

Revalidation of the Nevada Parole Board Risk Assessment Instrument

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April 2023

Executive Summary

Since 2002, the Nevada Parole Board has been using a validated risk assessment instrument to assess a prisoner's readiness for parole. The Board has authorized several subsequent re-validation studies that have resulted in some changes and improvements in the overall effectiveness of the instrument.

This report summarizes the results of the most recent validation study that is based on a cohort of prisoners released either on parole or discharged after completing their sentences between April 1, 2019 to March 31, 2020. The key findings of this study are as follows:

1. The overall recidivism rate based on a 2.5 year follow-up period (23.3 %) is relatively low compared to most other state prison systems;
2. The relatively low recidivism rate means that any risk assessment system will have a limited ability to predict future criminal behavior since 77% are succeeding;
3. The factors that are being used in the NPB risk instrument are factors typically found in other prisoner, probation, and parole risk assessment instruments.
4. All risk factors were found to be statistically associated with the recidivism rate with the exception of two dynamic factors;
 - a. Disciplinary offense committed in the past 12 months while incarcerated; and,
 - b. Classification Level.
5. Both of these dynamic items were found to be statistically associated with recidivism in the prior validation study.
6. A closer analysis of these two dynamic variables suggest that there are anomalies in the validation data that are skewing the statistical analysis. Modifying these two dynamic scoring items and resetting the risk levels significantly enhances the instrument's predictive power.
7. The term "High" risk should be replaced with the term "Higher Risk" since the vast majority of these released prisoners do not return to prison within 30 months.
8. Thus, parole is a proper decision for "Higher" risk cases but with the requirement of specialize supervision and/or re-entry services.
9. It should not negatively impact the current parole grant rate of about 65% which is appropriate given the current recidivism rate of 24%.

Introduction and Background

An increasing number of parole boards throughout the United States are relying upon validated risk assessment instruments that are reliable and valid tools to assist parole boards throughout the United States in making unbiased and safe decisions about whether to grant or deny parole to prisoners eligible for release to the community. The Nevada Parole Board (NPB) has been one of the early leaders in using a validated parole risk assessment instrument for such purposes.

The NPB first began using a validated risk instrument in 2004. That instrument was based on a cohort of 5,375 prisoners who were released from custody in 1999 and tracked to determine how many were returned to custody within three years of being released. That initial study found that 27% of the released prisoners had been returned for either a new offense or a technical violation within three years of release (14% were returned for a new conviction while 13% were returned for a technical violation).

In 2008, a modified risk instrument was adopted by the NPB which removed a number of items that were redundant or should be used as aggravating and mitigating factors rather than scoring items. That instrument consisted of 11 items, which were further separated into six static and five dynamic risk factors. The static items are risk related factors that do not change over the course of the person's imprisonment. The dynamic factors are risk related items that can vary based on time served and a person's conduct while incarcerated. All of the items adopted in 2008 are the items found on most adult correctional risk assessment instruments, which have been validated on a variety of adult correctional populations (probation, parole and prison).

The 2008 instrument was based on a validation study that found all but one of the factors were associated with recidivism rates (as defined as return to prison for any reason). That item was participation in treatment/rehabilitative programs. At that time, it was recommended to continue the use of that factor based on studies conducted in other jurisdictions that have found such a relationship.¹

In 2012, another validation study was commissioned by the NPB based on a cohort of prisoners released in 2009 and followed for a two-year period. It consisted of 5,693 released prisoners whose two-year overall return to prison rate was 22.6%. That study continued to affirm that the NPB's risk instrument was statistically associated with recidivism, and it recommended that the various changes be made to the dynamic scoring factors. These changes were adopted by the NPB and implemented.

¹ Steve Aos, Mama Miller and Elizabeth Drake. (2006). *Evidence-Based Public Policy Options to Reduce Future Prison Construction, Criminal Justice Costs and Crime Rates*. Olympia: Washington, State Institute for Public Policy. Sherman, Lawrence, Denise Gottfredson, Doris MacKenzie, John Eck, Peter Reuter, and Shawn Bushway. (1997). *Preventing Crime: What Works, What Doesn't, What's Promising*. A Report to the United States Congress by the National Institute of Justice, Washington, DC.

