



# **Validation of the Wisconsin Department of Corrections Risk Assessment Instrument**

July 2009

Mike Eisenberg  
Jason Bryl  
Dr. Tony Fabelo

*Prepared by the Council of State Governments Justice Center,  
with the support of the Wisconsin Department of Corrections*

**Council of State Governments Justice Center**  
100 Wall Street, 20th Floor  
New York, New York 10005

4630 Montgomery Avenue, Suite 650  
Bethesda, MD 20814

504 W. 12<sup>th</sup> Street  
Austin, Texas 78701



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Council of State Governments Justice Center, New York 10005.

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## **Acknowledgements**

The Justice Center would like to acknowledge the many contributions to this report by Mr. Tony Streveler of the Wisconsin Department of Corrections. Mr. Streveler was instrumental in initiating efforts to have the Wisconsin risk instrument validated, identifying the data necessary to conduct the study, and providing his guidance and expertise to Justice Center researchers in all phases of the validation study and report. The Justice Center would also like to acknowledge the assistance of Ms. Dolores Metzler for providing additional data necessary for the study. Finally, the Justice Center would like to express their appreciation to Secretary Rick Raemisch and Ismael Ozanne for providing their assistance and resources in allowing the Justice Center to conduct this study.

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## Executive Summary

### Overview

Probation and parole agencies across the country use risk assessment instruments to predict the likelihood that individuals under supervision will reoffend. Like other departments across the nation, the Division of Community Corrections of the Wisconsin Department of Corrections requires that the “Admission to Adult Field Caseload” risk classification instrument be completed for all felony and assaultive misdemeanor cases at the time an offender is admitted to field supervision. This instrument, commonly referred to as the DOC 502, is used not only to estimate risk probabilities for supervision purposes, but also to help determine staff workload and deployment.

The DOC 502 risk assessment instrument was last validated in 1984 and department officials have sought to examine the validity of their risk instrument on a more contemporaneous population. To address the need for revalidation, the Wisconsin Department of Corrections contracted with the Council of State Governments Justice Center to conduct a validation study of the DOC 502 risk assessment instrument. This report reviews general issues associated with the use of risk assessment instruments in classifying offenders and presents the results of a validation study of the DOC 502 risk assessment instrument.

Validity of risk assessment instruments is the most important supportive principle behind the proper utilization of these instruments. Namely, the instruments’ predictions must be supported by research showing it can identify different groups of offenders with different probabilities of reoffending.

### Methodology

Data for the risk validation study were extracted from a larger data set prepared in May 2006 by Dennis Simonson, formerly of the Wisconsin Department of Corrections. Data used for the study examined offenders placed on community supervision in 2001 and 2002. Data going back to those years is needed to allow for a three year follow-up study. Two outcome measures were used as the measures of recidivism. These are: (a) new offense within three years of placement on community supervision; and (b) new violent offense within three years of placement on community supervision.

Data extracted from the databases detailed above resulted in a sample of 42,853 offenders placed on community supervision in 2001-2002 (34,794 offenders placed on probation and 7,789 released on parole and Extended Supervision or ES). These offenders were followed for three years. The percent of offenders committing new offenses within three years was computed and examined in relation to each risk assessment factor, the overall risk score, and risk groups. Based on various multivariate statistical techniques all the relevant factors were tested for correlation with the probability of re-offending as defined here. The explanatory statistical “weight” for each factor was then evaluated in assessing the ability of each risk factor in predicting re-offenses. The research then determined the validity of the risk assessment instrument and identified new predictive factors. Based on the findings, recommendations were developed to improve the predictive ability of the DOC 502.

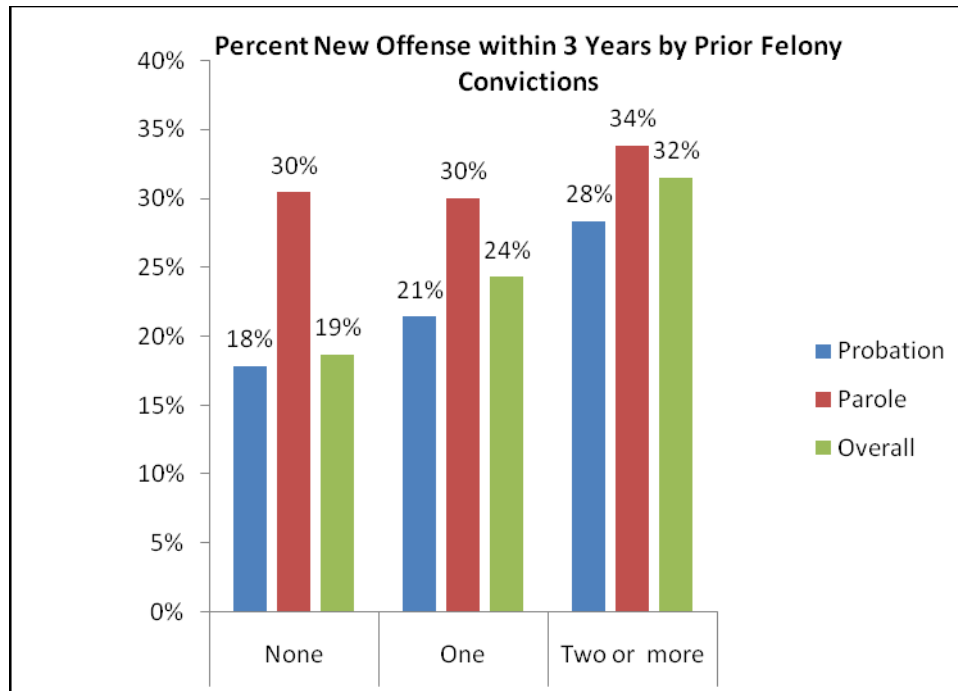
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## Findings

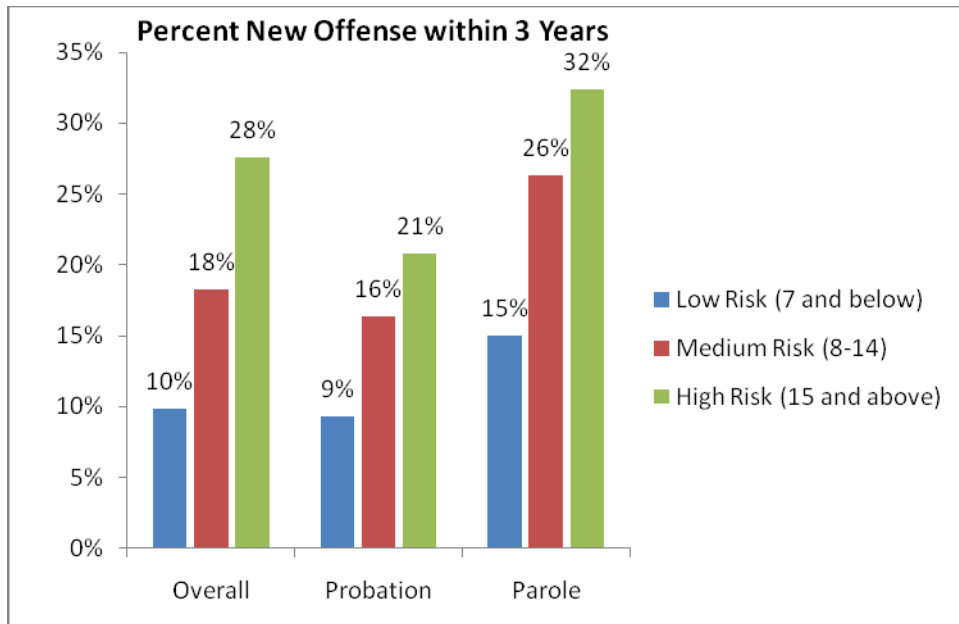
The analysis of the DOC 502 risk assessment instrument indicates that the risk score classifies offenders into different risk levels of re-offending, but significant issues that negatively impact the instrument were revealed by the research. Namely:

- A high percentage of offenders are classified as high risk, which is counter to the goal of risk classification: to differentiate the population by risk and allocate resources accordingly.
  - The current risk score provides little differentiation of the population, especially with the parole population, where 93% of offenders are classified as high risk.
- The main reason for the over-classification is the weight given to the assaultive offense factor.
  - Offenders with a conviction for an assaultive offense in the last five years receive 15 points on the risk score, which is the highest weight in the instrument. This weight was arbitrarily selected as it does not reflect the true relationship between this factor and the recidivism rate. As a matter of fact, just based on recidivism rates, this factor should be weighted the least as it is not predictive of recidivism.
- Other factors, besides the weight given to the assaultive risk factor, may contribute to the over-classification issue.
  - The current weighting system, failure to monitor inter- and intra-rater reliability of scoring, and the workload points assigned to cases may also contribute to over-classification. However, assessments of these factors are outside the scope of work of this contract and data are not available to examine many of these issues.
- The probation and parole populations differ significantly on the distribution of the population on most risk factors.
  - The most significant differences are in the employment, drug usage, age at first conviction and criminal history factors.
- Probationers and parolees classified at the same risk levels have different rates of re-offending with parolees having higher rates of re-offending for the same risk levels.
  - For example, 18% of probationers with no prior felony convictions committed a new offense within 3 years of placement on community supervision, while 30% of parolees with no prior felony convictions (prior to this incarceration) committed a new offense within 3 years of release from prison. This trend was similar for each classification by prior felony convictions, with offenders on parole having higher rates of reoffending than probationers regardless of the number of prior felony convictions. This is depicted in the figure below.

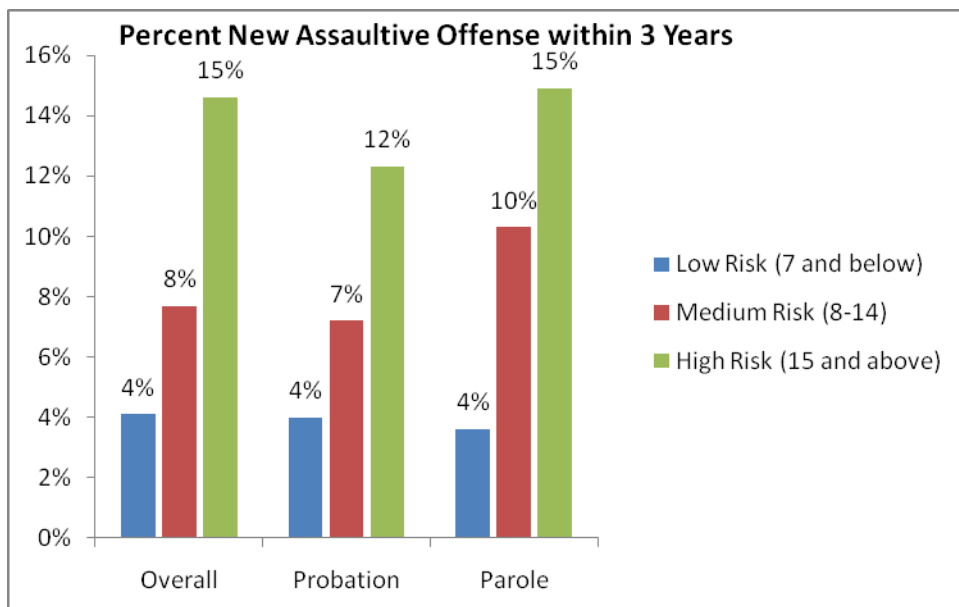




- The risk of re-offending by risk group varies by supervision type.
  - A low risk parolee has a 15% re-offense rate within 3 years of placement while a medium risk probationer has a 16% percent re-offense rate within 3 years. This means a low risk parolee, with about the same risk of re-offending as a medium risk probationer, may receive less supervision than a probationer that has a similar re-offense rate and this has important implications for supervision strategies when the present DOC 502 risk assessment instrument does not distinguish risk between probationers and parolees. This is depicted in the figure below.

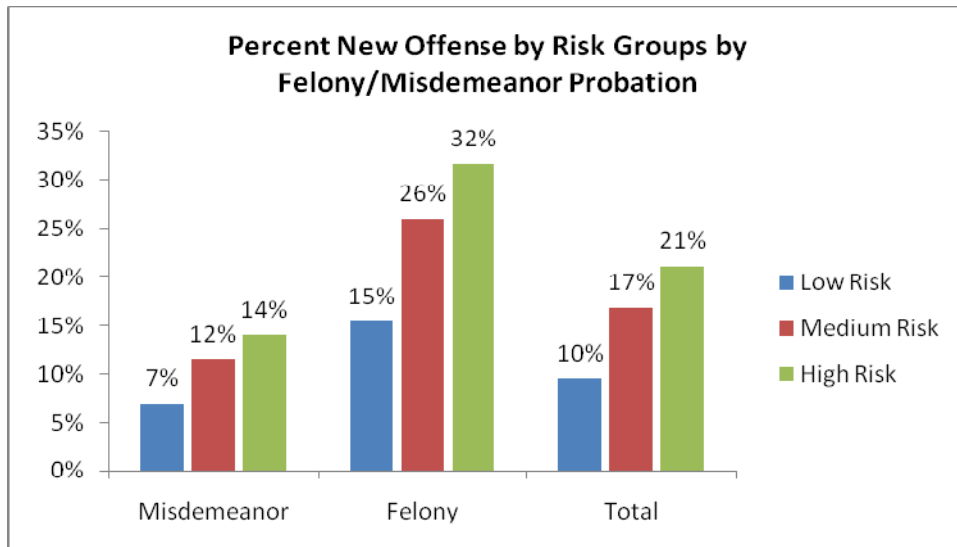


- The DOC 502 risk assessment instrument risk levels also differentiate populations into groups with different rates of committing a new assaultive offense. However most of the offenders classified as high risk of committing a new offense did not commit a new assaultive offense during the follow-up period.
  - A high false positive rate reduces the utility of classifying offenders by risk of committing a new assaultive offense. This is depicted in the figure below.



- DOC 502 risk assessment instrument differentiates risk of re-offending by risk group regardless of offense degree (felony or misdemeanor). However, there is a wider differentiation in the percent re-offending for felony probation offenders by risk group when compared to misdemeanor offenders.

- For example, there is a 17 percentage point difference in re-offense rates between low risk felony probationers (15%) and high risk felony probationers (32%), while there is only a 7% difference between the re-offense rates for low risk misdemeanor probationers (7%) and high risk misdemeanor probationers (14%).
- Misdemeanor offenders have lower re-offense rates than felony offenders classified at the same risk level. High risk misdemeanor probationers have re-offense rates (14%) similar to low risk felony probationers (15%). This is depicted in the figure below.



## Recommendations

The figure below presents the recommendations based on the finding of the research. These findings are explained in more detail in the body of the report.

