

July 2005

WASHINGTON'S OFFENDER ACCOUNTABILITY ACT: A FIRST LOOK AT OUTCOMES[‡]

On an average working day in the Superior Courts of Washington, about 125 adults are convicted for a felony crime. Over the course of a year, this means that close to 30,000 adult felony sentences are handed down statewide.¹

Except for those who serve a life sentence in prison, all of these felony offenders will re-enter the community, either immediately after sentencing or eventually after serving time in a county jail or a state prison.²

In 1999, the Washington State Legislature passed the Offender Accountability Act (OAA) to affect how the state provides community supervision to these adult felony offenders. In broad terms, the OAA directs the Washington State Department of Corrections (DOC) to:

- ✓ Classify felony offenders according to their risk for future offending as well as the amount of harm they have caused society in the past; and
- ✓ Deploy more staff and rehabilitative resources to higher-classified offenders and, because budgets are limited, spend correspondingly fewer dollars on lower-classified offenders.

When the Legislature enacted the OAA, it defined a straight-forward goal for the Act: to "reduce the risk of reoffending by offenders in the community."³

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¹ Washington Administrative Office of the Courts, data for 2004.

² Depending on the nature of an offender's crime and criminal history, roughly 30 percent of felony sentences result in a commitment to state prison while the remaining 70 percent involve a local non-prison sanction, which most often includes serving time in a county jail. Also, during fiscal year 2004, there were 32 life sentences issued. Data sources: Washington Administrative Office of the Courts; Washington Sentencing Guidelines Commission, *Statistical Summary of Adult Felony Sentencing, Fiscal Year 2004*.

³ RCW 9.94A.010.

Key Finding: Preliminary results indicate that recidivism rates have declined slightly since passage of Washington's Offender Accountability Act (OAA). Enacted in 1999, the OAA requires the Department of Corrections to classify adult felony offenders and re-allocate community-based resources by putting more effort on higher-risk offenders and less effort on lower-risk offenders.

We estimate that the two-year felony recidivism rates of higher-risk offenders have dropped by 3.5 percentage points, while the rates for lower-risk offenders have fallen a more modest 1.2 points. These findings are preliminary; definitive results will require four more years of observation. While it is too early to conclude that the OAA "caused" the drop in recidivism, these initial outcomes can be interpreted as promising.

To determine whether the OAA results in lower recidivism rates,⁴ the Legislature directed the Washington State Institute for Public Policy (Institute) to evaluate the impact of the Act. This is the Institute's fifth annual report on the OAA. The final evaluation on long-term outcomes is due in 2010.

This year's report provides the initial opportunity to examine the effect of the OAA's first year of operation on short-run recidivism rates. We emphasize that the information provided here is preliminary; we will only have definitive results after four more years of observation. This year's report is a bit like the earliest returns on election night—the reader should be aware that initial outcomes can change significantly as time unfolds.

⁴ "Recidivism" refers to the re-commission of a new criminal offense.

Summary of Findings

After we summarize our preliminary findings in this short section, the balance of the report describes in more detail how the OAA operates as well as the multivariate statistical methods we used to carry out the analysis.

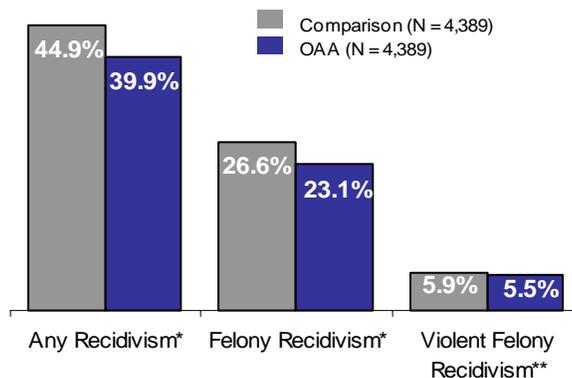
Under the OAA, DOC classifies offenders into four groups and allocates more resources to the higher-risk groups (and corresponding fewer resources to the lower-risk groups). To test whether this strategy lowers recidivism, we analyze the reconviction rates of all offenders released to the community during the first full year of implementation of the OAA—between July 1, 2001, and June 30, 2002. We compare this initial OAA group with similar offenders released prior to the OAA.

In this preliminary analysis, we made two types of comparisons: 1) we combined the two higher-risk OAA groups and compared their recidivism with their higher-risk pre-OAA counterparts; and 2) we combined the two lower-risk OAA groups and compared them with similar lower-risk offenders from the pre-OAA period.

Exhibits 1 and 2 show the key findings from our preliminary analyses. Twenty-four months after re-entering the community, we estimate that both higher-risk and lower-risk offenders supervised under the OAA have slightly lower recidivism rates than their non-OAA comparison groups.

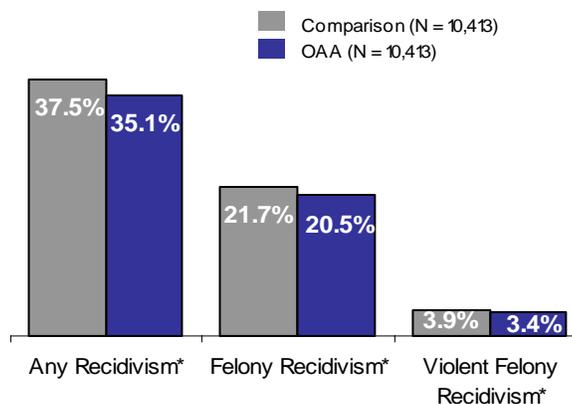
- ✓ **For the higher-risk offenders** under the OAA, we find that the OAA group had a 39.9 percent overall (felony and misdemeanor) recidivism rate, while the comparison group had a 44.9 percent rate—a 5.0 percentage point drop favoring the OAA group. Focusing only on felony reconvictions, the OAA and comparison groups had 23.1 and 26.6 percent recidivism rates, respectively—a 3.5 percentage point drop favoring the OAA group. Narrowing the focus further to just violent felony recidivism, we find that the OAA and comparison groups had 5.5 and 5.9 percent recidivism rates—a 0.4 percentage point drop favoring the OAA group.
- ✓ **For the lower-risk offenders** under the OAA, we also find lower recidivism rates than for the comparison group, although the difference in rates is smaller. For example, we find that the OAA group had a 35.1 percent overall (felony and misdemeanor) recidivism rate, while the comparison group had a 37.5 percent rate—a 2.4 percentage point drop favoring the OAA group.