In 2017, the revised instrument of 2012 was again validated. For that study a three-year return to prison rate was used for a cohort of all NDOC releases in 2013. This generated an overall return rate of 32%. The study found that the existing instrument was a valid predictor of recidivism. However, further changes were made to improve the instrument. This version became active in April of 2019. The current version of the instrument is available in the appendix of this document.

Current Study

This report represents the most recent revalidation commissioned by the NPB to determine how well the latest risk assessment instrument is performing. To conduct this study, a data file for a cohort of all persons released via discharge or parole from the prison from April 1, 2019 to March 31, 2020 was provided by the NDOC. This data file contained all scoring factors contained in the current NPB risk instrument as well as a limited number of background attributes.

Table 1 shows the basic background attributes of this cohort as well as the overall 2.5-year return to prison rate of 24%. A 2.5-year return rate was used as the cohort was chosen to maximize the number of persons released after being scored by the latest instrument and providing the maximum, standardized time from for all releases to track recidivism.

Also of note is that the return to prison rate as calculated for the entire cohort (24%) is significantly lower than the rate determined in the previous revalidation study (32%). The reasons for this difference are not the subject of this report, however, a likely contributor to this difference is the COVID-19 pandemic which was at its height during the 2.5-year return period. Mitigation measures adopted by both the NDOC and NPB likely lowered the number of persons returned to prison for technical violations during a significant portion of the time period observed in this study. As far as the type and number of persons released, the tail-end of the timeframe for the study cohort does fall within the early time frame of the pandemic, however, analysis of the attributes of persons released post mid-March 2020 show no difference compared to the rest of the release cohort and thus they have been included in the study.

The relatively low recidivism rate for the new instrument cohort of 24% presents challenges to developing a valid risk assessment instrument. Since we know that 76% of the people released from prison will not be returned within 30 months, there is not much variance to statistically explain in terms of distinguishing those who succeed or fail.

Releases from the NDOC between April 2019 and March 2020 were predominantly male (84%), white (48%) and Black (30%), and convicted of a Class B crime (49%). The method of release was prisoners paroled (68%), discharged (32%). Prisoners paroled include both mandatory and discretionary parole releases.

Table 1. NDOC Release Attributes April 1, 2019-March 31, 2020

Characteristic	2017 Instrument		
	Number	Percent of Total	Percent Readmitted to Prison
Total	3,666	100.0%	24.0%
Gender			
Female	596	16.3%	19.1%
Male	3,070	83.7%	25.0%
Race			
Black	1,092	29.8%	26.4%
Hispanic	655	17.9%	11.0%
Other	176	4.8%	35.3%
White	1,743	47.5%	26.4%
Release Reason			
Discharge	531	14.5%	11.1%
Parole	3,135	85.5%	26.2%
Original Offense Group			
A Felons	164	4.5%	20.1%
Violent	75	2.0%	14.7%
Sex	59	1.6%	13.6%
Drug	8	0.2%	12.5%
Other	22	0.6%	59.1%
B Felons	1,932	52.7%	19.3%
Violent	702	19.1%	21.9%
Sex	108	2.9%	4.6%
Drug	346	9.4%	13.3%
Property	387	10.6%	25.1%
DUI	150	4.1%	12.0%
Other	239	6.5%	22.2%
C Felons	909	24.8%	29.7%
Violent	230	6.3%	17.0%
Sex	4	0.1%	0.0%
Drug	82	2.2%	20.7%
Property	480	13.1%	36.9%
Other	113	3.1%	32.7%
D Felons	478	13.0%	31.6%
E Felons	183	5.0%	29.0%

The 2.5-year (or 30 months) return to prison rate observed of 24% is lower than the most recent national data available. For informational purposes, we report here that a study conducted by the NDOC of prisoners released in 2018 showed a 3-year return rate of 26%. A

study done by the Bureau of Justice Statistics, published in July 2021, found that 45% of prisoners released in 2012 (from 34 participating states) had a new conviction with 3 years of release.²

For the statistic of time between release and return to prison, as shown in Table 2, most returns to prison occurred within the first 12 months for both instrument cohorts. The average time to return for the new instrument returns averaged 10 months. Since the focus of this report is on the current or “new instrument” now being used by the NPB all of the remaining tables focus only on that cohort of releases.

