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Risk/Needs Assessment Project

Phase II

Interim Report 1

Development of a Risk Assessment Scale by Offense Gravity Score for All Offenders

2015



Risk Assessment Project II Interim Report 1

Development of a Risk Assessment Scale by Offense Gravity Score for All Offenders

[May 2015]

Highlights

The purpose of this report is to present the findings from a research project that was undertaken to develop a risk assessment instrument to be used at sentencing. This study was a follow-up to our original study that developed a risk scale for mid-level seriousness offenders. This follow-up study developed a risk scale for all offenders and, in doing so, developed a risk scale for each Offense Gravity Score [OGS] of the sentencing guidelines. This resulted in nine separate risk assessment tools.¹ Highlights from the study are as follows:

- The overall three-year recidivism rate was 47%, though this ranged from a low of 34% for OGS 14 to a high of 55% for OGS 9 and 12.
- About 30% of the offenders in the sample had an OGS of 3.
- Below are the nine factors found to be significant predictors of recidivism, and thus used in the risk scales. However, not all factors were found to be recidivism predictors for all OGSs. The number in parentheses indicates how many of the nine OGS specific risk scales include each factor:
 - Age (9)
 - Number of prior arrests (9)
 - Gender (8)
 - Prior Offense type (5)
 - Multiple current convictions (5)
 - County (4)
 - Prior juvenile adjudication (3)
 - Prior Record Score (2)
 - Current offense type (1)
- We compared the recidivism prediction accuracy for the risk scale developed for each OGS to the risk scale that would be used if combining all OGSs together. Overall, the OGS specific risk scale performed better than the overall risk scale, though this was significant for only three of the nine scales.
- Overall, the risk scale performed better in recidivism prediction accuracy when all significant factors were included. However, for two OGSs [OGS 3 and 7], the removal of several significant factors did not reduce the performance of the scale. It was decided, however, that all significant factors would remain in the scales since they provided some increase, albeit sometimes modest, in the overall prediction accuracy.

¹ The guidelines have 14 Offense Gravity Scores. We combined OGSs 9-14 as these categories had too few offenders to allow for the necessary analyses, and those OGSs compose Level 5 of the sentencing guidelines, which represent the most serious offenders.



Background

Act 95 of 2010, mandated the Pennsylvania Commission on Sentencing to develop a risk assessment instrument to assist the court at sentencing. Specifically, legislation mandated that the Commission undertake the following:

- Adopt a risk assessment instrument to be used at sentencing
- Consider the risk of re-offense and threat to public safety
- Help determine if offender is a candidate for alternative sentencing programs [RRRI, CIP, SIP, BC]
- Develop an empirically based worksheet using factors predicting recidivism

Risk Assessment Project: Phase I [Levels 3 and 4 offenders]

To address this mandate, the Commission undertook the Risk Assessment Project. The initial project, which was started during the summer of 2010, resulted in the development of an initial risk assessment tool for offenders sentenced under Levels 3 and 4 of the sentencing guidelines [mostly mid-level theft and drug offenders]. These levels were chosen for several reasons: 1) the offenses at these levels encompassed a wide variety of offense seriousness [OGS ranging from 2 to 8 depending upon prior record]; 2) the sentence recommendations provided for a variety of sentence types [prison, SIP, BC, jail, probation, IP]; and 3) we could use a sample sentenced during 2004, 2005, and 2006 [SGS Web data years], which allowed for a three year tracking period for most offenders.

The initial project resulted in the following 9 interim reports that documented the progression of work that led to the development of the initial risk assessment tool. [These reports can be found on the Commission's website: <http://pasentencing.us>]

- *Interim Report 1: Review of Factors used in Risk Assessment Instruments*
- *Interim Report 2: Recidivism Study: Initial Recidivism Information*
- *Interim Report 3: Factors that Predict Recidivism for Various Types of Offenders*
- *Interim Report 4: Development of Risk Assessment Scale*
- *Interim Report 5: Developing Categories of Risk*
- *Interim Report 6: Impact of Risk Assessment Tool for Low Risk Offenders*
- *Interim Report 7: Validation of Risk Scale*
- *Interim Report 8: Communicating Risk at Sentencing*
- *Special Report: The Impact of Juvenile Record on Recidivism Risk*

Implementation of a Risk Assessment Tool: Focus Groups. In December 2012, the Commission made the decision that the initial risk assessment tool for Level 3 and Level 4 offenders would define low risk offenders as having a risk score ranging from 0 to 4 on a 14 point scale. The next step was to determine how best to implement the risk scale. Toward that end, the Commission assembled focus groups to provide input on the implementation process. These focus groups consisted of personnel who utilized the sentencing guidelines in the four counties represented by the judicial appointments to the Commission: Allegheny, Blair, Philadelphia, and Westmoreland. The Commission held a meeting with the four focus groups to provide them with information on the background and development of the risk scale. The next step involved the development of a survey to determine the best way to convey risk information. This survey was sent to 1,000 criminal justice personnel in the four focus group counties, and follow-up meetings were held in each of the four counties to provide the survey findings, and receive additional input into the implementation of a risk assessment tool.



Implementation of a Risk Assessment Tool: Beta Testing. Originally, the Commission had decided to conduct beta testing with real cases in the four focus group counties. However, the Commission decided to delay the beta testing of the risk assessment tool in the field for two reasons. First, during the Focus Group sessions that we held on the initial risk assessment tool, one issue raised was the possible utilization of Common Pleas Case Management System [CPCMS] to populate the criminal history record part of the risk assessment module of the sentencing guidelines. For our risk study, we had used the criminal history records from the State Police, and for people in the field to use those records would require manual determination of an offender's criminal history. Over the last year, we have been working with the Administrative Office of the PA Courts [AOPC] to determine the feasibility of using CPCMS for criminal history information. Thus, we needed to replicate our original analyses using data obtained through CPCMS. If we find consistent results, indicating CPCMS as a viable option for criminal history information, this would eliminate the need for the county users to manually obtain and enter this information. Thus, all of the information used in the risk scale would then be pre-populated into the risk module of the SGSWeb guideline software.

The second reason that beta testing was delayed was because it would be less confusing to people in the field if the Commission developed a risk assessment tool for all offenders [not just Level 3 and 4 offenders] prior to implementation. Thus, the Commission has undertaken a follow-up risk study utilizing offenders from all 5 levels of the sentencing guidelines.

Risk Assessment Project: Phase II [Levels 1 - 5 offenders]

The original risk scale was developed for all offenders sentenced under Levels 3 and 4 of the sentencing guidelines. In the follow-up study, we developed a scale for all offenders sentenced under all five levels of the guidelines. In the original study the seriousness of the offense, as defined by the Offense Gravity Score, was one of the factors controlled for in the analysis. As it was found to be predictive of recidivism, it became one of the factors in the risk scale. In order to refine the utility of the scale, however, it was decided to develop a risk assessment scale for each of the Offense Gravity Scores, rather than use it as an independent factor. [This decision is discussed in more detail later.]

Sample. For our follow-up recidivism study, we used all offenders who were sentenced during 1998, 1999, and 2000. Since this study included offenders who were sentenced to state prison for lengthy periods of time, we needed to use a sample of offenders who were sentenced in years prior to those used in our original study to allow for a sufficient tracking period.² We also decided, however, to use offenders sentenced during later years [2004-2006] as a second validation sample.

The total sample from 1998-2000 consisted of 112,702 offenders. We split the sample at random into two sub-samples: one, the development sample, to develop the risk assessment tool; the other, a validation sample, to test the predictive capability of the tool. This procedure resulted in a development sample of 56,351 offenders. This development sample was further reduced to 51,131 due to several reasons including: missing identifying information [e.g., state identification number] that allows linkages with other data systems, inability to locate criminal history information and lack of a three-year recidivism follow-up [see Table 1 for a complete listing of sample reduction reasons.]

² DUI offenders were not included in either the original or follow-up study as these offenders were part of a separate project.



Pennsylvania Commission on Sentencing

Table 1. Determination of Final Sample
[1998-2000: 1997 guidelines only]

All offenses	285,794
Most serious in JP	170,565
Delete Life/Death	200
Delete DUI if MS/JP	41,563
Delete duplicates; take first	16,101
Total Sample	112,702
Development Sample	
Take 50% of total sample	56,351
Unable to find SID	1,299
SID no match with DOC data	229
SID with no match with State Police	1,037
Duplicates	1,938
Offender still in prison	352
Offender transferred [e.g., State hospital]	16
Vacated sentence	33
Less than three year followup	256
Offender died	60
Total deletions	5,220
Final development sample	51,131

Measuring Recidivism. As our measures of recidivism, we used re-arrest and, for offenders sentenced to state prison, re-incarceration on a technical violation. We obtained arrest information from the criminal history records maintained by the State Police. In determining exposure time, we used date of sentence for probation cases, expiration of minimum sentence for county jail sentences,³ and date of release for state prison sentences. The Department of Corrections provided the date of release, as well as information on technical violations that resulted in return to prison, which we took into account for the recidivism of offenders sentenced to prison.

Type of recidivist offense. The analysis for the risk tool looks at the risk of an offender being re-arrested for any new offense. The Commission was also interested in knowing the risk of a violent re-offense, particularly for the more serious Level 5 offender [OGS of 9 through 14]. Table 2 shows that, while offenders do tend to commit a variety of offenses, there is also some degree of crime specialization. For example, offenders in our study who had a current conviction for a firearms offense had the highest rate of re-arrest for another firearms offense; and offenders whose current conviction was for a personal felony offense had the second highest rate of re-arrest for another personal felony offense [offenders convicted of firearms had the highest rate of re-arrest for a personal felony offense. Thus, offenders in our sample who committed personal or violent offenses did appear to be at higher risk than other types of offenders of recommitting another personal or violent offense. Due to time constraints, however, we decided to reserve this issue of recidivism for a violent offense for subsequent analysis, and focus on re-arrest for any offense for this analysis

³ For county jail sentences, date of release was unavailable. Since the judge has paroling authority in these cases, offenders can be released prior to the expiration of the minimum. Findings from another study the Commission had conducted indicated that about a third of the offenders are released prior to their minimum, about a third at the expiration of their minimum, and about a third post minimum sentence. Thus, we decided that expiration of the minimum sentence was the best estimate for date of release for county jail sentences and used that to determine exposure time.



Table 2. Recidivism Rate by Current Conviction Offense and Rearrest Offense [3 year rate]

Current Offense	Reoffense Type (%)															Total Number
	sex					sex										
	burglary	property - misd	property - felony	personal - misd.	personal - felony	offense - felony	offense - misd.	drug - felony	drug - misd.	firearms	other weapons	consp	public order	public adm	other	
burglary	17.2*	39.9	13.1	18.5	9.7	1.1	0.9	6.4	18.2	3.0	8.8	5.2	10.7	10.6	4.3	1,223
property - misd	6.5	42.1	15.2	19.1	9.2	1.3	1.5	7.7	19.9	1.8	3.8	4.6	11.8	11.0	3.8	5,754
property - felony	6.4	43.9	18.9	19.7	11.6	1.2	1.3	8.7	21.7	3.1	7.0	5.4	11.8	14.0	2.9	4,611
personal - misd.	4.2	21.6	6.1	27.9	12.4	1.7	2.1	7.0	15.6	2.8	4.1	2.8	15.3	10.1	3.6	5,721
personal - felony	6.5	27.3	6.3	24.9	17.6	1.6	1.6	11.9	21.9	7.3	8.7	3.1	9.6	14.3	3.4	2,680
sex offense - felony	2.4	10.2	3.1	13.5	4.3	7.6	5.9	4.3	10.0	1.9	2.9	1.7	5.5	5.0	20.0	421
sex offense - misd.	2.0	14.3	4.6	16.8	4.6	4.3	10.2	3.6	8.4	0.5	2.0	0.3	13.0	6.1	5.9	393
drug - felony	3.2	18.3	3.9	18.8	11.9	1.0	1.0	30.3	39.3	7.4	6.8	5.4	7.9	12.3	2.5	5,266
drug - misd.	4.3	24.4	7.8	19.0	9.6	0.6	0.8	17.0	35.4	3.1	3.3	4.1	14.6	11.2	3.2	4,477
other traffic	3.8	19.7	7.1	23.9	8.2	1.5	1.6	9.1	19.0	3.2	2.2	3.1	13.6	10.9	2.6	807
firearms	4.5	27.5	6.2	29.8	19.7	1.3	1.4	23.8	33.3	15.5	13.0	7.6	11.1	15.4	3.9	971
other weapons	5.0	29.6	6.0	26.4	13.5	1.3	2.2	8.2	19.8	8.8	10.1	7.2	12.6	12.9	5.7	318
public order	4.2	23.2	7.8	21.9	9.1	1.0	1.4	6.3	21.7	1.5	2.0	3.2	31.9	11.9	3.2	1,356
public adm	5.5	29.4	8.4	26.6	12.6	1.5	1.8	10.3	21.3	3.5	3.9	3.7	16.5	15.0	3.9	1,608
other	1.7	17.3	6.4	15.0	4.7	0.6	0.3	6.7	12.3	0.6	2.5	2.5	8.6	4.2	8.4	359
Total	5.3	29.0	9.5	21.7	11.4	1.3	1.5	12.9	24.5	4.1	5.3	4.3	12.9	11.9	3.6	35,965

* Example: 17.2% of the current burglary offenders recidivate for burglary re-arrest within 3 years.

Sample Description

Table 3 shows the sample description. Overall, about 47% of the offenders recidivated after three years. Most of the offenders were male [82%], from an urban county [78%], and had a mean age of 31. Over half were white [56%], 37% were Black, and about 7% were Hispanic. Offenders were most likely to be convicted of a property [32%], personal [28%], or drug [26%] offense, with the most frequent Offense Gravity Score being 3. About 38% of the offenders had multiple convictions for which they were being sentenced. The majority of offenders [74%] had a prior arrest with the mean number of prior arrests being 3.4. As with their current offense, the most prevalent type of prior arrest was for property [53%], personal [39%], and drug [33%] offenses. About 43% had a Prior Record Score of 0 and 95% had no Juvenile Adjudications. [See Appendix A for sample description by OGS.]