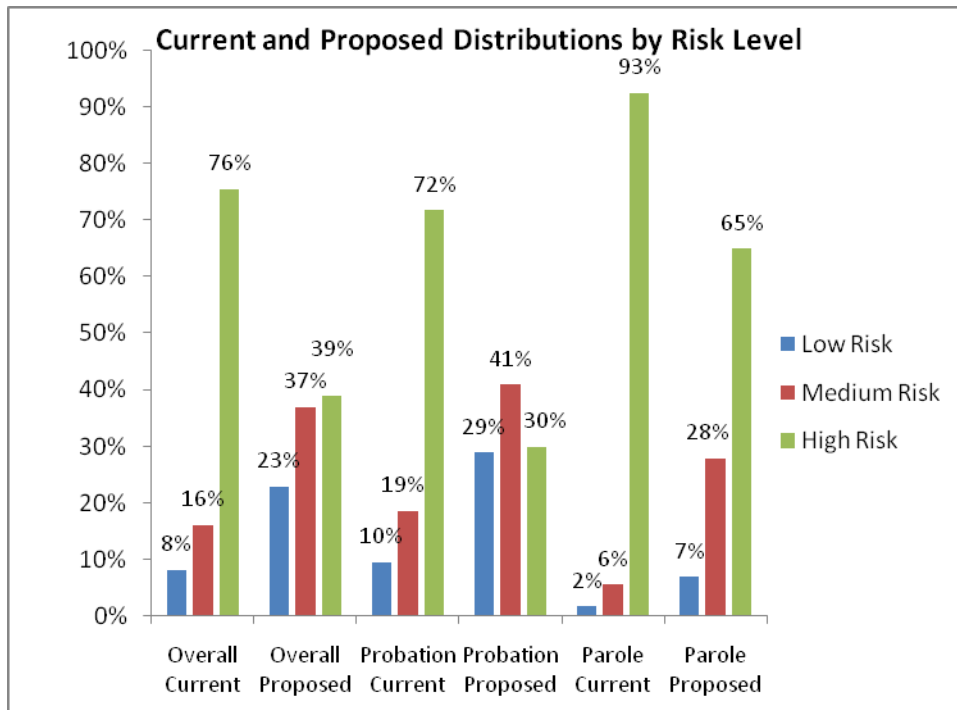
<b>Summary of Recommendations</b>	
<b>1. Implement revisions to DOC 502 risk assessment instrument</b>	<ul style="list-style-type: none"> <li>a. Use new weights for selected factors</li> <li>b. Revise definitions of risk factors where necessary</li> <li>c. Eliminate “Assaultive” risk history factor               <ul style="list-style-type: none"> <li>i. Establish procedures for risk level override specific to assaultive history</li> </ul> </li> <li>d. Add “Age at Placement on Community Supervision” as a new factor</li> </ul>
<b>2. Separate probation and parole supervision levels by risk scores of each population</b>	<ul style="list-style-type: none"> <li>a. Establish four supervision risk levels for both populations</li> </ul>

**b. Establish supervision standards for the new four levels of supervision**

**3. Conduct pilot test of new instrument**

- a. Create a committee to oversee pilot test implementation
- b. Establish new training protocols for revised risk instrument recommended here
- c. Conduct inter-rater and intra-rater reliability testing to assure accuracy of scoring
- d. Conduct an independent evaluation of pilot test to assess implementation issues before statewide adoption

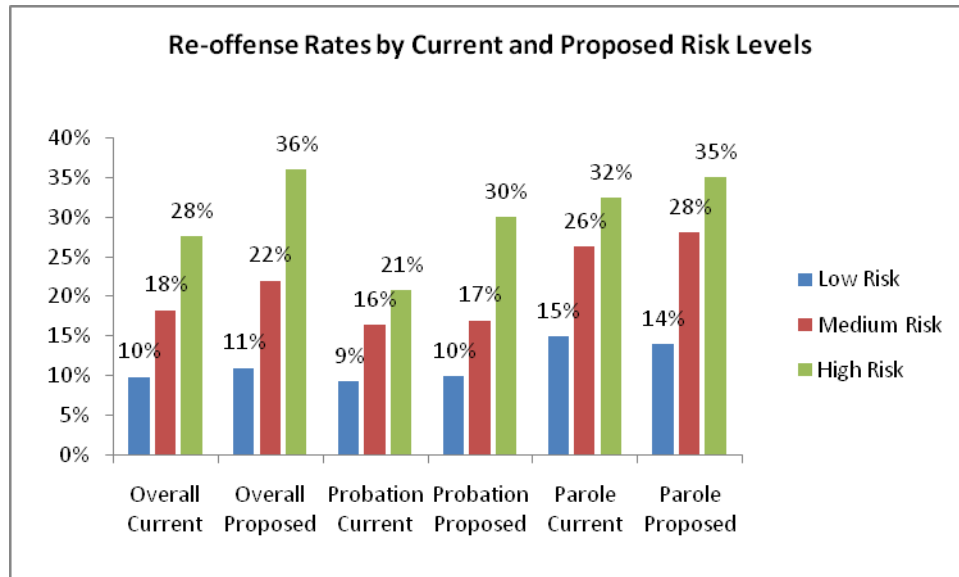
Based on changes to the DOC 502 proposed here and proposed new cut-off scores, the percent of cases classified as high risk (overall) declined from 76% to 39% under the proposed weights and cut-off scores, while the percent classified as low risk went from 8% to 23%. The chart below indicates the current and proposed distribution by risk level.



Even with the significant redistribution of risk groups, re-offense rates for the proposed revised score were very similar to the re-offense rates under the current distribution as indicated in the chart below. Specifically:

- The percent classified as low risk went from 8% to 23% but the re-offense rate for the low risk group went from 10% under the current DOC 502 instrument to an 11% re-offense rate for the low risk group under the proposed risk score.

- The largest change in re-offense rates was for offenders classified as high risk. Under the current risk instrument, the re-offense rate for high risk offenders was 28% and under the revised risk score the re-offense rate for the high risk group is 36%, indicating increased accuracy in classifying offenders as high risk.
- The change was even greater for probationers: the re-offense rate for probationers classified as high risk went from 21% under the current classification score to 30% under the proposed classification score.



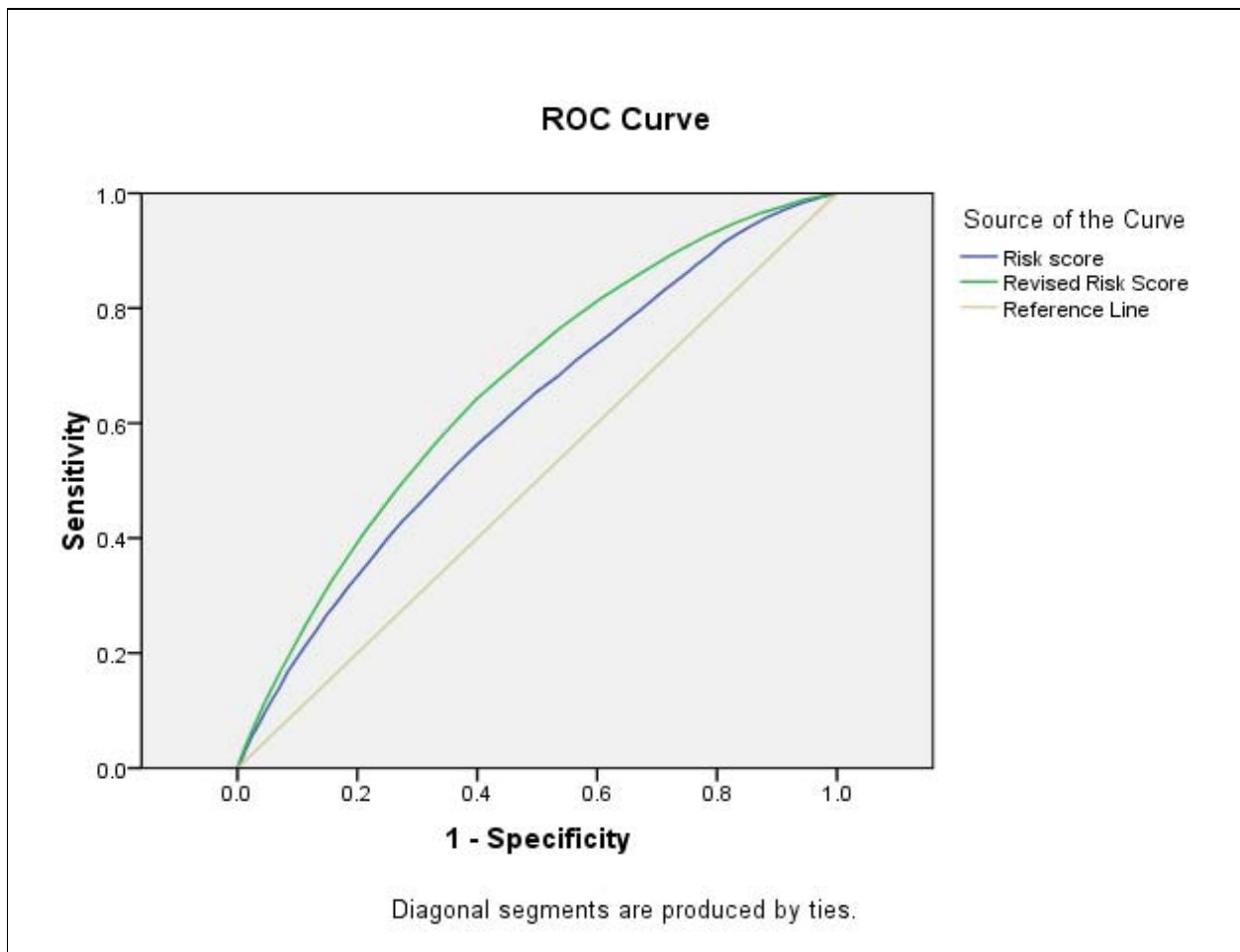
The proposed new instrument is more accurate in classifying offenders as high risk even though fewer offenders will be classified as high risk mainly because of the removal of the assaultive factor.

A linear regression analysis was run using the proposed risk factors and new weights. The previous “R” score for the regression analysis was .241 using the current factors compared to an “R” score of .257 using the proposed factors and weights, indicating an improvement in the predictive ability of the risk instrument.

A second measure of improvement in risk classification associated with the proposed revision in the risk score is the Receiver Operating Characteristic Curve or the ROC Curve. The ROC Curve is a measure that evaluates the performance of a classification scheme in which there is one variable (Risk Score or the Revised Risk Score) with two categories (New offense within three years or No New Offense within three years) by which subjects are classified. The Area Under the Curve (AUC) represents the probability that the result of the classification for a randomly chosen positive case (prediction of re-offense that is true) will exceed the result of a randomly chosen negative case. The curve is a graphical representation of the trade-off between false negative and false positive rates.

The ROC curve for the proposed revised risk score exceeds the ROC curve for the current risk score indicating greater accuracy of the proposed score in classifying offenders by risk. This is depicted in the chart below.

The area under the curve for the proposed revised risk score (.664) exceeds the current risk score (.614) and the lower and upper bounds of the proposed revised risk score (.658 and .669 respectively) exceed the current risk score (.609 and .620)



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## I. Introduction

Probation and parole agencies across the country use risk assessment instruments to predict the likelihood that individuals under supervision will reoffend. They use this information to classify offenders into different levels of risk and allocate supervision resources accordingly (Hubbard, Travis, & Latessa, 2001). Andrews and Bonta, commenting on the importance of risk assessment, state:

The prediction of criminal behavior is perhaps one of the most central issues in the criminal justice system. From it stems community safety, prevention, treatment, ethics, and justice. Predicting who will re-offend guides police officers, judges, prison officials, and parole boards in their decision making... (Andrews & Bonta, 1994)

Obviously, the importance of risk assessment applies equally to community supervision agencies and community corrections agents responsible for supervising offenders in the community. Therefore, the Wisconsin Department of Corrections Division of Community Corrections requires that the Admission to Adult Field Caseload risk classification instrument be completed for all felony and assaultive misdemeanor cases at the time an offender is admitted to field supervision. This instrument, commonly referred to as the DOC 502, is used not only to estimate risk probabilities for supervision purposes, but also to help determine staff workload and deployment. The Wisconsin Department of Corrections Division of Community Corrections Division Operations Manual (2003) chapter on case classification states that “Case classification/deployment is designed to promote the most cost-effective utilization of the agent’s time in relation to assessed offender risk to re-offend” and the DOC 502 risk assessment instrument is “designed to assess an offender’s propensity for further criminal activity...”

Recently, legislation proposed in Wisconsin would require the use of a validated risk assessment instrument to determine supervision requirements of offenders placed on probation (Wisconsin Legislative Fiscal Bureau, 2009). According to Wisconsin Department of Corrections staff, the DOC 502 risk assessment instrument was last validated in 1984 and department officials have sought to examine the validity of their risk instrument on a more contemporaneous population.<sup>1</sup> To address these issues, the Wisconsin Department of Corrections contracted with the Council of State Governments Justice Center to conduct a validation study of the DOC 502 Risk Scale.

This report reviews general issues associated with the use of risk assessment instruments in classifying offenders and presents the results of a validation study of the DOC 502 risk assessment instrument.

## II. Review of Relevant Risk Assessment Issues

The Wisconsin Case Classification/Staff Deployment Project (Baird, Heinz, & Bemus, 1979) developed in the late 1970’s, served as the foundation of the National Institute of Corrections’ Model Probation and Parole Management Program. This was the early basis for probation and parole agencies to implement case classification systems across the country in the 1980’s. A core component of these case classification systems was an actuarial risk assessment instrument developed in Wisconsin and commonly referred to as the Wisconsin Risk Assessment. Clear and Gallagher in the mid-80s (1985) raised questions of how well the

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<sup>1</sup> Personal communication from Anthony Streveler, Wisconsin Department of Corrections.

probation risk assessment instrument developed in Wisconsin on a probation population generalized to other populations. They recommended that “classification practices need to be placed regularly under review, tested against alternative approaches, and revised where appropriate.” These recommendations apply to any jurisdiction adopting risk assessment instruments, whether in Wisconsin or in other localities across the country.

Validity of risk assessment instruments is the most important supportive principle behind the proper utilization of these instruments. Namely, the instruments’ predictions must be supported by research showing it can identify different groups of offenders with different probabilities of reoffending. Baird (2009), one of the principal developers of the Wisconsin risk assessment instrument almost thirty years ago, recently commented that:

“The intent of actuarial risk assessment is to identify subgroups within an offender population who have significantly different rates of recidivism...It is obviously important to identify offenders at high risk of recidivism and to devote more resources to these cases....”

Baird recommends that the justice field should “step back and carefully review both the logic and level of evidence supporting” current assessment practices. He notes that the standard for measuring the efficacy of a risk assessment model should be the level of discrimination attained by risk levels.

Johnson and Hardyman (2004) establish four criteria to examine in determining validity of a risk instrument:

- A valid instrument identifies discrete groups of offenders who pose different levels of risk to public safety as measured by recidivism.
- The risk instrument must be reliable as measured by tests of inter-rater and intra-rater reliability. Inter-rater reliability means that two different staff members would score the same offender the same way on the risk instrument and intra-rater reliability means the same staff person would score the same offender the same way repeatedly with no change in circumstances.
- The risk instrument is demonstrated to be fair to all offender populations such as by gender or race/ethnicity.
- The risk instrument should be practical, efficient, and provide utility to staff.