Exhibit 1
Higher-Risk Offenders (RMA and RMB):
2-Year Recidivism Rates for the
OAA and Comparison Groups



* = Statistically significant difference ** = Not statistically different

Exhibit 2
Lower-Risk Offenders (RMC and RMD):
2-Year Recidivism Rates for the
OAA and Comparison Groups



* = Statistically significant difference

All differences are statistically significant with one exception: the violent felony recidivism rates for the higher-risk OAA group.

For this preliminary recidivism analysis of the OAA, we did not attempt to conduct a benefit-cost analysis; that economic study will be completed in a future report on the OAA. If, however, the incremental cost of the OAA is zero—that is, if the OAA simply reallocates existing DOC resources—then any statistically significant reduction in recidivism attributed to the OAA will be cost-beneficial.

It is, however, too early in our evaluation of the OAA to conclude that the preliminary recidivism reductions shown on Exhibits 1 and 2 are “caused” by the OAA. That is, there may be other factors that are unobserved to us that caused the

estimated reductions in recidivism. Additionally, in this preliminary analysis we were only able to use a two-year follow-up period to measure recidivism, and we have found that more reliable results can be measured with at least a three-year follow-up period. In subsequent reports on the OAA, we will be able to observe recidivism over longer time frames and follow additional cohorts of OAA offenders. This will increase our ability to determine whether the OAA is a causal factor in the drop in recidivism.

Elements of the 1999 Offender Accountability Act

The OAA requires DOC to take two broad steps: 1) DOC must classify all offenders using a research-based assessment tool, and 2) the agency must use this information to allocate supervision and treatment resources.⁵ These basic elements are described in this section.

OAA Element 1: DOC's Offender Classification System

The OAA instructs DOC to classify felony offenders according to the risk they pose to reoffending in the future and the amount of harm they have caused society in the past. To give operational direction to this classification, the OAA defines the assessment with this language:

*“Risk assessment” means the application of an objective instrument supported by research and adopted by the department for the purpose of assessing an offender's **risk of reoffense**, taking into consideration the **nature of the harm done** by the offender, place and circumstances of the offender related to risk, the offender's relationship to any victim, and any information provided to the department by victims.⁶*

With this language, the legislature directed DOC to classify offenders by taking into account two broad concepts: the “risk of reoffense” and the “nature of the harm done.” These two concepts do not necessarily address the same factors.

The “risk of reoffense” concept is forward looking. A classification system that measures the risk of reoffense is designed to predict whether an offender is likely to commit another crime in the future. The “harm done” concept, on the other hand, is backward looking. A classification system that measures harm done measures how much damage an offender has already caused victims and society, regardless of what he or she is likely to do in the future.

The DOC designed its “Risk Management Identification” (RMI) system—the formal name of DOC’s classification system—to include two sets of assessments and decision rules that together attempt to measure and balance both of these OAA concepts. First, DOC adopted a formal risk assessment tool to measure the likelihood of future reoffending. Second, DOC adopted additional criteria to gauge how much harm the offender’s prior criminal activity caused victims and society. Each of these two classification tools is summarized here.

Element 1a: DOC’s “Risk of Reoffense” Assessment Tool.⁷ Prior to the OAA, DOC began using a formal risk assessment tool called the “Level of Service Inventory-Revised (LSI-R).” Canadian researchers developed this 54-question, copyrighted instrument in the 1980s. Previous research (outside of Washington State) indicated the LSI-R is a valid instrument for predicting whether an offender is likely to reoffend.⁸ DOC adopted the LSI-R as one of the key parts of its Risk Management Identification system.

The questions on the LSI-R cover ten areas of an offender’s life.⁹ After DOC staff administers the LSI-R, an offender’s combined LSI-R score is tabulated. An offender’s LSI-R score can range from 1 to 54, where higher numbers indicate a higher probability of reoffending.

Exhibit 3 provides a snapshot on how the LSI-R relates to recidivism in Washington. The chart shows that the higher the LSI-R score, the higher

⁷ This section draws on our formal study of the LSI-R as implemented by DOC. See, R. Barnoski, S. Aos, *Washington’s Offender Accountability Act: An Analysis of the Department of Corrections’ Risk Assessment*. Olympia: Washington State Institute for Public Policy, 2003.

⁸ Prior research associated with the LSI-R is discussed in: D. A. Andrews & J. L. Bonta (1995) *The Level of Service Inventory-Revised, Manual*. North Tonawanda, New York: Multi-Health Systems, Inc.

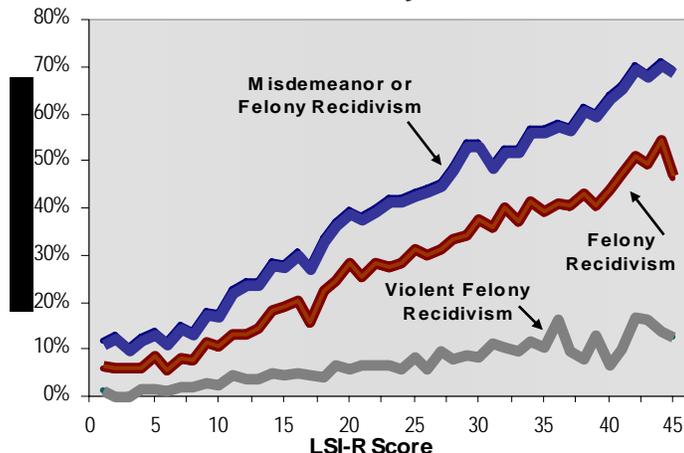
⁹ These 54 questions include: ten questions on prior criminal history; ten on an offender’s education and employment; two on finances; four on an offender’s family situation; three on an offender’s living situation; two on leisure and recreation activities; five on peers; nine of alcohol and drug problems; five on emotional or personal problems; and four on an offender’s attitude.

