

Revalidation of the Nevada Parole Board Risk Assessment Instrument

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Executive Summary

1. Compared to national recidivism rates (three-year return to prison rates) Nevada continues to have a low three rate of return to state prison (32% versus national rate of 40-45%)
2. The current version of the Nevada Parole Board's Risk Assessment instrument continues to be a valid predictor of recidivism as measured by return to prison within three years.
3. However, there are a few factors that can be either adjusted and/or removed that would serve to moderately improve somewhat the validity of the current instrument.
4. The most important changes would be to modify the prior employment, current age and prison custody level factors.
5. Adopting the recommended changes to the instrument will only moderately improve the identification of low risk inmates under consideration for parole. A significantly higher number of releases are specified as low risk but with the same recidivism rates as existed under the current system.

Introduction and Background

An increasing number of parole boards throughout the United States are relying upon risk assessment instruments to help them make 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 this movement where a validated parole risk assessment instrument is being used 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 as according to 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 the prisoner's conduct. All of the items adopted in 2008 are the same 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, JFA recommended continued use of this factor based on studies conducted in other jurisdictions that had 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 following changes be made to the 2012 dynamic scoring factors:

1. Inmate misconduct should be modified so that it is an ordinal variable where inmates conduct during the past 12 months is scored as follows:

¹ AOs, Steve, 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.

- a) No misconduct of any kind = -1
 - b) One misconduct of any kind = 0
 - c) 2 misconducts of any kind = -1
 - d) 3 or more misconducts of any kind = 2
2. Completion of treatment programs should be counted only for the following obtaining a GED, High School and above formal degree, or a vocational training program. Furthermore, as other programs are certified by the NDOC in terms of their efficacy, they will be counted with inmates receiving a score of -1 points.
3. Gang membership should NOT include those suspected as gang membership. An analysis of that group found that their recidivism rate was 20% -- below the overall average of 23%.

Based on these changes and the relatively low recidivism rate for the inmate cohort as a whole, the cut-off points for the risk level scale was modified as follows:

Low Risk = 5 points or less
Moderate Risk - 6- 11 points
Higher Risk = 12 points and above.

These changes were adopted by the NPB and implemented (see Appendix A for a copy of the revised instrument).

Current Study

This report represents yet another validation study commissioned by the NPB to determine how well the 2012 instrument is performing. To conduct this study, a data file for a cohort of all prisoners (5,121) released in 2013 was provided by the Nevada Department of Corrections (NDOC). This data file contained all of the factors contained in the NPB risk instrument as well as other background factors. Table 1 shows the basic background attributes of the cohort as well as the overall three-year return to prison rate of 32%. The cohort is predominantly male (86%), white (48%) and Black (28%), and convicted of a Class B crime (67%). The method of release was divided between prisoners paroled (43%), discharged (40%) or receiving a mandatory parole (17%). The vast majority had been sentenced from Clark County (69%) followed by Washoe County (19%) counties. The average age of released inmates is 36 years with a considerable range of 18 to 83 years.

The three-year return to prison rate was 32% which is comparable to previous studies that used the three-year follow-up time frame. It's important to note that this and prior recidivism rates are low when compared to national data. One study done by the PEW Center on the states published in April 2011 and examined the 3-year return to prison rates for prisoners released in 1999 and 2004.² For both cohorts the overall return to prison rate was 45% and 43%.

² *State of Recidivism, The Revolving Door of America's Prisons*. April 2011. The Pew Center on the States.

The Bureau of Justice Statistics (BJS) has published three national studies of prison recidivism consisting of prisoners released in 1983, 1994 and 2005. As shown in Figure 1, these national BJS studies show return to prison rates of 41%, 52%, and 50%. It should be added that when California, which had a very large return to prison rates, is excluded from the analysis the 1994 rate drops to 40%.³ In addition to the current study the NDOC conducted its own study of prisoners released in 2008 and reported a three-year return to prison rate of 28%.