### **III. Scope of Work**

The contract requirements for conducting the validation study of the Wisconsin DOC 502 Risk Scale include:

- Validate the ability of the DOC 502 risk assessment instrument to differentiate supervision populations into different risk levels of recidivating
  - Recidivism measures will include new offense within 3 years of placement on community supervision and new violent offense within 3 years of placement on community supervision



- Validate the ability of the DOC 502 risk assessment instrument to differentiate supervision populations into different risk levels of recidivating by gender, race/ethnicity and felony/misdemeanor offenders
- Conduct statistical tests to determine if differences in outcomes are statistically significant

Test of inter-and-intra rater reliability were not included in the scope of work for this validation study and these cannot be conducted until a validated instrument is adopted for implementation.

Figure 1 shows the format of the present DOC 502 risk assessment instrument. This instrument is composed of the same factors and weights used in the original development of the instrument in 1979. A number of issues related to the use of the DOC 502 risk assessment instrument have been raised by those familiar with this instrument. These issues are examined in this validation study and include:

- **High percentage of offenders classified as high risk**

Recent examination of the risk distribution of the community supervision population at assessment indicates that over 90% of the parole / extended supervision (ES) population is classified as high risk. This is inconsistent with one of the primary goals of risk assessment, which is to differentiate the population according to risk and allocate supervision resources differentially. A population classified almost exclusively as high risk suggests little differentiation by risk.

- **Impact of weighting of assaultive risk history**

The high percent of offenders classified as high risk appears to be driven by the “Assaultive history” risk factor which is heavily weighted in the instrument. This factor automatically results in the classification of high risk for any offender with that history. Most risk assessment research suggests that assaultive history is not correlated with risk of reoffending and, as Baird (2009) notes, “combining factors that have little or no relationship to recidivism with validated risk factors cannot improve but can seriously reduce the relationship between risk scores and outcomes”.

- **Use of DOC 502 Risk Assessment for Probation and Parole/ES populations**

The DOC 502 is used for all offenders placed on community supervision, which includes probationers and offenders on parole or Extended Supervision (ES). However, the probation and parole/ES populations are significantly different populations in terms of criminal history, past supervision experience and other factors that are included in the DOC 502 risk assessment instrument. The use of one instrument for these two populations is examined.

- **Variation of Risk Groups for Other Populations**

Wisconsin DOC staff requested that the validity of the risk instrument be examined for specific populations. Risk classification by race/ethnicity, gender and by felony and misdemeanor probation populations is examined.

Figure 1: DOC 502 Risk Assessment Instrument

<b>DEPARTMENT OF CORRECTIONS</b> Division of Community Corrections DOC-502 (Rev. 1/03)	<b>ADMISSION TO ADULT FIELD CASELOAD</b> <b>ASSESSMENT OF OFFENDER RISK</b>	<b>WISCONSIN</b>															
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">OFFENDER NAME</td> <td style="width: 20%;">Last</td> <td style="width: 20%;">First</td> <td style="width: 10%;">MI</td> <td style="width: 15%;">DOC NUMBER</td> </tr> <tr> <td>DATE PLACED ON PROBATION OR RELEASED ON PAROLE IN WISCONSIN (MM/DD/YY)</td> <td colspan="3">AGENT LAST NAME</td> <td>AREA NUMBER</td> </tr> <tr> <td>FACILITY OF RELEASE</td> <td colspan="2"></td> <td>CODE</td> <td>DATE COMPLETED (MM/DD/YY)</td> </tr> </table>			OFFENDER NAME	Last	First	MI	DOC NUMBER	DATE PLACED ON PROBATION OR RELEASED ON PAROLE IN WISCONSIN (MM/DD/YY)	AGENT LAST NAME			AREA NUMBER	FACILITY OF RELEASE			CODE	DATE COMPLETED (MM/DD/YY)
OFFENDER NAME	Last	First	MI	DOC NUMBER													
DATE PLACED ON PROBATION OR RELEASED ON PAROLE IN WISCONSIN (MM/DD/YY)	AGENT LAST NAME			AREA NUMBER													
FACILITY OF RELEASE			CODE	DATE COMPLETED (MM/DD/YY)													
(Select the appropriate answer and enter the associated weight in the score column.)				<b>SCORE</b>													
Number of Address Changes in last 12 Months: (Prior to incarceration for parolees)	0 2 3	None One Two or more		_____													
Percentage of Time Employed in Last 12 Months: (Prior to incarceration for parolees)	0 1 2 0	60% or more 40% - 59% Under 40% Not applicable		_____													
Alcohol Usage Problems: (Prior to incarceration for parolees)	0 2 4	No interference with functioning Occasional abuse; some disruption of functioning Frequent abuse; serious disruption; needs treatment		_____													
Other Drug Problems: (Prior to incarceration for parolees)	0 1 2	No interference with functioning Occasional abuse; some disruption of functioning Frequent abuse; serious disruption; needs treatment		_____													
Attitude:	0 3 5	Motivated to change; receptive to assistance Dependent or unwilling to accept responsibility Rationalizes behavior; negative; not motivated to change		_____													
Age at First Conviction: (or Juvenile Adjudications)	0 2 4	24 or older 20 - 23 19 or younger		_____													
Number of Prior Periods of Probation / Parole Supervision: (Adult or Juvenile)	0 4	None One or more		_____													
Number of Prior Probation / Parole Revocations: (Adult or Juvenile)	0 4	None One or more		_____													
Number of Prior Felony Convictions: (or Juvenile Adjudications)	0 2 4	None One Two or more		_____													
Convictions or Juvenile Adjudications for: (Include current offense, Score must be either 0,2,3, or 5.)	0 2 3 5	None of the Offense(s) stated below Burglary, theft, auto theft, or robbery Worthless checks or forgery One or more from the above categories		_____													
Convictions or Juvenile Adjudication for Assaultive Offense within Last Five Years: (An offense which involves the use of a weapon, physical force or the threat of force)	15 0	Yes No		_____													
<b>TOTAL</b>				_____													
				Total all scores to arrive at the risk assessment score													

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## IV. Methodology

Data for the risk validation study were extracted from a larger data set prepared in May 2006 by Dennis Simonson, formerly of the Wisconsin Department of Corrections (Simonson, 2007). Data was extracted from the following Wisconsin databases:

- **DOC CIPIS database:** This database contains information about incarceration episodes in Wisconsin DOC facilities.
- **DOC OATS database:** This database contains information regarding DOC 502 risk assessments and information regarding prison releases to parole or extended supervision as well as information regarding offenders placed on probation.
- **DOC 502 CACU database:** This database contains information regarding offenses, sentences, and offender supervision status.

Data used for the study examined offenders placed on community supervision in 2001 and 2002. Data going back to those years is needed to allow for a three year follow-up study. Two outcome measures were used as the measures of recidivism. These are:

- New offense within three years of placement on community supervision
- New violent offense within three years of placement on community supervision
  - Community supervision includes placement on probation and release on parole or Extended Supervision (ES)

Figure 2 depicts the sample selected and tracking methodology. Data extracted from the databases detailed above resulted in a sample of 42,853 offenders placed on community supervision in 2001-2002. These offenders were followed for three years and the percent of offenders who committed a new offense and/or new assaultive offense was determined.

**Figure 2: Study Sample and Tracking Methodology**

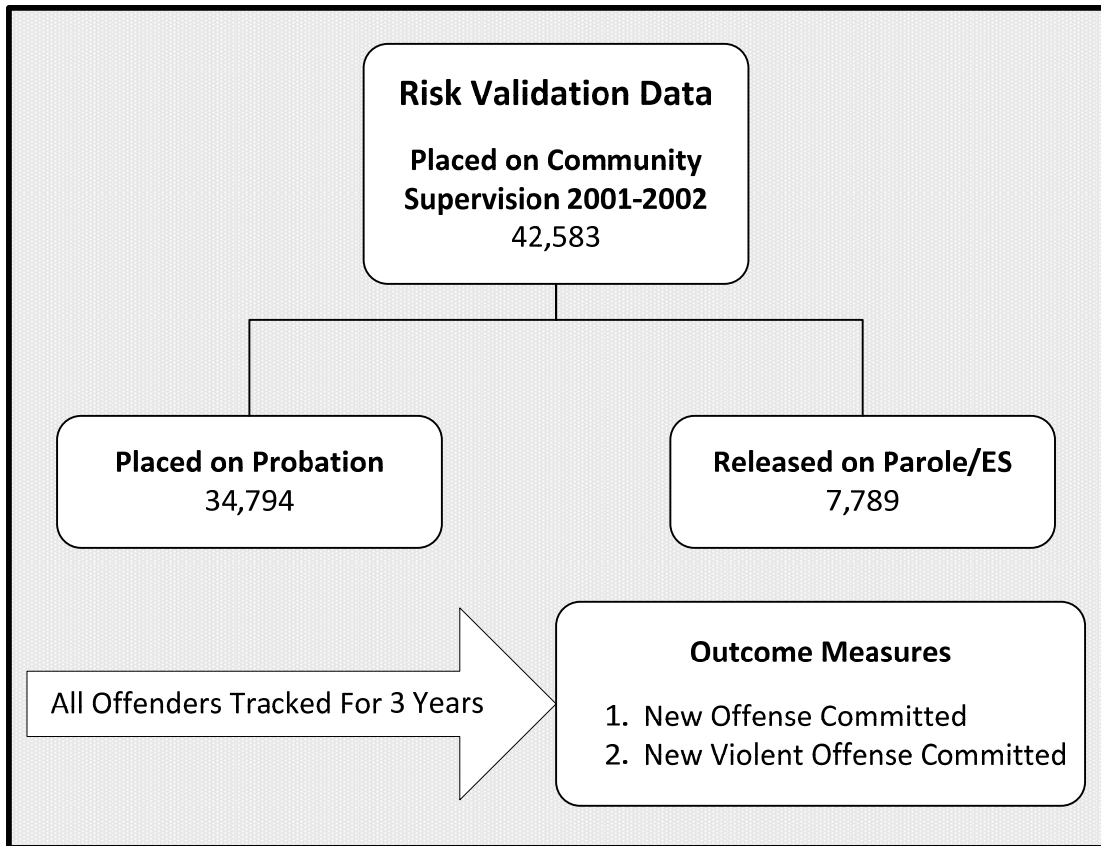
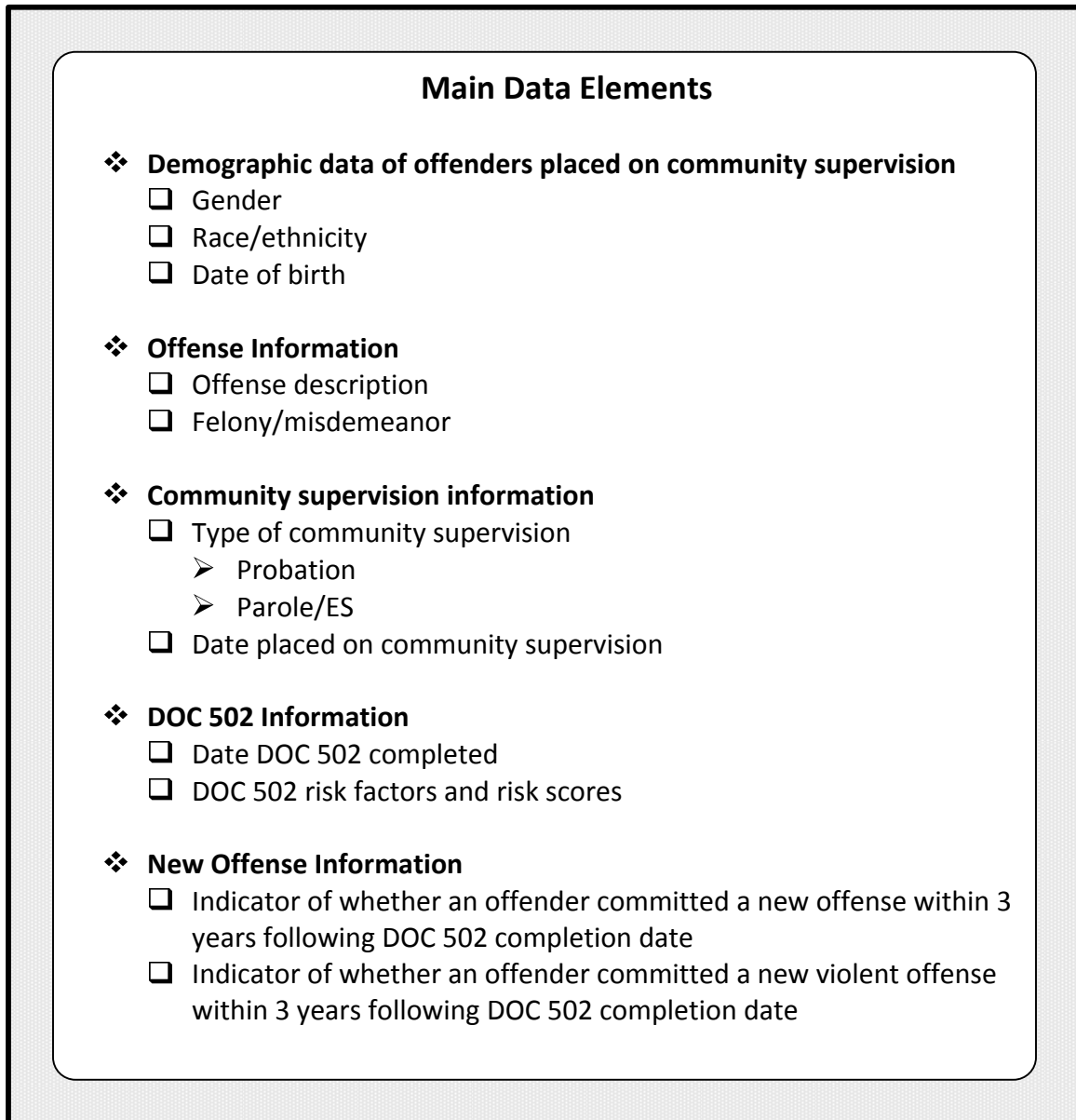


Figure 3 depicts the data that were extracted from the larger Simonson database that provided the following basic information for conducting the validation study. These data include basic demographic description, offense, community supervision, DOC 502 and new offense information.

**Figure 3: Data Factors Examined for Validation Study**



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The primary analyses conducted for this study examined the percent of offenders placed on community supervision who committed a new offense or new violent offense within 3 years of the completion of the DOC 502 risk assessment by:

- Each risk factor comprising the DOC 502 risk assessment instrument
- Risk groups by cut-off scores utilized to classify offenders into Maximum, Medium, or Minimum level of supervision. Cut-off scores for the DOC 502 are:
  - 15 and above = Maximum
  - 8 to 14 = Medium
  - 7 and below = Minimum
- Analyses for risk groups were conducted by:
  - Probation / Parole supervision populations
  - Gender
  - Race/ethnicity
  - Felony / Misdemeanor probationers

Analyses in this report present results for the probation, parole/ES and overall populations. Offenders on both probation and parole were examined as part of the overall population.