⁵ The OAA also gave DOC new authority to hold timely hearings and to sanction offenders with crimes committed after July 1, 2000, who violate conditions of community custody.

⁶ RCW 9.94A.030(32), emphasis added.

the chance that an offender will recidivate. An analysis of these data indicates that a one-point increase in the LSI-R score results in a 1.5 percentage point increase in the misdemeanor and felony recidivism rate, a 1.1 percentage point increase for felony recidivism, and a 0.3 percentage point increase for violent felony recidivism.

Exhibit 3
Recidivism Rates by LSI-R Score



Unfortunately, Exhibit 3 also reveals no distinct changes in recidivism rates from one score to the next—that is, the lines on Exhibit 3 increase at fairly steady rates. This is a significant finding, because it means that the LSI-R provides no naturally occurring “cut-off scores” to create low- and high-risk categories. Nonetheless, DOC uses LSI-R specific cutoff scores, in conjunction with its harm-done rules, to classify offenders. The specific scoring rules used by DOC are summarized on page 12 of this report.

In our previous study testing the predictive validity of the LSI-R as used by DOC, we presented four findings:¹⁰

- ✓ The LSI-R predicts recidivism moderately well.
- ✓ The predictive power of the LSI-R can be improved significantly by adding several readily available measures.
- ✓ An enhanced prediction instrument would improve the classification of DOC offenders by specifically measuring the likelihood of the most serious form of recidivism—violent felonies.
- ✓ Finally, as reported above, there are no distinct changes in recidivism rates at specific risk scores, thus there are no obvious “cut-off scores” to create risk categories.

Following up on these conclusions, the Institute and DOC are currently discussing alternative approaches to risk-for-reoffense classifications for the RMI system.

Element 1b: DOC’s “Harm Done” Criteria. As mentioned, the LSI-R was designed to predict whether an offender will commit another crime. It was not constructed to measure the level of prior harm caused by an offender—a key requirement in the OAA legislation. To implement this aspect of the OAA, DOC adopted an additional set of rules to gauge how much damage an offender has caused in his or her prior criminality. DOC developed these “harm-done” rules from recommendations by DOC, the Victims Council, and criteria established by the Washington Association of Sheriffs and Police Chiefs.¹¹ Examples of the RMI questions used to determine prior harm done include the following: Is the offender classified as a Level I, II, III sex offender? Is the offender designated as a Dangerous Mentally Ill Offender? Did the offender commit a violent offense involving a stranger? If an offender scores a “yes” on any of these conditions, then, regardless of the offender’s LSI-R score, the offender is regarded as needing higher levels of community custody.

The Product of the Classification System: RMA, RMB, RMC, and RMD Offender Classifications. Together, the LSI-R and the harm-done criteria make up DOC’s RMI classification system; DOC uses the system to classify each offender. As mentioned, DOC’s specific scoring rules are listed at the end of this report.

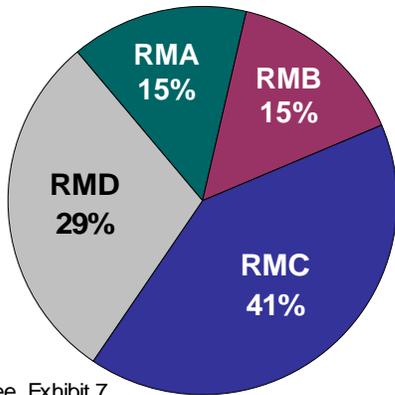
With the RMI scoring system, each felon under DOC supervision is classified into one of four categories: RMA, RMB, RMC, or RMD. The RMA category is the highest risk and highest harm-done classification, while the RMD category is the lowest risk and lowest harm-done group.

Exhibit 4 shows the distribution of all RMI-classified offenders for the sample of offenders used in this study. The sample includes felons released to the community during Fiscal Year 2002—those released from state prison as well as those sentenced to local sanctions (usually county jail). The chart shows that 30 percent of offenders are classified as either RMA or RMB (the highest risk and harm-done categories) with the majority (70 percent) of offenders classified in the less risky RMC and RMD categories.

¹¹ Washington State Department of Corrections, “Risk Assessment and the Offender Accountability Act, November 5, 2001,” presentation to the House Criminal Justice and Corrections Committee, November 30, 2001.

¹⁰ Barnoski and Aos, 2003.

Exhibit 4
All DOC Offenders by RMI Level



Source: See Exhibit 7

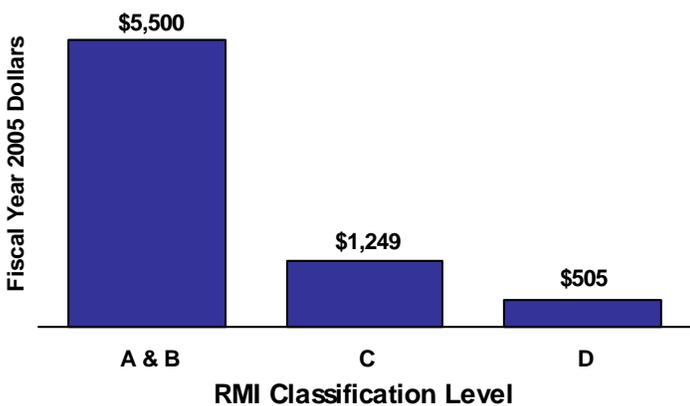
OAA Element 2: Resource Allocation Pursuant to the OAA

As discussed, the OAA requires that DOC not only classify offenders, but also re-allocate resources according to this classification. The OAA directs DOC to deploy more of its community-based resources to the higher-risk RMA and RMB offenders, with correspondingly fewer resources devoted to the relatively lower-risk RMC and RMD offenders. Thus, the RMI designation is central to the OAA and its ability to reduce overall recidivism rates.

