.1%
40	252	32.1%	27.9%	4.2%
41	273	28.2%	27.0%	1.2%
42	273	26.0%	26.6%	-0.6%
43	256	22.3%	25.0%	-2.7%
44	323	19.5%	24.5%	-5.0% [b]
45	284	19.4%	24.5%	-5.1% [b]
46	269	23.8%	25.5%	-1.7%
47	235	26.8%	24.6%	2.2%
48	210	17.6%	25.1%	-7.5% [b]
49	191	13.1%	24.6%	-11.5% [b]
50	202	19.3%	22.9%	-3.6%
51	216	13.9%	22.5%	-8.7% [b]
52	160	13.8%	21.9%	-8.2% [b]
53	104	15.4%	23.4%	-8.0% [b]
54	97	20.6%	21.5%	-0.8%
55	92	10.9%	19.7%	-8.8% [b]
56	87	5.7%	18.1%	-12.4% [b]
57	66	9.1%	21.5%	-12.4% [b]
58	59	15.3%	24.3%	-9.0%
59	48	14.6%	19.6%	-5.0%
60	54	13.0%	18.0%	-5.1%
61	31	6.5%	16.3%	-9.9% [b]
62	27	7.4%	17.4%	-10.0% [b]
63	28	3.6%	15.3%	-11.7% [b]
64	13	15.4%	12.0%	3.4% [c]
65	21	4.8%	16.0%	-11.2% [c]
66	15	6.7%	19.2%	-12.5% [c]
67	10	20.0%	16.3%	3.7% [c]
68	11	9.1%	14.4%	-5.3% [c]
69	11	9.1%	13.3%	-4.2% [c]
70	6	0.0%	12.6%	-12.6% [c]
71	5	0.0%	13.6%	-13.6% [c]
72	4	0.0%	14.9%	-14.9% [c]
73	2	0.0%	10.2%	-10.2% [c]
74	3	0.0%	10.2%	-10.2% [c]
75	5	0.0%	10.2%	-10.2% [c]
76	2	0.0%	10.2%	-10.2% [c]
77	1	0.0%	10.8%	-10.8% [c]
78	1	0.0%	10.8%	-10.8% [c]
79	1	0.0%	10.2%	-10.2% [c]
80	1	100.0%	39.5%	60.5% [c]
77	1	0.0%	10.8%	-10.8% [c]
78	1	0.0%	25.1%	-25.1% [c]
79	1	0.0%	10.2%	-10.2% [c]
Overall	**16,302**	**32.3%**	**32.3%**	**0.0%**

Note: Percentages may not add to 100% due to rounding.

[a] Expected rates were calculated by regressing Recidivism Scale decile scores on the binary rearrest outcome measure (0,1) using a logistic regression model.

[b] Actual and expected rates differed significantly ($p<.05$).

[c] To few cases to reliably determine whether actual and expected rates differed significantly ($p<.05$).

Data Sources: NYS Division of Criminal Justice Services IPRS, COMPAS-Probation and CCH databases.

Source: NYS Division of Criminal Justice Services, *NYS COMPAS-Probation Risk and Needs Assessment Study* (2012).

Table B7
COMPAS-Probation Study Cases:
Actual and Expected Rearrest Rates for ANY Offense by Recidivism Scale Decile Scores and Law Type

Recidivism Scale Decile Scores		Number of Cases	All COMPAS-Probation Cases — Full-Case Model Actual	Expected	Difference
Low	D1	1,634	9.1%	10.8%	-1.7% *
	D2	1,156	16.1%	13.8%	2.3% *
	D3	1,513	19.1%	17.5%	1.6%
	D4	1,757	22.8%	21.9%	0.8%
Med.	D5	1,465	28.1%	27.1%	1.0%
	D6	1,595	33.1%	33.0%	0.1%
	D7	1,661	36.4%	39.5%	-3.2% *
High	D8	1,694	42.6%	46.4%	-3.8% *
	D9	1,797	52.6%	53.4%	-0.8%
	D10	2,031	64.1%	60.3%	3.8% *
Overall		**16,303**			