Data used in this study were collected during the transition to truth in sentencing and, concomitantly, the transition from prison releases through parole to releases through extended supervision. Because the post-release supervision offenders in this study were primarily parolees, the term “parole” will be used in this study to include parole and extended supervision releases, as well as other forms of release such as Mandatory Release.

For purposes of this report, reference to Maximum, Medium, and Minimum supervision levels are equivalent to High, Medium, and Low risk classifications. Classification, in practice in Wisconsin, utilizes both the risk classification score, needs score, and policy and override procedures to establish a supervision level for an offender. In addition to Maximum, Medium, and Minimum supervision levels, Wisconsin classifies offenders into High Risk, Intensive Sex Offender, GPS, and Administrative supervision levels with differential workload points assigned to those supervision levels.

Figure 4 depicts the research methodology used in this analysis.

**Figure 4: Research Methodology**

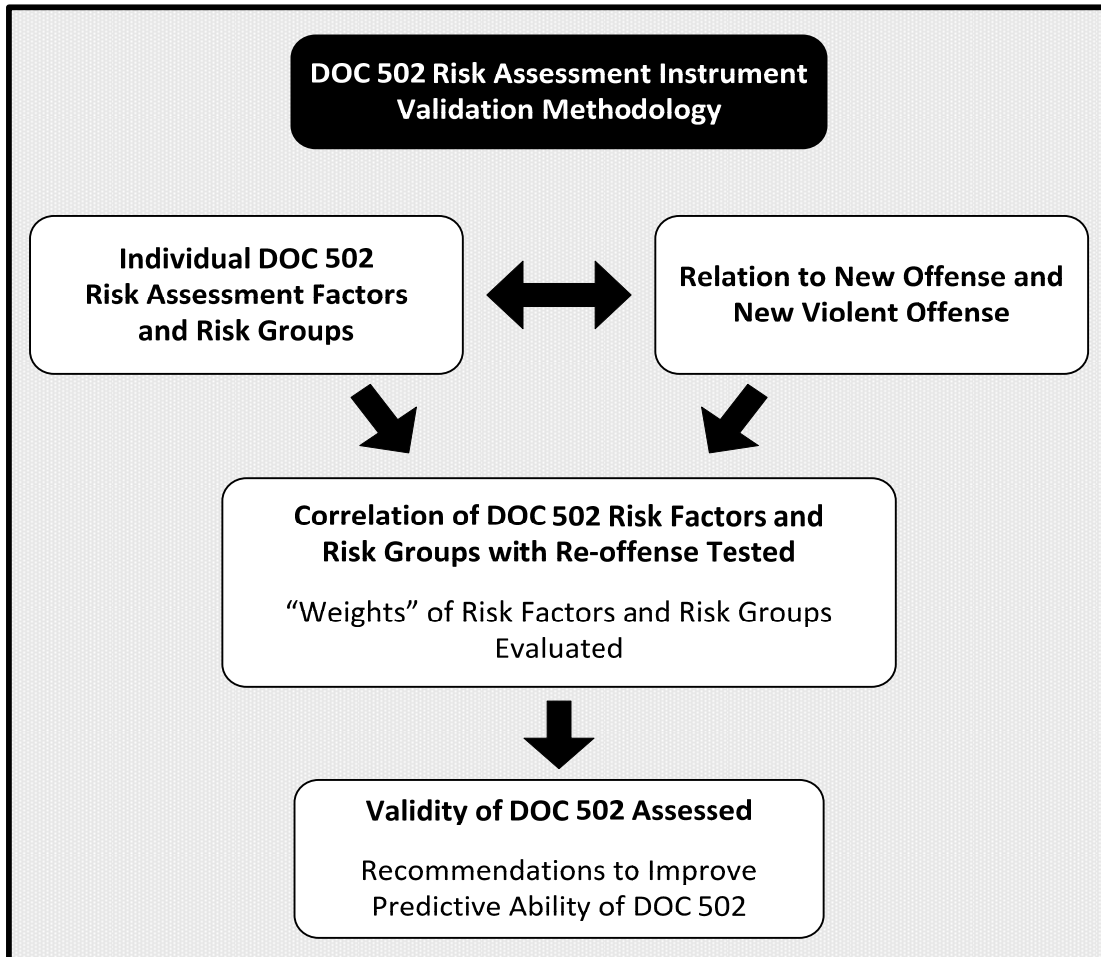


Table 1 details the characteristics of the sample by probation, parole/ES, and overall sample. The sample includes 42,583 offenders placed on probation and parole in 2001 and 2002. Approximately 18% (7,789/42,583) of the sample were offenders released from the Wisconsin Department of Corrections.

The most significant differences in the probation and parole populations include:

- Parole population composed of higher percent of males (89%) than probation population (77%)
- Approximately 42% of probation population is less than 24 years old compared to 24% of parole population
- Probation population is 73% white compared to 45% of the parole population
- Probation population is composed of 61% misdemeanor offenses versus 3% for the parole population

**Table 1: Sample Characteristics**

	Supervision Type	
	Probation	Parole
<b>Sample Size</b>	34,794	7,789
<b>Gender</b>	<b>Probation</b>	<b>Parole</b>
Male	77%	89%
Female	23%	11%
<b>Age at DOC 502</b>	<b>Probation</b>	<b>Parole</b>
<20	22%	6%
20-23	20%	18%
24-30	19%	26%
30-35	11%	15%
35-40	11%	15%
40-50	13%	16%
50-60	3%	3%
>60	1%	1%
<b>Race/Ethnicity</b>	<b>Probation</b>	<b>Parole</b>
White	73%	45%
Black	18%	45%
Hispanic	6%	7%
Asian or Pacific Islander	4%	3%
<b>Felony/Misdemeanor</b>	<b>Probation</b>	<b>Parole</b>
Misdemeanor	61%	3%
Felony	39%	97%



## V. Results

### A. Distribution of Populations by Risk Factors

Figure 5 illustrates the distribution of the probation, parole and overall populations on the risk factor “Prior Felony Convictions”. The analysis indicates that the parole population is composed of a population with a significantly higher percent of offenders with one or more prior felony convictions than the probation population. Approximately 42% of the parole population has two or more prior felony convictions compared to 7% of the probation population having two or more prior felony convictions. Conversely, 81% of the probation population has no prior felony convictions compared to only 30% of the parole population. This is the most significant distinction between the two populations.

**Figure 5: Distribution of Population by Prior Felony Convictions**

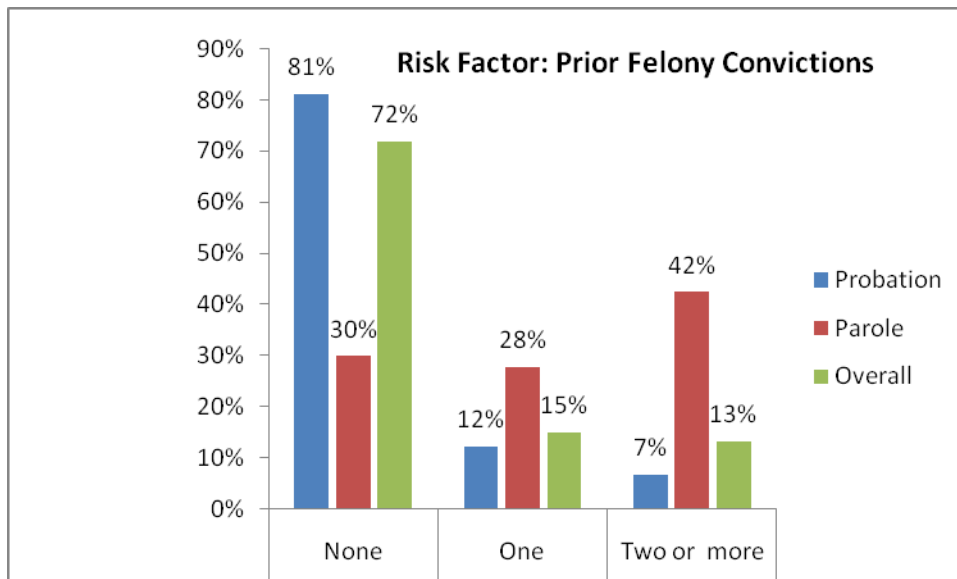


Table 2 indicates the distribution of the probation, parole, and overall populations for each risk factor that is a component of the DOC 502 risk assessment instrument. The probation and parole populations differ on the distribution of the population on most risk factors.

- **Key Finding: The probation and parole populations differ significantly on the distribution of the population on most risk factors. The most significant differences are in the employment, drug usage, age at first conviction and criminal history factors**

**Table 2: Distribution of Risk Factors**

		Probation	Parole	Total
<b>Address Changes</b>	None	34%	17%	31%
	One	36%	41%	37%
	Two or more	30%	42%	33%
<b>Employment</b>	60% or more	41%	20%	37%
	40% - 59%	24%	20%	23%
	Under 40%	36%	60%	40%
<b>Alcohol usage</b>	No interference	27%	20%	26%
	Occasional abuse	43%	46%	43%
	Frequent abuse	31%	34%	31%
<b>Drug usage</b>	No interference	43%	21%	39%
	Occasional abuse	32%	39%	33%
	Frequent abuse	26%	41%	28%
<b>Attitude</b>	Motivated	38%	38%	38%
	Dependent	39%	38%	39%
	Negative	23%	24%	23%
<b>Age first conviction</b>	24 or older	33%	18%	30%
	20-23	20%	17%	19%
	19 or younger	47%	65%	51%
<b>Prior Probation/Parole</b>	None	58%	17%	50%
	One or more	42%	83%	50%
<b>Prior Revocations</b>	None	84%	31%	75%
	One or more	16%	69%	25%
<b>Prior Felony Convictions</b>	None	81%	30%	72%
	One	12%	28%	15%
	Two or more	7%	42%	13%
	None of listed	64%	40%	60%
<b>Offense</b>	Burglary, theft	26%	43%	29%
	Worthless checks	6%	5%	5%
	One or more of above	5%	12%	6%
	Assaultive offense last 5 yrs.	No	49%	48%
	Yes	52%	52%	52%

\* Column totals may not equal 100% in some categories due to rounding.

**How to Read Table 2:** Looking at the factor titled “Address Changes” under the Probation column, the table indicates that 34% of probationers had no (None) address changes in the year prior to placement on probation, while 36% had one address change and 30% had two or more address changes

## B. Percent New Offense by Risk Factors

Figure 6 indicates the percent of offenders committing new offenses within 3 years of placement on community supervision by the number of prior felony convictions by supervision type. Overall, the greater the number of prior felony convictions the higher the percent of offenders committing new offenses within 3 years of placement on community supervision. Approximately 19% of offenders with no prior felony convictions committed a new offense within 3 years of placement on community supervision while 32% of offenders with two or more prior felony convictions committed a new offense within 3 years.

However, when this factor is disaggregated by probation and parole offenders classified by prior felony convictions, parolees and probationers have different rates of re-offending on the same factor. For instance, 18% of probationers with no prior felony convictions committed a new offense within 3 years of placement on community supervision while 30% of parolees with no prior felony convictions (prior to this incarceration) committed a new offense within 3 years of release from prison. This trend was similar for each classification by prior felony convictions, with offenders on parole having higher rates of reoffending than probationers regardless of the number of prior felony convictions.

**Figure 6: Percent New Offense by Prior Felony Convictions**

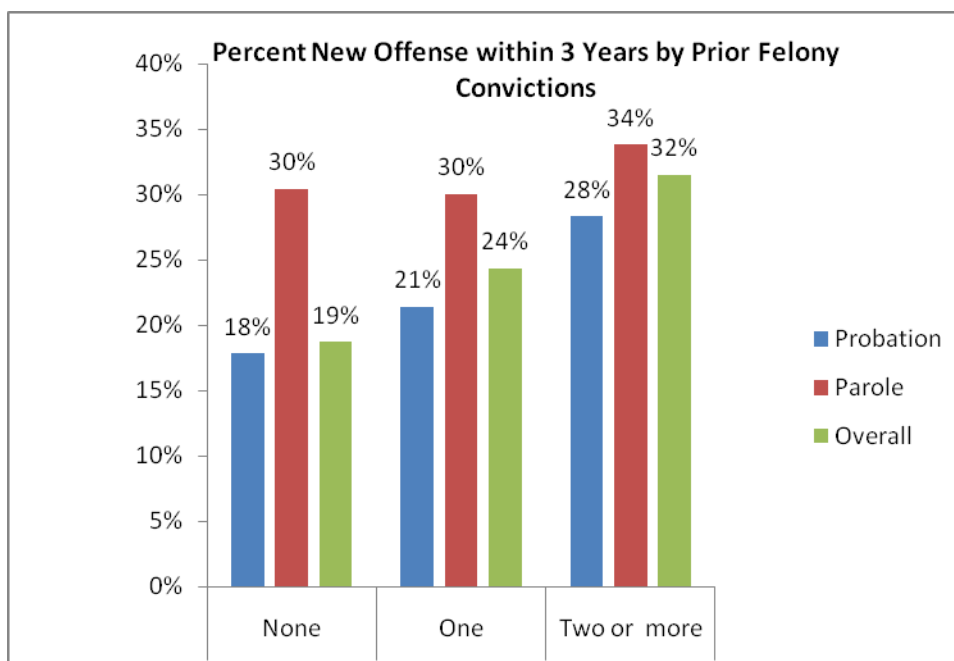


Table 3 examines each risk factor by the percent committing a new offense within 3 years. The table breaks outcome results by the probation, parole, and overall community supervision populations. Overall 18.9% (6,581/34,784) of probationers committed a new offense within 3 years of placement on community supervision while 31.7% of parole/ES offenders (2,471/7,789) committed a new offense within 3 years of placement on community supervision.

**Table 3: Percent New Offense within 3 Years of Placement on Community Supervision by Risk Factors**

	Percent with New offense within 3 years			
		Probation	Parole	Overall
<b>Overall</b>		<b>19%</b>	<b>32%</b>	<b>21%</b>
<b>Address Changes</b>	None	16%	30%	18%
	One	18%	30%	21%
	Two or more	23%	34%	26%
<b>Employment</b>	60% or more	14%	26%	15%
	40% - 59%	19%	32%	21%
	Under 40%	25%	34%	27%
<b>Alcohol usage</b>	No interference	16%	27%	18%
	Occasional abuse	19%	33%	22%
	Frequent abuse	21%	33%	24%
<b>Drug usage</b>	No interference	14%	24%	15%
	Occasional abuse	21%	33%	24%
	Frequent abuse	24%	35%	27%
<b>Attitude</b>	Motivated	16%	28%	18%
	Dependent	20%	34%	22%
	Negative	22%	34%	24%
<b>Age first conviction</b>	24 or older	12%	23%	13%
	20-23	16%	29%	18%
	19 or younger	25%	35%	28%
<b>Prior Probation/Parole</b>	None	16%	31%	17%
	One or more	23%	32%	26%
<b>Prior Revocations</b>	None	17%	30%	18%
	One or more	27%	33%	30%
<b>Prior Felony Convictions</b>	None	18%	30%	19%
	One	21%	30%	24%
	Two or more	28%	34%	32%
<b>Offense</b>	None of listed	17%	27%	18%
	Burglary, theft, auto theft, robbery	24%	36%	27%
	Worthless checks or forgery	18%	31%	20%
	One or more of above	26%	33%	29%
<b>Assaultive offense last 5 years</b>	No	18%	31%	21%
	Yes	20%	32%	22%

**How to Read Table 3:**

Looking at the factor titled “Address Changes” under the Probation column, the table indicates that of probationers who had no (None) address changes in the year prior to placement on probation 16% re-offended within 3 years, while 30% of parolees with no address changes re-offended within 3 years.

