



## SEX OFFENDER SENTENCING IN WASHINGTON STATE: PREDICTING RECIDIVISM BASED ON DEMOGRAPHICS AND CRIMINAL HISTORY

The 2004 Legislature directed the Washington State Institute for Public Policy (Institute) to conduct a comprehensive analysis and evaluation of the impact and effectiveness of current sex offender sentencing policies.<sup>1</sup> Because this is an extensive topic, we are publishing a series of reports.

In a previous report, the Institute found that the tools used by the the End of Sentence Review Committee to predict sex offender risk for reoffense had little to no predictive accuracy.<sup>2</sup>

**This report describes how well a “static” risk tool being developed by the Institute for the Department of Corrections predicts recidivism for Washington State sex offenders. This tool is considered static, since it is based solely on demographic and criminal history data that cannot be changed.**

As part of its evaluation of the Offender Accountability Act,<sup>3</sup> the Institute developed a static risk prediction tool for the Department of Corrections. The tool uses demographic and criminal history data that are available on the state’s criminal justice databases. The tool was developed to predict felony drug, felony property, and violent felony recidivism, but not felony sex recidivism.<sup>4</sup>

The static risk tool classifies felony offenders into one of five risk categories: Low, moderate, high drug, high non-violent felony, and high violent felony. The low risk offenders have a 15 percent felony recidivism rate, the moderate risk a 25 percent felony rate, the high drug a 30 percent felony drug rate, the high property a 30 percent felony property rate, and the high violent a 25 percent violent felony recidivism rate.<sup>5</sup>

### SUMMARY

As part of its evaluation of the Offender Accountability Act, the Institute developed a risk prediction tool for Washington State felony offenders for the Department of Corrections. This “static” risk tool is based on demographic and criminal history data available in the state’s criminal justice databases.

This report describes how well the static risk tool predicts recidivism for Washington State sex offenders.

### Findings

- The static risk tool classifies both sex offenders and non-sex offenders according to their risk for felony and violent felony reoffending with the same moderate predictive accuracy.
- With respect to predicting felony sex recidivism, the conclusion is different—the static risk levels do not classify offenders according to their recidivism risk.

That is, it is not possible to predict with any degree of accuracy which sex offenders will reoffend with a felony sex offense based solely on demographic and criminal history factors. Additional information is needed to identify which sex offenders are at a high risk for sexual reoffending.

The development of a new risk assessment to predict sexual reoffending will require the following steps:

1. A rigorous review of existing sex offender risk assessment research;
2. Involvement of clinicians, and those using the assessment; and
3. Statistical analyses that determine how to combine the information into the tool.

<sup>1</sup> ESHB 2400, Chapter 176, Laws of 2004.

<sup>2</sup> R. Barnoski, 2005, *Sex Offender Sentencing in Washington State: Sex Offender Risk Level Classification Tool and Recidivism*, Olympia: Washington State Institute for Public Policy, Document No. 05-08-1202.

<sup>3</sup> E2SSB 5421, Chapter 196, Laws of 1999.

<sup>4</sup> Violent felony recidivism includes homicide, sex, robbery, assault, and weapon offenses. That is, felony sex recidivism is included in violent felony recidivism.

<sup>5</sup> The Institute will be publishing a report describing the static risk tool during 2006.

The recidivism rates in this report are calculated for offenders placed in the community prior to 2000, since measuring sex offense recidivism requires a five-year time period in the community and one additional year for processing in the courts.<sup>6</sup>

Recidivism is defined as a conviction in a Washington State court. Three types of recidivism are measured: a conviction in Washington State for (1) any new felony offense, (2) any new violent felony offense excluding sex, and (3) any new felony sex offense.<sup>7</sup>