Table 2.

New Instrument Releases by Time to Readmission

Release Type & Return Time Category	Number Returned	Percent of Total
Time to Readmission Total	880	100.0%
6 months or less	361	41.0%
>6 - 12 months	240	27.3%
>12 - 18 months	132	15.0%
>18 - 24 months	82	9.3%
Over 24 months	65	7.4%
Average time to readmission	12.0 months	

Analysis of Current Risk Instrument

The statistical associations between the risk instrument factors and the prison readmission rate were determined by three measures (Phi, Cramer’s V, and Contingency Coefficient) all at the .05 significance level. The statistical tests were applied using the dichotomous dependent variable of return to prison (yes or no) within 30 months after release from the NDOC between April 2019 and March 2020.

Table 3 shows the results for all 12 scoring factors. For the seven static factors, all were associated in the proper direction and where statistically significant on all three measures. The ‘Gender’ and ‘Employment History’ factors had the weakest associations with prison readmission but were still significant at the .05 level. ‘Age at First Arrest’ and ‘Prior Revocations’ had the strongest association with prison readmission.

In general, the five dynamic factors had weaker statistical association than the static factors with the exception of ‘Current Age’ which was significant at the .05 level and had a very strong association with prison readmission. The ‘Active Gang’ and ‘DOC Program’ completion variables have a statistically significant relationship with prison readmission at the .05 level.

² Recidivism of Prisoners Released in 34 States in 2012: A 5-Year Follow-Up Period (2012-2017), Matthew R. Durose and Leonardo Antenangeli, Ph.D., The Bureau of Justice Statistics, July 2021.

Table 3. New Instrument by Scoring Item

Scoring Item	Weight	Number	Percent of Total	Percent Readmitted to Prison
Total		3,666	100.0%	24.0%
Age at First Arrest*				
24 years or older	0	651	17.8%	12.4%
20-23 years	1	684	18.7%	20.2%
19 years or younger	2	2,331	63.6%	28.4%
Prior Revocation*				
None	0	1,292	35.2%	15.3%
One or more	2	2,374	64.8%	28.8%
Employment History*				
Satisfactory full time > 1 year	0	917	25.0%	18.8%
Less than full time employment	1	2,749	75.0%	25.8%
Offense for Current or Prior Convictions*				
All others	0	912	24.9%	12.4%
Any property, robbery, forgery	2	2,754	75.1%	27.9%
History of Drug/Alcohol Abuse*				
None	0	143	3.9%	8.4%
Some use	1	179	4.9%	17.3%
Frequent abuse	2	3,344	91.2%	25.0%
Gender*				
Female	-1	596	16.3%	19.1%
Male	0	3,070	83.7%	25.0%
Number of Prior Felony Convictions*				
Less than 2	0	2,113	57.6%	21.9%
2 or more	2	1,553	42.4%	26.9%
Current Age *				
59 or older	-2	168	4.6%	8.9%
40-58	-1	1,130	30.8%	20.5%
33-39	0	878	23.9%	24.8%
23-32	1	1,289	35.2%	27.2%
Under 23	2	201	5.5%	32.3%
Active Gang*				
No	0	3,166	86.4%	22.8%
Yes	2	500	13.6%	31.4%
DOC certified edu/voc/treat program*				
Yes	-1	1,330	36.3%	20.5%
No	0	2,336	63.7%	26.0%

Scoring Item	Weight	Number	Percent of Total	Percent Readmitted to Prison
Total		3,666	100.0%	24.0%
Misconducts in Past Year				
No Misconducts	0	2,524	68.8%	24.0%
One or more	2	1,142	31.2%	24.0%
Current Custody Level*				
Minimum or medium	0	3,532	96.3%	24.4%
Close/max or disciplinary segregation	2	134	3.7%	14.2%

*Statically significant $p < .05$

The other two factors (Prison Misconducts and Classification Level) have either no association (Prison Misconduct) or an association that is contrary to the scoring scheme (Classification Level). The prior validation study had found these two variables to be statistically associated with recidivism, so these updated results are somewhat puzzling.