Most risk factors identify groups representing different rates of reoffending, consistent with valid risk prediction factors. In other words, low risk items have lower re-offense rates than high risk items. For instance, all offenders with no prior revocations had an 18% re-offense rate compared to a 30% re-offense rate for offenders with one or more prior revocations. However, as previously discussed, re-offense rates vary by the probation and parole populations on the same items for all of the risk factors. Looking again at the prior revocations risk factor, 17% of probationers with no prior revocations re-offended within 3 years compared to 30% of parolees.

- **Key Finding: Most of the risk factors distinguish groups into low, medium, and high re-offense rates although the magnitude of the differences varies by the probation and parole population**
- **Key Finding: Probation and parole population re-offense rates differ on the same factors.**

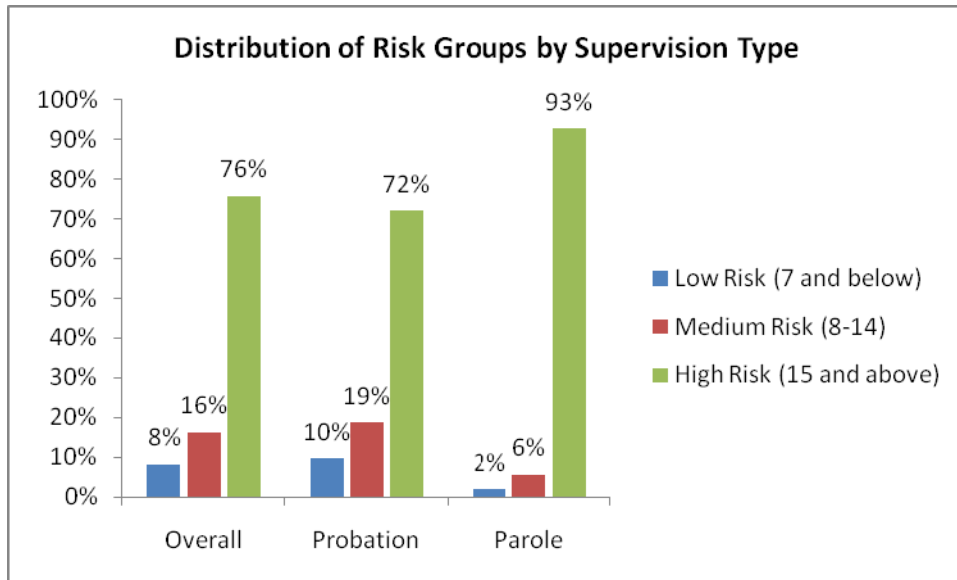
The greater the distinctiveness, in terms of recidivism, of a risk factor, the better the predictive ability of the risk item. For example, this can be illustrated by examining re-offense rates of the risk factors “Age at First Conviction” and “Assaultive Offense last 5 years” in Table 2. There is a 15 percentage point difference in re-offense rates for the low and high categories on Age at First Conviction (13% re-offense rate for 24 or older category compared to 28% for 19 or younger category). However, there is only a 1 percentage point difference in re-offense rates for the Assaultive Offense category (21% for No assaultive history compared to 22% for Yes, assaultive history). The Assaultive Offense factor is a less predictive risk factor than any of the other risk factors in the DOC 502 risk assessment instrument and contributes little to the predictive accuracy of the DOC 502 risk instrument as far as classifying offenders’ risk of re-offending.

- **Key Finding: Some risk factors are less predictive of re-offending than others with the risk factor of Assaultive Offense history being the least predictive factor, negatively impacting the predictive accuracy of the DOC 502 risk instrument**

### **C. Distribution of Risk Groups**

Figure 7 indicates the distribution of offenders by risk group for probation, parole, and overall. Overall, 76% of the community corrections supervision population is initially classified as high risk by the DOC 502 risk assessment instrument. Approximately 93% of the parole population is classified as high risk.

**Figure 7: Distribution of Risk Groups**

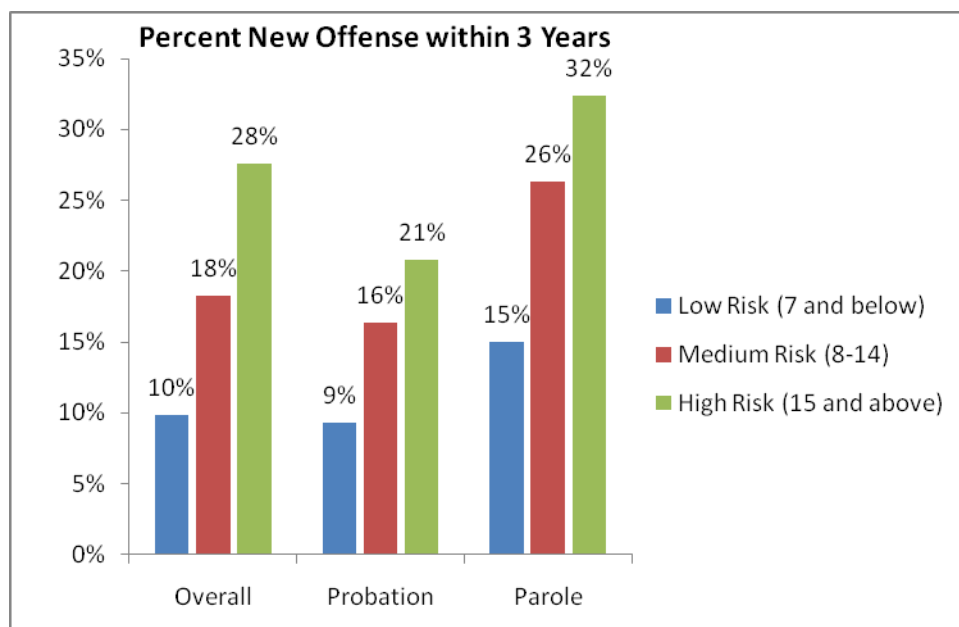


- **Key Finding:** *The high percent of offenders classified as high risk by the DOC 502 risk score results in little differentiation of the supervision population by risk. Differentiation of the supervision population by risk is a key goal of classification and the DOC 502 is not providing this differentiation.*

## D. Outcomes by Risk Group: New Offense within 3 Years

Figure 8 indicates the percent of the population committing a new offense within 3 years of placement on community supervision by risk group. Offenders placed on community supervision classified as low risk had a 10% re-offense rate within 3 years compared to 18% for medium risk offenders and 28% for high risk offenders. Conversely, 90% of low risk offenders did not commit a new offense within 3 years of placement on community supervision. The DOC 502 risk assessment instrument classifies offenders into distinct groups that pose different risks of re-offending. But again, as stated above, most of the offenders are classified in the high risk category and the DOC 502 is not providing significant differentiation among the groups because of an over classification of offenders as high risk.

**Figure 8: Percent New Offense by Risk Group**



- **Key Finding: DOC 502 Risk instrument differentiates population by risk of committing a new offense into groups with different rates of committing a new offense.**
  - **This finding does not mitigate the finding that there is very little differentiation of the supervision population by risk. Most offenders are classified as high risk.**

Figure 8 also confirms that differences noted earlier regarding the different re-offense rates for the probation and parole populations on each risk factor is reflected in different rates of re-offending for each risk group by the probation and parole populations.

Probationers classified as low risk had a 9% re-offense rate within 3 years compared to 15% for low risk parolees. Low risk parolees had about the same re-offense rate as medium risk probationers. Parolees classified as medium risk had a higher re-offense rate (26%) than probationers classified as high risk (21%). As the risk classification significantly drives supervision conditions, these findings suggest that classification results may not allocate supervision resources commensurate to risk.

- 
- **Key Finding: Risk of re-offending by risk group varies by supervision type**
    - **A low risk parolee has a 15% re-offense rate within 3 years of placement while a medium risk probationer has a 16% percent re-offense rate within 3 years**
      - **This means a low risk parolee, with about the same risk of re-offending as a medium risk probationer, may receive less supervision than a probationer that has a similar re-offense rate and this has important implications for supervision strategies when the present DOC 502 risk instrument does not distinguish risk between probationers and parolees.**



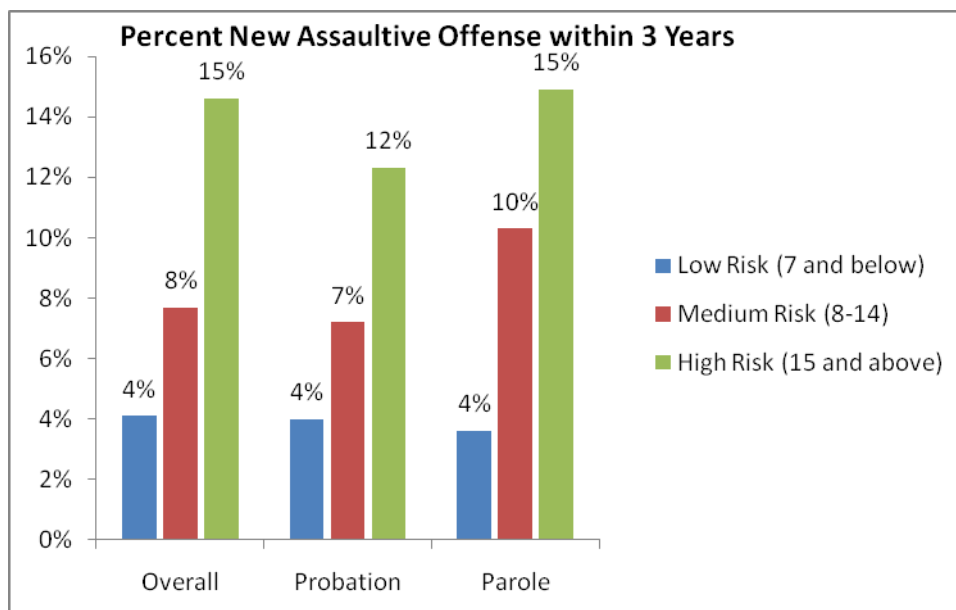
## E. Outcomes by Risk Group: New Assaultive Offense within 3 Years

Figure 9 indicates the percent of the population who committed a new assaultive offense within 3 years of placement on community supervision by risk group. The chart indicates that the risk instrument classifies offenders into groups by risk of committing a new assaultive offense within 3 years. Namely, low risk offenders have lower chances of committing a new assaultive offense within three years compared to high risk offenders.

Approximately 7% (2,522/34,794) of probationers committed a new assaultive offense within 3 years and 6% (483/7,789) of parolees committed a new assaultive offense within 3 years

The utility of this finding is mitigated when you consider that while Figure 10 indicates 15% of offenders classified as high risk committed a new assaultive offense (the highest percent of any risk classification), this means conversely that 85% of offenders classified as high risk of committing an assaultive offense did not commit an assaultive offense within 3 years of placement on community supervision.

**Figure 9: Percent Committing New Assaultive Offense within 3 Years by Risk Group**



➤ **Key Finding: DOC 502 risk assessment instrument risk levels also differentiate populations into groups with different rates of committing a new assaultive offense. However most of the offenders classified as high risk of committing a new offense did not commit a new assaultive offense during the follow-up period.**

- **A high false positive rate reduces the utility of classifying offenders by risk of committing a new assaultive offense**

## F. Correlation of Risk Factors to Committing New Offense: Improving the Predictive Ability of the DOC 502

Table 4 indicates the correlation of the risk score to each of the factors composing the risk score. A Pearson correlation test is used to establish the strength of the relationship between the dependent variable (commitment of a new offense within three years) and the independent variables (the risk factors). The higher the Pearson correlation the greater the correlation is with the dependent variable. For example, Age at First Conviction is the factor with the highest correlation with committing a new offense (.171) while “Assaultive Offense last 5 years” has the lowest correlation with committing new offense (.029).

The overall correlation of the DOC 502 risk score with committing a New Offense within 3 years is .175. Removing the “Assaultive Offense history” risk factor from the risk score increases the strength of the DOC 502 to .224. This relates to the prior analysis that shows that this factor does not add much predictability to the instrument. To the contrary, it decreases its overall predictive ability.

**Table 4: Correlation of Risk Factors to Committing New Offense**

		<b>New offense within 3 years</b>
<b>New offense within 3 years</b>	Pearson Correlation	1
	N	47800
<b>Risk score</b>	Pearson Correlation	.175**
<b>Risk score w/o Assaultive</b>	Pearson Correlation	.224**
<b>Address Changes</b>	Pearson Correlation	.083**
<b>Employment</b>	Pearson Correlation	.134**
<b>Alcohol usage</b>	Pearson Correlation	.067**
<b>Drug usage</b>	Pearson Correlation	.119**
<b>Attitude</b>	Pearson Correlation	.061**
<b>Age first conviction</b>	Pearson Correlation	.171**
<b>Prior Probation/Parole</b>	Pearson Correlation	.157**
<b>Prior Revocations</b>	Pearson Correlation	.158**
<b>Prior Felony Convictions</b>	Pearson Correlation	.125**
<b>Offense</b>	Pearson Correlation	.106**
<b>Assaultive offense last 5 years</b>	Pearson Correlation	.029**
<b>** . Correlation is significant at the 0.01 level (2-tailed).</b>		
<b>* . Correlation is significant at the 0.05 level (2-tailed).</b>		

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The assaultive offense history risk factor weights significantly in the scoring of the instrument. Offenders with a conviction for an assaultive offense in the last five years receive 15 points on the risk score, which is the highest weight in the instrument. This weight was arbitrarily selected as it does not reflect the true relationship between this factor and recidivism rate. As a matter of fact, just based on recidivism rates, this factor should be weighted the least as it is not highly predictive of recidivism. The weight given to this factor is the main reason for the over classification of offenders as high risk. For example, approximately 49% of the community supervision population has a prior assault conviction in the last 5 years (see Table 1) and this factor alone results in almost half of the community supervision population being classified as high risk. As specified in the classification manual, this was a classification policy decision and not based on an actuarial prediction of re-offending. As discussed above, the removal of the assaultive risk factor alone improves the correlation of the risk score with committing a new offense from .175 to .224.

Other risk factors, such as Address Changes, Alcohol Usage, and Attitude have low correlations to risk of committing a new offense. Changing the weights of some of these factors may improve the correlation of the overall risk score with new offense in 3 years. Additionally, new risk factors can be explored to increase the predictive accuracy of the risk instrument. This will be explored later in the report.