DOC budget data indicate that the higher-risk (and highest harm-done) offenders receive more resources than lower-risk offenders. Exhibit 5 indicates that \$5,500 per year is budgeted for community supervision for the average RMA and RMB offender. This contrasts with \$1,249 and \$505 for each lower-risk RMC and RMD offender, respectively. This differential in the level of effort is also seen in the monthly amounts of community supervision staff time that DOC budgets for different risk-classified offenders. Exhibit 6 shows that 9.2 hours of community supervision per month are budgeted for RMA offenders. The slightly lower-risk RMB offenders are budgeted to receive a similar level of supervision: 7.6 hours of staff attention per month. RMC offenders are budgeted to receive less supervision at 5.4 budgeted monthly hours while RMD offenders receive considerably less supervision at 1.6 hours.

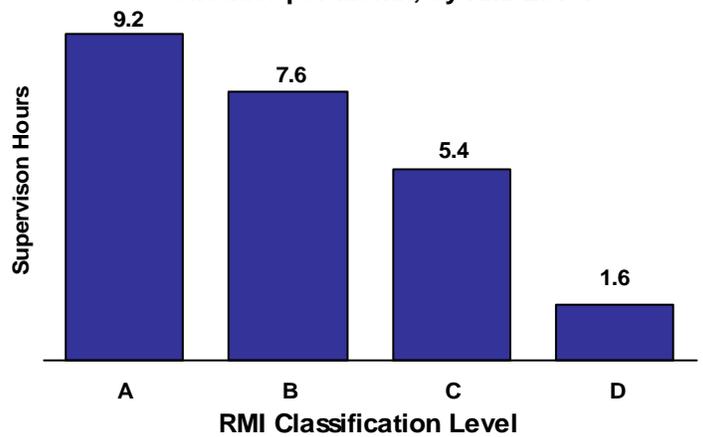
These DOC data provide a clear indication that more community-based resources are being budgeted for the higher-risk offenders and correspondingly fewer resources are being spent on lower-risk offenders. Whether the OAA is able to reduce overall recidivism rates and provide a net benefit to Washington will depend, in part, on the effectiveness of this resource re-allocation that DOC has made pursuant to the legislative direction of the OAA.

Exhibit 5
DOC Budgeted Annual Cost per Offender on Community Supervision, by RMI Level



Source: Personal communication with DOC staff.

Exhibit 6
DOC Supervision Hours Budgeted per Offender per Month, by RMI Level



Source: Personal communication with DOC staff.

The Institute's Evaluation of the OAA: Technical Description

The Basic Research Question. In passing the OAA, the intention of the Legislature was to lower recidivism rates by reallocating a portion of DOC's budgeted resources, especially those used to supervise offenders in the community. The OAA directs that more DOC resources be spent on higher-risk offenders and, because of budget restrictions, fewer resources be spent on lower-risk offenders. If supervision and treatment resources are efficacious, then, under the OAA, recidivism rates might be expected to decrease for higher-risk offenders and increase for lower-risk offenders. If, however, community supervision and treatment resources do not have a statistically significant effect on recidivism rates, then, of course, the OAA will not change the recidivism rates of either the higher-risk or lower-risk offenders. It is also possible that resources affect higher-risk offenders differently than lower-risk offenders. In particular, it is possible that supervising lower-risk offenders less may *reduce* their recidivism rates. Thus, the basic research tasks for the evaluation of the OAA are to estimate whether the Act produces significant effects on the recidivism rates of high-risk and low-risk offenders.

Research Design. An ideal way to estimate whether the OAA achieves a reduction in recidivism would be to assign randomly some offenders to the new OAA regime and some to the old pre-OAA approach to community supervision. Any observed difference in recidivism rates could then be confidently attributed to the effect of the OAA. Unfortunately, a random assignment approach was not possible for this evaluation because the implementation of the OAA was statewide and, as we explain, it became fully operational at one time (mid-2001).

Lacking the ability to employ a random assignment evaluation design, the Institute uses several "next-best" non-experimental approaches to address the basic question of interest for the evaluation.

Two Groups of Offenders for the Evaluation: the Pre-OAA Group and the OAA Group. Our approach to evaluating the OAA derives from administrative data on two groups of offenders who were released to the community during two different time periods:

1) **The pre-OAA group** includes all DOC offenders released to the community (from either prison or jail, or directly to community placement) between October 1, 1998 (the day the first LSI-R scores were available) and June 30, 2000 (the

day before OAA Legislation went into effect). The total pre-OAA sample includes 19,995 offenders.

2) **The OAA group** includes all offenders released to the community between July 1, 2001, and June 30, 2002—the first full year of effective OAA implementation. We selected the July 1, 2001, start date for the OAA group because that was when, according to DOC, the RMI classification system was fully operational.¹² The June 30, 2002, cutoff date for the OAA group was set so that offenders in the sample would have a fixed two-year follow-up period in the community, with an additional six-month period to allow any cases to be adjudicated by the courts. The total OAA sample includes 14,879 offenders.

Data. For all offenders in this study, we collected administrative data on the following factors:

- ✓ Age at release to the community
- ✓ Gender
- ✓ Ethnicity
- ✓ Adult and juvenile criminal history
- ✓ Crime for the current offense
- ✓ LSI-R scores
- ✓ Sentence type (prison or community)
- ✓ Recidivism data

The administrative data were obtained from two principal sources: electronic files from the Department of Corrections and electronic court-based data from the Administrative Office of the Courts. The Institute obtains quarterly data updates from these sources and combines them for research purposes. For the evaluation presented in this report, the data are through December 2004.

For the OAA group, we also have each offender's RMI classification. We do not, of course, have information on the RMI classification for the pre-OAA group since the OAA system was not in place during that time period.