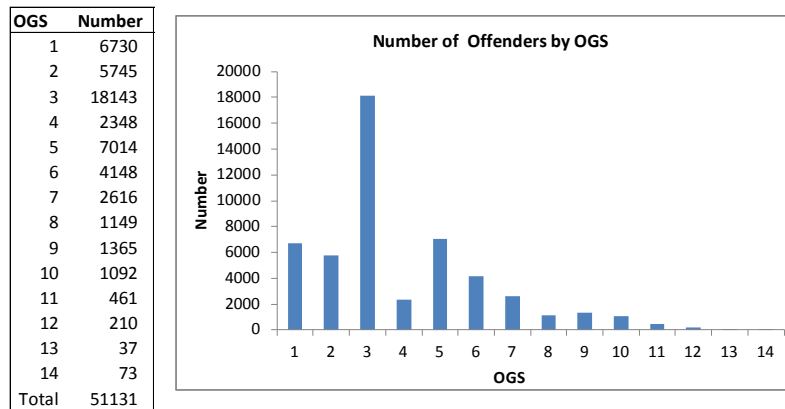
Table 3. Sample Description for Development Sample (N = 50,743)

	N	%		N	%
Recidivism [three years]			Total prior arrests		
Yes	23,655	46.6	0	12,999	25.6
No	27,088	53.4	1	9,825	19.4
Gender			2	6,785	13.4
Male	41,516	81.8	3-4	8,590	16.9
Female	9,227	18.2	5-7	6,086	12.0
Age			8-9	2,174	4.3
< 21	8,850	17.4	Over 9	4,284	8.4
21-29	17,900	35.3	Mean	3.43	
30-39	14,549	28.7	Type of prior arrest(s)		
40-49	7,239	14.3	Prior personal/sex arrest(s)		
50+	2,205	4.3	Yes	19,851	39.1
Mean	30.5		No		
County			Prior property arrest(s)		
Philadelphia	7,572	14.9	Yes	26,910	53.0
Allegheny	6,008	11.8	No		
Other urban	25,730	50.7	Prior drug arrest(s)		
Rural	11,433	22.5	Yes	16,878	33.3
Race			No	33,865	66.7
White/Other	28,371	55.9	Prior firearms/weapons arrest(s)		
Black	18,695	36.8	Yes	8,124	16.0
Hispanic	3,677	7.2	No	42,619	84.0
Current offense type (most serious)			Prior traffic arrest(s)		
Burglary	1,576	3.1	Yes	10,360	20.4
Property M	8,378	16.5	No	40,383	79.6
Property F	6,200	12.2	Prior Public Order arrest(s)		
Personal M	8,804	17.4	Yes	13,405	26.4
Personal F	3,803	7.5	No	37,338	73.6
Sex Offense F	629	1.2	Prior Public Administration arrest(s)		
Sex Offense M	729	1.4	Yes	8,177	16.1
Drug F	7,190	14.2	No	42,566	83.9
Drug M	6,138	12.1	PRS		
Traffic	1,144	2.3	Yes	22,046	43.4
Firearms	1,271	2.5	No	28,697	56.6
Other Weapons	459	0.9	Mean	1.29	
Public Order	2,237	4.4	Prior Juvenile Adjudication		
Public Administration	2,185	4.3	Yes	2,717	5.4
OGS			No	48,026	94.6
1	6,675	13.2	Type of sentence		
2	5,687	11.2	Prison	5,235	10.3
3	18,021	35.5	Jail	17,392	34.3
4	2,328	4.6	CIP	2,637	5.2
5	6,946	13.7	Probation	24,265	47.8
6	4,126	8.1	Other	1,214	2.4
7	2,599	5.1			
8	1,140	2.2			
9-14	3,221	6.3			
Mean	3.95				
Multiple charges					
Yes	19,168	37.8			
No	31,575	62.2			



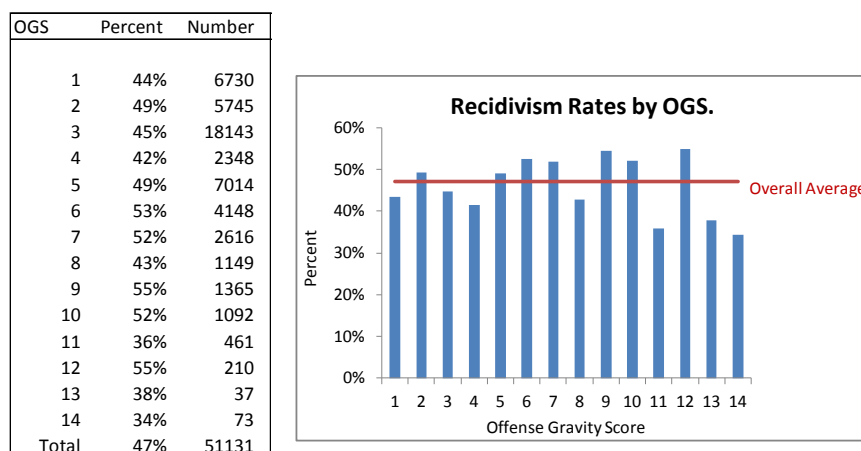
Developing a risk scale for each OGS. For this study, we decided to focus on refining the risk assessment tool and determine whether a risk tool could be developed for each individual Offense Gravity Score of the guidelines, rather than develop one tool that would be applied to all OGS levels. This decision was made for two reasons. First, there was a wide range in the number of offenders depending upon the OGS level. Table 4 shows that less than 1% of the offenders had an OGS of 14, while 35% had an OGS of 3. With one-third of the offenders being at OGS 3, those offenders would be overrepresented in the analysis, even controlling for OGS level.

Table 4. Number of Offenders by OGS Level



Second, we thought that developing a risk tool based upon all offenders together might not adequately address the varying levels of seriousness represented by the various OGS levels. Table 5 shows that the recidivism rate of offenders varies by OGS level. Not only was there a wide range of recidivism, depending upon the OGS [34% for OGS 14 to 55% for OGS 12], the recidivism rate was not linearly related to OGS. The recidivism rate did not consistently go higher or lower with each increase in OGS level. Thus, some offenders committing less serious offenses have higher recidivism rates than those who commit the more serious offenses. Development of a risk tool for all offenders as a group would potentially result in the less serious offenders having higher risk scores while more serious offenders would have lower risk scores. Application of a risk tool within the context of the offense seriousness [as reflected by the OGS] was viewed as being both consistent with the guideline structure and potentially more useful to judges at sentencing. [See Appendix B for recidivism rates of offenses within each OGS.]

Table 5. Recidivism Rates by OGS





Analysis: Predictors of Recidivism

Bivariate analysis: factors related to recidivism. The sentencing guidelines have 14 OGS levels. As the number of cases in the six highest OGS levels was too small to permit the necessary analyses, we decided to collapse OGS levels 9 through 14, which represented the most serious offenders [Level 5 of the guidelines]. Thus, we essentially conducted nine separate recidivism studies.

The initial analysis involved determining which factors were significantly related to recidivism. Table 6 shows a summary of the factors found to be significant at the bivariate level for the entire sample, as well as for each OGS [see Appendix C for specific bivariate results by OGS]. Overall, for the full sample, offenders were more likely to recidivate if they were young, Black, male, from an urban county, and had a greater number of prior arrests, a Prior Record Score [which measures number and seriousness of prior convictions and serious juvenile adjudications], prior juvenile adjudications, and multiple current convictions. The highest recidivism rates were for offenders convicted of burglary or firearms offenses. Offenders who committed a property, personal, or drug offense had higher recidivism rates if the offenses were felonies rather than misdemeanors.

Table 6. Summary of Recidivism Findings for Bivariate Analysis by OGS

Factor	FULL Sample	ogs 1	ogs 2	ogs 3	ogs 4	ogs 5	ogs 6	ogs 7	ogs 8	ogs 9-14
Age	Young	***	***	***	***	***	***	***	***	***
Race	Black	***	***	***	***	***	***	***	***	***
Gender	Male	ns	***	***	**	***	***	***	***	***
County	Yes	***	***	***	***	***	***	***	***	***
	Allegheny and Philadelphia	Allegheny	Allegheny and Phil.	Allegheny	Allegheny	Allegheny and Phil.	Philadelphia	Allegheny and Phil.	Allegheny and Phil.	Allegheny and Phil.
Total prior arrests	yes	***	***	***	***	***	***	***	***	***
Type of prior arrest(s)										
Prior personal	yes	***	***	***	***	***	***	***	***	***
Prior property	yes	***	***	***	***	***	***	***	***	***
Prior drug	yes	***	***	***	***	***	***	***	***	***
Prior firearms/weapons	yes	***	***	***	***	***	***	***	***	***
Prior traffic	yes	***	***	***	***	***	***	**	*	ns
Prior Public Order	yes	***	***	***	***	***	**	***	**	***
Prior Public Adm	yes	***	***	***	***	***	***	***	***	***
PRS	yes	***	***	***	***	***	***	***	***	***
Prior Juvenile Adjudication	yes	***	**	***	**	***	***	***	***	***
Multiple current convictions	yes	ns	ns	***	ns	*	ns	**	ns	ns
Current offense type	Yes	*	**	***	***	***	***	***	***	***
	Burglary	Property	Property	Property Fel.	Property	Personal Fel.	Escape	Personal	Drug	Robbery
	Firearms	Drug			Firearms	Escape	Drug			Firearms
	Property Felony	Public Order								
	Personal Felony									
	Drug Felony									
OGS	6 and 7									

* sig. at .05 level

** sig. at .01 level

*** sig. at .001 level

ns - not statistically significant



As can be seen in Table 6 these factors were found to be significantly related to recidivism for most of the OGSs as well. Age, race, county, number of prior arrests, PRS, prior juvenile adjudications, and current offense were found to be significantly related to recidivism for all OGSs. Gender was found to be significantly related to recidivism for all but one OGS [OGS 1], while having multiple current convictions was found to be significant for only three of the OGSs.

While county and type of current offense were factors related to recidivism for all OGSs, there was some variation in how the factor predicted recidivism. For county, for five of the OGSs, offenders from Allegheny and Philadelphia Counties were more likely to recidivate than offenders from other urban or rural counties; for three of the OGSs, offenders from Allegheny County were more likely to recidivate than offenders from Philadelphia, other urban, or rural counties, and for one OGS offenders from Philadelphia were more likely to recidivate than offenders from Allegheny, other urban, or rural Counties. For current offense, offenders convicted of property offenses were more likely to recidivate at the lower OGSs while offenders convicted of personal offenses were more likely to recidivate at the higher OGSs. Further, offenders convicted of drug, public order, firearms, and escape offenses had higher recidivism rates for some OGSs.

Multivariate analysis procedure. The next step was to conduct the multivariate analysis to determine which factors predicted recidivism controlling for all factors simultaneously. In conducting the logistic analysis, we rotated all of the categories for factors that were multi-categorical, not dichotomous, categories. That is, we used one category as the comparison category in the first analysis, a second category as the comparison category in the second analysis and so on for all of the categories. This procedure was necessary to ensure that reported differences were real and not simply due to the particular comparison category. We took a conservative approach and included a factor only if the category was significantly different from all of the other categories for that factor.

Tables 7 and 8 show two examples of this process, and provide excerpts from the logistic model rotations.⁴ Table 7 shows the rotation done for age at OGS 9-14. Offenders who were age 21-29 were significantly less likely to recidivate than offenders who were less than 21, and significantly more likely to recidivate than offenders in the 30-39, 40-49, and over 49 age group categories. However, there was no difference among offenders who were in the 30-39 and 40-49 age groups categories [shaded grey in Table 7], so those two categories were collapsed into one.

Table 7. Example of Variable Rotation: Age categories for OGS 9-14

[excerpt from logistic regression model outcome]

	< 21 years Odds Ratio	21-29 years Odds Ratio	30-39 years Odds Ratio	40-49 years Odds Ratio	50+ years Odds Ratio
< 21	Reference	1.901***	2.801***	3.680***	9.947***
21-29 years	0.526***	Reference	1.474***	1.936***	5.233***
30-39 years	0.357***	0.679***	Reference	1.314	3.551***
40-49 years	0.272***	0.516***	0.761	Reference	2.703***
50+	0.101***	0.191***	0.282***	0.370***	Reference
*** sig. at .001 level					
Note: grey shaded area shows where the categories were not significantly different from each other.					

⁴ Subsequent to this analysis we discovered that some ‘offenses’ listed in the criminal history records were not criminal activity. For example, registration for Megan’s Law offenses was indicated in the ‘offense’ field and date of registration was listed in the ‘arrest’ field. We removed the noncriminal offenses, which resulted in some differences in the findings for some OGSs. Thus the final logistic models included in Appendix D vary somewhat from the one used for these analyses.



Table 8 shows the rotation done for current offense type at OGS 6. Offenders convicted of personal misdemeanor offenses had the lowest recidivism rate at this OGS. If this offense is used as the reference category in the analysis, we find that offenders convicted of personal felony, drug, and escape offense are significantly more likely to recidivate than offenders convicted of personal misdemeanor offenses. Further, there is no difference in the recidivism of offenders convicted of burglary, property, sex related offense, or other offenses when compared to offenders convicted of personal misdemeanors. Thus, this pattern of significant differences would result in offenders convicted of personal felony, drug, and escape offenses receiving one point on the risk assessment scale, while all other offenders would receive no points for their current offense. However, this would result in some offenders receiving a point in the risk scale while being no more likely to recidivate than some offenders receiving no points. For example, if personal felony offenses are used as the reference category, we find that they are not more likely to recidivate than offenders convicted of burglary and property offenses. Yet, using the original comparison [personal misdemeanor offenses as the reference offense] offenders convicted of personal felony offenses would have received one point while offenders convicted of burglary and property offenses would have received 0 points in the risk scale.

Table 8. Example of Variable Rotation: Offense categories for OGS 6

	Burglary Odds Ratio	Property Odds Ratio	Personal (M) Odds Ratio	Personal (F) Odds Ratio	Drug Offenses Odds Ratio	Sex Related Odds Ratio	Escape Odds Ratio	Other Offenses Odds Ratio
Burglary	Reference	1.063	1.881	0.853	0.709	1.764*	0.643	0.804
Property	0.941	Reference	1.77	0.803	0.667	1.660*	0.605	0.756
Personal (M)	0.532	0.565	Reference	0.454*	0.377**	0.938	0.342**	0.427
Personal (F)	1.172	1.246	2.205*	Reference	0.831	2.068***	0.754	0.942
Drug Offenses	1.411	1.499	2.653**	1.203	Reference	2.488***	0.908	1.134
Sex Related Offenses	0.567*	0.602*	1.066	0.484***	0.402***	Reference	0.365***	0.456
Escape	1.554	1.652	2.923**	1.326	1.102	2.741***	Reference	1.249
Other Offenses	1.244	1.322	2.34	1.062	0.882	2.195	0.801	Reference

* Sig. at .05 level ** Sig. at .01 level *** Sig. at .001 level

Multivariate analysis findings. Table 9 shows a summary of the factors found to be predictive of recidivism for each of the OGSs. Age and the number of prior arrests were predictors for all of the OGSs, while gender was predictive for all but OGS 1. Prior offense type was predictive for five of the OGSs that represented less serious offenders [OGS 1-5]. Having multiple charges also was a significant predictor for five OGSs [OGS 3-7]. Having a prior juvenile adjudication was predictive for three OGS [3, 5, and 6], while having Prior Record Score greater than zero was predictive for two OGSs [7 and 8]. Current offense type was predictive for only OGS 3.

Table 9. Predictors of Recidivism by Offense Gravity Score: Development Sample

	OGS 1 n=6673	OGS 2 n=5687	OGS 3 n=18021	OGS 4 n=2328	OGS 5 n=6946	OGS 6 n=4126	OGS 7 n=2599	OGS 8 1140	OGS 9-14 3221
Gender	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County	Yes	Yes	Yes	No	Yes	No	No	No	No
Age	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Current Offense	No	No	Yes	No	No	No	No	No	No
Number of Prior Arrests	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Prior Offense Type	Yes	Yes	Yes	Yes	Yes	No	No	No	No
Multiple charges	No	No	Yes	Yes	Yes	Yes	Yes	No	No
PRS	No	No	No	No	No	No	Yes	Yes	No
Prior juv. Adjud	No	No	Yes	No	Yes	Yes	No	No	No



The significant predictors of recidivism were used to develop the risk scale for each OGS.⁵ Table 10 provides a summary of how each of the factors counted in the risk assessment scale for each OGS. The risk scale ranged from 0-6 [OGS 8] to 0-16 [OGS 3]. Before finalizing the risk scales, and conducting the analyses on the validation sample, we addressed two additional issues: 1) the predictive accuracy of the risk scales with and without each of the predictors, and 2) the predictive accuracy of the OGS specific scale compared to the ‘full sample’ scale.