One of the reasons for the lack of statistical association with the return to prison rate is that there are anomalies in the validation data that are skewing the statistical analysis for these two scoring items. For example, prisoners who were scored as being in maximum custody or administrative segregation and/or have misconducts in the past year were more likely to be discharged rather than being paroled. This reduces their risk time for being returned to prison for a technical violation.

A refined analysis found that prisoners who are in minimum custody at release perform better than those classified at medium or higher custody levels. Similarly, inmates who have no misconducts in the past year have slightly lower recidivism rates.

The overall strength of the static and dynamic factors is shown in Tables 4 through 6. There is a positive correlation between the total static score the prison return rate. There is less of a correlation between the total dynamic score and the prison return rate. The total score (dynamic and static combined) remains significantly correlated with prison readmission.

However, one can also see that the total risk points are not completely consistent with the recidivism rates. For example, the cut-off point for low to moderate risk is 7 points, but it has a recidivism rate that is more like the moderate risk category. Similarly, the cut-off points for moderate to high (11, 12 and 13) have recidivism rates that are well above the other moderate risk point levels.

Table 4. New Instrument Releases by Static Score

Static Score	Number	Percent of Total	Percent Readmitted to Prison
Total	3,666	100.0%	24.0%
-1	3	0.1%	0.0%
0	25	0.7%	0.0%
1	40	1.1%	0.0%
2	116	3.2%	2.6%
3	143	3.9%	6.3%
4	226	6.2%	8.8%
5	240	6.5%	15.4%
6	315	8.6%	17.1%
7	492	13.4%	30.3%
8	434	11.8%	27.0%
9	715	19.5%	28.4%
10	358	9.8%	27.1%
11	559	15.2%	34.2%
Avg. Score: 7.6, Pearson Correlation .201; $p < .001$			

Table 5. New Instrument Releases by Dynamic Score

Dynamic Score	Number	Percent of Total	Percent Readmitted to Prison
Total	3,666	100.0%	24.0%
-3	71	1.9%	9.9%
-2	339	9.2%	13.3%
-1	642	17.5%	21.5%
0	694	18.9%	24.2%
1	859	23.4%	25.5%
2	465	12.7%	29.0%
3	352	9.6%	27.3%
4	153	4.2%	31.4%
5	55	1.5%	34.5%
6	32	0.9%	12.5%
7	4	0.1%	25.0%
Avg. Score 0.7; Pearson Correlation .093; $p < .001$			

Table 6.
New Instrument Releases by Total Score and Risk Level

Total Assessment Score	Risk Level	Number	Percent of Total	Percent Readmitted to Prison
Total		3,666	100.0%	24.0%
-3	Low	9	0.2%	0.0%
-2		12	0.3%	0.0%
-1		21	0.6%	0.0%
0		36	1.0%	0.0%
1		61	1.7%	1.6%
2		91	2.5%	2.2%
3		130	3.5%	10.0%
4		141	3.8%	8.5%
5		211	5.8%	11.8%
6		263	7.2%	15.6%
7		353	9.6%	22.1%
Low			1,328	36.2%
8	Moderate	393	10.7%	24.4%
9		521	14.2%	30.9%
10		483	13.2%	28.6%
11		386	10.5%	32.1%
12		302	8.2%	35.8%
13		173	4.7%	37.6%
Moderate		2,258	61.6%	30.6%
14	High	42	1.1%	23.8%
15		21	0.6%	9.5%
16+		16	0.5%	30.8%
High		79	2.2%	21.0%
Avg. Score 8.2; Pearson Correlation .212; $p < .001$				

Recommended Changes to the Current System

Based on the above results there are two options that the NPB should consider. Option #1 would be to delete the two dynamic factors that are not showing an appropriate association with the recidivism rate and adjust the cut-off points accordingly. If those two are deleted and the cut-off points adjusted there is a considerable improvement in the overall validation results. The results of these changes are shown in Table 7. Here one can see improvements in distinguishing released prisoners by their recidivism rate (Figure 1). The overall Pearson correlation increases from .212 to .238 and improves its significance level to the .01 level.