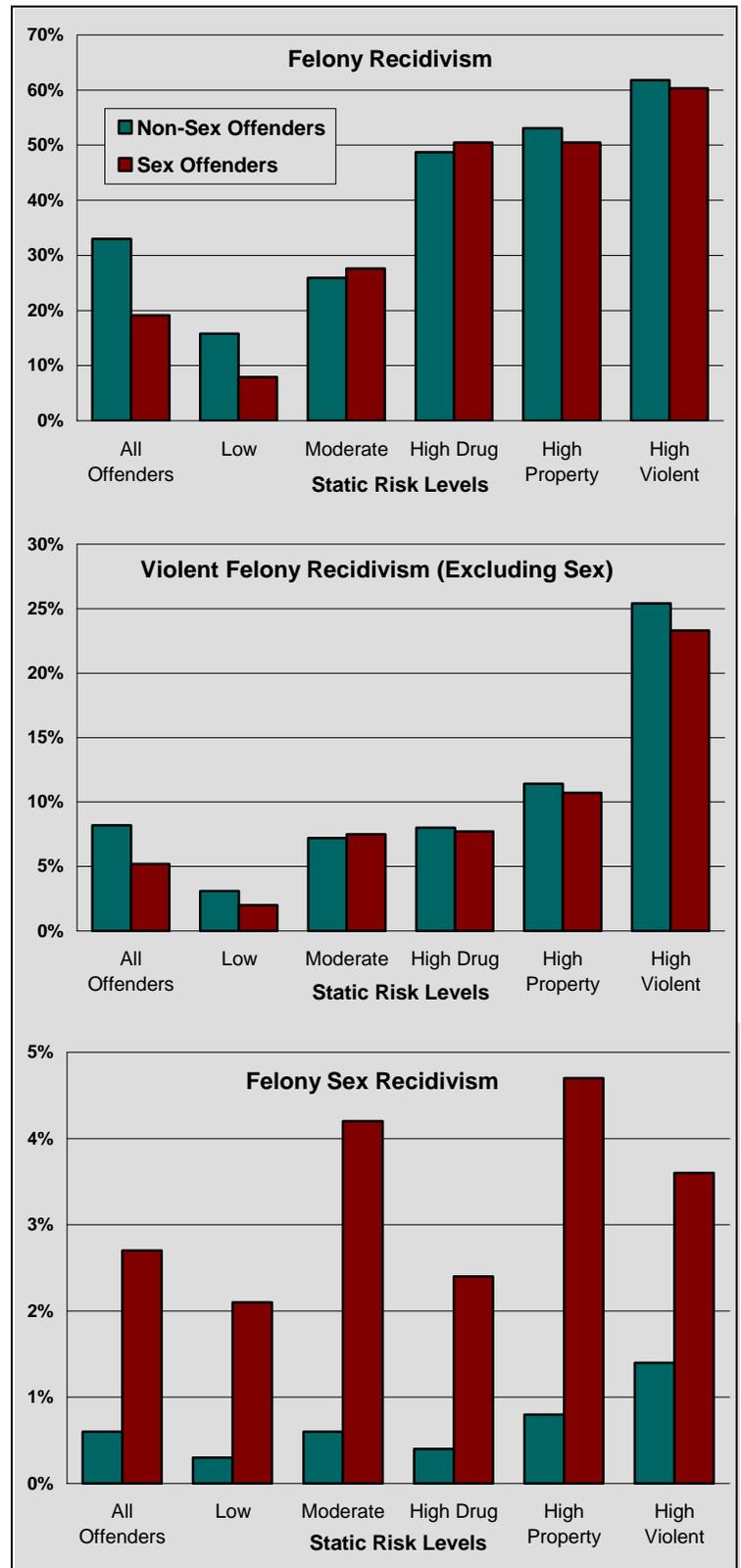
**Exhibit 1** compares three types of recidivism rates for non-sex offenders and sex offenders by the five risk categories of the static risk tool. The analysis is based on the 147,303 non-sex offenders and 10,256 sex offenders either released from prison or jail or placed on community supervision between 1992 and 1999.

The first two columns in the exhibit represent the recidivism rates for all non-sex offenders and sex offenders in the study sample. For example, the felony recidivism rate for all non-sex offenders is 33 percent compared with 19 percent for all sex offenders. That is, non-sex offenders have a much higher felony recidivism rate than sex offenders.

However, there is little difference in the felony recidivism rates within each risk level—with one exception. The felony recidivism rate for non-sex offenders classified as high violent risk is 62 percent, compared with 60 percent for sex offenders. That is, the risk levels work equally well classifying sex offenders as well as non-sex offenders according to their risk for felony reoffending. The one exception is for low risk offenders; the felony recidivism rate for sex offenders is lower than the rate for non-sex offenders—8 percent versus 16 percent.