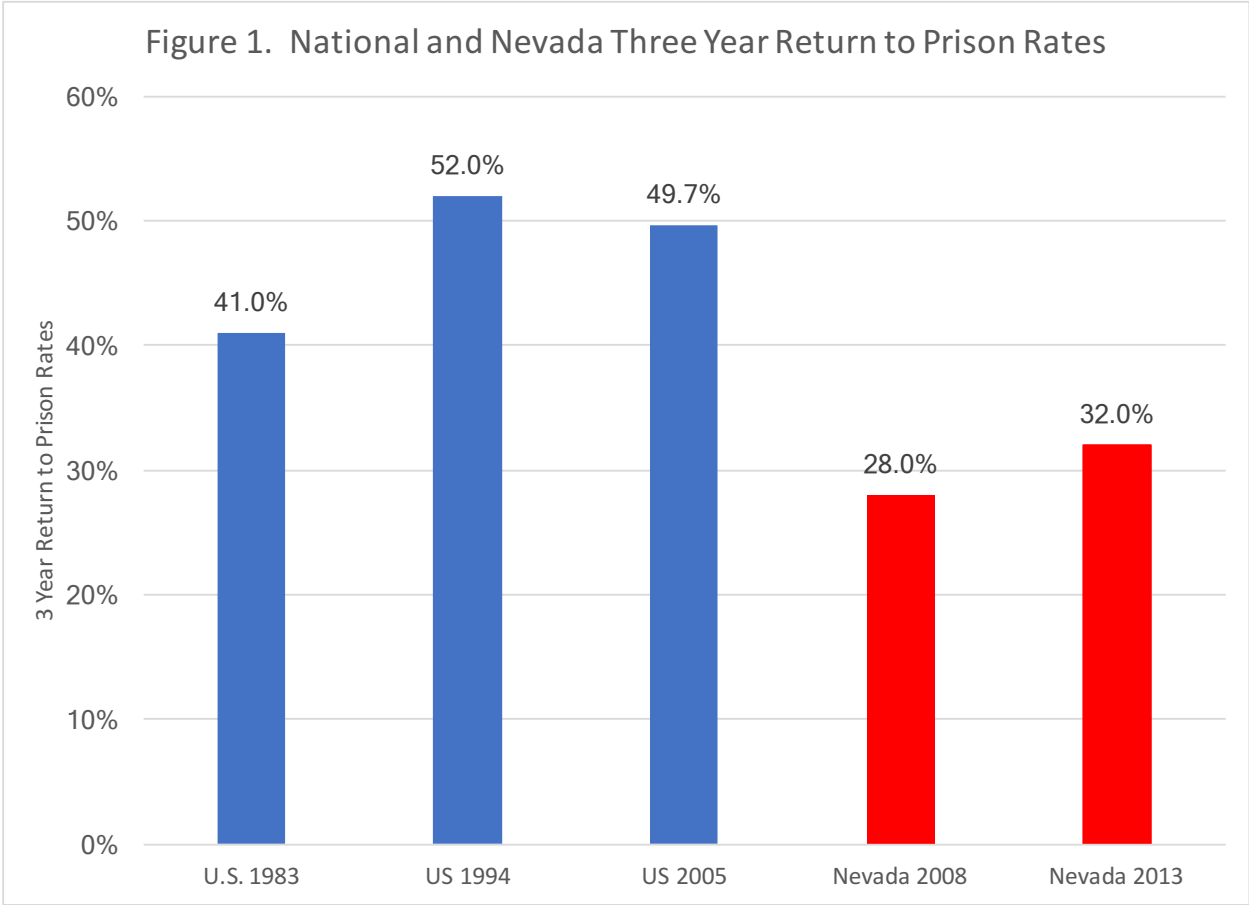
These low rates of recidivism had several policy and research implications. Most significantly, it shows that overall the vast majority of prisoners being released from prison (over 70%) are not returning to prison. In turn this means that as a class of people they are not high risk to re-offend. The downside of this positive statistic is that it becomes more difficult to develop risk instruments that will accurately predict those who will return to prison. It's far easier to predict who will not return to prison since the vast majority do not return. Put differently, if one predicted that every prisoner released from prison will not return within 2-3 years for any reason, one would be right 70-75% of the time.

One other statistic to note is the time between release and return to prison. As shown in Table 2, the majority of returns to prison occurred within 12-18 months. This table emphasizes that the released prisoners are most likely to incur parole violations or be convicted of new felony crimes during the first year of release.

³ Langan, Patrick A. and David J. Levin. June 2002. *Recidivism of Prisoners Released in 1994*. Washington, DC: Bureau of Justice Statistics, U.S. Department of Justice.