Option #2 would be to retain the two dynamic factors and modify them as follows:

1. Adjust the Current Classification level so that prisoners classified as Minimum receive a score of -1 and all others a score of zero; and,
2. Adjust the Misconducts in the past year score so that prisoners with no misconducts receive a score of -1 and all others a score of zero.

The cut-off points for low, moderate, and high risk categories would also be adjusted as proposed in Table 7. This option would allow the NPB to retain these two dynamic items and produce improvements in the validity of the overall instrument. It is also noted that these two items have been shown in prior studies to be statistically associated with recidivism rates.

Finally, it is recommended that the term used for “High” risk be replaced with the term “Higher” risk reflecting the fact that 2/3rds of this risk group do not recidivate within 30 months.

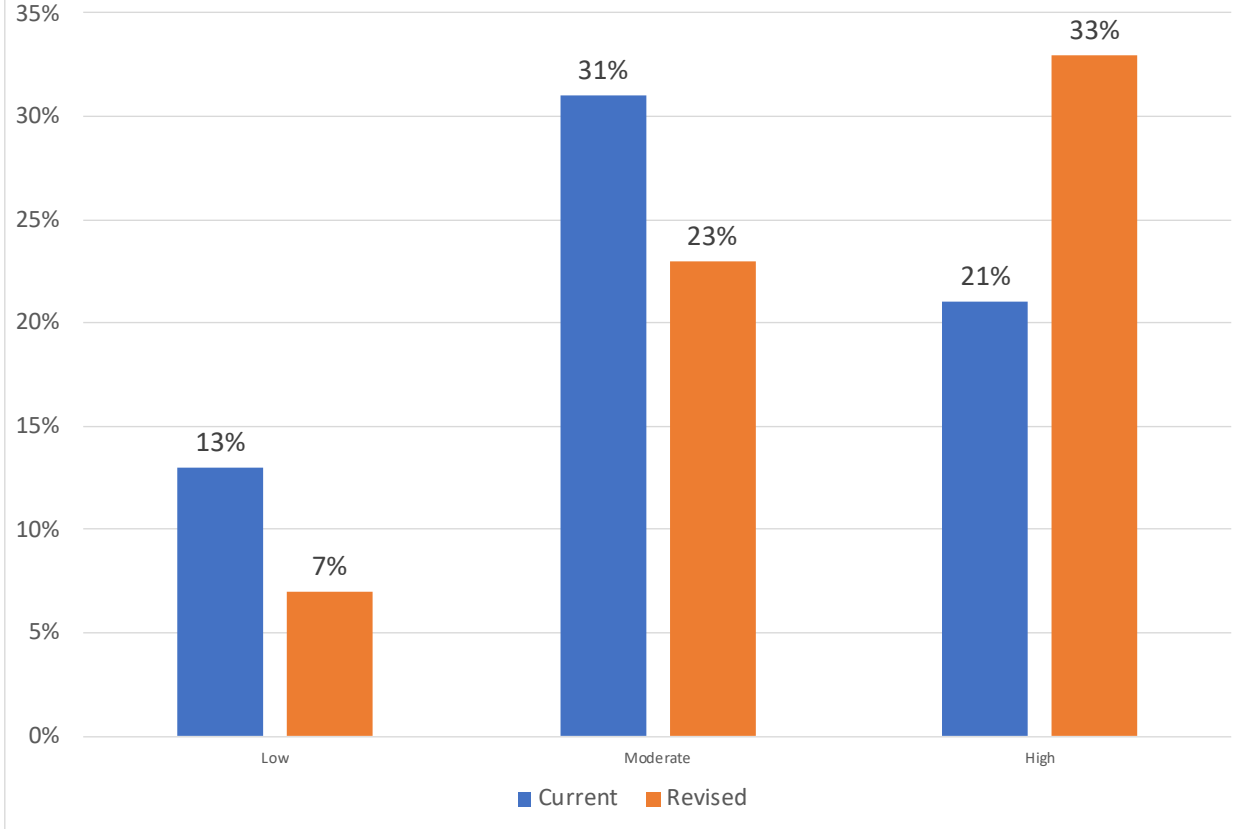
Both Options if implemented will reduce the percentage of cases classified as low risk but increases the identification of truly low risk cases. The percentage of cases identified as higher risk increase and increases the identification of people with higher recidivism rates.