In the multivariate models we use for this evaluation, we include three statistically-developed risk scores we have computed for each offender in the two groups. These scores are alternatives to the LSI-R and were constructed specifically to measure "static" risk factors in a more comprehensive and consistent way than the

¹² The OAA legally became effect on July 1, 2000. According to DOC, however, the RMI classification system was not fully operational until the late spring of 2001. Therefore, we selected July 1, 2001, as the beginning release-to-the-community date for our evaluation.

**Exhibit 7
Descriptive Statistics**

	<u>OAA and Pre-OAA Groups</u>			<u>OAA Group by RMI Classification</u>					
	OAA Group	Pre-OAA Group	Statistically Significant Difference? (p-value)	RMA	RMB	RMC	RMD	RMA and RMB	RMC and RMD
Demographic Variables									
Age at Release	32.21	32.09	No (0.27)	32.70	32.98	32.11	31.71	32.84	31.94
Male %	77.3%	78.2%	Yes (0.03)	92.2%	81.4%	74.4%	71.7%	86.7%	73.7%
White %	78.3%	77.2%	Yes (0.02)	67.3%	75.8%	80.9%	81.4%	71.6%	81.1%
Black %	15.0%	16.4%	Yes (0.00)	24.5%	17.7%	13.2%	11.5%	21.1%	12.5%
Asian %	2.4%	2.3%	No (0.37)	2.8%	1.4%	1.8%	3.6%	2.1%	2.5%
Native Amer %	2.9%	2.9%	No (0.79)	3.8%	4.0%	3.1%	1.8%	3.9%	2.5%
Risk for Reoffense Scales									
LSI-R Score	26.57	22.03	Yes (0.00)	31.55	35.19	29.72	15.32	33.39	23.69
Prison Sentence %	17.1%	21.8%	Yes (0.00)	33.8%	27.8%	16.2%	4.6%	30.8%	11.3%
Static Felony Risk Score	59.21	58.03	Yes (0.00)	66.21	69.35	62.24	46.15	67.79	55.50
Static NonDrug Fel Score	35.29	34.12	Yes (0.00)	40.33	40.82	35.97	28.70	40.58	32.92
Static Violent Fel Score	35.34	34.53	Yes (0.00)	46.75	42.35	34.47	26.94	44.53	31.32
Unadjusted Recidivism									
Felony & Misdemeanor %	41.7%	41.8%	No (0.90)	48.8%	52.7%	47.8%	24.2%	50.8%	37.9%
Felony %	26.1%	26.3%	No (0.78)	29.9%	34.0%	30.9%	13.6%	32.0%	23.6%
Violent Felony %	6.8%	7.0%	No (0.52)	12.4%	9.9%	6.6%	2.7%	11.1%	4.9%
Sample Size	14,879	19,995		2,192	2,236	6,072	4,379	4,428	10,451

Data Sources: Washington State Department of Corrections and Administrative Office of the Courts. The OAA group includes those offenders released to the community during Fiscal Year 2002. The pre-OAA group includes those offenders released to the community between October 1, 1998, and June 30, 2000.

LSI-R allows. Static risk factors are those observed characteristics of an offender that do not change over time, such as an offender’s gender and prior criminal history. Each of the three scores—for felony risk, violence risk, and non-drug felony risk—were calculated with multivariate logistic regression models predicting the three types of recidivism outcomes as a function of a number of variables including information on prior and current adult and juvenile criminal history.¹³

Recidivism Outcome Measures. All references to “recidivism” in this study refer to an offender who is reconvicted for a new offense in the courts in Washington State. That is, recidivism is a conviction for an offense committed after placement in the community. For offenders sentenced to prison or jail, placement in the community begins at the time of release from confinement. For offenders sentenced directly to community supervision, placement begins at the time of sentencing. Adequately measuring recidivism for adult offenders requires a sufficient follow-up period for reoffending as well as another period to allow for reoffenses to be formally adjudicated.¹⁴ In this study, we calculate a 24-month follow-up period and allow six months for adjudications to be decided in the court system. Both these time periods are shorter than

appropriate for adult offenders. In future reports on the OAA we will be able to calculate 36-month recidivism rates and allow for a 12-month adjudication period. In this preliminary OAA report, however, we were constrained to the shorter time intervals.

We report three types of recidivism rates in this study: 1) any recidivism which records a new felony or misdemeanor conviction; 2) felony recidivism which measures only new felony convictions; and 3) violent felony recidivism which includes only new felony convictions for homicide, sex offenses, robbery, or aggravated assault.

In upcoming annual reports on the OAA, we will also examine two other commonly-measured recidivism outcomes: returns to prison and technical violations. The principal focus of the evaluation, however, will continue to be whether the OAA affects the rate at which offenders commit new crimes.

Descriptive Statistics. Basic descriptive information on the OAA and pre-OAA groups of offenders is presented in Exhibit 7. The Exhibit also provides descriptive information for the OAA group broken out by RMI classification.

Exhibit 7 shows that there are some statistically significant differences between offenders released prior to the OAA and the offenders released after the OAA, although many of the differences are quite small. For example, 78.2 percent of the pre-OAA group are male while 77.3 percent of the

¹³ More information on the construction of these scores can be obtained from one of this report’s authors, Robert Barnoski.

¹⁴ This definition of recidivism is consistent with that developed for the legislature in R. Barnoski, *Standards for Improving Research Effectiveness in Adult and Juvenile Justice*. Olympia: Washington State Institute for Public Policy, 1997.

OAA group are male. More significant for our evaluation of the OAA, several risk-for-reoffense scales are statistically different between the two groups. The three static risk scales indicate that the pre-OAA is about two percent less risky than the OAA group.

There is a large difference, however, in the LSI-R scores of the two groups: the pre-OAA group is about 17 percent less risky than the OAA group as measured by the LSI-R. This large discrepancy raises concerns about the comparability of the LSI-R during the two time intervals. In the pre-OAA period, the LSI-R was a new tool for DOC and it may not have been completed as thoroughly as it was during the OAA period. We confirmed this in personal communication with DOC staff. Because of this, it is inappropriate to use the LSI-R score, in aggregate, to control for differences in the pre-OAA and OAA groups in our analyses. Thus, in the statistical models we developed for this evaluation, we use the three static risk scales that we developed to measure risk for reoffense.