Table 1
2013 Nevada Prison Release Characteristics

Characteristics	Prison Releases	% of Total
Total Releases	5,121	100.0%
Gender		
Female	717	14.0%
Male	4,404	86.0%
Race		
Black	1,455	28.4%
Caucasian	2,438	47.6%
Hispanic	915	17.9%
Other	313	6.1%
Offense Category		
Unknown	2	0.0%
A	270	5.3%
B	3,411	66.6%
C	800	15.6%
D	432	8.4%
E	206	4.0%
Method of Release		
Paroled	2,189	42.7%
Mandatory Parole	878	17.1%
Discharged	2,052	40.1%
Sentencing County		
Clark	3,510	68.5%
Washoe	979	19.1%
Others	632	12.3%
Returned to Prison W/In 3 Yrs.		
Yes	1,640	32.0%
No	3,481	68.0%
Age at Release		
Average Age		36 yrs.
Median Age		34 yrs.
Youngest		18 yrs.
Oldest		83 yrs.
Length of Stay in Prison		
Total		24.4 mos.
Parole		25.0 mos.
Mandatory Parole		27.9 mos.
Discharge		22.2 mos.



**Table 2
2013 Releases Time to Readmission**

Return Time Category	Number Returned	Percent of Total
Time to Readmission Parole	1,045	100.0%
6 months or less	366	35.0%
>6 - 12 months	253	24.2%
>12 - 18 months	140	13.4%
>18 - 24 months	75	7.2%
Over 24 months	211	20.2%
Average time to readmission	13.8 mos.	

Analysis of Current Risk Instrument

In this section of the report we evaluate the statistical associations between the risk factors and the prison return rates. Three measures of statistical tests were applied using the dichotomous dependent variable of return to prison (yes or no) within 36 months of release in 2013.⁴

Table 3 shows the results for the six static factors. All were associated in the proper direction and were statistically significant on all three measures. The gender factor was the weakness of the factors but was still significant at the .10 level. The employment at admission factor was significant but there was little difference between people who were employed less than full time for the year prior to the offense or people who have unsatisfactory employment in the same time period. Collapsing this three-part ordinal variable would improve its predictive power.

Table 4 repeats this analysis for the five dynamic factors. In general, the dynamic factors perform poorer than the static factors. While age at release, gang membership and the number of disciplinary reports have a statistical relationship with a return to prison, the other two factors (completion of certified education/vocational/treatment program and custody level at release) do not. There is some evidence that the three-part ordinal level custody level variable could be collapsed into a dichotomous variable that only distinguishes between minimum/medium versus maximum/administrative segregation status at release.

More troublesome is the lack of a statistical relationship between completed or certified programs and recidivism. This issue has been noted in prior studies. This problem may be related to the relatively small number of prisoners who complete such programs (only 18% of the releases and that a large percentage of inmates completing the program are already at low risk. Specifically, the average static and total risk scores for such inmates are below the average risk score for people who do not complete such programs. Placing low risk people in such treatment programs will not have any positive impact on their recidivism rates and may serve to actually increase their recidivism rates. The Nevada Department of Corrections is making significant strides to ensure the selection process is driven by risk level so we should see improvement in the impact of such programs in the future.

The overall strength of the static versus the dynamic factors is borne out in Tables 5, 6, and 7. There is a very progressive correlation between the total static score and 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 recidivism, but largely due to the influence of the static and the three dynamic factors.

⁴ These tests were Phi, Cramer's V, and Contingency Coefficient.

Table 3. 2013 Releases Static Scoring Items with Return Rate

	Points	Prison Releases	% of Total	% Returned to Prison
Baseline	NA	5,036		32.0%
Age at First Arrest*				
24 years or older	0	855	17.0%	20.5%
20-23 years	1	932	18.5%	26.1%
19 years or younger	2	3,244	64.5%	37.1%
Prior Revocation*				
None	0	1,732	34.7%	22.6%
One or more	2	3,264	65.3%	37.4%
Employment History*				
Satisfactory full time > 1 year	0	1,192	24.1%	26.7%
Employed less than full time < 1 year	1	1,542	31.1%	34.8%
Unsatisfactory	2	2,219	44.8%	33.5%
Offense for Current or Prior Convictions*				
All others	0	1,304	25.9%	19.8%
Any property, robbery, forgery	2	3,732	74.1%	36.7%
History of Drug/Alcohol Abuse*				
None	0	202	4.0%	18.8%
Some use	1	333	6.6%	22.8%
Frequent abuse	2	4,488	89.3%	33.7%
Gender**				
Female	0	722	14.3%	27.6%
Male	1	4,326	85.7%	33.0%