The NPB is advised that while the Higher risk group has significantly higher recidivism rates, about 2/3rds do not return to prison within 30 months. Thus, parole is not an improper decision for such cases but should have the requirement of specialize supervision and/or re-entry services. It should not negatively impact the current parole grant rate of about 65%

Table 7.
Revised Total Score and Risk Level

Cut-off Points	Total Assessment Score	Number	Percent of Total	Percent Readmitted to Prison
	Total	5,717	100.0%	24.0%
Low	-4	1	0.0%	0.0%
	-3	10	0.3%	0.0%
	-2	13	0.4%	0.0%
	-1	24	0.7%	0.0%
	0	49	1.3%	0.0%
	1	66	1.8%	1.5%
	2	102	2.8%	3.9%
	3	137	3.7%	8.8%
	4	171	4.7%	7.6%
	5	258	7.0%	11.2%
Low Total	Avg. Score=3.0	831	22.7%	7.1%
Mod.	6	306	8.3%	17.3%
	7	432	11.8%	22.9%
	8	482	13.1%	27.4%
Moderate Total	Avg. Score=7.1	1,220	33.3%	23.3%
Higher	9	613	16.7%	33.3%
	10	497	13.6%	31.0%
	11	290	7.9%	36.6%
	12	144	3.9%	34.0%
	13	56	1.5%	32.4%
	14	15	0.4%	40.0%
Higher Total	Avg. Score=10.1	1,615	44.1%	33.3%
Average Score 7.5 Pearson Correlation .238, Significant at the .01 level				

Figure 1. Current vs. Option #1 Recidivism Rates



APPENDIX

**NEVADA PAROLE RISK
ASSESSMENT**

Static Risk Factors	Pts	Dynamic Risk Factors	Pts
1. Age at First Arrest (juvenile or adult)		8. Current Age	
24 years or older	0	59 or more years of age	-2
20-23 years	1	40-58 years of age	-1
19 years or younger	2	33 – 39 years of age	0
2. Prior Prob/Parole Revocation (juv. or adult)		23 – 32 years of age	1
No parole or probation revocations	0	Under 23 years of age	2
One or more (including gross misdemeanors)	2	9. Active Gang Membership	
3. Employment History (prior to arrest)		No (none or suspect)	0
Satisfactory full-time employment >1 year	0	Yes (member or associate)	2
Less than full-time employment	1	10. DOC certified edu/voc/treat program	
4. Offense for Current or Prior Convictions		Yes (during current term of incarceration)	-1
All others	0	No	0
Any Property Offense, Robbery, Forgery, etc.	2	11. Offenses in Custody - Past Year	
5. History of Drug/Alcohol Abuse		No Offenses in Custody	0
None	0	One or More Offenses in Custody	2
Some use, no severe disruption of functioning	1	12. Current Custody Level	
Frequent abuse, serious disruption of functioning	2	Minimum or Medium Custody	0
6. Gender		Close/Max or Disciplinary Segregation	2
Male	0	Total Dynamic Risk Score	
Female	-1		
7. Number of Prior Felony Convictions			
Less than 2 prior felony convictions	0		
2 or more prior felony convictions	2		
Total Static Risk Score		Total Risk Score (Static + Dynamic Score)	

_____ Low Risk = 0-7 points _____ Moderate Risk = 8-13 points _____ High Risk = 14+ points

The risk assessment is based on the static and dynamic factors that are applicable at the time of a parole hearing. A change in status following the hearing that may impact the risk factors shall not be the basis for an appeal for re-computation. A prisoner will only be granted a re-hearing if a factor is misapplied at the time of the hearing, and a correction changes the guideline recommendation.

Parole Risk Assessment – Effective March 6, 2019