Three Statistical Models. Lacking the opportunity to employ a random assignment research design, we developed three statistical modeling approaches to test whether the OAA achieves reductions in recidivism.¹⁵ These modeling approaches provide a range of estimates of the effect of the OAA on recidivism; each model offers advantages and disadvantages. From these estimates, we attempt to draw preliminary inferences about whether the OAA has affected the recidivism rates of adult felony offenders in Washington.

1) Basic Multivariate Model. First, we estimated a standard multivariate logistic regression model where 24-month recidivism outcomes are a function of OAA group membership along with a variety of control variables. The model takes this form:

$$\text{Recidivism} = f(\text{OAA}, X, \text{error})$$

In this basic model, we test simply for any estimated overall effect of the OAA on recidivism, after controlling for information we have on each offender (the “X” term in the equation). As shown on Exhibit 7, there are pre-existing differences between the pre-OAA and the OAA groups with the OAA appearing to be slightly riskier for reoffense. The controlling variables, which include the observed variables described earlier,

are used to adjust statistically for these pre-existing differences. This basic model tests for an overall OAA effect, but cannot estimate separate effects for the high-risk and low-risk offenders as classified by the OAA. This is a limitation to this first simple modeling approach since the purpose of the OAA is to separate offenders into higher- and lower-risk classifications. Nonetheless, we estimated this basic multivariate model to provide an initial examination of the effect of the OAA.

2) Propensity Score Matching Models. Next, we implement two propensity score matching models. This modeling approach involves two steps. First, we develop a model to predict which OAA offenders are classified by DOC as either a higher-risk RMA or RMB offender or as a lower-risk RMC or RMD offender. That is, for the OAA sample, we estimate:

$$\begin{aligned} \text{RMAB-hat} &= f(X, \text{error}) \\ \text{RMCD-hat} &= f(X, \text{error}) \end{aligned}$$

In these models, an OAA offender’s actual group membership is a function of a variety of X variables that DOC uses to classify offenders (see page 12). We use this information to predict which offenders in the pre-OAA period would have been classified as an RMA or RMB offender (RMAB-hat) or as an RMC or RMD offender (RMCD-hat) had the RMI system been in place prior to the OAA. Based on these propensity scores, we then used a matching algorithm to select matched OAA and pre-OAA groups (matched on each offender’s propensity score).

After selecting the OAA and pre-OAA matched groups based on propensity score matching, we then used multivariate logistic regression to estimate effects.

$$\begin{aligned} \text{Recidivism-AB Group} &= f(\text{OAA}, X, \text{error}) \\ \text{Recidivism-CD Group} &= f(\text{OAA}, X, \text{error}) \end{aligned}$$

The advantage of the propensity score models over the basic multivariate model is that they allow an estimate of the separate effects of the OAA on the higher-risk (AB) and lower-risk (CD) offenders. That is, it models explicitly the selection process DOC uses to assign an offender to the RMA and RMB classifications as well as the RMC and RMD classifications.

3) Risk Factor Matching Models. Finally, we estimate another form of matching models where we create matched groups not based on a single propensity score but, rather, on the three separate risk scales that we developed to predict recidivism. This approach allows the creation of comparison groups based on the specific risk

¹⁵ A standard text describing some of our modeling approaches is: J. M. Wooldridge, *Econometric Analysis of Cross Section and Panel Data*. Cambridge, MA: MIT Press, 2002.

factors shown to predict recidivism. In this approach, we use the matching algorithm to select, for each OAA AB or CD offender, a unique matched offender from the pre-OAA group with nearly identical scores on the three risk factor scales. Once these risk-scale matched groups are created, we use, as before, multivariate logistic regression to estimate OAA effects.

$$\begin{aligned} \text{Recidivism-AB Group} &= f(\text{OAA}, X, \text{error}) \\ \text{Recidivism-CD Group} &= f(\text{OAA}, X, \text{error}) \end{aligned}$$

The advantage of the risk scale matching approach is it uses specific information about factors shown to predict recidivism as the basis for selecting the comparison groups for the analysis. The disadvantage is it does not model explicitly the classification process DOC uses to assign offenders to the RMA, RMB, RMC, and RMD categories.

A Note on the Matching Algorithm

The matching algorithm used by the Institute for this analysis assigns absolute-difference values for each matching factor chosen. For example, if age were a factor, then a 35-year-old case record would have an age distance value of 0 when compared with a 35-year-old control, and an age distance value of 1 when compared with controls aged 34 or 36. Each matching factor is assigned a maximum allowable distance. Using the age example again, we could assign a maximum allowable distance of 5, thus allowing a match of the 35-year-old case record with controls between 30 and 40. Using multiple matching factors, we match each case to the control with the lowest sum of difference values.

For this study we used the following distances for the static risk factor matching models and the propensity score matching models:

Matching Factor	Maximum Distance
Static Felony Risk Score	7
Static NonDrug Felony Score	5
Static Violence Score	5
Propensity Score	.01

Preliminary Evaluation Results

Exhibit 8 displays the findings from the first modeling approach—the basic multivariate model. As mentioned, this model is presented as the first step in the analysis; its simple structure does not allow a refined look at the question of whether the

The lower panel of Exhibit 8 shows the regression results for a model without the covariates in the first model. Without the other control variables, the OAA has no significant difference on any measure of recidivism. This finding is consistent with the descriptive information shown in Exhibit 7. That is, the OAA sample appears to be a slightly riskier group than the pre-OAA group.