Another measure of the association of the risk score with new offense behavior utilizes a linear regression analysis which statistically examines the relationship between independent variables (risk factors) and a dependent variable (new offenses). The correlation coefficient “R” measures the degree to which the independent variables are related to the dependent variable. The value of “R” can range between 0 and 1, with 0 indicating the independent variables have little association with the dependent variable to 1 indicating a positive relationship between the independent variables and dependent variable.

A linear regression analysis was conducted using the risk factors composing the DOC 502 risk instrument and dependent variable of committing a new offense within 3 years. The “R” score for the regression analysis was .241 which is on the lower end of “R” scores computed in other studies of the Wisconsin risk instrument. As reported in a meta-analysis of 14 studies of the Wisconsin risk instrument by Gendreau (1996), an “R” score for the Wisconsin risk score used in other states averaged .31. While other states adopted the Wisconsin as it was originally developed, many states have subsequently adopted weights and factors modifying the Wisconsin risk instrument based on research similar to this. For example, some states that use an assaultive risk factor have established a weight of 8 points for that factor instead of the 15 points as scored on the Wisconsin DOC 502.

## VI. Special Analyses

### A. Overview

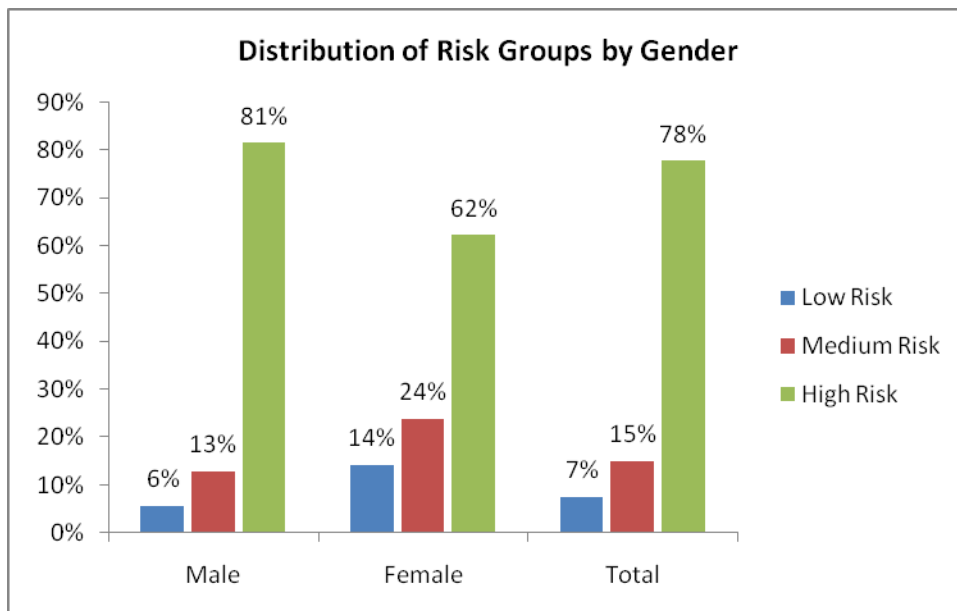
At the request of the Wisconsin Department of Corrections analyses of the DOC 502 risk instrument by certain populations was conducted. Populations and sample sizes examined included:

- Gender
  - Male sample size =38,313
  - Female sample size= 9,479
- Race / ethnicity
  - White = 31,792
  - Black = 11,168
  - Hispanic = 2,741
  - Asia/Pacific Islander/Other = 1,904
- Felony / Misdemeanor probationers
  - Felons = 13,267
  - Misdemeanor = 21,009

### B. Distribution of Risk Groups by Gender

Figure 10 indicates the distribution of risk groups, as scored on the DOC 502 risk score, by gender. Females have a lower percent classified as high risk (62%) than males (81%). Conversely 38% of females are classified as low or medium risk compared to 19% of males classified as such.

**Figure 10: Distribution of Risk Groups by Gender**

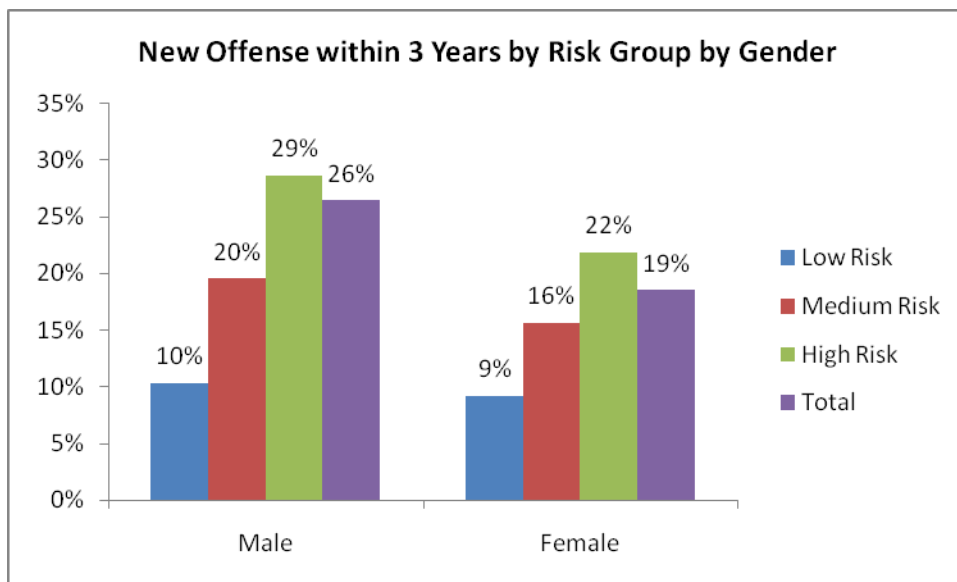


### C. New Offense by Risk Group by Gender

Figure 11 indicates the percent of new offenses during the follow-up period by risk groups and gender. Females have lower re-offense rates than males in every risk group category (a common finding in recidivism studies). However, the DOC 502 risk assessment instrument effectively classifies offenders into groups having differential risk of re-offending, regardless of gender.

The Pearson “R” correlation between gender and new offense was  $-.073$  indicating a weak correlation between gender and new offense.

**Figure 11: Percent New Offense by Risk Group by Gender**



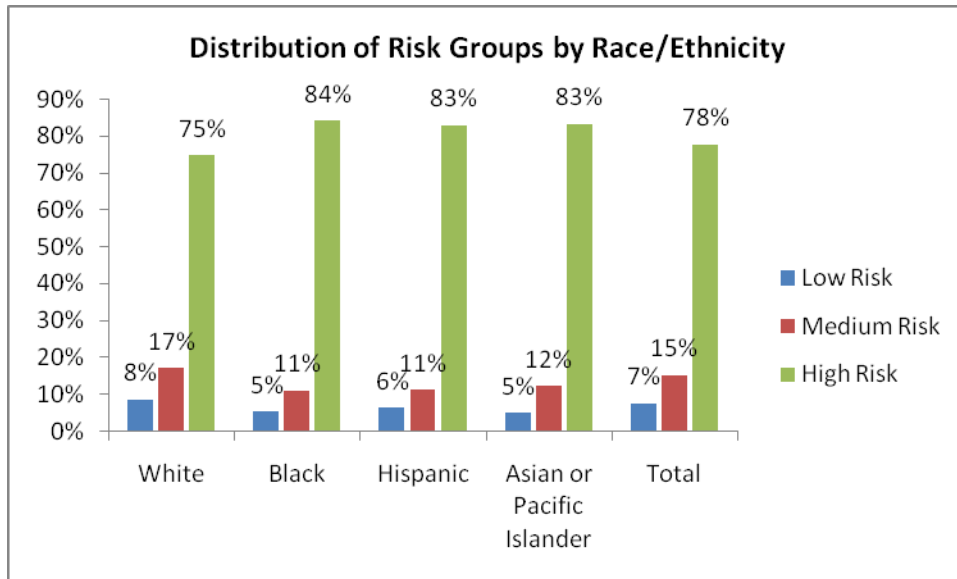
- **Key Finding:** *The DOC 502 risk score differentiates the male and female populations equitably by risk of committing a new offense into groups with different rates of committing a new offense, but, as stated before, the instrument over classifies both males and females in the high risk group.*

## D. Distribution of Risk Groups by Race/Ethnicity

Figure 12 details the distribution of risk classifications on the DOC 502 risk score by race/ethnicity. In general, a higher percent of minorities are classified as high risk when compared to Whites. For example, 84% of Blacks were classified as High Risk compared to 75% of Whites classified as High risk.

The risk instrument over classifies offenders in the high risk category for all race groups.

**Figure 12: Distribution of Risk Groups by Race/Ethnicity**

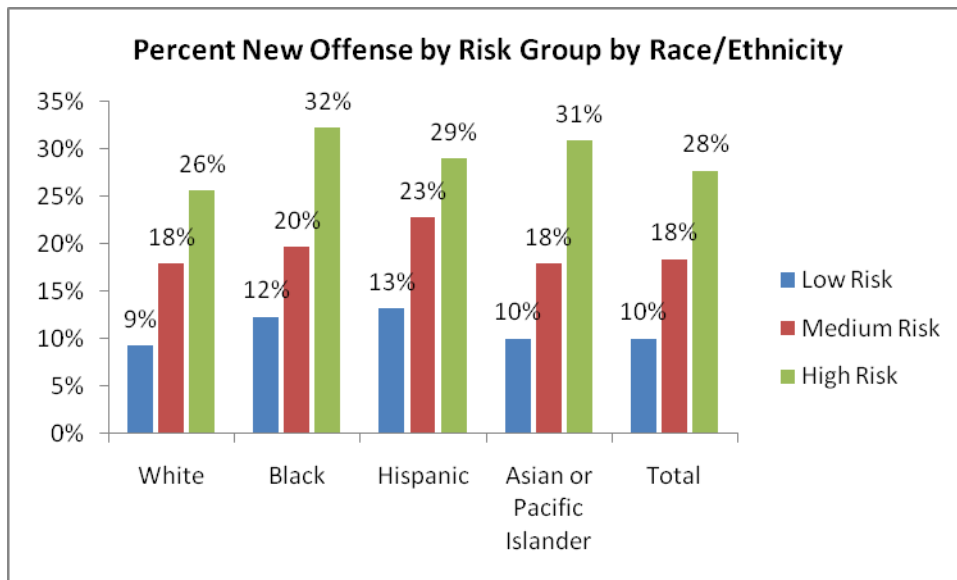


## E. New Offense by Risk Group by Race/Ethnicity

Figure 13 indicates that, regardless of race/ethnicity, offenders are classified accurately into risk groups commensurate to their risk of re-offending. While high risk minority offenders have slightly higher rates of re-offending than the total sample these differences are not significant (32% of Blacks re-offend after three years compared to 26% for Whites and 28% for the overall population).

The Pearson “R” correlation between race/ethnicity and new offense was .053.

**Figure 13: Percent New Offense by Risk Groups by Race/Ethnicity**

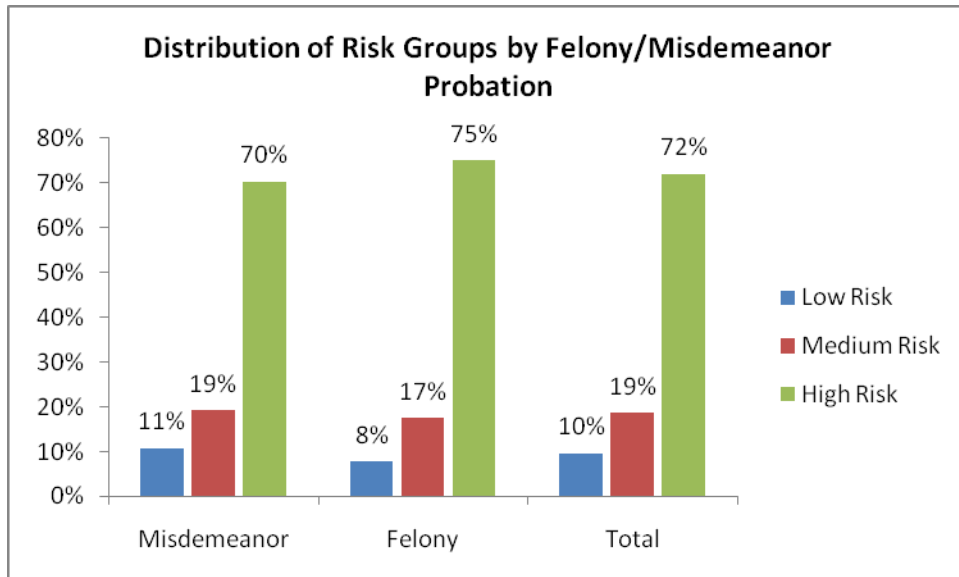


- **Key Finding: DOC 502 risk assessment instrument differentiates racial and ethnic populations equitably by risk of committing a new offense into groups with different rates of committing a new offense but the risk instrument over classifies offenders in the high risk category for all race groups.**

## F. Distribution of Risk Groups by Felony / Misdemeanor Probation

Figure 14 indicates little difference in risk classification by offense degree. Offenders convicted of felony or misdemeanor offenses have similar risk classification distributions. For instance, 70% of misdemeanor offenders are classified as high risk compared to 75% of felony probationers classified as high risk. This again reflects the fact that the DOC 502 over-classifies most offenders as high risk

**Figure 14: Distribution of Risk Groups by Felony/Misdemeanor Probation**



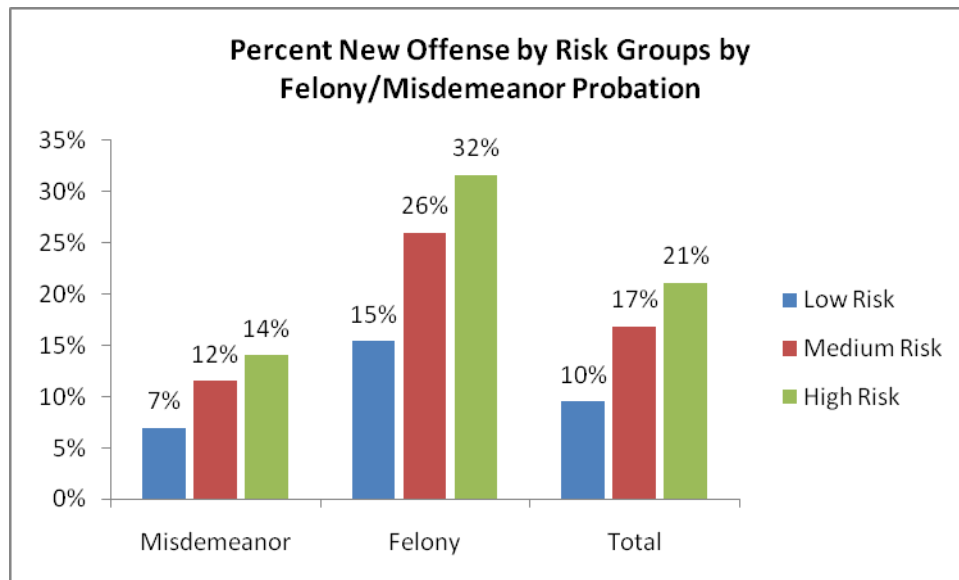


## G. Percent New Offense by Risk Group by Felony/Misdemeanor Probation

Figure 15 indicates that the DOC 502 risk classification differentiates risk of re-offending by risk group regardless of offense degree (felony or misdemeanor). However, there is a wider differentiation in the percent re-offending for felony probation offenders by risk group when compared to misdemeanor offenders. For example, there is a 17% difference in re-offense rates between low risk felony probationers (15%) and high risk felony probationers (32%) while there is only a 7% difference between the re-offense rates for low risk misdemeanor probationers (7%) and high risk misdemeanor probationers (14%).