Table 10. Scales by Offense Gravity Score

Scale	OGS 1 n=6673 0-10	OGS 2 n=5687 0-10	OGS 3 n=18021 0-16	OGS 4 n=2328 0-9	OGS 5 n=6946 0-13	OGS 6 n=4126 0-9	OGS 7 n=2599 0-9	OGS 8 n=1140 0-6	OGS 9-14 n=3221 0-8
Gender		Male= 1 Female=0	Male= 1 Female=0	Male= 1 Female=0	Male= 1 Female=0	Male= 1 Female=0	Male= 1 Female=0	Male= 1 Female=0	Male= 1 Female=0
County	Alleg =1 All other=0	Urban=1 Rural=0	Alleg =1 All other=0		Urban=1 Rural=0				
Age	<21=3 21-39=2 40-49=1 >49=0	<21=3 21-39=2 40-49=1 >49=0	<21=3 21-39=2 40-49=1 >49=0	<21=3 21 to 29=2 30-44=1 >44=0	<21=3 21-25=2 26-39=1 >39=0	<21=3 21-39=2 40-49=1 >49=0	<21=3 21-39=2 40-49=1 >49=0	<21=2 21 to 39=1 over 39=0	<21=3 21-29=2 30-49=1 >49=0
Current offense			Property Fel=1 All other=0						
Number of Prior Arrests	none=0 1=1 2 to 4 =2 5 to 9 =3 over 9=4	none=0 1=1 2=2 3 to 6=3 over 6=4	none=0 1=1 2=2 3 to 4=3 5 to 7=4 over 7=5	none=0 1 to 2=1 3 to 8=2 over 8=3	none=0 1=1 2 to 4=2 5 to 7=3 over 7=4	none, 1=0 2=1 3 to 6=2 over 6=3	none=0 1=1 2 to 6=2 over 6=3	none=0 1 to 4=1 over 4=2	0=0 1=1 2 to 4=2 5 to 7=3 Over 7=4
Prior Offense Type	lic order=1 drug=1	drug=1	property=1 drug=1 public adm.=1	drug=1	drug=1 public adm=1				
Multiple charges			Yes=1 No =0	Yes=1 No =0	Yes=1 No =0	Yes=1 No =0	Yes=1 No =0		
PRS							Yes=1 No =0	Yes=1 No =0	
Prior juv. Adjud			Yes=1 No/ unknown=0		Yes=1 No/ unknown=0	Yes=1 No/ unknown=0			

⁵ While race was found to be a significant predictor of recidivism, it is not included in the risk scale. It was a factor, however, controlled for in the analyses.



Contribution of specific factors. In order to determine how well the scale performed with and without each factor, we conducted a series of block testing analyses, adding one variable at a time. We started with the two variables that were consistently the best predictors of recidivism, age and number of prior arrests, and added each variable found to be a significant in the order of their importance [based upon the odds ratio].⁶ Table 11 shows the results of the ROC [receiver operating characteristic] analyses, which plots the true positive rate [how many people were predicted to recidivate and did recidivate] against the false positive rate [how many people were predicted to recidivate but did not recidivate]. For most of the OGSs, most of the factors in the risk scale provided additional improvement in the recidivism prediction accuracy. However, there were some variables that did not significantly improve the scale's performance. The addition of multiple charges did not add significantly for any of the OGSs, and gender did not for four of the eight OGSs in which it was included in the scale. The OGSs most impacted were OGS 3, where four of the eight factors in the risk scale did not significantly increase the predictive accuracy of the scale, and OGS7, where three of the five factors did not provide improvement. However, in the end, we decided to keep all of the significant predictors of recidivism in the scale for each OGS as we concluded that any improvement in the scale accuracy, even if modest, [and not statistically significant] was useful.⁷

Table 11. Variables that add significantly to prediction when added one at a time [AUC results from block testing].									
	OGS 1 n=6673	OGS 2 n=5687	OGS 3 n=18021	OGS 4 n=2328	OGS 5 n=6946	OGS 6 n=4126	OGS 7 n=2599	OGS 8 1140	OGS 9-14 3221
Gender		Yes	Yes	No	Yes	Yes	No	No	No
County	Yes	Yes	No		Yes				
Age	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Current Offense			No			Yes			Yes
Number of Prior Arrests	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Prior Offense Type	No	No	No	Yes	No				
Multiple charges			No	No	No	No	No		
PRS							No	Yes	
Prior juv. Adjud			Yes		Yes				

GS specific scale vs. full scale. In addition to examining the extent to which the individual factors impacted the prediction accuracy of the scale, we also examined how well the risk assessment scale developed for the specific OGS performed compared to a scale that would be based upon findings for the entire sample. In other words, are we doing better in developing OGS specific scales than using one scale for all offenders, regardless of OGS?

⁶ For another report, we conducted additional analysis to determine the contribution that three demographic factors made toward the prediction of arrest. In that report, we found that, overall, age contributed about 25% toward the prediction of arrest, and number of prior arrests contributed about 50% toward the prediction of arrest. Removing age significantly reduced the accuracy of the scale's prediction of arrest. Since our focus was on demographic factors, we had not tested number of prior arrests, but since they contribute most toward the prediction of arrest, we think it is safe to assume the removal of that factor would also significantly reduce the scale's accuracy. See "Special Report The Impact of Removing Age, Gender, and County from the Risk Assessment Scale" on Commission's website [<http://pasentencing.us>]

⁷ When this analysis was conducted, current offense was found to be a significant predictor of recidivism for OGS 6 and OGS 0-14. Subsequent to this analysis, however, we discovered that some 'offenses' listed in the criminal history records were not criminal activity. For example, registration for Megan's Law offenses was indicated in the 'offense' field and date of registration was listed in the 'arrest' field. We removed the noncriminal offenses, which resulted in some differences in the findings for some OGSs.



In order to determine how well the OGS specific risk scale performed compared to an overall risk scale, we again conducted a series of ROC [receiver operating characteristic] analyses.

Table 12 provides an example of this analysis for OGS 6. This example provides the risk scale based upon findings from the entire sample and the risk scale based upon findings for OGS 6 only. Both scales were used to compare the prediction accuracy as shown in Figure 1. The findings from the ROC analysis indicate that the OGS specific scale does significantly better in prediction of risk than the overall risk scale [AUC of .7012 vs. .6729, statistically significant at .000 level]

Table 12. Risk Scales for All OGSs Combined and OGS 6.

	ALL OGSs Combined N=51,099		OGS 6 N=4,148	
	Scale	Points	Scale	Points
Gender	Male	1	Male	1
	Female	0	Female	0
County	Phil/Alleg	2	Philadelphia	1
	Other urban	1	Other	0
	Rural	0		
Age	<21	4	<21	3
	21 to 29	3	21-39	2
	30 to 39	2	40-49	1
	40 to 49	1	>49	0
	over 49	0		
Current Offense	Property -F	3	Drug Other	1 0
	Burglary	"		
	Escape	"		
	Firearms	2		
	Personal - F	"		
Prior Arrests	Sex -F	"		
	none	0	none, 1	0
	1	1	2	1
	2	2	3 to 6	2
	3 to 4	3	over 6	3
	5 to 7	4		
Prior Offense	8 to 9	5		
	over 9	6		
	property	1	NS	
	drug	1		
	traffic	1		
	public order	1		
OGS	public adm.	1		
	NS			
Multiple charges	yes	1	yes	1
	no	0	no	0
PRS [yes/no]	yes	1	NS	
	no	0		
Prior juv. Adjud	yes	1	NS	
	no/unknown	0		

Note: NS indicates that the factor is not a significant predictor of recidivism.

Figure 1

Model	N	Model Comparisons			
		ROC Area	Std. Error	95%CI	
OGS Specific	4148	0.7012	0.0079	0.68567	0.71677
Full Data Scale	4148	0.6729	0.0083	0.65662	0.68917

chi2(1) = 35.55 Prob>chi2 = 0.0000

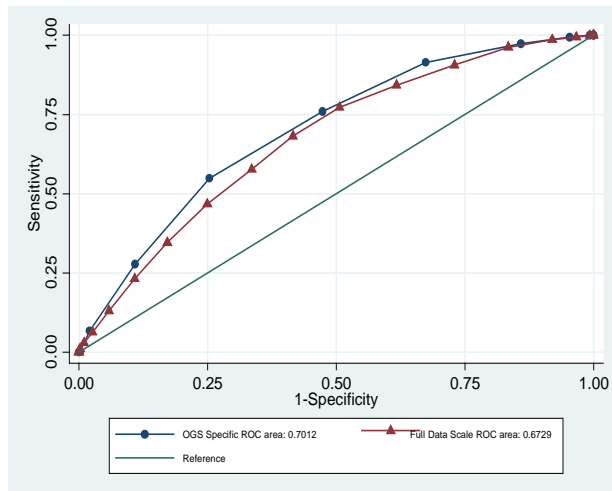




Table 13 summarizes the results of this analysis for all OGSs. The OGS specific risk model predicted better than the overall risk scale for all OGSs. This finding was significant, however, for only 3 of the 9 OGSs, and approached significance for another OGS. We concluded that the development of an OGS specific risk scale was the best direction to take, even if it resulted in only modest improvement in the accuracy of the risk prediction for some OGSs.

Table 13. Summary of AUC testing of OGS specific risk model compared to the full sample risk model.

	<u>OGS 1</u>	<u>OGS 2</u>	<u>OGS 3</u>	<u>OGS 4</u>	<u>OGS 5</u>	<u>OGS 6</u>	<u>OGS 7</u>	<u>OGS 8</u>	<u>OGS 9-14</u>
OGS specific	x	x	x *	x	x *	x ***	x	x	x #
Full model									
Note: x indicates which model performed better.									

* sig. at .01 level

** sig. at .01 level

***. Sig. at .001 level

#sig. at .10 level

Recidivism rates by risk scale.

Table 14 shows the number of offenders by risk score for each OGS. Most of the offenders have risk scores in the middle of the risk assessment scale, though for OGS 1 and 3 there are more offenders with lower risk scores, while for OGS 6, 8, and 9-14 there are more offenders with higher risk scores.

Table 15 shows the recidivism rate by risk score for each OGS. The recidivism rates range from a low of 0% for the lowest risk score at OGS 2, 4, 7, and 9-14 to a high of 100% for the highest risk score at OGS 1, 3, and 5. However, it should be noted that there are very few offenders in those extreme categories, [as few as one, two, or three]. The vast majority of offenders have risk scores that lie in the middle of the risk scale. Table 17 shows the mean risk score [indicated by red line] for each OGS, as well where the majority of offenders lie along the risk scale range [68% or one standard deviation from the mean as indicated by grey box].



Table 14. Number of Offenders by Risk Score within OGS.

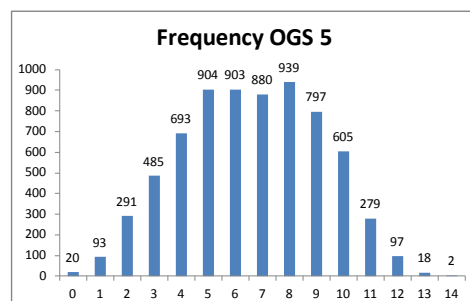
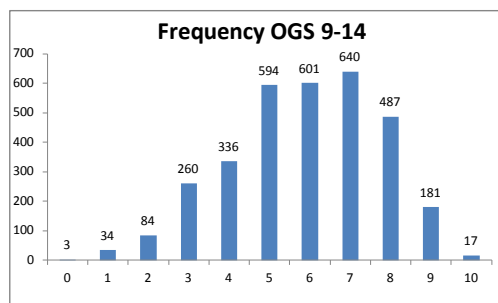
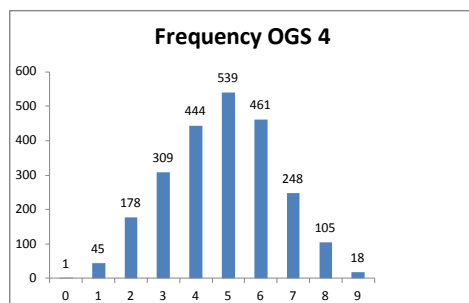
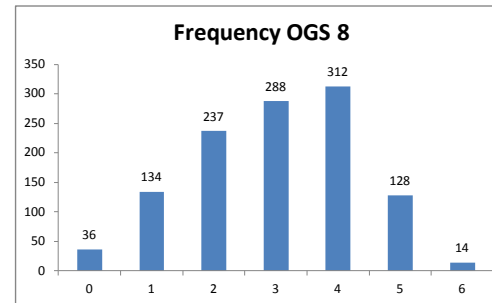
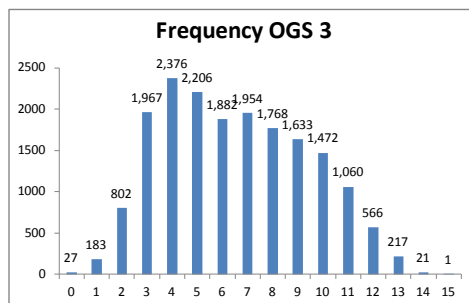
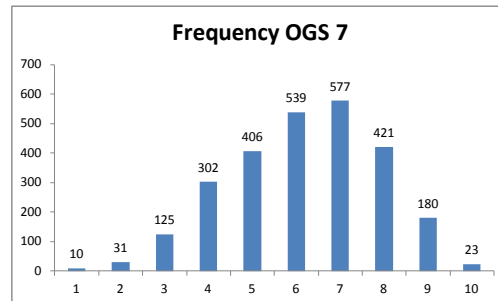
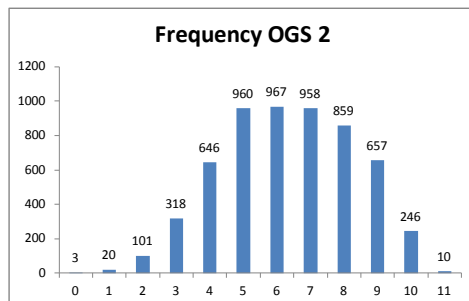
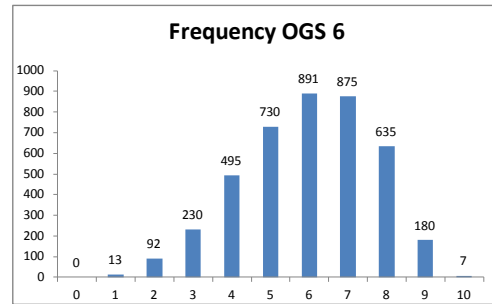
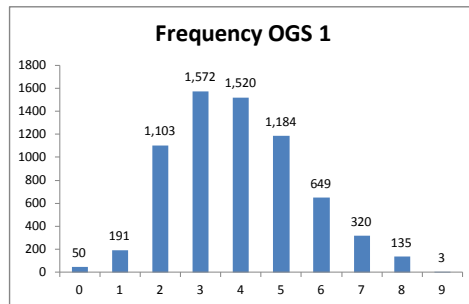
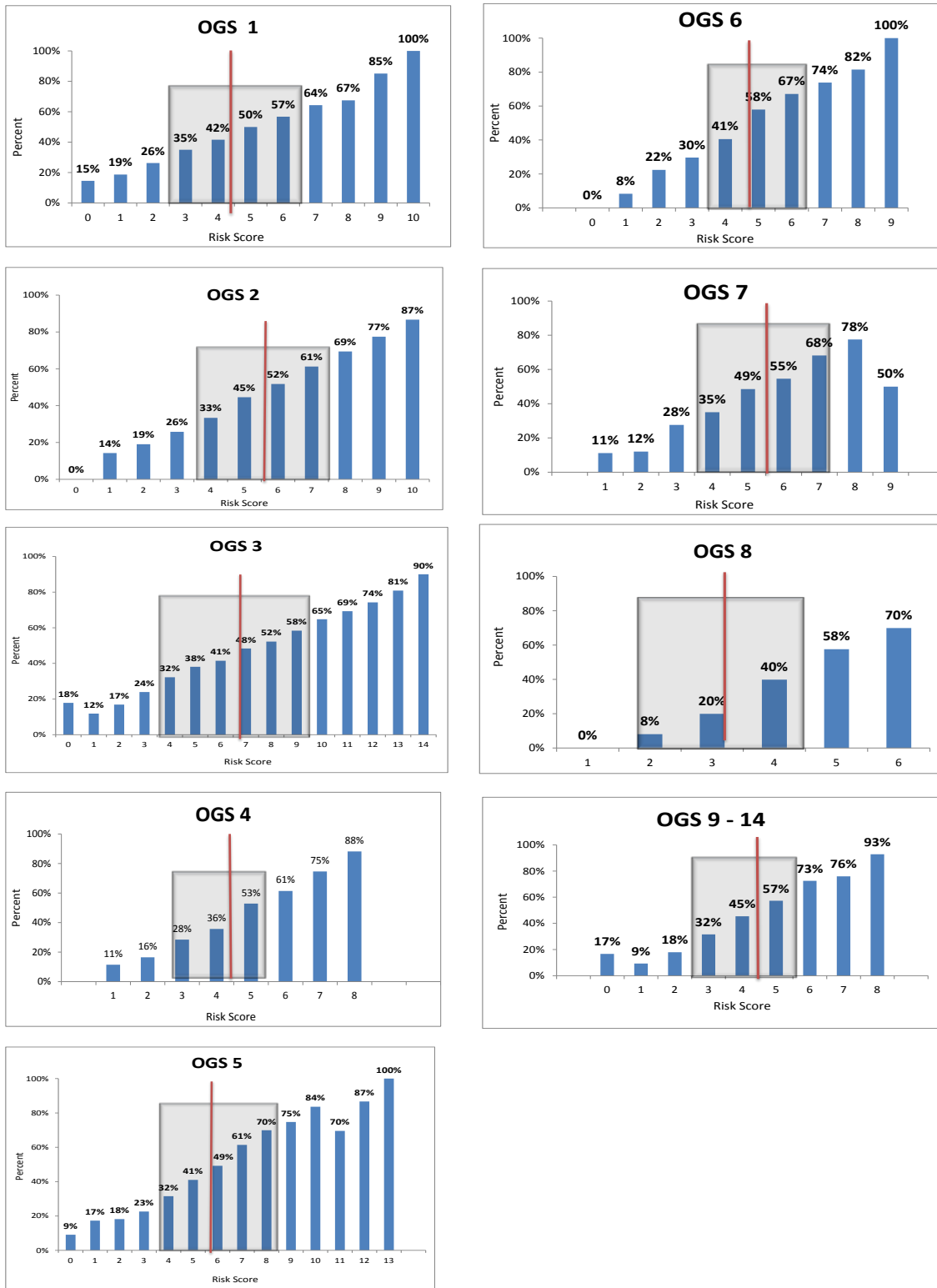