Exhibit 8
Basic Multivariate Model:
Mean-Adjusted 2-Year Recidivism Rates

Method and Outcome	All OAA and Pre-OAA Offenders					
	OAA Group	Comparison Group	Difference	Effect Size	p-value	N
Basic Multivariate Model With Covariates						
Any Recidivism	34.4%	38.1%	-3.6%	-0.08	.00	34,830
Felony Recidivism	19.9%	21.9%	-2.0%	-0.05	.00	34,830
Violent Felony Recidivism	3.4%	4.0%	-0.5%	-0.03	.00	34,830
Basic Multivariate Model Without Covariates						
Any Recidivism	41.7%	41.8%	-0.1%	-0.00	.90	34,874
Felony Recidivism	26.1%	26.3%	-0.1%	-0.00	.78	34,874
Violent Felony Recidivism	6.8%	7.0%	-0.2%	-0.01	.52	34,874

Note: Results are from separate logistic regressions for each recidivism outcome, with effects calculated at the means of the samples. Effect sizes are calculated using the arcsine transformation described in: M.W. Lipsey and D. Wilson. (2001) *Practical meta-analysis*. Thousand Oaks: Sage Publications, Table B10, formula (22).

OAA affects recidivism rates for higher- and lower-risk offenders. Nonetheless, the results shown in the upper panel of Exhibit 8 (the model with all covariates) indicate that overall recidivism rates are 3.6 percentage points lower for the OAA group than for the pre-OAA comparison group. For felony-only recidivism, the rates are 2.0 percentage points lower. For violent felony recidivism, the rates are lower by about half a percentage point. All these results are small, but they are statistically significant given the large size of the sample in the analysis (n = 34,830).

The regression results in Exhibit 8 confirm that a significant OAA effect on recidivism emerges only after adjusting for the higher-risk nature of offenders in the OAA group.

The results of the second and third modeling approaches are shown in Exhibit 9. The top panel shows the results for the propensity score matching methods, while the bottom panel shows the results for the risk factor matching approach. In each case, the risk factor matching method produces smaller OAA effects than the propensity score matching method. For example, for the higher-risk group (RMAB

offenders), the propensity score method estimates a statistically significant reduction of 7.6 percentage points in overall recidivism while the risk factor method indicates a 5.0 percentage point reduction. Except for the violent felony recidivism estimates for the AB group, all reductions are statistically significant.

Exhibit 9
Propensity Score and Risk Factor Matching Models:
Mean-Adjusted 2-Year Recidivism Rates

Method and Outcome	Higher-Risk Group (RMA and RMB Offenders)						Lower-Risk Group (RMC and RMD Offenders)					
	OAA Group	Comparison Group	Difference	Effect Size	p-value	N	OAA Group	Comparison Group	Difference	Effect Size	p-value	N
Propensity Score Matching												
Any Recidivism	42.8%	50.5%	-7.6%	-0.15	.00	7,404	33.4%	35.9%	-2.5%	-0.05	.00	20,860
Felony Recidivism	24.2%	29.0%	-4.8%	-0.11	.00	7,404	19.5%	20.9%	-1.4%	-0.03	.02	20,860
Violent Felony Recidivism	7.1%	8.1%	-1.0%	-0.04	.09	7,404	3.0%	3.5%	-0.5%	-0.03	.03	20,860
Risk Factor Matching												
Any Recidivism	39.9%	44.9%	-5.0%	-0.10	.00	8,778	35.1%	37.5%	-2.4%	-0.05	.00	20,826
Felony Recidivism	23.1%	26.6%	-3.5%	-0.08	.00	8,778	20.5%	21.7%	-1.2%	-0.03	.05	20,826
Violent Felony Recidivism	5.5%	5.9%	-0.4%	-0.02	.41	8,778	3.4%	3.9%	-0.5%	-0.02	.05	20,826

Note: Results are from separate logistic regressions for each recidivism outcome, with effects calculated at the means of the samples. Effect sizes are calculated using the arcsine transformation described in: M.W. Lipsey and D. Wilson. (2001) *Practical meta-analysis*. Thousand Oaks: Sage Publications, Table B10, formula (22).

Exhibit 10
Group Comparability for the Risk Factor Matched Groups
(Descriptive Statistics for the Matched Groups)

	<u>Higher-Risk Offenders (RMA&B)</u>			<u>Lower-Risk Offenders (RMC&D)</u>		
	OAA Group	Pre-OAA Group	Statistically Significant Difference? (p-value)	OAA Group	Pre-OAA Group	Statistically Significant Difference? (p-value)
Demographic Variables						
Age at Release	32.8	31.4	No (.97)	31.9	31.8	No (.68)
Male %	86.7%	88.8%	Yes (.00)	73.2%	74.7%	Yes (.02)
Black %	21.0%	19.1%	Yes (.03)	12.4%	15.2%	Yes (.00)
Asian %	2.1%	2.3%	No (.61)	2.6%	2.5%	No (.93)
Native Amer %	3.9%	3.7%	No (.58)	2.5%	2.7%	No (.37)
Risk for Reoffense Scales						
Prison Sentence %	30.6%	28.5%	Yes (.04)	11.3%	19.8%	Yes (.00)
Static Felony Risk Score	67.7	67.6	No (.99)	55.43	55.42	No (.96)
Static NonDrug Fel Score	40.6	40.5	No (.94)	40.33	40.82	No (.95)
Static Violent Fel Score	44.5	44.5	No (.97)	46.75	42.35	No (.92)
Unadjusted Recidivism						
Felony & Misdemeanor %	50.7%	50.0%	No (.52)	37.9%	39.3%	Yes (.04)
Felony %	31.9%	32.5%	No (.54)	23.6%	24.6%	No (.12)
Violent Felony %	11.2%	9.6%	Yes (.02)	4.9%	5.9%	Yes (.00)
Sample Size	4,389	4,389		10,413	10,413	

Data Sources: Washington State Department of Corrections and Administrative Office of the Courts. The OAA group includes those offenders released to the community during Fiscal Year 2002. The pre-OAA group includes those offenders released to the community from October 1, 1998, to June 30, 2000.