Recidivism Scale Decile Scores		Number of Cases	Penal Law Cases = 72% of All Cases — Full-Case Model Actual	Expected	Difference
Low	D1	814	12.7%	10.8%	1.9%
	D2	594	19.9%	13.8%	6.1% *
	D3	814	25.2%	17.5%	7.7% *
		1,092	29.4%	21.9%	7.5% *
Med.	D5	1,047	33.0%	27.1%	5.8% *
	D6	1,228	37.8%	33.0%	4.8% *
	D7	1,319	40.9%	39.5%	1.4%
High	D8	1,416	45.8%	46.4%	-0.6%
	D9	1,575	54.0%	53.4%	0.5%
	D10	1,863	65.4%	60.3%	5.1% *
Overall		**11,762**			

Recidivism Scale Decile Scores		Number of Cases	VTL Cases = 28% of All Cases — Full-Case Model Actual	Expected	Difference
Low	D1	820	5.5%	10.8%	-5.3% *
	D2	562	12.1%	13.8%	-1.7%
	D3	699	12.0%	17.5%	-5.5% *
	D4	665	11.9%	21.9%	-10.0% *
Med.	D5	418	16.0%	27.1%	-11.1% *
	D6	367	17.4%	33.0%	-15.6% *
	D7	342	18.7%	39.5%	-20.8% *
High	D8	278	26.3%	46.4%	-20.1% *
	D9	222	43.2%	53.4%	-10.2% *
	D10	168	50.0%	60.3%	-10.3% *
Overall		**4,541**			

Note: Percentages may not add to 100% due to rounding. The asterisk (*) indicates that actual and expected rates differ significantly ($p<.05$).

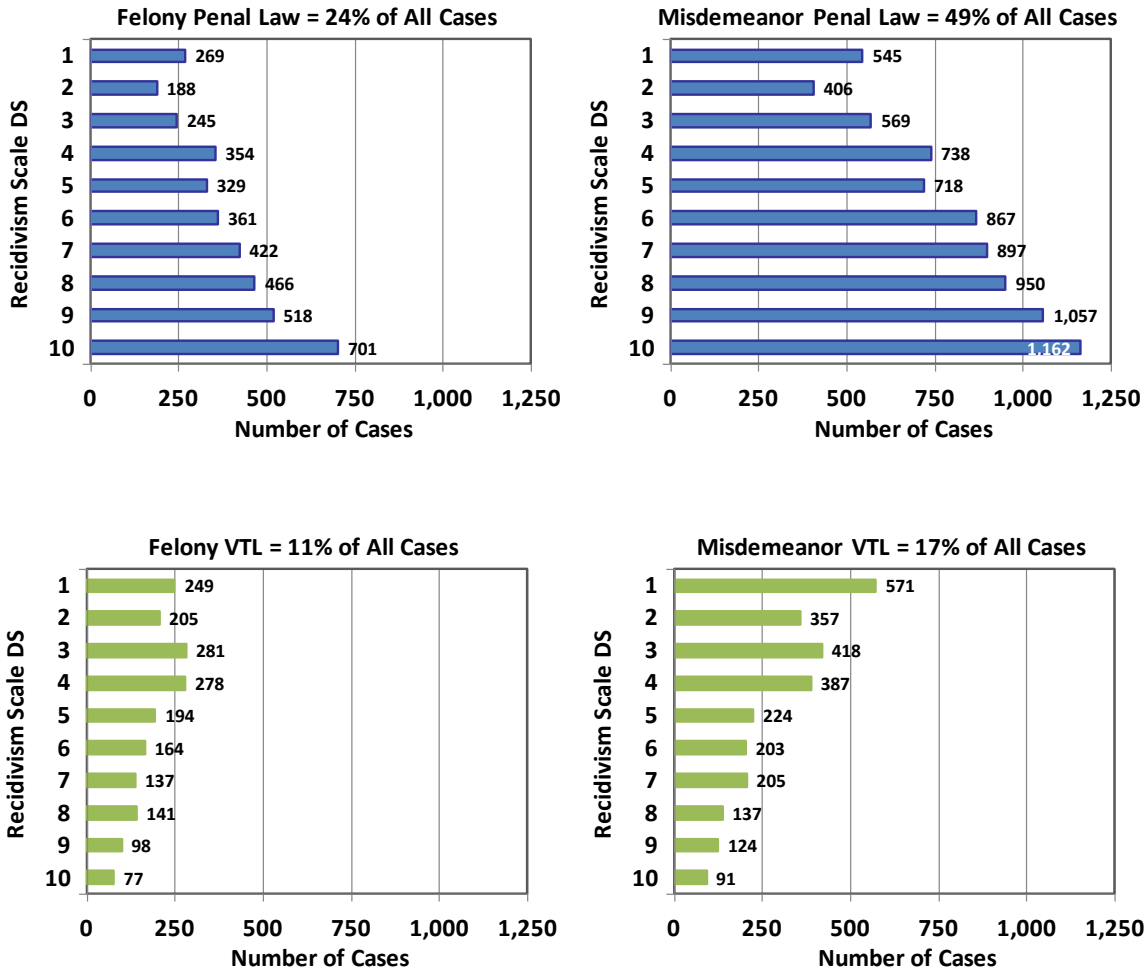
[a] Expected rates were calculated by regressing Recidivism Scale decile scores on the binary rearrest outcome measure (0,1) using a logistic regression model.