The results for violent felony recidivism, excluding sex offenses, are similar to the results for felony recidivism, except the rates are lower. As with felony recidivism, the non-sex offenders have a higher violent felony recidivism rate—8 percent versus 5 percent. Yet, the violent felony recidivism rates of sex offenders and non-sex offenders within each risk level are nearly equal.

**Exhibit 1**  
**5-Year Felony Recidivism Rates**  
**Non-Sex Offenders and Sex Offenders**  
**By Static Risk Levels**



<sup>6</sup> R. Barnoski, 2005, *Sex Offender Sentencing in Washington State: Measuring Recidivism*, Olympia: Washington State Institute for Public Policy, Document No. 05-08-1202.

<sup>7</sup> Violent felony recidivism, excluding sex offenses, includes homicide, robbery, assault, and weapon offenses.

Thus, the risk levels work equally well classifying both sex offenders and non-sex offenders according to their risk for violent felony reoffending.

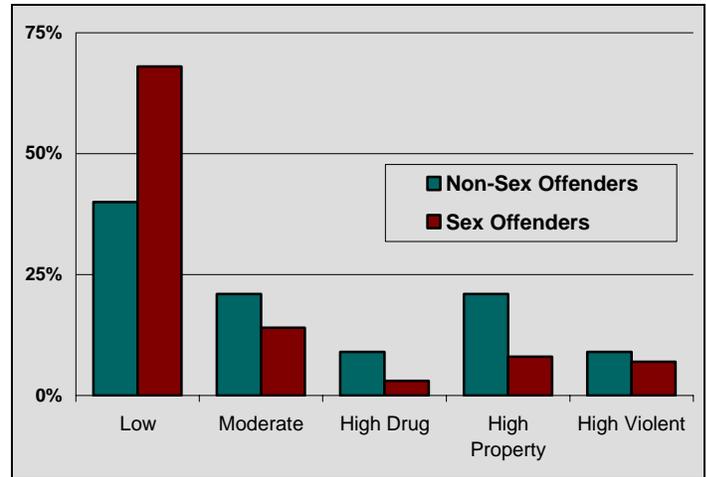
However, the results for felony sex recidivism are quite different. First, the felony sex recidivism rates are low, less than 5 percent. Second, the felony sex recidivism rates for sex offenders are much higher than the rates for non-sex offenders. Finally, the rates do not increase with increasing risk level. That is, the static risk tool does not classify offenders according to their risk for felony sex reoffending. Therefore, a different tool for accurately classifying sex offenders according to their risk for felony sex reoffending is needed.

**Exhibit 2** examines the percentage distribution of the five risk categories from the static risk tool for offenders sentenced to jail and/or community supervision and those sentenced to prison. Nearly 70 percent of sex offenders are classified in the low risk category, compared with 40 percent of the non-sex offenders. Approximately 8 percent of both sex offenders and non-sex offenders are classified in the high violent risk level. In other words, a large percentage of the sex offender population is classified by the static risk tool as low risk, yet the same percentage of sex offenders and non-sex offenders are classified as high violent risk. As a result, there are proportionally fewer sex offenders in the moderate, high drug, and high property risk categories.

**Exhibit 3** displays the best measure of predictive accuracy between recidivism and the risk-level categories—the Area Under the Receiver Operating Characteristic (AUC).<sup>8</sup> An AUC can vary between .500 and 1.00. AUCs in the .500s indicate little to no predictive accuracy, .600s indicate weak accuracy, .700s moderate, and those above .800 have strong predictive accuracy.<sup>9</sup>

The AUCs in Exhibit 3 indicate that the static risk levels predict felony and violent felony recidivism moderately well for both the non-sex and sex offender populations. However, the AUCs indicate the static risk tool has little to no predictive accuracy for the felony sex recidivism.