Exhibit 10 examines descriptive statistics for the matched groups created using the risk factor approach to matching. We report this group because it is our preferred modeling approach at this juncture in the evaluation of the OAA. Exhibit 10 shows that after matching RMA and RMB offenders with offenders in the pre-OAA period—matching on the three risk scores for felony, non-drug felony, and violence—the two groups are quite comparable, although several important and statistically significant differences remain. The offenders in the OAA group have slightly fewer males, slightly more blacks, and a slightly higher percentage of previous prison sentences. As expected, there were no significant differences on the static risk scores, since those are the variables on which we created the matched samples. The matched groups for the lower-risk RMC and RMD offenders were similarly comparable, although there were also significant differences on the same variables, but in the opposite direction. For both these matched groups, we rely on the multivariate controls to adjust for the differences in estimating the average treatment effect for the OAA.

The logistic regression results for felony recidivism for the risk factor matching model is shown in Exhibit 11 to demonstrate the general approach taken in this analysis. The regression results for each of the other models shown in Exhibits 8 and 9 use the same set of covariates as shown in Exhibit 11. Detailed regression results for each model are available from the authors.

Exhibit 11
Regression Output for the
Risk Factor Matched Sample: High-Risk Group

Variable	Coefficient	Std. Err	Z-Statistic	Prob.
Dependent Variable: Felony Recidivism				
Method: ML - Binary Logit (Quadratic hill climbing)				
Included observations: 8778 after adjustments				
QML (Huber/White) standard errors & covariance				
CONSTANT	-4.405	0.467	-9.436	0.000
OAA (AB)	-0.186	0.061	-3.061	0.002
MALE	0.035	0.085	0.413	0.680
BLACK	0.484	0.061	7.900	0.000
ASIAN	-0.200	0.192	-1.042	0.297
NATAMER	0.024	0.127	0.187	0.852
ETHOTHER	-0.555	0.249	-2.225	0.026
AGE	-0.012	0.003	-4.111	0.000
FELONYSCORE	0.090	0.019	4.755	0.000
FELONYSCORE^2	-0.001	0.000	-4.189	0.000
FELONYSCORE^3	0.000	0.000	3.997	0.000
NONDRUGFELONYSCORE	0.054	0.014	3.907	0.000
NONDRUGFELONYSCORE^2	0.000	0.000	-2.810	0.005
VIOLENCESCORE	0.003	0.002	1.490	0.136
PRISON	0.278	0.056	4.996	0.000
LSI41	0.766	0.084	9.076	0.000
LSI3240	0.547	0.065	8.432	0.000
ADULTVIOLENCE	-0.206	0.059	-3.500	0.001
LSI10_VIOLENCE	-0.189	0.074	-2.559	0.011
LSI47	-0.053	0.084	-0.634	0.526
LSI48	-0.005	0.059	-0.078	0.937
LSI49	-0.236	0.067	-3.513	0.000
LSI50	-0.133	0.062	-2.134	0.033
HOMICIDE	-0.301	0.220	-1.367	0.172
Mean dependent var	0.322055	S.D. dependent var	0.467291	
S.E. of regression	0.435748	Akaike info criterion	1.117354	
Sum squared resid	1662.175	Schwarz criterion	1.136711	
Log likelihood	-4880.065	Hannan-Quinn criter.	1.123949	
Restr. log likelihood	-5516.173	Avg. log likelihood	-0.555943	
LR statistic (23 df)	1272.216	McFadden R-squared	0.115317	
Probability(LR stat)	0.000000			

Exhibit 12

DOC's Criteria for Risk Management Levels A – D

RISK MANAGEMENT A (RMA)	RISK MANAGEMENT B (RMB)
<p>Offenders will be assigned Risk Management Level A if they meet one or more of the following criteria:</p> <ol style="list-style-type: none">1) An LSI-R score of 41 or over and have been convicted of a violent crime2) Level III sex offenders3) Designated as Dangerous Mentally III Offender (DMIO)4) Do not meet the above criteria but through documented history meet any of the following:<ol style="list-style-type: none">a) Committed a violent act involving a victim who was unknown to the offender.b) Committed a predatory act of violence directed toward strangers or individuals with whom a relationship has been established or promoted for the primary purpose of victimization.c) Committed a violent act where the victim was vulnerable due to age (5 years or younger), physical condition, mental disability, or ill health where the victim was incapable of resisting the offense, or with significantly impaired ability to protect him/herself.d) Committed violent acts or made threats of violence directed toward institutions or groups in the community, including, but not limited to, religious, ethnic, or racial groups.e) History of violent acts and continue to exhibit behavior demonstrating a current threat to the victim(s) including, but not limited to, domestic violence or sexual offenses.	<p>Offenders who do not meet the criteria to be assigned to RMA, will be assigned Risk Management Level B if they meet one or more of the following criteria:</p> <ol style="list-style-type: none">1) An LSI-R score of 41 or over;2) An LSI-R score of 32 to 40 and have been convicted of a violent crime;3) Level II sex offenders; and/or4) Offenders with identified high level of needs including, but not limited to, those who are developmentally disabled or seriously mentally ill as determined by a qualified service provider. <p style="text-align: center;">RISK MANAGEMENT C (RMC)</p> <ol style="list-style-type: none">1) Offenders who do not meet the criteria to be assigned to RMA or RMB, with a LSI-R score of 24 to 40, will be assigned to Risk Management Level C.2) Level I sex offenders will be assigned to RMC. <p style="text-align: center;">RISK MANAGEMENT D (RMD)</p> <p>Offenders who do not meet the criteria to be assigned to RMA, RMB, or RMC with an LSI-R score of 0 to 23 will be assigned to RMD.</p>

The Institute's first four OAA reports are available on our website: <http://www.wsipp.wa.gov/>

R. Barnoski, S. Aos, *Washington's Offender Accountability Act: An Analysis of the Department of Corrections' Risk Assessment*. Olympia: Washington State Institute for Public Policy, 2003.

S. Aos, *Washington's Offender Accountability Act: Update and Progress Report on the Act's Evaluation*. Olympia: Washington State Institute for Public Policy, 2003.

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