*Significant at the .05 level or greater. ** Significant at the .10 level

Table 4. 2013 Releases Dynamic Scoring Items with Return Rate

	Points	Prison Releases	% of Total	% Returned to Prison
Current Age*				
41 and above	-1	1,693	33.3%	26.8%
31-40	0	1,465	28.8%	31.8%
21-30	1	1,829	35.9%	36.7%
Under 21	2	101	2.0%	46.5%
Active Gang*				
No	0	3,845	78.5%	30.8%
Yes	2	1,053	21.5%	38.0%
DOC certified edu/voc/treat program				
Yes	-1	908	18.1%	32.3%
No	0	4,113	81.9%	32.2%
Disciplinary Conduct - Past Year**				
None	-1	3,582	71.6%	31.1%
One	0	872	17.4%	32.7%
Two	1	348	7.0%	36.2%
Three or more	2	202	4.0%	40.6%
Current Prison Custody Level				
Minimum	-1	2,085	41.5%	32.8%
Medium	0	2,678	53.3%	31.2%
Maximum or Disciplinary Segregation	2	257	5.1%	35.0%

*Significant at the .05 level or greater. ** Significant at the .10 level

Table 5. 2013 Releases Static Score with Return Rate

	Prison Releases	% of Total	% Returned to Prison
Baseline	5,092	100.0%	32.0%
0	2	0.0%	0.0%
1	31	0.6%	3.2%
2	32	0.6%	0.0%
3	123	2.4%	7.3%
4	159	3.1%	8.2%
5	305	6.0%	13.8%
6	394	7.7%	22.1%
7	624	12.2%	28.0%
8	781	15.3%	31.6%
9	1,063	20.8%	38.3%
10	883	17.2%	41.2%
11	695	13.6%	42.4%
Mean score: 8.2 pts.		Median score: 9.0 pts	
Pearson correlation = .222 Sig. = .000			

Table 6. 2013 Releases Dynamic Score with Return Rate

	Prison Releases	Percent of Total	% Returned to Prison
Baseline	5,088	100.0%	32.0%
-6	18	0.4%	5.6%
-5	31	0.6%	29.0%
-4	93	1.8%	28.0%
-3	682	13.4%	26.8%
-2	1,084	21.3%	28.4%
-1	1,093	21.5%	30.7%
0	888	17.5%	35.7%
1	502	9.9%	33.9%
2	327	6.4%	41.0%
3	156	3.1%	39.1%
4+	214	4.2%	43.5%
Mean score: -0.6 pts.		Median score: -1.0 pts	
Pearson correlation = .094 Sig. = .000			

Table 7. 2013 Releases Total Assessment Score with Return Rate

	Prison Releases	% of Total	% Returned to Prison
Baseline	5,092	100.0%	32.0%
-4	1	0.0%	0.0%
-3	2	0.0%	50.0%
-2	10	0.2%	0.0%
-1	31	0.6%	3.2%
0	48	0.9%	6.3%
1	99	1.9%	9.1%
2	160	3.1%	8.8%
3	200	3.9%	16.5%
4	291	5.7%	19.9%
5	375	7.4%	22.9%
6	551	10.8%	29.6%
7	640	12.6%	32.3%
8	706	13.9%	34.7%
9	644	12.6%	36.5%
10	542	10.6%	41.9%
11	339	6.7%	45.7%
12	181	3.6%	41.4%
13	115	2.3%	44.3%
14+	153	3.0%	49.0%
Mean: 7.5		Median: 8.0	
Pearson correlation = .212 Sig. = .000			

The current cut-off points for the risk also seem to be appropriate. As shown in Table 8, one can see a strong relationship between the scored risk levels and return to prison rates.

Table 8. Scored Risk Level and Return to Prison Rates

Risk Level	Points	Prison Releases	%	% Returned*
Low	5 and less	1,217	23.9%	16.8%
Moderate	6 – 11 pts.	3,422	67.3%	36.0%
High	12 and above pts.	449	8.8%	44.8%

*Significant at the .05 level.

Possible Changes to the Risk Instrument

Based on the above results, we attempted to make some modifications to the current risk instrument that would enhance its current level of association with return to prison rates . Specifically, the following adjustments were made.

Static Factors

1. Employment
Satisfactory Employment = 0 pts.
Else = 1pt.
2. Add New Factor called “Number of Prior Felonies” and score as follows:
Less than 2 prior felony convictions = 0 pts.
2 or more prior convictions = 2 pts.
3. Recode gender as follows:
Male = 0 pts.
Female = -1 pts.