Table 15. Recidivism Rates by Risk Score by Offense Gravity Score [OGS].



Note: The grey box represents where 68% of the offenders fall [1 standard deviation from the mean]. The red line is the mean risk score.



Summary

The purpose of this report was to provide findings from our analyses used to develop a risk assessment instrument to be used at sentencing. This study was a follow-up to our original study which developed a risk scale for mid-level seriousness offenders [Levels 3 and 4 of the sentencing guidelines]. This follow-up study developed a risk scale for all offenders [Levels 1 through 5 of the sentencing guidelines]. Rather than develop one risk scale [which was done in the original study], we decided to develop a risk scale for each OGS, which controlled somewhat for the seriousness of the current offense. [The exception was the combining of OGS 9-14 due to small numbers; these offenders are all Level 5 offenders and are the most serious offenders.]

The overall 3 year recidivism rate was 47%, though this ranged from a low of 34% for OGS 14 to a high of 55% for OGS 9 and OGS 12. In our bivariate analyses we found that generally offenders who were young, black, male, and from urban counties, and who had a greater number of prior arrests, had prior convictions, and/or had prior juvenile adjudications were more likely to recidivate. Having multiple current convictions was generally not a significant factor. Property offenders at the lower OGSs were more likely to recidivate, while offenders convicted of personal offenses were more likely to recidivate at the higher OGSs.

In the development of the risk scale we conducted a series of analyses: 1) multivariate logistic regression to determine which factors were recidivism predictors while holding all factors described above constant; 2) rotation of all categories for factors that were multi-categorical [i.e., not dichotomous] to ensure that reported differences were real and not due to the particular comparison category; 3) block testing analyses, adding one factor at a time, to determine how well the scale performed with and without a certain factor; and 4) comparison of how well the OGS specific scale performed compared to the full sample scale.

We found that age and the number of prior arrests predicted recidivism for all OGSs [In additional analyses conducted we found that these two factors accounted for over 50% of the risk model's explained prediction of recidivism]. Gender was significant for all but OGS 1, and prior offense type and multiple charges were significant predictors for five OGSs. Having a prior juvenile adjudication was predictive for three OGSs, and a Prior Record Score greater than 0 was predictive for two OGSs. Current offense type was predictive for only one OGS.

In testing the risk scale prediction accuracy with and without the significant factors, we found that, overall, the scale performed better when all significant factors were included. However, for two OGSs [OGS 3 and OGS 7], the removal of several significant factors did not reduce the performance of the scale. It was decided, however, that all significant factors would remain in the scales since they provided some increase, albeit sometimes modest, in the overall prediction.

In testing the OGS specific risk scale compared to the full risk scale used for all offenders, we found the OGS specific scale performed better, though this was significant for only three of the nine scales. Considering that the findings were consistently in the direction of the OGS specific risk scales, we concluded that those were the preferred risk scales to use.

The next steps, currently being undertaken by the Commission, involve three areas. First, we are validating these risk scales with two validation samples. One sample consists of offenders sentenced during the same years as the development sample [1998, 1999, 2000]; the second sample consists of offenders sentenced during later years [2004, 2005, and 2006]. Second, we are validating the findings using criminal history information from CPCMS maintained by AOPC. Third, we are working with AOPC and the Commission's software vendor to incorporate a risk assessment module that would populate the risk factor information. Once these steps are completed, we will be beta testing the risk assessment instrument in the four focus group counties.



Appendix A

Sample Description by Offense Gravity Score

[Development Sample: 1998, 1999, 2000]



Pennsylvania Commission on Sentencing

OGS 1 Descriptive statistics for the development sample (N = 6,673)

Development		Development		Development	
N		%		N	
Race		Type of prior arrest(s)			
White/Other		Prior personal/sex arrest(s)			
Black		Yes		2,337	
Hispanic		No		4,336	
6,673		100.0		6,673	
Gender		Prior property arrest(s)			
Male		Yes		3,226	
Female		No		3,447	
6,673		100.0		6,673	
Age		Prior drug arrest(s)			
< 21		Yes		2,058	
21 - 39		No		4,615	
40-49				6,673	
50+					
6,673					
Mean		30.8			
County		Prior firearms/weapons arrest(s)			
Philadelphia		Yes		620	
Allegheny		No		6,053	
Other urban				6,673	
Rural					
6,673					
PRS		Prior traffic arrest(s)			
Yes		Yes		795	
No		No		5,878	
6,673				6,673	
Mean		1.07			
Multiple charges		Prior Public Order arrest(s)			
Yes		Yes		2,130	
No		No		4,543	
6,673				6,673	
Total prior arrests		Prior Public Administration arrest(s)			
0		Yes		897	
1		No		5,776	
2-4				6,673	
5-9					
10+					
6,673					
Mean		3.03			
Prior Juvenile Adjudication		Type of sentence			
Yes		Prison		16	
No		Jail		1,212	
6,673		CIP		228	
		Probation		4,707	
		Other		510	
				6,673	
Current offense type (most serious)		Recidivism			
Property		Three Year			
Personal		Yes		2,894	
Drug		No		3,779	
Other Traffice				6,673	
Public Order					
Public Administr					
6,673					



Pennsylvania Commission on Sentencing

OGS 2. Descriptive statistics for the development sample (N = 5,687).

	N	%		N	%
Race			Type of prior arrest(s)		
White/Other	3,530	62.1	Prior personal/sex arrest(s)		
Black	1,804	31.7	Yes	2,060	36.2
Hispanic	353	6.2	No	3,627	63.8
	5,687	100.0		5,687	100.0
Gender			Prior property arrest(s)		
Male	4,203	73.9	Yes	3,550	62.4
Female	1,484	26.1	No	2,137	37.6
	5,687	100.0		5,687	100.0
Age			Prior drug arrest(s)		
< 21	966	17.0	Yes	1,652	29.0
21 - 39	3,726	65.5	No	4,035	71.0
40-49	772	13.6		5,687	100.0
50+	223	3.9			
	5,687	100.0	Prior firearms/weapons arrest(s)		
Mean	30.28		Yes	706	12.4
			No	4,981	87.6
				5,687	100.0
County			Prior traffic arrest(s)		
Philadelphia	194	3.4	Yes	1,243	21.9
Allegheny	513	9.0	No	4,994	87.8
Other urban	3,324	58.4		6,237	109.7
Rural	1,656	29.1			
	5,687	100.0	Prior Public Order arrest(s)		
PRS			Yes	1,487	26.1
Yes	2,422	42.6	No	4,200	73.9
No	3,265	57.4		5,687	100.0
	5,687	100.0	Prior Public Administration arrest(s)		
Mean	1.24		Yes	941	16.5
			No	4,746	83.5
Multiple charges				5,687	100.0
Yes	1,267	22.3	Type of sentence		
No	4,420	77.7	Prison	76	1.3
	5,687	100.0	Jail	1,630	28.7
Total prior arrests			CIP	208	3.7
0	1,264	22.2	Probation	3,670	64.5
1	1,116	19.6	Other	103	1.8
2	849	14.9		5,687	100.0
3-6	1,580	27.8	Recidivism		
7+	878	15.4	Three Year		
	5,687	100.0	Yes	2,786	49.0
Mean	3.42		No	2,901	51.0
				5,687	100.0
Prior Juvenile Adjudication					
Yes	186	3.3			
No	5,501	96.7			
	5,687	100			
Current offense type (most serious)					
Personal	108	1.9			
Property	3,682	64.7			
Traffic	460	8.1			
Public Administ	1,406	24.7			
Other (Firearms	31	0.5			
	5,687	100.0			



Pennsylvania Commission on Sentencing

OGS 3. Descriptive statistics for the development sample (N = 18,021).

	N	%		N	%
Race			Type of prior arrest(s)		
White/Other	10,949	60.8	Prior personal/sex arrest(s)		
Black	6,081	33.7	Yes	7,162	39.7
Hispanic	991	5.5	No	10,859	60.3
	18,021	100.0		18,021	100.0
Gender			Prior property arrest(s)		
Male	14,543	80.7	Yes	9,388	52.1
Female	3,478	19.3	No	8,633	47.9
	18,021	100.0		18,021	100.0
Age			Prior drug arrest(s)		
< 21	2,546	14.1	Yes	5,711	31.7
21 - 39	11,565	64.2	No	12,310	68.3
40-49	3,012	16.7		18,021	100.0
50+	898	5.0	Prior firearms/weapons arrest(s)		
	18,021	100.0	Yes	2,402	13.3
Mean	31.6		No	15,619	86.7
				18,021	100.0
County			Prior traffic arrest(s)		
Philadelphia	1,399	7.8	Yes	2,134	11.8
Allegheny	2,652	14.7	No	15,887	88.2
Other urban	9,798	54.4		18,021	100.0
Rural	4,172	23.2	Prior Public Order arrest(s)		
	18,021	100.0	Yes	5,213	28.9
PRS			No	12,808	71.1
Yes	7,795	43.3		18,021	100.0
No	10,226	56.7	Prior Public Administration arrest(s)		
	18,021	100.0	Yes	2,997	16.6
Mean	1.26		No	15,024	83.4
				18,021	100.0
Multiple charges			Type of sentence		
Yes	6,734	37.4	Prison	445	2.5
No	11,287	62.6	Jail	5,862	32.5
	18,021	100.0	CIP	922	5.1
Total prior arrests			Probation	10,416	57.8
0	4,724	26.2	Other	376	2.1
1	3,436	19.1		18,021	100.0
2	2,341	13.0	Recidivism		
3-4	2,842	15.8	Three Year		
5-7	2,073		Yes	8,038	44.6
8+	2,605	14.5	No	9,983	55.4
	18,021	100.0		18,021	100.0
Mean	3.68				
Prior Juvenile Adjudication					
Yes	658	3.7			
No	17,363	96.3			
	18,021	100			
Current offense type (most serious)					
Property M	3,271	18.2			
Property F	2,277	12.6			
Personal	6,951	38.6			
Sex Offense	143	0.8			
Drug F	871	4.8			
Drug M	3,609	20.0			
Traffic	273	1.5			
Weapons	241	1.3			
Public Order	122	0.7			
Public Administration	263	1.5			
	18,021	100.0			



OGS 4. Descriptive statistics for the development sample (N =2,328).

	N	%		N	%
Race			Type of prior arrest(s)		
White/Other	1,547	62.1	Prior personal/sex arrest(s)		
Black	681	29.3	Yes	872	37.5
Hispanic	100	4.3	No	1,456	62.5
	2,328	100.0		2,328	100.0
Gender			Prior property arrest(s)		
Male	1,961	84.2	Yes	1,141	49.0
Female	367	15.8	No	1,187	51.0
	2,328	100.0		2,328	100.0
Age			Prior drug arrest(s)		
< 21	360	15.5	Yes	512	22.0
21 - 29	801	34.4	No	1,816	78.0
30-44	911	39.1		2,328	100.0
45+	256	11.0	Prior firearms/weapons arrest(s)		
	2,328	100.0	Yes	319	13.7
Mean	31.34		No	2,009	86.3
				2,328	100.0
County			Prior traffic arrest(s)		
Philadelphia	371	15.9	Yes	462	19.8
Allegheny	252	10.8	No	1,866	80.2
Other urban	1,058	45.4		2,328	100.0
Rural	647	27.8	Prior Public Order arrest(s)		
	2,328	100.0	Yes	541	23.2
PRS			No	1,787	76.8
Yes	897	38.5		2,328	100.0
No	1,431	61.5	Prior Public Administration arrest(s)		
	2,328	100.0	Yes	298	12.8
Mean	1.09		No	2,030	87.2
				2,328	100.0
Multiple charges			Type of sentence		
Yes	1,091	46.9	Prison	91	3.9
No	1,237	53.1	Jail	882	37.9
	2,328	100.0	CIP	120	5.2
Total prior arrests			Probation	1,191	51.2
0	714	30.7	Other	44	1.9
1	479	20.6		2,328	100.0
2	320	13.7	Recidivism		
3-8	629	27.0	Three Year		
9+	186	8.0	Yes	965	41.5
	2,328	100.0	No	1,363	58.5
Mean	2.90			2,328	100.0
Prior Juvenile Adjudication					
Yes	93	4.0			
No	2,235	96.0			
	2,328	100			
Current offense type (most serious)					
Property	941	40.4			
Personal	591	25.4			
Sex	386	16.6			
Firearms/Other Weap	344	14.8			
Other Offense	66	2.8			
	2,328	100.0			



Pennsylvania Commission on Sentencing

OGS 5. Descriptive statistics for the development sample (N = 6,946).