Data Sources: NYS Division of Criminal Justice Services IPRS, COMPAS-Probation and CCH databases.

Source: NYS Division of Criminal Justice Services, *NYS COMPAS-Probation Risk and Needs Assessment Study (* 2012).

Appendix C: Additional Figure

Figure C1
All COMPAS-Probation Study Cases: Recidivism Scale
Frequency Distributions by Law Type and Seriousness



Source: NYS Division of Criminal Justice Services, *NYS COMPAS-Probation Risk and Needs Assessment Study* (2012).

Appendix D: Penal Law Articles and Categories

Penal Law Articles		Article Categories			
Codes	Titles	Person/ Weapon	Property	Drug	Public Safety and Other
100	Criminal solicitation				■
105	Conspiracy				■
115	Criminal facilitation				■
120	Assault and related offenses	■			
121	Strangulation and related offenses	■			
125	Homicide, abortion and related offenses	■			
130	Sex offenses	■			
135	Kidnapping, coercion and related offenses	■			
140	Burglary and related offenses		■		
145	Criminal mischief and related offenses		■		
150	Arson		■		
155	Larceny		■		
156	Offenses involving computers		■		
158	Welfare fraud		■		
160	Robbery	■			
165	Other offenses relating to theft		■		
170	Forgery and related offenses		■		
175	Offenses involving false written statements		■		
176	Insurance fraud		■		
178	Criminal diversion of prescription medications		■		
180	Bribery not involving public servants		■		
185	Frauds on creditors		■		
190	Other frauds		■		
195	Official misconduct and obstruction of public servants generally				■
200	Bribery involving public servants and related offenses				■
205	Escape and other offenses related to custody				■
210	Perjury and related offenses				■
215	Other offenses relating to judicial and other proceedings				■
220	Controlled substance offenses			■	
221	Offenses involving marihuana			■	
225	Gambling offenses				■
230	Prostitution offenses				■
235	Obscenity and related offenses				■
240	Offense against public order				■
241	Harassment of rent regulated tenants				■
245	Offenses against public sensibilities				■
250	Offenses against the right to privacy				■
255	Offenses affecting the marital relationship				■
260	Offenses related to children and incompetents	■			
263	Sexual performance by a child	■			
265	Firearms and other dangerous weapons	■			
270	Other offenses related to public safety				■
275	Offenses relating to unauthorized recording		■		
460	Enterprise corruption		■		
470	Money laundering		■		

Source: New York State Legislature, Laws of NYS at http://public.leginfo.state.ny.us/menugetf.cgi?COMMONQUERY=LAWS.