Dynamic Factors

4. Current age:
Less than 23 years = 2 pts.
23 yrs. to 32 yrs. = 1 pt.
33 yrs. to 39 yrs. = 0 pts.
40 yrs. to 58 yrs. = -1 pts.
59 or more yrs. = -2 pts.
5. Current Custody level
Minimum or Medium Custody= 0 pts.
Max or Discip Segregation = 2 pts.
6. Remove # of Disciplinarys and substitute NDOC variable “offenses in custody” (OIC) and score as follows:
No = 0 pts.
Yes = 2 pts.

When these changes are made, there is no major improved statistical association between the new total score and the recidivism rates. But the revisions appear to provide a higher level of specification and performance for the low risk category. (Table 9 and 10). In other words, the modifications do a better job of specifying low, moderate and high risk prisoners. In particular, there is a higher proportion of inmates who qualify as low risk. This is achieved while maintaining the same recidivism rates that existed under the current system.

In summary, the current risk instrument is working as designed. There are some opportunities that would serve to improve the current system. The least obstructive changes would be to modify the prior employment, current age, current classification level, gender items.

Inserting the new factors of “prior felonies” and the NDOC’s definition of “offenses in custody” would enhance the accuracy of the overall risk assessment. The completion of a certified NDOC program should be retained but there must be an effort by the NDOC to ensure that moderate and high risk prisoners have priority for enrollment in such programs.

Table 9. Modified Risk Instrument Total Points and Recidivism Rates

Total Points	Percent Returned to Prison	Releases
-3	0.0%	1
-2	0.0%	3
-1	0.0%	14
0	3.7%	27
1	1.6%	64
2	8.2%	97
3	10.9%	129
4	8.0%	187
5	22.8%	237
6	26.0%	339
7	26.4%	413
8	29.5%	457
9	34.1%	575
10	36.2%	539
11	39.4%	578
12	42.4%	429
13	46.9%	303
14	50.0%	208
15	40.4%	94
16	58.5%	41
17	61.1%	18
18	25.0%	4

Table 10. Revised Risk Levels

Risk Level	Points	Prison Releases	New % Distribution*	New % Returned to Prison	Old % Distribution*	Old % Returned to Prison
Low	7 pts. and under	1,511	31.0%	19.2%	23.9%	16.8%
Moderate	8-13 pts	2,881	59.3%	37.4%	67.3%	36.0%
High	14 pts. and above	477	9.7%	45.7%	8.8%	44.8%

*Significant at the .05 level.

Appendix A

NEVADA PAROLE RISK ASSESSMENT

Name	ID Number	Location	Date
Static Risk Factors	Pts	Dynamic Risk Factors	Pts
1. Age at First Arrest (juvenile or adult)		7. Current Age	
24 years or older	0	41 and above	-1
20-23 years	1	31 - 40	0
19 years or younger	2	21 - 30	1
2. Prior Prob/Parole Revocation (juv. or adult)		Under 21	2
No parole or probation revocations	0	8. Active Gang Membership	
One or more (including gross misdemeanors)	2	No (none or suspect)	0
3. Employment History (prior to arrest)		Yes (member or associate)	2
Satisfactory full-time employment >1 year	0	9. DOC certified edu/voc/treat program	
Employed less than full-time/full-time < 1 year	1	Yes (during current term of incarceration)	-1
Unsatisfact. employment/unemployed /unemployable	2	No	0
4. Offense for Current or Prior Convictions		10. Disciplinary Conduct - Past Year	
All others	0	No Misconduct of any Kind	-1
Any Property Offense, Robbery, Forgery, etc.	2	One Misconduct of any Kind	0
5. History of Drug/Alcohol Abuse		Two Misconducts of any Kind	1
None	0	Three or More Misconducts of any Kind	2
Some use, no severe disruption of functioning	1	11. Current Custody Level	
Frequent abuse, serious disruption of functioning	2	Minimum	-1
6. Gender		Medium	0
Male	1	Maximum or Disciplinary Segregation	2
Female	0	Total Dynamic Risk Score	
Total Static Risk Score		Total Score (Static+Dynamic Score)	

_____ Low Risk = 0-5 points
_____ Medium Risk = 6-11 points
_____ High Risk = 12+ points or 8 points on Dynamic factors

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 would cause a deviation from the guideline recommendation.