	N	%		N	%
Race			Type of prior arrest(s)		
White/Other	3,597	51.8	Prior personal/sex arrest(s)		
Black	2,909	41.9	Yes	2,716	39.1
Hispanic	440	6.3	No	4,230	60.9
	6,946	100.0		6,946	100.0
Gender			Prior property arrest(s)		
Male	5,734	82.6	Yes	3,983	57.3
Female	1,212	17.4	No	2,963	42.7
	6,946	100.0		6,946	100.0
Age			Prior drug arrest(s)		
< 21	1,457	21.0	Yes	2,305	33.2
21 -25	1,590	22.9	No	4,641	66.8
26-39	2,755	39.7		6,946	100.0
40+	1,144	16.5	Prior firearms/weapons arrest(s)		
	6,946	100.0	Yes	1,337	19.2
Mean	29.6		No	5,609	80.8
				6,946	100.0
County			Prior traffic arrest(s)		
Philadelphia	1,317	19.0	Yes	767	11.0
Allegheny	751	10.8	No	6,179	89.0
Other urban	3,472	50.0		6,946	100.0
Rural	1,406	20.2	Prior Public Order arrest(s)		
	6,946	100.0	Yes	1,652	23.8
PRS			No	5,294	76.2
Yes	3,250	46.8		6,946	100.0
No	3,696	53.2	Prior Public Administration arrest(s)		
	6,946	100.0	Yes	1,190	17.1
Mean	1.46		No	5,756	82.9
				6,946	100.0
Multiple charges			Type of sentence		
Yes	3,240	46.6	Prison	873	12.6
No	3,706	53.4	Jail	3,273	47.1
	6,946	100.0	CIP	437	6.3
Total prior arrests			Probation	2,264	32.6
0	1,828	26.3	Other	99	1.4
1	1,241	17.9		6,946	100.0
2-4	2,036	29.3	Recidivism		
5-7	870	12.5	Three Year		
8+	971	14.0	Yes	3,405	49.0
	6,946	100.0	No	3,541	51.0
Mean	3.60			6,946	100.0
Prior Juvenile Adjudication					
Yes	538	7.7			
No	6,408	92.3			
	6,946	100			
Current offense type (most serious)					
Burglary	857	12.3			
Property	2,910	41.9			
Personal M	414	6.0			
Personal F	407	5.9			
Sex Offense	201	2.9			
Drug	1,747	25.2			
Weapons	143	2.1			
Other Offenses	67	1.0			
Escape	200	2.9			
	6,946	100.0			



Pennsylvania Commission on Sentencing

OGS 6. Descriptive statistics for the development sample (N =4,126).

	N	%		N	%
Race			Type of prior arrest(s)		
White/Other	1,227	62.1	Prior personal/sex arrest(s)		
Black	2,090	50.7	Yes	1,794	43.5
Hispanic	809	19.6	No	2,332	56.5
	4,126	100.0		4,126	100.0
Gender			Prior property arrest(s)		
Male	3,567	86.5	Yes	2,131	51.6
Female	559	13.5	No	1,995	48.4
	4,126	100.0		4,126	100.0
Age			Prior drug arrest(s)		
< 21	786	19.0	Yes	2,087	50.6
21 - 39	2,635	63.9	No	2,039	49.4
40-49	523	12.7		4,126	100.0
50+	182	4.4	Prior firearms/weapons arrest(s)		
	4,126	100.0	Yes	1,013	24.6
Mean	29.76		No	3,113	75.4
				4,126	100.0
County			Prior traffic arrest(s)		
Philadelphia	1,876	45.5	Yes	609	14.8
Allegheny	356	8.6	No	3,517	85.2
Other urban	1,367	33.1		4,126	100.0
Rural	527	12.8	Prior Public Order arrest(s)		
	4,126	100.0	Yes	933	22.6
PRS			No	3,193	77.4
Yes	1,994	48.3		4,126	100.0
No	2,132	51.7	Prior Public Administration arrest(s)		
	4,126	100.0	Yes	764	18.5
Mean	1.51		No	3,362	81.5
				4,126	100.0
Multiple charges			Type of sentence		
Yes	1,827	44.3	Prison	732	17.7
No	2,299	55.7	Jail	1,916	46.4
	4,126	100.0	CIP	433	10.5
Total prior arrests			Probation	1,013	24.6
0	872	21.1	Other	32	0.8
1	723	17.5		4,126	100.0
2	575	13.9	Recidivism		
3-6	1,241	30.1	Three Year		
7+	715	17.3	Yes	2,157	52.3
	4,126	100.0	No	1,969	47.7
Mean	3.61			4,126	100.0
Prior Juvenile Adjudication					
Yes	331	8.0			
No	3,795	92.0			
	4,126	100.0			
Current offense type (most serious)					
Burglary	72	1.7			
Property	116	2.8			
Personal M	62	1.5			
Personal F	580	14.1			
Sex Related Offense	417	10.1			
Drug	2,797	67.8			
Escape	82	2.0			
	4,126	100.0			



OGS 7. Descriptive statistics for the development sample (N =2,599).

	N	%		N	%
Race			Type of prior arrest(s)		
White/Other	1,067	41.1	Prior personal/sex arrest(s)		
Black	1,243	47.8	Yes	1,061	40.8
Hispanic	289	11.1	No	1,538	59.2
	2,599	100.0		2,599	100.0
Gender			Prior property arrest(s)		
Male	2,328	89.6	Yes	1,411	54.3
Female	271	10.4	No	1,188	45.7
	2,599	100.0		2,599	100.0
Age			Prior drug arrest(s)		
< 21	681	26.2	Yes	1,060	40.8
21 - 39	1,612	62.0	No	1,539	59.2
40-49	238	9.2		2,599	100.0
50+	68	2.6	Prior firearms/weapons arrest(s)		
	2,599	100.0	Yes	589	22.7
Mean	27.6		No	2,010	77.3
				2,599	100.0
County			Prior traffic arrest(s)		
Philadelphia	837	32.2	Yes	233	9.0
Allegheny	226	8.7	No	2,366	91.0
Other urban	1,147	44.1		2,599	100.0
Rural	389	15.0	Prior Public Order arrest(s)		
	2,599	100.0	Yes	558	21.5
PRS			No	2,041	78.5
Yes	1,240	47.7		2,599	100.0
No	1,359	52.3	Prior Public Administration arrest(s)		
	2,599	100.0	Yes	420	16.2
Mean	1.49		No	2,179	83.8
				2,599	100.0
Multiple charges			Type of sentence		
Yes	1,459	56.1	Prison	888	34.2
No	1,140	43.9	Jail	1,167	44.9
	2,599	100.0	CIP	216	8.3
Total prior arrests			Probation	314	12.1
0	641	24.7	Other	14	0.5
1	489	18.8		2,599	100.0
2-6	1,066	41.0	Recidivism		
7+	403	15.5	Three Year		
	2,599	100.0	Yes	1,345	51.8
Mean	3.39		No	1,254	48.2
				2,599	100.0
Prior Juvenile Adjudication					
Yes	290	11.2			
No	2,309	88.8			
	2,599	100			
Current offense type (most serious)					
Burglary&Property	674	25.9			
Personal	494	19.0			
Sex Offense	236	9.1			
Drug	1,043	40.1			
Firearm	152	5.8			
	2,599	100.0			



OGS 8. Descriptive statistics for the development sample (N =1,140).

	N	%		N	%
Race			Type of prior arrest(s)		
White/Other	430	62.1	Prior personal/sex arrest(s)		
Black	563	49.4	Yes	439	38.5
Hispanic	147	12.9	No	701	61.5
	1,140	100.0		1,140	100.0
Gender			Prior property arrest(s)		
Male	973	85.4	Yes	488	42.8
Female	167	14.6	No	652	57.2
	1,140	100.0		1,140	100.0
Age			Prior drug arrest(s)		
< 21	197	17.3	Yes	408	35.8
21 - 39	759	66.6	No	732	64.2
40-49	133	11.7		1,140	100.0
50+	51	4.5	Prior firearms/weapons arrest(s)		
	1,140	100.0	Yes	269	23.6
Mean	29.94		No	871	76.4
				1,140	100.0
County			Prior traffic arrest(s)		
Philadelphia	364	31.9	Yes	184	16.1
Allegheny	112	9.8	No	956	83.9
Other urban	507	44.5		1,140	100.0
Rural	157	13.8	Prior Public Order arrest(s)		
	1,140	100.0	Yes	235	20.6
PRS			No	905	79.4
Yes	473	41.5		1,140	100.0
No	667	58.5	Prior Public Administration arrest(s)		
	1,140	100.0	Yes	170	14.9
Mean	1.20		No	970	85.1
				1,140	100.0
Multiple charges			Type of sentence		
Yes	623	54.6	Prison	512	44.9
No	517	45.4	Jail	453	39.7
	1,140	100.0	CIP	37	3.2
Total prior arrests			Probation	135	11.8
0	342	30.0	Other	3	0.3
1	233	20.4		1,140	100.0
2-4	333	29.2	Recidivism		
5+	232	20.4	Three Year		
	1,140	100.0	Yes	483	42.4
Mean	2.73		No	657	57.6
				1,140	100.0
Prior Juvenile Adjudication					
Yes	88	7.7			
No	1,052	92.3			
	1,140	100			
Current offense type (most serious)					
Personal	514	45.1			
Drug	555	48.7			
Other	71	6.2			
	1,140	100.0			



Pennsylvania Commission on Sentencing

OGS 9-14. Descriptive statistics for the development sample (N =3,221).

Development			Development		
	N	%		N	%
Race			Type of prior arrest(s)		
White/Other	1,204	62.1	Prior personal/sex arrest(s)		
Black	1,744	54.1	Yes	1,409	43.7
Hispanic	273	8.5	No	1,812	56.3
	3,221	100.0		3,221	100.0
Gender			Prior property arrest(s)		
Male	2,956	91.8	Yes	1,591	49.4
Female	265	8.2	No	1,630	50.6
	3,221	100.0		3,221	100.0
Age			Prior drug arrest(s)		
< 21	808	25.1	Yes	1,084	33.7
21 - 29	1,242	38.6	No	2,137	66.3
30-49	1,027	31.9		3,221	100.0
50+	144	4.5			
	3,221	100.0	Prior firearms arrest(s)		
Mean	28.43		Yes	561	17.4
			No	2,660	82.6
				3,221	100.0
County			Prior traffic arrest(s)		
Philadelphia	1,131	35.1	Yes	509	15.8
Allegheny	406	12.6	No	2,712	84.2
Other urban	1,267	39.3		3,221	100.0
Rural	417	12.9			
	3,221	100.0	Prior Public Order arrest(s)		
PRS			Yes	656	20.4
Yes	1,388	43.1	No	2,565	79.6
No	1,833	56.9		3,221	100.0
	3,221	100.0	Prior Public Administration arrest(s)		
Mean	1.31		Yes	500	15.5
			No	2,721	84.5
Multiple charges				3,221	100.0
Yes	1,804	56.0	Type of sentence		
No	1,417	44.0	Prison	1,602	49.7
	3,221	100.0	Jail	996	30.9
Total prior arrests			CIP	36	1.1
0	898	27.9	Probation	554	17.2
1	592	18.4	Other	33	1.0
2-4	1,049	32.6		3,221	100.0
5-7	379	11.8			
8+	303	9.4	Recidivism		
	3,221	100.0	Three Year		
Mean	2.92		Yes	1,580	49.1
			No	1,641	50.9
Prior Juvenile Adjudication				3,221	100.0
Yes	357	11.8	Enhancement or Mandatory		
No	2,864	94.2	Yes	390	12.1
	3,221	100.0	No	2,831	87.9
Current offense type (most serious)				3,221	100.0
Robbery	761	23.6			
Burglary	241	7.5			
Aggravated Assault	531	16.5			
Murder	229	7.1			
Other Personal	71	2.2			
Sex	332	10.3			
Drug	223	6.9			
Firearms	833	25.9			
	3,221	100.0			



Appendix B

Recidivism Rates by Offense and Offense Gravity Score

[Development Sample: 1998, 1999, 2000]

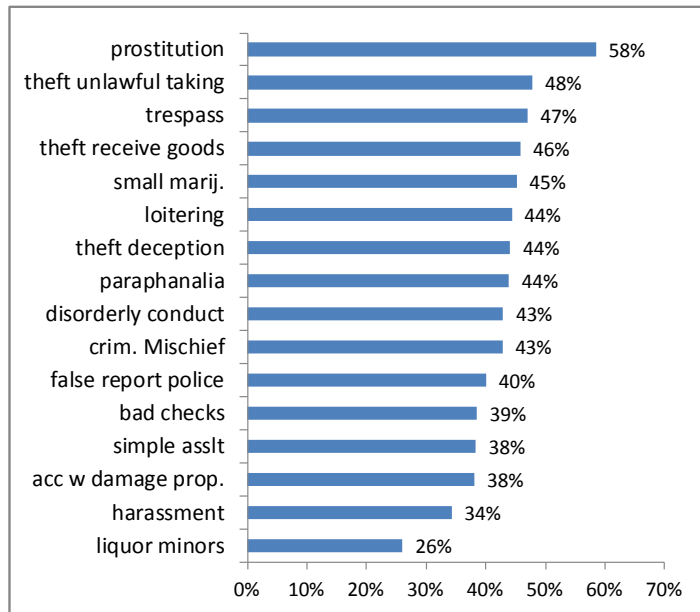


Recidivism Rates by OGS

OGS 1

[represent 95% of offenses at this ogs level]

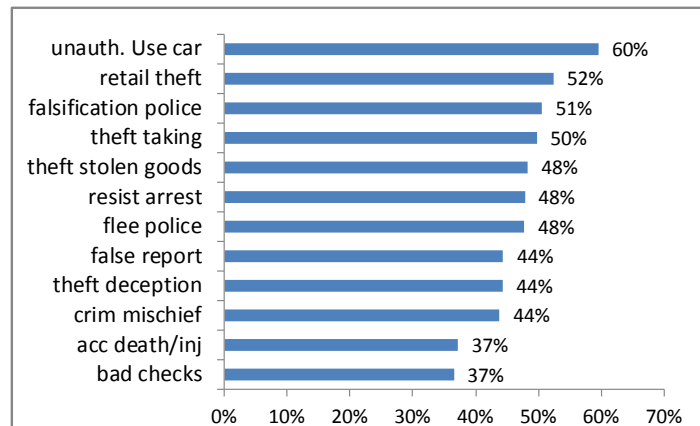
Offense	Title	% Recid.	Total Number of Offenders
liquor minors	186310	26%	223
harassment	185504	34%	222
acc w damage prop.	753743	38%	394
simple asslt	182701	38%	287
bad checks	184105	39%	200
false report police	184906	40%	105
crim. Mischief	183304	43%	173
disorderly conduct	185503	43%	879
paraphanalia	353200	44%	1317
theft deception	183922	44%	93
loitering	185506	44%	97
small marij.	353100	45%	1171
theft receive goods	183925	46%	166
trespass	183503	47%	302
theft unlawful taking	183921	48%	272
prostitution	185902	58%	515
Total		44%	6416



OGS 2

[represent 93% of offenses at this ogs level]

Offense	Title	% Recid.	Total Number of Offenders
bad checks	184105	37%	156
acc death/inj	753742	37%	86
crim mischief	183304	44%	194
theft deception	183922	44%	203
false report	184906	44%	322
flee police	753733	48%	446
resist arrest	185104	48%	638
theft stolen goods	183925	48%	174
theft taking	183921	50%	533
falsification police	184904	51%	271
retail theft	183929	52%	1651
unauth. Use car	183928	60%	652
Total			5326



Note: Subsequent to this analysis, we discovered that some 'offenses' listed in the criminal history records were not criminal activity. Upon removal of those offenses, the percentages in some of these tables could have changed.