Misdemeanor offenders have lower re-offense rates than felony offenders classified at the same risk level. High risk misdemeanor probationers have re-offense rates (14%) similar to low risk felony probationers (15%).

**Figure 15: Percent New Offense by Risk Group by Felony/Misdemeanor Probation**



- **Key Finding: DOC 502 risk assessment instrument differentiates misdemeanor and felony probation populations equitably by risk of committing a new offense into groups with different rates of committing a new offense, but both groups have over 70% of the population classified as high risk.**
  - **The rates of re-offending for misdemeanor and felony probationers classified at the same risk group level are different with more differentiation shown among risk groups for felony offenders than misdemeanor offenders**

## VII. Summary and Recommendations

### A. Overview of Findings

The analysis of the DOC 502 risk assessment instrument indicates that the risk score classifies offenders into different risk levels of re-offending. However, two significant issues were revealed by the research:

- A high percentage of offenders are classified as high risk, which is counter to the goal of risk classification: to differentiate the population by risk and allocate resources accordingly.
  - The current risk score provides little differentiation of the population, especially with the parole population, where 93% of offenders are classified as high risk.
- The main reason for the over-classification is the weight given to the assaultive offense factor.
  - Offenders with a conviction for an assaultive offense in the last five years receive 15 points on the risk score which is the highest weight in the instrument. This weight was arbitrarily selected as it does not reflect the true relationship between this factor and recidivism rate. As a matter of fact, just based on recidivism rates, this factor should be weighted the least as it is not highly predictive of recidivism.
- Other factors, besides the weight given to the assaultive risk factor, may contribute to the over-classification issue.
  - The current weighting system, failure to monitor inter- and intra-rater reliability of scoring, and the workload points assigned to cases may also contribute to over-classification. However assessments of these factors are outside the scope of work of this contract and data is not available to examine many of these issues.
- Probationers and parolees classified at the same risk levels have different rates of re-offending with parolees having higher rates of re-offending for the same risk levels
  - For example, 18% of probationers with no prior felony convictions committed a new offense within 3 years of placement on community supervision, while 30% of parolees with no prior felony convictions (prior to this incarceration) committed a new offense within 3 years of release from prison.
  - This trend was similar for each classification by prior felony convictions, with offenders on parole having higher rates of reoffending than probationers regardless of the number of prior felony convictions.

Based on findings reported above, a number of steps should be taken to improve the classification of offenders by risk of re-offending as stated below.

## B. Recommendations

Figure 16 summarizes the recommendations based on the research finding discussed above. The section below details proposed changes to the DOC 502 risk assessment instrument. The current and revised DOC 502 is presented indicating the change in weight and factors recommended. A comparison of the current distribution of DOC 502 risk groups and the distribution of risk groups resulting from the revised score is presented and then the 3 year re-offense rates by risk group associated with the current instrument and the revised score is also presented.

**Figure 16: Summary of Recommendations**

<b>Summary of Recommendations</b>
<b>4. Implement revisions to DOC 502 risk assessment instrument</b> <ul style="list-style-type: none"><li>a. Use new weights for selected factors</li><li>b. Revise definitions of risk factors where necessary</li><li>c. Eliminate “Assaultive” risk history factor<ul style="list-style-type: none"><li>i. Establish procedures for risk level override specific to assaultive history</li></ul></li><li>d. Add “Age at Placement on Community Supervision” as a new factor</li></ul>
<b>5. Separate probation and parole supervision levels by risk scores of each population</b> <ul style="list-style-type: none"><li>a. Establish four supervision risk levels for both populations</li><li>b. Establish supervision standards for the new four levels of supervision</li></ul>
<b>6. Conduct pilot test of new instrument</b> <ul style="list-style-type: none"><li>a. Create a committee to oversee pilot test implementation</li><li>b. Establish new training protocols for revised risk instrument recommended here</li><li>c. Conduct inter-rater and intra-rater reliability testing to assure accuracy of scoring</li><li>d. Conduct an independent evaluation of pilot test to assess implementation issues before statewide adoption</li></ul>

### **Revised Weights for Selected Factors and Definitions of Risk Factors**

Table 5 provides a side-by-side illustration of the current DOC 502 risk Assessment instrument and proposed revisions as well as re-offense rates for each factor. Key changes include:

- Weight for Address Changes factor reduced due to weakness of predictive ability

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- Weight for Alcohol Usage factor reduced due to weakness of predictive ability and made consistent with the Drug Usage factor, which had a higher correlation with new offending than the Alcohol Usage factor
  - Weight for Attitude factor reduced due to weakness of predictive ability. The “Dependent...” and “Rationalized behavior...” categories combined due to similarity of re-offense rates for those categories
  - Weights for Number of Prior Periods of Probation/Parole Supervision, Number of Prior Probation/Parole Revocations, and Number of Prior Felony Convictions reduced due to weakness of predictive ability
  - Weights for Conviction Offense reduced due to weakness of predictive ability and offenses changed consistent with re-offense rates
  - Convictions for Assaultive Offense factor dropped from Risk score due to lack of predictive ability
  - Age at Placement on Community Supervision factor added to Risk score and weighted equivalent to Age at Conviction factor due to strength of predictive ability

**Table 5: Current and Proposed Risk Factors and Weights**

Risk Factor	Categories	Current Weight	Proposed Weight	Percent Re-offense
Address Changes	None	0	0	18%
	One	2	1	21%
	Two or more	3	2	26%
Employment	60% or more	0	0	15%
	40% - 59%	1	1	21%
	Under 40%	2	2	27%
Alcohol usage	No interference	0	0	18%
	Occasional abuse	2	1	22%
	Frequent abuse	4	2	24%
Drug usage	No interference	0	0	15%
	Occasional abuse	1	1	24%
	Frequent abuse	2	2	27%
Attitude	Motivated	0	0	18%
	Dependent	3	1	22%
	Negative	5	1	24%
Age first conviction	24 or older	0	0	13%
	20-23	2	2	18%
	19 or younger	4	4	28%
Prior Probation/Parole	None	0	0	17%
	One or more	4	2	26%
Prior Revocations	None	0	0	18%
	One or more	4	2	30%
Prior Felony Convictions	None	0	0	19%
	One	2	1	24%
	Two or more	4	2	32%
Offense	None of listed	0	0	18%
	Burglary, theft, auto theft, robbery	2	2	27%
	Worthless checks or forgery	3	1	20%
	One or more of above	5	2	29%
Assaultive offense last 5 years	No	0	NA	21%
	Yes	15	NA	22%
Age at Placement on Community Supervision	>40	NA	0	17%
	20-40	NA	2	25%
	<20	NA	4	34%

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Proposed changes are based on risk categories with the greatest distinctiveness in terms of re-offense rates and the distribution of the population on the risk category (Austin, 2003). For instance, there is a 13% difference in re-offense for offenders with no prior felony convictions (19% re-offense rate) and offenders with two or more felony convictions (32%), which is one of the larger ranges in re-offending of all of the risk factors listed above. However, the ability to differentiate the population by risk on this factor is diminished by the fact that 72% of the population has no prior felony conviction. While there is a large difference in re-offending by the number of prior felony convictions (32% re-offense for 2 felony convictions and 19% for none = 13% difference), the fact that most of the population has no prior felony convictions (72% have no prior felony convictions) significantly diminishes the ability of this factor to differentiate the population by risk and merits the reduction in weight. Additionally this factor is confounded by the differences in the parole and probation populations on this factor. Namely, 81% of probationers have no prior felony conviction while only 30% have no prior felony. Combining the two populations diminishes the predictive power of this factor.

Weights can be generated by the correlation of the factor in the regression equation analysis but for practical purposes a simplified weight is used to aid in the scoring of the risk instrument. The goal is to simplify the use of the instrument without reducing its true relation to the recidivism study conducted to validate the instrument.

With the proposed changes in weight and factors, revised cut-off scores are proposed as detailed below.

### **Separate Probation and Parole Risk**

As detailed earlier, differences in the probation and parole populations resulted in differences in re-offense rates for probationers and parolees classified in the same risk group. Additionally, the high percent of offenders classified as high risk is counter to the purposes of classification's goals of differentiating the population according to risk. Changes in risk factors proposed above significantly reduces the population identified as high risk, increases the population identified as low risk, while maintaining re-offense rates similar to the current re-offense rates associated with the DOC 502 risk assessment instrument.

### **Revise Cut-off Points**

Table 6 below shows the current risk assessment instrument cut-off points in comparison with the proposed new ones. The current DOC 502 risk score has a range from 0 to 52. The proposed risk score has a range of 0 to 25. Cut-off scores are determined by the relation of risk score and re-offense rates. The recommended cut-off scores for the proposed risk score are detailed below.

**Table 6: Current Risk Assessment Instrument Cut-Off Points and Proposed Cut-Off Points**

Risk Level	Current Score	Proposed Score
Low	0-7	0-8
Medium	8-14	9-14
High	15 or greater	15 or greater

Figure 17 indicates the current and proposed distribution of the community supervision population as a result of the new cut-off scores and re-weighting and changing risk factors. As the figure shows the percent classified as high risk (overall) declined from 76% to 39% under the proposed weights and cut-off scores while the percent classified as low risk went from 8% to 23%.

**Figure 17: Distribution of Risk Groups: Current Risk Distribution Compared to Proposed**

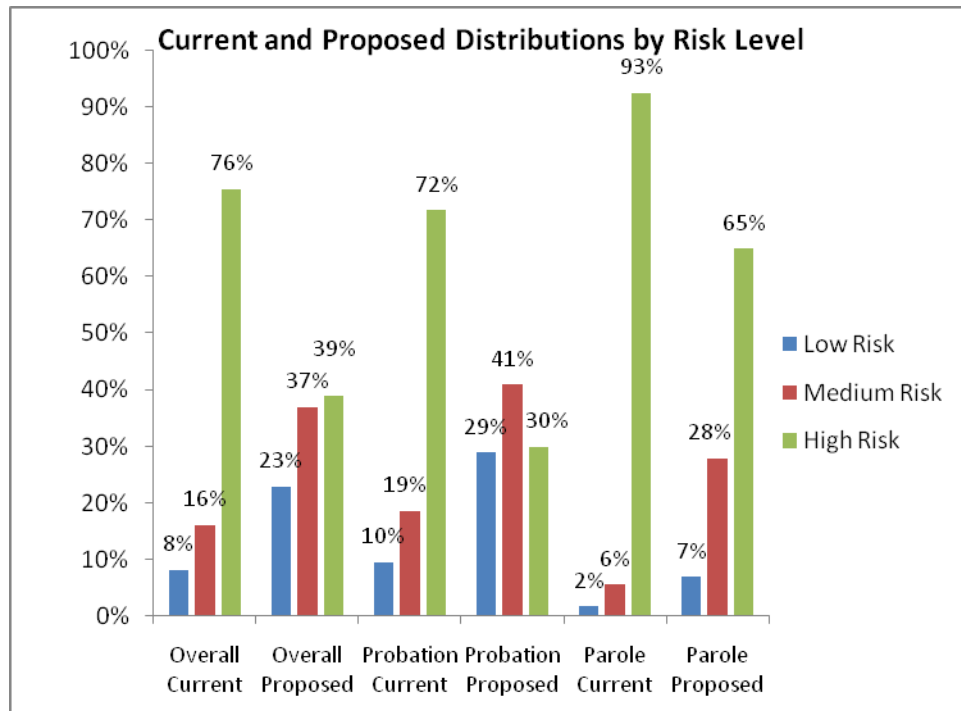
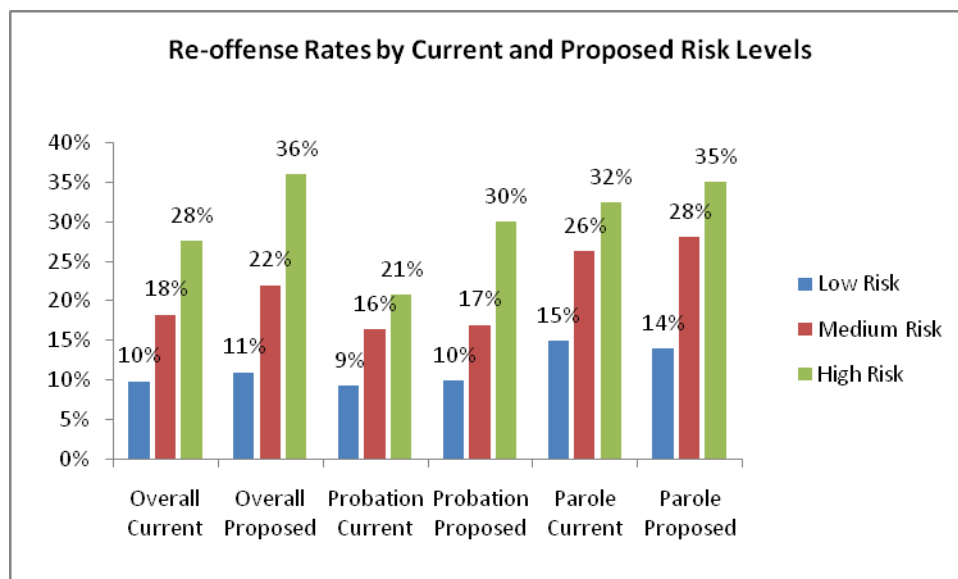


Figure 18 below indicates that even with the significant redistribution of risk groups, re-offense rates for the proposed revised score were very similar to the re-offense rates under the current distribution. As discussed above, the percent classified as low risk went from 8% to 23% but the re-offense rate for the low risk group went from 10% under the current DOC 502 instrument to an 11% re-offense rate for the low risk group under the proposed risk score. The largest change in re-offense rates was for offenders classified as high risk. Under the current risk instrument, the re-offense rate for high risk offenders was 28% and under the revised risk score the re-offense rate for the high risk group is 36%, indicating increased accuracy in classifying offenders as high risk. The change was even greater for probationers where the re-offense rate for probationers classified as high risk went from 21% under the current classification score to 30% under the proposed classification score. Again, the proposed new instrument is more accurate in classifying offenders as high risk even though fewer offenders will be classified as high risk mainly because of the removal of the assaultive factor.