**Exhibit 2**  
Static Risk Level Percentage Distribution  
Non-Sex Offenders vs. Sex Offenders



**Exhibit 3**  
Static Risk Level Percentage Distribution  
Non-Sex Offenders vs. Sex Offenders

| Type of Recidivism           | Area Under the Receiver Operating Characteristic |               |
|------------------------------|--|---------------|
|                              | Non-Sex Offenders                                | Sex Offenders |
| Any Felony                   | 0.717  | 0.769         |
| Violent Felony Excluding Sex | 0.703  | 0.751         |
| Felony Sex                   | 0.646  | 0.576         |

\*All differences are statistically significant at the .0001 probability level, and are based on 147,303 non-sex felony offenders and 10,256 sex offenders.

Although all of the differences in recidivism rates across the five risk levels for both groups of offenders are statistically significant, the AUCs for felony sex recidivism represent little to weak predictive accuracy for both groups of offenders.

In summary, the AUCs in Exhibit 3 confirm what Exhibit 1 illustrates—the static risk levels predict felony and violent felony recidivism fairly well but do a poor job of predicting felony sex recidivism. Since the static risk tool fails to accurately predict felony sex recidivism, we now use multivariate techniques to try predicting felony sex recidivism using the demographic and criminal history information available on the statewide databases.

<sup>8</sup> M.E. Rice and G.T. Harris, 2005, Comparing Effect Sizes in Follow-Up Studies: ROC Area, Cohen's d, and r, *Law and Human Behavior* 29(5): 615-620. V.L. Quinsey, G.T. Harris, M.E. Rice, C.A. Cormier, 2005, *Violent Offenders: Appraising and Managing Risk, Second Edition*, Washington, DC: American Psychological Association.

<sup>9</sup> T. G. Tape, 2003, *Interpreting Diagnostic Tests*, The Area Under the ROC Curve, Omaha: University of Nebraska Medical Center, see: <http://gim.unmc.edu/dxtests/roc3.htm>.

**Exhibit 4** displays the results from the multivariate analyses. First, the analyses indicate that different factors are needed to predict felony sex recidivism for child sex offenders. Second, the best results achieve only a weak association with felony sex recidivism; an AUC of 0.653 for child sex offenders and 0.623 for the remaining sex offenders. That is, based on demographic and criminal history factors, it is not possible to predict with any degree of accuracy which sex offenders will reoffend with a felony sex offense.

**Exhibit 4**  
**Predicting Felony Sex Recidivism Based on Demographic and Criminal History Factors**

| Factor                              | Odds Ratio | Prob. Level | Std. Est. |
|-------------------------------------|------------|-------------|-----------|
| Child Sex Offenders                 | AUC=0.653  |             |           |
| Age Score                           | 1.303      | .0001       | 0.150     |
| Non-Drug Risk Score                 | 1.022      | .0001       | 0.117     |
| Felony Sex Convictions              | 2.397      | .0001       | 0.172     |
| Misdemeanor Sex Convictions         | 2.463      | 0.0014      | 0.062     |
| Other Sex Offenders                 | AUC=0.623  |             |           |
| Age Score                           | 1.272      | .0001       | 0.13      |
| Juvenile Felony Violent Convictions | 2.317      | .0001       | 0.07      |
| Felony Sex Convictions              | 1.718      | .0001       | 0.11      |
| Rape Convictions                    | 1.228      | 0.03        | 0.05      |
| Violent Convictions (not sex)       | 1.228      | 0.03        | 0.05      |
| Non-Violent Convictions             | 0.886      | 0.01        | -0.08     |

Std. Est. = standardized parameter estimate

However, it may be possible to develop a better tool for predicting felony sex recidivism. A previous Institute study found that a subset of items from the Washington State Sex Offender Risk Classification Tool has moderate accuracy in predicting felony sex recidivism.<sup>10</sup> Further support for improved prediction is found in the research literature.

The development of a risk assessment to specifically predict sexual reoffending will require the following steps:

1. A rigorous review of existing sex offender risk assessment research,
2. Involvement of clinicians and those who will be using the assessment, and
3. Statistical analyses that determine how to combine the information into the tool.

<sup>10</sup> R. Barnoski, 2005, *Sex Offender Sentencing in Washington State: Sex Offender Risk Classification Tool and Recidivism*, Olympia: Washington State Institute for Public Policy, Document No. 06-01-1204.

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