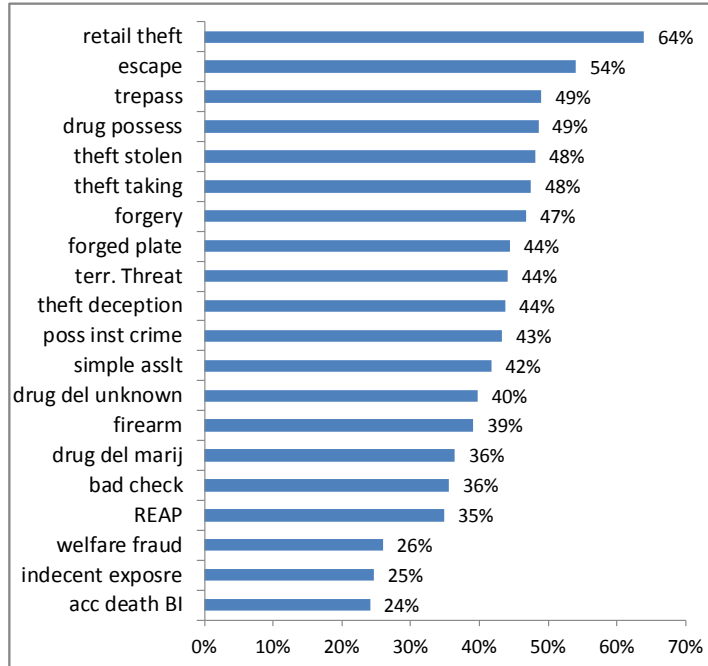


Recidivism Rates by OGS

OGS 3

[represent 97% of offenses at this ogs level]

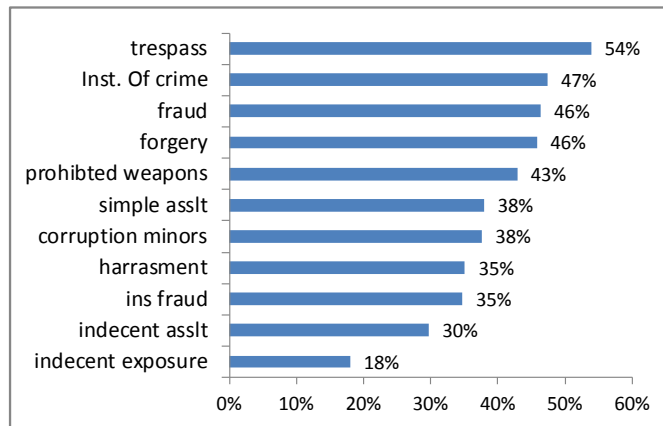
Offense	Title	% Recid.	Total Number of Offenders
acc death BI	753742	24%	187
indecent exposre	183127	25%	142
welfare fraud	620481	26%	104
REAP	182705	35%	938
bad check	184105	36%	427
drug del marij	353006	36%	543
firearm	186106	39%	69
drug del unknown	353000	40%	312
simple asslt	182701	42%	4,894
poss inst crime	180907	43%	164
theft deception	183922	44%	496
terr. Threat	182706	44%	900
forged plate	757122	44%	268
forgery	184101	47%	763
theft taking	183921	48%	1,286
theft stolen	183925	48%	526
drug possess	351600	49%	3,623
trespass	183503	49%	410
escape	185121	54%	198
retail theft	183929	64%	1,348



OGS 4

[represent 91% of offenses at this ogs level]

Offense	Title	% Recid.	Total Number of Offenders
indecent exposure	183127	18%	50
indecent asslt	183126	30%	340
ins fraud	184117	35%	49
harrasment	182709	35%	151
corruption minors	186301	38%	282
simple asslt	182701	38%	145
prohibited weapons	180908	43%	154
forgery	184101	46%	295
fraud	184106	46%	82
Inst. Of crime	180907	47%	114
trespass	183503	54%	477
2139			



Note: Subsequent to this analysis, we discovered that some 'offenses' listed in the criminal history records were not criminal activity.

Upon removal of those offenses, the percentages in some of these tables could have changed.



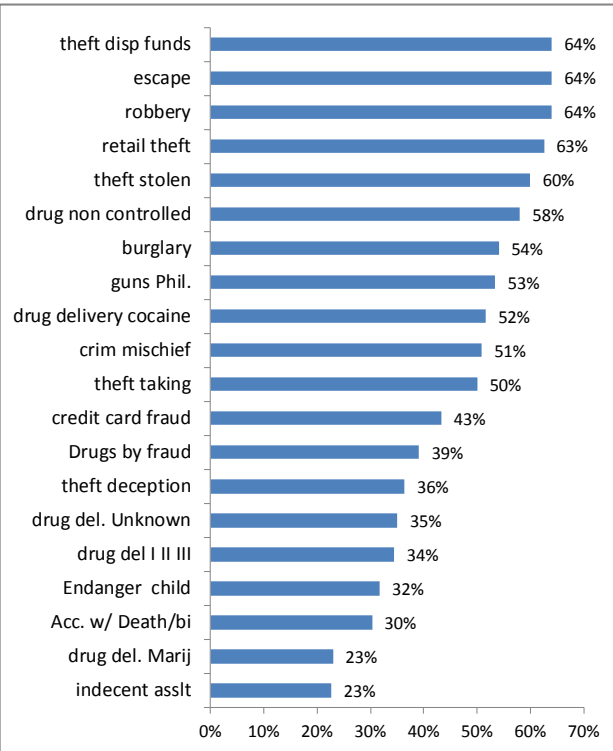
Pennsylvania Commission on Sentencing

Recidivism Rates by OGS

OGS 5

[represent 92% of offenses at this ogs level]

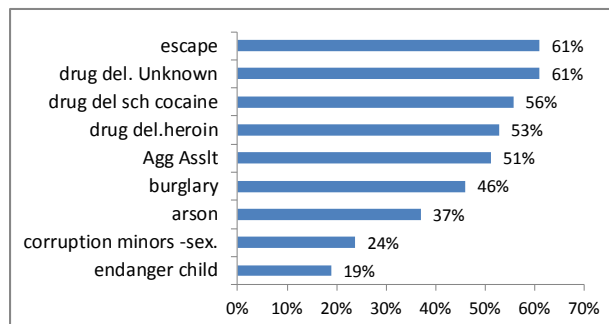
Offense	Title	% Recid.	Total Number of Offenders
indecent asslt	183126	23%	203
drug del. Marij	353006	23%	100
Acc. w/ Death/bi	753742	30%	66
Endanger child	184304	32%	337
drug del I II III	353008	34%	58
drug del. Unknown	353000	35%	134
theft deception	183922	36%	283
Drugs by fraud	351200	39%	69
credit card fraud	184106	43%	127
theft taking	183921	50%	970
crim mischief	183304	51%	57
drug delivery cocaine	353003	52%	1,203
guns Phil.	186108	53%	88
burglary	183502	54%	862
drug non controlled	353500	58%	81
theft stolen	183925	60%	1,146
retail theft	183929	63%	80
robbery	183701	64%	369
escape	185121	64%	200
theft disp funds	183927	64%	50
			6483



OGS 6

[represent 93% of offenses at this ogs level]

Offense	Title	% Recid.	Total Number of Offenders
endanger child	184304	19%	53
corruption minors -se	186301	24%	371
arson	183301	37%	46
burglary	183502	46%	74
Agg Asslt	182702	51%	479
drug del. heroin	353001	53%	305
drug del sch cocaine	353003	56%	203
drug del. Unknown	353000	61%	2,233
escape	185121	61%	82
			3846



Note: Subsequent to this analysis, we discovered that some 'offenses' listed in the criminal history records were not criminal activity.

Upon removal of those offenses, the percentages in some of these tables could have changed.

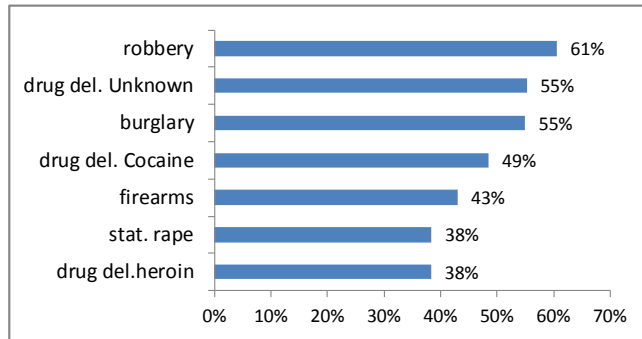


Recidivism Rates by OGS

OGS 7

[represent 92% of offenses at this ogs level]

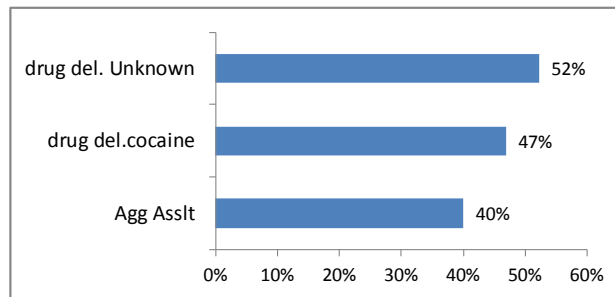
Offense	Title	% Recid.	Total Number of Offenders
drug del. heroin	353001	38%	60
stat. rape	183122	38%	237
firearms	186106	43%	107
drug del. Cocaine	353003	49%	268
burglary	183502	55%	653
drug del. Unknown	353000	55%	648
robbery	183701	61%	444
			2417



OGS 8

[represent 84% of offenses at this ogs level]

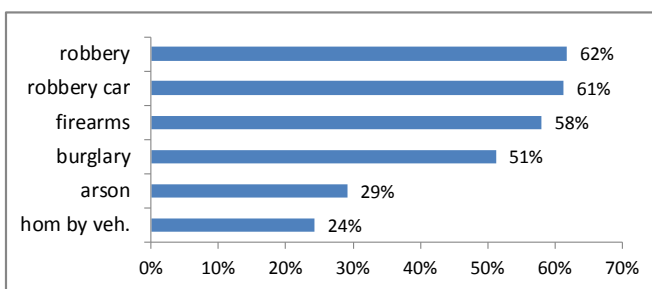
Offense	Title	% Recid.	Total Number of Offenders
Agg Asslt	182702	40%	460
drug del. cocaine	353003	47%	239
drug del. Unknown	353000	52%	270
			969



OGS 9

[represent 97% of offenses at this ogs level]

Offense	Title	% Recid.	Total Number of Offenders
hom by veh.	753735	24%	74
arson	183301	29%	24
burglary	183502	51%	242
firearms	186106	58%	834
robbery car	183702	61%	31
robbery	183701	62%	123
			1328



Note: Subsequent to this analysis, we discovered that some 'offenses' listed in the criminal history records were not criminal activity. Upon removal of those offenses, the percentages in some of these tables could have changed.

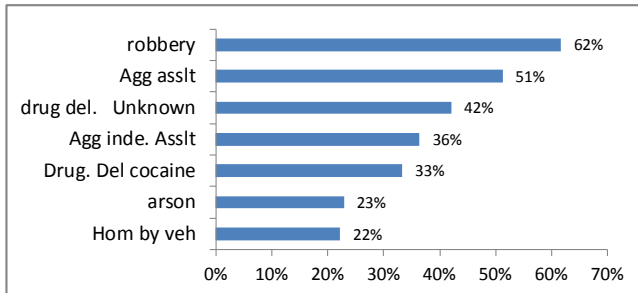


Recidivism Rates by OGS

OGS 10

[represent 99% of offenses at this ogs level]

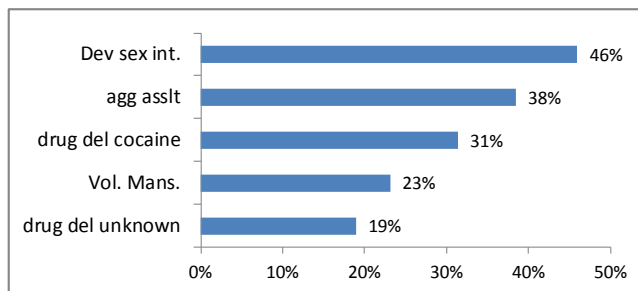
Offense	Title	% Recid.	Total Number of Offenders
Hom by veh	753735	22%	36
arson	183301	23%	35
Drug. Del cocaine	353003	33%	42
Agg inde. Asslt	183125	36%	107
drug del. Unknown	353000	42%	38
Agg asslt	182702	51%	275
robbery	183701	62%	546
			1079



OGS 11

[represent 98% of offenses at this ogs level]

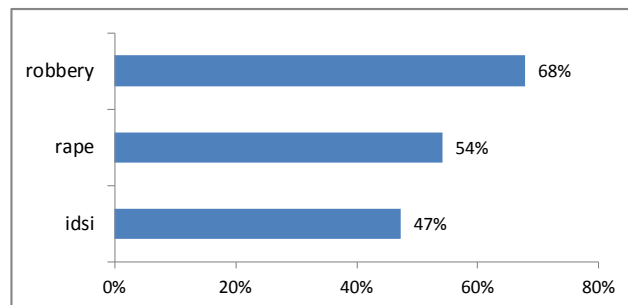
Offense	Title	% Recid.	Total Number of Offenders
drug del unknown	353000	19%	37
Vol. Mans.	182503	23%	26
drug del cocaine	353003	31%	67
agg asslt	182702	38%	250
Dev sex int.	183124	46%	74
			454



OGS 12

[represents 96% of offenses at this ogs level]

Offense	Title	% Recid.	Total Number of Offenders
idsi	183123	47%	74
rape	183121	54%	72
robbery	183701	68%	56
			202



Note: Subsequent to this analysis, we discovered that some 'offenses' listed in the criminal history records were not criminal activity. Upon removal of those offenses, the percentages in some of these tables could have changed.



Recidivism Rates by OGS

All offenses at OGS 13 and OGS 14 are listed; too few to graph.

OGS 13

Offense	Title	% Recid.	Total Number of Offenders
Att. Murder	182502	57%	23
drug del cocaine	353003	11%	9
drug del unknown	353000	0%	4
drug del/death	182506	0%	1

OGS 14

Offense	Title	% Recid.	Total Number of Offenders
murder 3	182502	34%	73

Note: Subsequent to this analysis, we discovered that some 'offenses' listed in the criminal history records were not criminal activity. Upon removal of those offenses, the percentages in some of these tables could have changed.