**Figure 18: Percent Re-offense by Risk Groups: Current Risk Groups Compared to Proposed**



A linear regression analysis was run using the proposed risk factors and new weights. The previous “R” score for the regression analysis was .241 using the current factors compared to an “R” score of .257 using the proposed factors and weights, indicating an improvement in the predictive ability of the risk instrument.

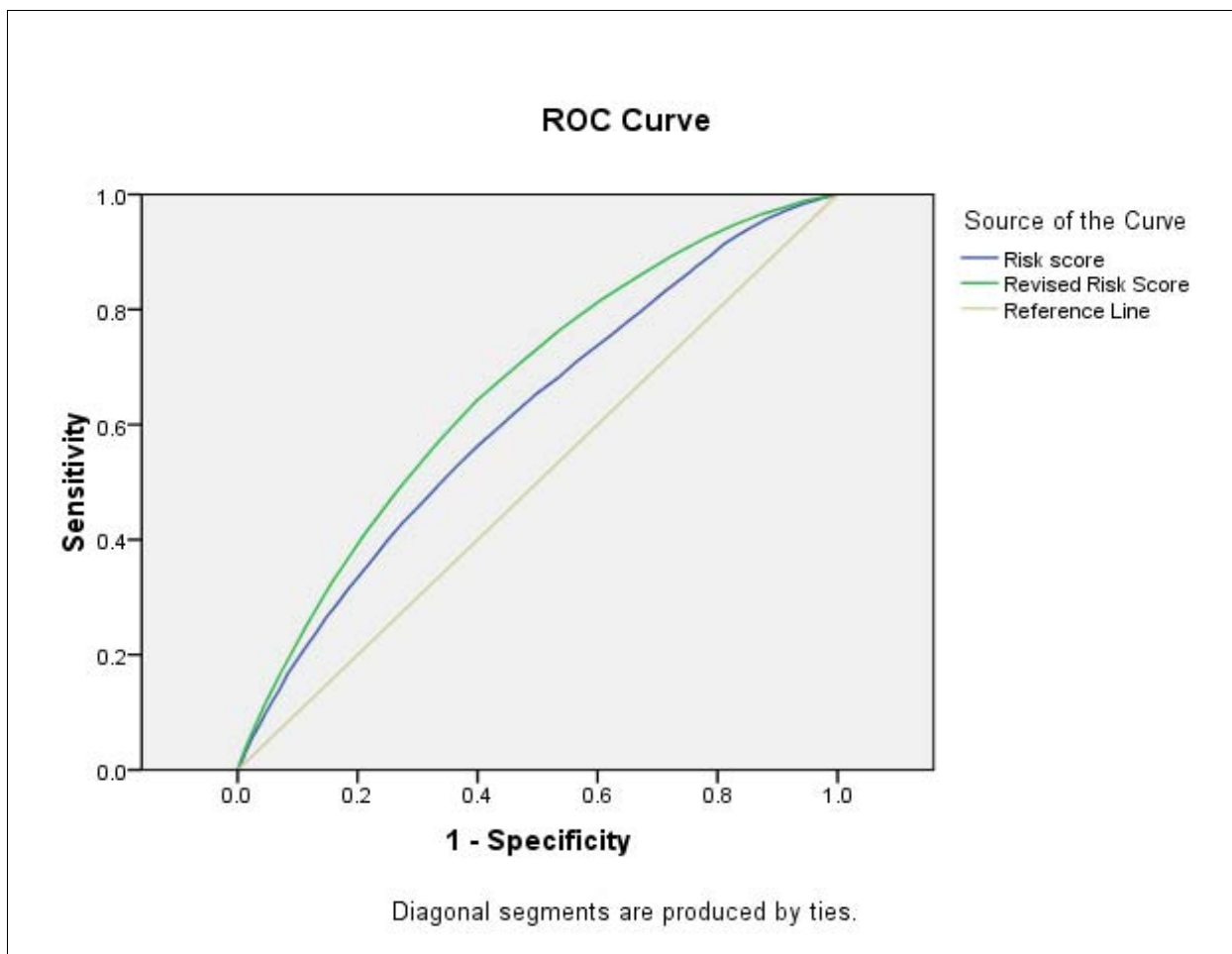
A second measure of improvement in risk classification associated with the proposed revision in the risk score is the Receiver Operating Characteristic Curve or the ROC Curve. The ROC Curve is a measure that evaluates the performance of a classification scheme in which there is one variable (Risk Score or the Revised Risk Score) with two categories (New offense within three years or No New Offense within three years) by which subjects are classified. The Area Under the Curve (AUC) represents the probability that the result of the classification for a randomly chosen positive case (prediction of re-offense that is true) will exceed the result of a randomly chosen negative case. The curve is a graphical representation of the trade-off between false negative and false positive rates.



Figure 19 presents the ROC curve for the current risk score and proposed revised risk score. The ROC curve for the proposed revised risk score exceeds the ROC curve for the current risk score indicating greater accuracy of the proposed score in classifying offenders by risk.

The area under the curve for the proposed revised risk score (.664) exceeds the current risk score (.614) and the lower and upper bounds of the proposed revised risk score (.658 and .669 respectively) exceed the current risk score (.609 and .620)

**Figure 19: ROC Curve for Current and Proposed Revision to DOC 502 Risk Score**



Test Result Variable(s)	Area	Area Under the Curve Asymptotic 95% Confidence Interval	
		Lower Bound	Upper Bound
Risk score	0.614	0.609	0.62
Revised Risk Score	0.664	0.658	0.669

Improvements in risk classification can be attributed to:

- Re-weighting of factors commensurate to their predictive ability
- Addition of Age at Placement on Community Supervision
  - This factor has a correlation with new offense of .117 compared to the correlation of .029 for the Assaultive risk factor that was dropped from the risk factors in the proposed risk instrument
- Deletion of the assaultive risk factor
  - The Assaultive risk factor led to classification of some offenders as high risk whose actual risk of re-offending was low or medium

### **Redesign Use of Assaultive Factor**

The Assaultive risk factor is a component of many risk instruments but its inclusion in a risk instrument purporting to classify offenders based on risk of re-offending is questionable. Possible options to the current weight and inclusion in the risk score include:

- Eliminate the assaultive risk item as a factor in the risk score, as recommended here, and develop override rules that more specifically address the consideration of assaultive history in determining supervision level
  - Current policy allows, to some extent, for this consideration. However, it may be necessary to make override rules more explicit to prevent assaultive history overrides from negating the role of risk assessment in determining supervision level.
  - As a general rule, risk instruments subject to more than 20% of classifications being overridden usually result in significant diminution of the predictive ability of the instrument.
- Reduce the weight of the assaultive risk factor so that it elevates offender's classification by one risk level over scored risk level.
  - Texas probation uses the same Wisconsin factors but the assaultive risk weight is only 8 points, moving a minimum score to a medium and a medium to high risk
- Revise the "history from last assaultive offense" definition from five years to one year or a time frame based on a study that establishes a scientific basis for setting a time frame for the scoring rule.
  - For instance, if it was determined that 80% of all re-offending for assaultive offenders occurred within one year of the last re-offense that could serve as a scientific basis for reducing the scoring rule to one year.

- Conversely, if 80% of all re-offending occurred within 5 years that could serve as a basis for maintaining the current scoring rules.

Currently it appears that the assaultive factor results in significant misclassification of offenders according to risk of re-offense and results in workload requirements disproportionate to the risk of re-offense experienced (to be detailed later).

The proposed changes would result in a redistribution of risk levels by offense type. Table 7 below indicates, for selected offenses, the current distribution by offense types by risk level and the proposed distribution of offenses by risk level. The second part of Table 6 indicates re-offense rates. In general, the results indicate that offenders classified as high risk under the proposed changes represent a higher recidivist offender than under the current classification. For instance, under the current system 94% of offenders whose governing offense is assault were classified as high risk and had a 25% re-offense rate. Under the proposed classification system, 32% of assaults would be classified as high risk and their re-offense rate was 38%.

**Table 7: Offense Type by Risk Group: Current and Proposed Distribution and Re-Offense Rates**

	Distribution					
	Current			Proposed		
	Low	Medium	High	Low	Medium	High
<b>Assault</b>	2%	4%	94%	31%	37%	32%
<b>Drug Possession</b>	12%	33%	55%	24%	46%	30%
<b>Violent</b>	8%	16%	76%	21%	38%	41%
	Re-offense Rates					
	Current Risk Levels			Proposed Risk Levels		
	Low	Medium	High	Low	Medium	High
<b>Assault</b>	12%	21%	25%	13%	24%	38%
<b>Drug Possession</b>	9%	16%	27%	12%	19%	33%
<b>Violent</b>	9%	23%	30%	11%	23%	40%

It is important to note that we are acknowledging here the rationale behind the current decision to supervise offenders with assaultive backgrounds at a high risk level is a policy choice driven by the perception that these offenders may need closer supervision. The same goal can be accomplished as a clear override to the risk assessment, not as part of the risk assessment. As a result, it will be explicit this is a policy choice, not based on research-driven actuarial risk, but on other policy considerations.

It is suggested that if this is adopted as a policy, the override should not raise the offenders' supervision level more than one risk level. The assaultive risk factor works two ways in the sense that supervision resources may be misspent on offenders that are not as risky as others who represent higher risk. In addition, a more accurate allocation of resources by actual

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risk could be used to supervise high risk offenders more intensively (or provide more interventions).

### **Adopt Four Levels of Supervision**

A goal of the revised risk instrument was to establish cut-off scores that would result in equivalent re-offense rates by risk group for probation and parole. Within the parameters of the current study it has not been possible to achieve that result due to the significant difference in re-offense rates for probation and parole. Establishing a low risk group for parole, equivalent to low risk probationers, would result in a very small percentage of parolees classified as low risk and again force a high percentage of parolees to be classified as high risk, again running counter to the purpose of classification.

The data suggests that the community supervision population examined presents 4 levels of risk based on re-offense rates that may merit 4 differential levels of supervision.

Table 8 details a 4 level system of supervision based on risk of re-offense and community supervision type (probation or parole/ES). Based on Table 7, risk scores and supervision levels would be assigned as described below:

- Probationers with a risk score of 0-8 would be classified as Level 1 supervision
  - Level 1 supervision would require the lowest supervision requirements of all supervision levels
- Probationers with a risk score of 9-14 and parolees with a risk score of 0-8 would be Level 2 supervision
  - Level 2 supervision would establish a minimum-medium supervision level
- Probationers with a risk score of 15 or greater and parolees with a risk score of 9-14 would be Level 3 supervision
  - Level 3 supervision would establish a medium-maximum supervision level
- Parolees with a risk score of 15 or greater would be Level 4 supervision
  - Level 4 supervision would be considered maximum supervision level

**Table 8: Proposed Levels of Supervision Based on Revised DOC 502**

<b>Risk Level</b>	<b>Risk Category (risk score)</b>	<b>Re-offense Rate</b>	<b>Percent of Community Supervision Placements</b>
<b>1</b>	Low Risk Probation (0-8)	10%	24%
<b>2</b>	Low Risk Parole (0-8) Medium Risk Probation (9-14)	14% -17%	34%
<b>3</b>	Medium Risk Parole (9-14) High Risk Probation (15+)	28%-30%	29%
<b>4</b>	High Risk Parole (15+)	35%	12%

### **New Risk Assessment Instrument**

Figure 20 below illustrates the new recommended risk assessment instrument based on the recommendations detailed above.

**Figure 20: Proposed New Risk Assessment Instrument Based on Recommendations in Report**

Department of Corrections		Wisconsin	
Division of Community Corrections		<b>Admission to Field Caseload Assessment of Offender Risk</b>	
DOC 502 (rev. 6/09)			
Offender Name	Last	First	MI
			DOC Number
Date Placed on Probation or Release on Parole In Wisconsin (MM/DD/YY)		Agent Last Name	
		Area Number	
Facility of Release		Code	
		Date Completed (MM/DD/YY)	
			<b>SCORE</b>
Number of Address Changes in last 12 Months: -----	0	None	_____
	1	One	
	2	Two or More	
Percentage of Time Employed in Last 12 months: -----	0	60% or more	_____
	1	40%-59%	
	2	Under 40%	
	0	Not applicable	
Alcohol Usage Problems: ----- (Prior to incarcerations for parolees)	0	No interference with functioning	_____
	1	Occasional abuse; some disruption Of functioning	
	2	Frequent abuse; serious disruption, Needs treatment	
Other Drug Problems: ----- (Prior to incarcerations for parolees)	0	No interference with functioning	_____
	1	Occasional abuse; some disruption of functioning	
	2	Frequent abuse; serious disruption, Needs treatment	
Attitude: -----	0	Motivated to change; receptive to assistance	_____
	1	Not motivated to change	
Age at First Conviction: -----	0	24 or older	_____
	2	20-23	
	4	19 or younger	
Age at Placement on Community Supervision: -----	0	40 or older	_____
	2	20-39	
	4	19 or younger	
Number of prior Periods of Probation/Parole Supervision: --	0	None	_____
	1	One or more	
Number of prior Probation/Parole Revocations: -----	0	None	_____
	1	One or more	
Number of prior Felony Convictions -----	0	None	_____
	1	One or more	
Convictions or Juvenile Adjudications for: -----	0	None of the Offense(s) listed below	_____
	1	Assault, Drug Trafficking, Other violent	
	2	Robbery, Theft	
			<b>TOTAL</b> _____

Risk Score	Supervision Level	
	Probation	Parole
0-8	1	2
9-14	2	3
15+	3	4

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### **Pilot Project to Test Implementation**

A pilot test of the revised risk assessment instrument should be conducted before full state-wide implementation. The pilot test should involve the following components:

- A pilot test committee, composed of agents, supervisors, administrators and an independent representative, not associated with the department but knowledgeable regarding relevant issues, should be appointed to oversee the pilot test.
- Training should be conducted on scoring the new instrument. Material explaining the new scoring system will need to be prepared and disseminated in the training.
- Tests of inter-rater and intra-rater reliability of scoring the new instrument should be conducted as part of the training protocol:
  - Inter-rater reliability means that two different staff members would score the same offender the same way on the risk instrument
  - Intra-rater reliability means the same staff person would score the same offender the same way repeatedly with no change in circumstances
- An evaluation of the pilot test should be conducted to determine:
  - If the revised instrument is scored correctly;
  - How the revised instrument results in changes in supervision levels of the population;
  - If changes in supervision levels results in differential supervision of the population; and,
  - How changes in supervision impacts outcomes.

It is recommended that an independent evaluator oversee the pilot test. Given the lack of research personnel in the Wisconsin Department of Corrections and the significant changes proposed in the risk assessment, an independent evaluator would be viewed as an objective third party in evaluating changes.

It is recognized that proposed changes represent a significant change in operations for the Department of Community Corrections and require a significant commitment to revising policy and procedures if adopted. The Division should carefully contemplate the adoption of these recommendations as they do have significant implications for supervision and the allocation of resources if adopted.

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