Appendix C

Bivariate Recidivism Findings by Offense Gravity Score

[Development Sample: 1998, 1999, 2000]



Full Sample

Bivariate recidivism findings: development sample [N=50.743]

	Percent		Number		sig
	Success	Failure	Success	Failure	
Race					***
White/Other Race	60.2	39.8	17,071	11,300	
Black	44.0	56.0	8,217	10,478	
Hispanic	49.0	51.0	1,800	1,877	
Gender					***
Male	51.4	48.6	21,326	20,190	
Female	62.4	37.6	5,762	3,465	
Age					***
< 21	42.1	57.9	3,728	5,122	
21 - 29	51.5	48.5	9,225	8,675	
31 - 39	55.2	44.8	8,031	6,518	
40-49	60.8	39.2	4,404	2,835	
50+	77.1	22.9	1,700	505	
County					***
Philadelphia	43.3	56.7	3,281	4,291	
Allegheny	42.6	57.4	2,561	3,447	
Other urban	54.6	45.4	14,054	11,676	
Rural	62.9	37.1	7,192	4,241	
Multiple charges					***
Yes	51.0	49.0	9,775	9393	
No	54.8	45.2	17,313	14262	
Prior Arrests					***
0	70.3	29.7	9,136	3,863	
1	60.0	40.0	5,894	3,931	
2	53.2	46.8	3,608	3,177	
3-4	46.2	53.8	3,967	4,623	
5-7	39.7	60.3	2,416	3,670	
8-9	34.5	65.5	749	1,425	
10+	30.8	69.2	1,318	2,966	
Offense type					***
Burglary	45.8	54.2	722	854	
Property_M	53.1	46.9	4,446	3,932	
Property_F	48.1	51.9	2,980	3,220	
Personal_M	61.2	38.8	5,385	3,419	
Personal_F	49.0	51.0	1,864	1,939	
Sex Offense_F	68.2	31.8	429	200	
Sex Offense_M	74.2	25.8	541	188	
Drug F	49.2	50.8	3,535	3,655	
Drug M	53.5	46.5	3,284	2,854	
Other Traffice	56.8	43.2	650	494	
Firearms	46.2	53.8	587	684	
Other Weapons	55.3	44.7	254	205	
Public Order	57.3	42.7	1,282	955	
Public Administration	51.7	48.3	1,129	1,056	
Prior Record Score					***
Yes	44.7	55.3	9,860	12,186	
No	60.0	40.0	17,228	11,469	
Type of Prior Offense [yes]					
Personal/Sex	43.0	57.0	8,527	11,324	***
Property	44.1	55.9	11,876	15,034	***
Drug	40.1	59.9	6,773	10,105	***
Firearms/Weapons	37.9	62.1	3,082	5,042	***
Traffic	49.1	50.9	5,086	5,274	***
Public Order	43.4	56.6	5,823	7,582	***
Public Administration	38.0	62.0	3,105	5,072	***
Juvenile Adjudication					
Yes	34.3	65.7	932	1,785	***
No	54.5	45.5	26,156	21,870	***
OGS					***
1	56.6	43.4	3,779	2,896	
2	51.0	49.0	2,901	2,786	
3	55.4	44.6	9,983	8,038	
4	58.5	41.5	1,363	965	
5	51.0	49.0	3,541	3,405	
6	47.7	52.3	1,969	2,157	
7	48.2	51.8	1,254	1,345	
8	57.6	42.4	657	483	
9-14	50.9	49.1	1,641	1,580	

* Significant at .05 level ** Significant at .01 level *** Significant at .001 level



OGS 1

Bivariate recidivism findings: development sample [N=6,673]

	Percent		Number		sig
	Success	Failure	Success	Failure	
Race					***
White/Other Race	61.0	39.0	2,938	1,882	
Black	44.6	55.4	705	874	
Hispanic	49.6	50.4	136	138	
Gender					
Male	56.7	43.3	2,976	2,273	
Female	56.4	43.6	803	621	
Age					***
< 21	48.8	51.2	512	537	
21 - 39	56.4	43.6	2,464	1,906	
40-49	61.8	38.2	624	385	
50+	73.1	26.9	179	66	
Mean	30.8				
County					***
Philadelphia	57.8	42.2	48	35	
Allegheny	38.5	61.5	285	455	
Other urban	56.5	43.5	2,142	1,646	
Rural	63.2	36.8	1,304	758	
Multiple charges					
Yes	54.6	45.4	613	510	
No	57.0	43.0	3,166	2384	
Prior Arrests					***
0	70.4	29.6	1,208	508	
1	62.8	37.2	952	564	
2-4	53.3	46.7	1,094	960	
5-9	41.5	58.5	394	556	
10+	30.0	70.0	131	306	
Offense type					*
Property	55.1	44.9	730	594	
Personal	63.2	36.8	182	106	
Drug	55.7	44.3	1,376	1,094	
Other Traffic	61.6	38.4	252	157	
Public Order	56.5	43.5	1,154	888	
Public Administration	60.7	39.3	85	55	
Prior Record Score					***
Yes	48.5	51.5	1,254	1,332	
No	61.8	38.2	2,525	1,562	
Type of Prior Offense [yes]					
Personal/Sex	45.7	54.3	1,069	1,268	***
Property	48.0	52.0	1,550	1,676	***
Drug	44.9	55.1	924	1,134	***
Firearms/Weapons	42.6	57.4	264	356	***
Traffic	48.7	51.3	387	408	***
Public Order	44.4	55.6	945	1,185	***
Public Administration	41.5	58.5	372	525	***
Juvenile Adjudication					
Yes	43.8	56.3	77	99	***
No	57.0	43.0	3,702	2,795	

* Significant at .05 level ** Significant at .01 level *** Significant at .001 level



OGS 2

Bivariate recidivism findings: development sample [N=5,687]

	Percent		Number		sig
	Success	Failure	Success	Failure	
Race					***
White/Other Race	55.6	44.4	1,964	1,566	
Black	42.5	57.5	767	1,037	
Hispanic	48.2	51.8	170	183	
Gender					***
Male	47.6	52.4	2,000	2,203	
Female	60.7	39.3	901	583	
Age					***
< 21	43.9	56.1	424	542	
21 - 39	50.3	49.7	1,875	1,851	
40-49	56.4	43.7	435	337	
50+	74.9	25.1	167	56	
Mean	30.3				
County					***
Philadelphia	37.6	62.4	73	121	
Allegheny	37.4	62.6	192	321	
Other urban	48.5	51.5	1,612	1,712	
Rural	61.8	38.2	1,024	632	
Multiple charges					
Yes	49.8	50.2	631	636	
No	51.4	48.6	2270	2150	
Prior Arrests					***
0	69.3	30.7	876	388	
1	59.6	40.4	665	451	
2	50.8	49.2	431	418	
3-6	42.3	57.7	669	911	
7+	29.6	70.4	260	618	
Offense type					**
Personal	65.7	34.3	71	31	
Property	49.5	50.5	1822	1860	
Traffic	53.3	46.7	245	215	
Public Administration	53.1	46.9	746	660	
Other (Firearms & Pub Order)	54.8	45.2	17	14	
Prior Record Score					***
Yes	43.8	56.2	1,061	1,361	
No	56.4	43.6	1,840	1,425	
Type of Prior Offense [yes]					
Personal/Sex	39.5	60.5	914	1,246	***
Property	43.8	56.2	1,554	1,996	***
Drug	37.1	63.0	612	1,040	***
Firearms/Weapons	33.6	66.4	237	469	***
Traffic	45.4	54.6	564	679	***
Public Order	38.7	61.3	576	911	***
Public Administration	36.3	63.7	342	599	***
Juvenile Adjudication					**
Yes	38.7	61.3	72	114	
No	51.4	48.6	2829	2672	

* Significant at .05 level ** Significant at .01 level *** Significant at .001 level



OGS 3

Bivariate recidivism findings: development sample [N=18,021]

	Percent		Number		sig
	Success	Failure	Success	Failure	
Race					***
White/Other Race	60.8	39.2	6,661	4,288	
Black	46.4	53.6	2,819	3,262	
Hispanic	50.8	49.2	503	488	
Gender					***
Male	53.8	46.2	7,817	6,726	
Female	62.3	37.7	2,166	1,312	
Age					***
< 21	45.5	54.5	1,159	1,387	
21 - 39	54.8	45.2	6,338	5,227	
40-49	59.8	40.2	1,802	1,210	
50+	76.2	23.8	684	214	
Mean	31.6				
County					***
Philadelphia	52.7	47.3	737	662	
Allegheny	43.4	56.6	1,150	1,502	
Other urban	55.9	44.1	5,480	4,318	
Rural	62.7	37.3	2,616	1,556	
Multiple charges					***
Yes	52.7	47.3	3,546	3188	
No	57.0	43.0	6,437	4850	
Prior Arrests					***
0	71.6	28.4	3,382	1,342	
1	62.0	38.0	2,131	1,305	
2	56.6	43.4	1,324	1,017	
3-4	50.0	50.0	1,421	1,421	
5-7	42.6	57.4	884	1,189	
8+	32.3	67.7	841	1,764	
Offense type					***
Property_M	56.3	43.7	1,840	1,431	
Property_F	43.1	56.9	981	1,296	
Personal	59.4	40.6	4,129	2,822	
Sex Offense	75.5	24.5	108	35	
Drug F	62.2	37.8	542	329	
Drug M	51.8	48.2	1,868	1,741	
Other Traffice	55.7	44.3	152	121	
Weapon	58.9	41.1	142	99	
Public Order	69.7	30.3	85	37	
Public Administration	51.7	48.3	136	127	
Prior Record Score					***
Yes	46.6	53.4	3,630	4,165	
No	62.1	37.9	6,353	3,873	
Type of Prior Offense [yes]					
Personal/Sex	44.9	55.1	3,219	3,943	***
Property	45.6	54.4	4,279	5,109	***
Drug	42.0	58.0	2,400	3,311	***
Firearms/Weapons	40.1	59.9	963	1,439	***
Traffic	42.4	57.6	904	1,230	***
Public Order	44.9	55.1	2,339	2,874	***
Public Administration	38.9	61.1	1,165	1,832	***
Juvenile Adjudication					
Yes	39.2	60.8	258	400	***
No	56.0	44.0	9,725	7,638	

* Significant at .05 level ** Significant at .01 level *** Significant at .001 level



OGS 4

Bivariate recidivism findings: development sample [N=2,328]

	Percent		Number		sig
	Success	Failure	Success	Failure	
Race					***
White/Other Race	62.5	37.5	967	580	
Black	49.6	50.4	338	343	
Hispanic	58.0	42.0	58	42	
Gender					**
Male	57.3	42.7	1,123	838	
Female	65.4	34.6	240	127	
Age					***
< 21	47.2	52.8	170	190	
21 - 29	54.8	45.2	439	362	
30-44	61.6	38.4	561	350	
45+	75.4	24.6	193	63	
Mean	31.3				
County					***
Philadelphia	53.9	46.1	200	171	
Allegheny	46.0	54.0	116	136	
Other urban	59.2	40.8	626	432	
Rural	65.1	34.9	421	226	
Multiple charges					
Yes	54.5	45.5	595	496	
No	62.1	37.9	768	469	
Prior Arrests					***
0	73.9	26.1	528	186	
1	61.8	38.2	296	183	
2	59.1	40.9	189	131	
3-8	45.6	54.4	287	342	
9+	33.9	66.1	63	123	
Offense type					***
Property	51.4	48.6	484	457	
Personal	62.6	37.4	370	221	
Sex	71.8	28.2	277	109	
Firearms/Other Weap	55.5	44.5	191	153	
Other Offense	62.1	37.9	41	25	
Prior Record Score					***
Yes	50.1	49.9	449	448	
No	63.9	36.1	914	517	
Type of Prior Offense [yes]					
Personal/Sex	49.1	50.9	428	444	***
Property	48.0	52.0	548	593	***
Drug	40.6	59.4	208	304	***
Firearms/Weapons	42.9	57.1	137	182	***
Traffic	50.4	49.6	233	229	***
Public Order	46.0	54.0	249	292	***
Public Administration	41.9	58.1	125	173	***
Juvenile Adjudication					**
Yes	45.2	54.8	42	51	
No	59.1	40.9	1321	914	

* Significant at .05 level ** Significant at .01 level *** Significant at .001 level



OGS 5

Bivariate recidivism findings: development sample [N=6,946]

	Percent		Number		sig
	Success	Failure	Success	Failure	
Race					***
White/Other Race	57.8	42.2	2,078	1,519	
Black	42.7	57.3	1,242	1,667	
Hispanic	50.2	49.8	221	219	
Gender					***
Male	47.5	52.5	2,724	3,010	
Female	67.4	32.6	817	395	
Age					***
< 21	39.2	60.8	571	886	
21 - 25	48.3	51.7	768	822	
26-39	53.0	47.0	1,459	1,296	
40+	64.9	35.1	743	401	
Mean	31.6				
County					***
Philadelphia	38.5	61.5	507	810	
Allegheny	43.8	56.2	329	422	
Other urban	53.1	46.9	1,842	1,630	
Rural	61.4	38.6	863	543	
Multiple charges					*
Yes	49.6	50.4	1,607	1,633	
No	52.2	47.8	1,934	1,772	
Prior Arrests					***
0	69.7	30.3	1,274	554	
1	57.1	42.9	708	533	
2-4	46.9	53.1	955	1,081	
5-7	36.6	63.4	318	552	
8+	29.5	70.5	286	685	
Offense type					***
Burglary	45.7	54.3	392	465	
Property F	49.7	50.3	1,447	1,463	
Personal M	67.4	32.6	279	135	
Personal F	38.8	61.2	158	249	
Sex Offense	78.1	21.9	157	44	
Drug	53.2	46.8	929	818	
Weapon	46.9	53.1	67	76	
Other Offense	56.7	43.3	38	29	
Escape	37.0	63.0	74	126	
Prior Record Score					***
Yes	42.1	57.9	1,368	1,882	
No	58.8	41.2	2,173	1,523	
Type of Prior Offense [yes]					
Personal/Sex	39.5	60.5	1,073	1,643	***
Property	41.6	58.4	1,658	2,325	***
Drug	37.1	62.9	856	1,449	***
Firearms/Weapons	33.2	66.8	444	893	***
Traffic	40.0	60.0	307	460	***
Public Order	41.8	58.2	691	961	***
Public Administration	34.0	66.0	405	785	***
Juvenile Adjudication					
Yes	29.9	70.1	161	377	***
No	52.7	47.3	3,380	3,028	

* Significant at .05 level ** Significant at .01 level *** Significant at .001 level



OGS 6

Bivariate recidivism findings: development sample [N=4,126]

	Percent		Number		sig
	Success	Failure	Success	Failure	
Race					***
White/Other Race	66.1	33.9	811	416	
Black	40.0	60.0	835	1,255	
Hispanic	39.9	60.1	323	486	
Gender					***
Male	45.0	55.0	1,606	1,961	
Female	64.9	35.1	363	196	
Age					***
< 21	33.2	66.8	261	525	
21 - 39	46.8	53.2	1,234	1,401	
40-49	62.5	37.5	327	196	
50+	80.8	19.2	147	35	
Mean	29.8				
County					***
Philadelphia	37.9	62.1	711	1,165	
Allegheny	46.1	53.9	164	192	
Other urban	54.7	45.3	748	619	
Rural	65.7	34.3	346	181	
Multiple charges					
Yes	47.1	52.9	861	966	
No	48.2	51.8	1108	1191	
Prior Arrests					***
0	64.8	35.2	565	307	
1	57.5	42.5	416	307	
2	46.1	53.9	265	310	
3-6	37.5	62.5	465	776	
7+	36.1	63.9	258	457	
Offense type					***
Burglary	52.8	47.2	38	34	
Property	66.4	33.6	77	39	
Personal M	77.4	22.6	48	14	
Personal F	52.2	47.8	303	277	
Sex Related Offense	77.0	23.0	321	96	
Drug	41.1	58.9	1,149	1,648	
Escape	40.2	59.8	33	49	
Prior Record Score					***
Yes	41.5	58.5	828	1,166	
No	53.5	46.5	1,141	991	
Type of Prior Offense [yes]					
Personal/Sex	39.7	60.3	712	1,082	***
Property	40.9	59.1	871	1,260	***
Drug	37.9	62.1	792	1,295	***
Firearms/Weapons	35.8	64.2	363	650	***
Traffic	44.5	55.5	271	338	***
Public Order	43.0	57.0	401	532	**
Public Administration	36.9	63.1	282	482	***
Juvenile Adjudication					***
Yes	29.6	70.4	98	233	
No	49.3	50.7	1871	1924	

* Significant at .05 level ** Significant at .01 level *** Significant at .001 level



OGS 7

Bivariate recidivism findings: development sample [N=2,599]

	Percent		Number		sig
	Success	Failure	Success	Failure	
Race					***
White/Other Race	56.0	44.0	597	470	
Black	41.2	58.8	512	731	
Hispanic	50.2	49.8	145	144	
Gender					***
Male	46.6	53.4	1,084	1,244	
Female	62.7	37.3	170	101	
Age					***
< 21	40.2	59.8	274	407	
21 - 39	48.8	51.2	786	826	
40-49	58.8	41.2	140	98	
50+	79.4	20.6	54	14	
Mean	27.6				
County					***
Philadelphia	39.8	60.2	333	504	
Allegheny	42.0	58.0	95	131	
Other urban	51.9	48.1	595	552	
Rural	59.4	40.6	231	158	
Multiple charges					**
Yes	45.4	54.6	663	796	
No	51.8	48.2	591	549	
Prior Arrests					***
0	65.7	34.3	421	220	
1	52.6	47.4	257	232	
2-6	42.6	57.4	454	612	
7+	30.3	69.7	122	281	
Offense type					***
Burglary and Property	46.3	53.7	312	362	
Personal	40.5	59.5	200	294	
Sex Offense	63.1	36.9	149	87	
Drug	48.9	51.1	510	533	
Firearm	54.6	45.4	83	69	
Prior Record Score					***
Yes	39.4	60.6	489	751	
No	56.3	43.7	765	594	
Type of Prior Offense [yes]					
Personal/Sex	39.7	60.3	421	640	***
Property	39.8	60.2	562	849	***
Drug	38.7	61.3	410	650	***
Firearms/Weapons	36.8	63.2	217	372	***
Traffic	39.1	60.9	91	142	**
Public Order	39.4	60.6	220	338	***
Public Administration	35.7	64.3	150	270	***
Juvenile Adjudication					
Yes	31.4	68.6	91	199	***
No	50.4	49.6	1,163	1,146	

* Significant at .05 level ** Significant at .01 level *** Significant at .001 level



OGS 8

Bivariate recidivism findings: development sample [N=1,140]

	Percent		Number		sig
	Success	Failure	Success	Failure	
Race					***
White/Other Race	72.3	27.7	311	119	
Black	45.3	54.7	255	308	
Hispanic	61.9	38.1	91	56	
Gender					***
Male	54.8	45.2	533	440	
Female	74.3	25.7	124	43	
Age					***
< 21	39.6	60.4	78	119	
21 - 39	58.9	41.1	447	312	
40-49	67.7	32.3	90	43	
50+	82.4	17.6	42	9	
Mean	29.9				
County					***
Philadelphia	51.1	48.9	186	178	
Allegheny	47.3	52.7	53	59	
Other urban	60.9	39.1	309	198	
Rural	69.4	30.6	109	48	
Multiple charges					
Yes	56.5	43.5	352	271	
No	59.0	41.0	305	212	
Prior Arrests					***
0	79.2	20.8	271	71	
1	60.5	39.5	141	92	
2-4	48.6	51.4	162	171	
5+	35.8	64.2	83	149	
Offense type					***
Personal	62.6	37.4	322	192	
Drug	51.2	48.8	284	271	
Other	71.8	28.2	51	20	
Prior Record Score					***
Yes	42.1	57.9	199	274	
No	68.7	31.3	458	209	
Type of Prior Offense [yes]					
Personal/Sex	46.9	53.1	206	233	***
Property	44.7	55.3	218	270	***
Drug	38.7	61.3	158	250	***
Firearms/Weapons	43.9	56.1	118	151	***
Traffic	50.0	50.0	92	92	*
Public Order	47.7	52.3	112	123	**
Public Administration	41.2	58.8	70	100	***
Juvenile Adjudication					***
Yes	25.0	75.0	22	66	
No	60.4	39.6	635	417	

* Significant at .05 level ** Significant at .01 level *** Significant at .001 level



OGS 9-14

Bivariate recidivism findings: development sample [N=3,221]

	Percent		Number		sig
	Success	Failure	Success	Failure	
Race					***
White/Other Race	61.8	38.2	744	460	
Black	42.7	57.3	744	1,000	
Hispanic	56.0	44.0	153	120	
Gender					***
Male	49.5	50.5	1,463	1,493	
Female	67.2	32.8	178	87	
Age					***
< 21	34.5	65.5	279	529	
21 - 29	49.0	51.0	608	634	
30-49	61.1	38.9	628	399	
50+	87.5	12.5	126	18	
Mean	28.4				
County					***
Philadelphia	43.0	57.0	486	645	
Allegheny	43.6	56.4	177	229	
Other urban	55.2	44.8	700	567	
Rural	66.7	33.3	278	139	
Multiple charges					
Yes	50.3	49.7	907	897	
No	51.8	48.2	734	683	
Prior Arrests					***
0	68.0	32.0	611	287	
1	55.4	44.6	328	264	
2-4	44.9	55.1	471	578	
5-7	36.1	63.9	137	242	
8+	31.0	69.0	94	209	
Offense type					***
Robbery	37.3	62.7	284	477	
Burglary	49.0	51.0	118	123	
Aggravated Assault	55.0	45.0	292	239	
Murder	70.3	29.7	161	68	
Other Personal	74.6	25.4	53	18	
Sex	69.3	30.7	230	102	
Drug	68.2	31.8	152	71	
Firearms	42.1	57.9	351	482	
Prior Record Score					***
Yes	41.9	58.1	582	806	
No	57.8	42.2	1,059	774	
Type of Prior Offense [yes indicated]					
Personal/Sex	41.5	58.5	585	824	***
Property	40.0	60.0	636	955	***
Drug	38.1	61.9	413	671	***
Firearms	36.5	63.5	205	356	***
Traffic	49.1	50.9	250	259	
Public Order	44.2	55.8	290	366	***
Public Administration	38.8	61.2	194	306	***
Juvenile Adjudication					***
Yes	31.1	68.9	111	246	
No	53.4	46.6	1530	1334	
Enhancement or Mandatory					***
Yes	40.3	59.7	157	233	
No	52.4	47.6	1484	1347	

* Significant at .05 level ** Significant at .01 level *** Significant at .001 level



Appendix D

Logistic Models by Offense Gravity Score



**Logistic Regression Predicting 3-year Recidivism among 1998-2000
Development Sample**

OGS1

Factor	Odds Ratio
Black	1.399***
Hispanic	1.518**
Male	1.056
Allegheny	1.984**
Other Urban	1.468
Rural	1.348
< 21	4.687***
21-39 years	2.443***
40-49 years	1.626**
Property Offense	1.317
Drug Offense	1.202
Other Traffic	1.13
Public Order	1.186
Public Adm	1.178
m_charge	1.034
1 Prior Arrest	1.240*
2-4 Prior Arrests	1.646***
5-9 Prior Arrests	2.381***
10 +Prior Arrests	3.323***
Prior Personal/Sex arrest	1.138
Prior Property arrest	1.128
Prior Drug arrest	1.148*
Prior Weapons arrest	1.01
Prior Traffic arrest	0.933
Prior Public Order arrest	1.212**
Prior Public Adm arrest	1.119
Juvenile Adjudication (Yes)	1.212
prs (yes)	1.068
_cons	0.078***
N	6673
r2	0.0735
aic	8519.641
bic	8717.01

OGS 2

Factor	Odds Ratio
Black	1.234**
Hispanic	1.107
Female	0.688***
Philadelphia	1.506*
Allegheny	1.710***
Other Urban	1.436***
< 21	5.861***
21-39 years	3.153***
40-49 years	1.981***
Property Offense	1.896**
Traffic Offense	1.486
Public Administration Offense	1.512
Other offense	2.448*
Multiple Charges	1.046
1 Prior Arrest	1.407**
2 prior arrests	1.948***
3-6 prior arrests	2.653***
7+ prior arrests	4.089***
Prior Personal/Sex arrest	1.072
Prior Property arrest	1.115
Prior Drug arrest	1.197*
Prior Weapons arrest	1.054
Prior Traffic arrest	0.976
Prior Public Order arrest	1.111
Prior Public Adm arrest	1.081
Juvenile Adjudication (Yes)	1.124
prs (yes)	0.96
_cons	0.058***
N	5,687
r2	0.094
aic	7193.481
bic	7379.568

*Personal Offense as reference

*county: Philadelphia as reference

*Current offenses: personal offense as reference



Logistic Regression Predicting 3-year Recidivism among 1998-2000 Development Sample

OGS 3

Factor	Odds Ratio
Black	1.341***
Hispanic	1.416***
Male	1.299***
Allegheny	1.370***
Other Urban	1.123
Rural	1.042
< 21	6.813***
21-39 years	3.247***
40-49 years	1.970***
Property M	1.946**
Property F	2.299***
Personal Offense	1.722**
Drug F	1.43
Drug M	1.872**
Weapon	1.528
Other Traffic	1.459
Public Order	1.487
Public Adm	1.729*
m_charge	1.150***
1 Prior Arrest	1.406***
2 Prior Arrest	1.680***
3-4 prior arrests	2.114***
5-7 prior arrests	2.726***
8+ prior arrests	4.100***
Prior Personal/Sex arrest	1.047
Prior Property arrest	1.154**
Prior Drug arrest	1.207***
Prior Weapons arrest	0.99
Prior Traffic arrest	1.033
Prior Public Order arrest	0.997
Prior Public Adm arrest	1.158**
Juvenile Adjudication (Yes)	1.362***
prs (yes)	0.992
_cons	0.039***
N	18021
r2	0.0947
aic	22494.202
bic	22759.378

*Current offenses: sex offense as reference

OGS 4

Factor	Odds Ratio
Black	1.166
Hispanic	0.99
Female	0.736*
Philadelphia	1.144
Allegheny	1.311
Other Urban	1.127
< 21	5.673***
21-29 years	3.227***
30-44 years	1.811***
Property Offense	1.577**
Personal Offense	1.323
Firearm and Other Weapons	1.395
Other offense	1.105
m_charge	1.252*
1 Prior Arrest	1.470*
2 prior arrests	1.591*
3-8 prior arrests	2.631***
9+ prior arrests	4.325***
Prior Personal/Sex arrest	1.024
Prior Property arrest	1.167
Prior Drug arrest	1.509***
Prior Weapons arrest	1.065
Prior Traffic arrest	1.221
Prior Public Order arrest	1.09
Prior Public Adm arrest	1.055
Juvenile Adjudication (Yes)	0.895
prs (yes)	0.968
_cons	0.077***
N	2,328
r2	0.1081
aic	2873.463
bic	3034.54

*Sex Offense as Reference



Logistic Regression Predicting 3-year Recidivism among 1998-2000 Development Sample

OGS 5

Factor	Odds Ratio
Black	1.332***
Hispanic	1.156
Male	1.518***
Philadelphia	1.425***
Allegheny	1.371**
Other Urban	1.200*
< 21	4.481***
21-25 years	2.483***
26-39 years	1.711***
Burglary	1.875**
Property	1.797**
Personal M	1.463
Personal F	2.287***
Drug Offense	1.573*
Escape	2.130**
Weapon	1.883*
Other Offense	1.901
m_charge	1.115*
1 Prior Arrest	1.493***
2-4 prior arrests	1.902***
5-7 prior arrests	2.897***
8+ prior arrests	4.114***
Prior Personal/Sex arrest	1.074
Prior Property arrest	1.144
Prior Drug arrest	1.350***
Prior Weapons arrest	1.01
Prior Traffic arrest	1.029
Prior Public Order arrest	0.921
Prior Public Adm arrest	1.227*
Juvenile Adjudication (Yes)	1.444**
prs (yes)	1.042
_cons	0.054***
N	6946
r2	0.1216
aic	8519.689
bic	8738.758

*sex offense as reference

OGS 6

Factor	Odds Ratio
Black	1.492***
Hispanic	1.575***
Female	0.547***
Philadelphia	1.451**
Allegheny	1.221
Other Urban	1.015
< 21	9.667***
21-39 years	4.692***
40-49 years	2.517***
Burglary Offense	1.825
Property Offense	1.695
Personal F Offense	2.030*
Drug	2.430**
Sex Related Offense	1.031
Escape Offense	2.523*
m_charge	1.193*
1 Prior Arrest	1.081
2 prior arrests	1.463*
3-6 prior arrests	1.988***
7+ prior arrests	2.546***
Prior Personal/Sex arrest	1.111
Prior Property arrest	0.929
Prior Drug arrest	1.065
Prior Weapons arrest	0.924
Prior Traffic arrest	1.163
Prior Public Order arrest	1.087
Prior Public Adm arrest	1.088
Juvenile Adjudication (Yes)	1.413*
prs (yes)	0.997
_cons	0.040***
N	4126
r2	0.1253
aic	5055.904
bic	5245.656

*property misd. as reference



Logistic Regression Predicting 3-year Recidivism among 1998-2000 Development Sample

OGS 7

Factor	Odds Ratio
Black	1.581***
Hispanic	1.316
Male	1.442*
Philadelphia	1.568**
Allegheny	1.299
Other Urban	1.121
< 21	8.658***
21-39 years	4.715***
40-49 years	2.776**
Burglary&Property	1.614**
Personal	1.402
Drug Offense	1.168
Firearm	1.033
m_charge	1.316**
1 Prior Arrest	1.464*
2-6 prior arrests	1.968***
7+ prior arrests	3.470***
Prior Personal/Sex arrest	0.955
Prior Property arrest	1.105
Prior Drug arrest	1.163
Prior Weapons arrest	0.851
Prior Traffic arrest	0.955
Prior Public Order arrest	1.118
Prior Public Adm arrest	1.052
Juvenile Adjudication (Yes)	1.256
prs (Yes)	1.278*
_cons	0.029***
N	2599
r2	0.0969
aic	3304.819
bic	3463.117

*sex offense as reference

OGS 8

Factor	Odds Ratio
Black	2.094***
Hispanic	1.141
Female	0.548**
Philadelphia	1.253
Allegheny	1.645
Other Urban	1.145
< 21	10.680***
21-39 years	3.712**
40-49 years	2.165
Drug	1.177
Other offense	0.994
multiple charges	1.076
1 Prior Arrest	1.931**
2-4 prior arrests	2.963***
5+ prior arrests	5.153***
Prior Personal/Sex arrest	0.812
Prior Property arrest	0.952
Prior Drug arrest	1.33
Prior Weapons arrest	0.824
Prior Traffic arrest	0.925
Prior Public Order arrest	0.876
Prior Public Adm arrest	1.145
Juvenile Adjudication (Yes)	1.757
prs (Yes)	1.745**
_cons	0.035***
N	1,140
r2	0.1798
aic	1324.297
bic	1450.267

*sex offense as reference



**Logistic Regression Predicting 3-year Recidivism among
1998-2000 Development Sample**

OGS 9 - 14

Factor	Odds Ratio
Black	1.202
Hispanic	1.003
Female	0.719*
Philadelphia	1.3
Allegheny	1.26
Other Urban	1.196
< 21	11.426***
21-29 years	5.742***
30-49 years	3.375***
Burglary	2.370**
Robbery	3.027***
Aggravated Assault	1.973*
Murder	1.313
Sex Offense	1.703
Drug Offense	1.573
Firearms Offense	2.968***
multiple charges	1.034
1 Prior Arrest	1.461**
2-4 prior arrests	2.009***
5-7 prior arrests	2.936***
8+ prior arrests	4.966***
Prior Personal/Sex arrest	1.034
Prior Property arrest	1.13
Prior Drug arrest	1.095
Prior Firearms arrest	0.88
Prior Traffic arrest	1.008
Prior Public Order arrest	0.898
Prior Public Adm arrest	1.029
Juvenile Adjudication (Yes)	1.251
prs (Yes)	1.134
Enhancement or Mandatory	1.174
_cons	0.027***
N	3221
r2	0.1381
aic	3911.692
bic	4106.171