

Recidivism Rates for Nebraska Adult Probationers: 2006 to 2012¹

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Statement of the Problem.

Purpose of the Analysis. Accurate estimates of recidivism rates among ex-offenders discharged from probation serve multiple administrative purposes, to: 1) provide data for program evaluation studies of specific community corrections services, 2) provide data for cost benefit analyses of community corrections efforts, 3) track the success of community corrections over time, 4) allow evidence based policy formulation, and 5) test applied research hypotheses in the effort to improve both rehabilitation outcomes and public safety. The current report describes the work and results of the University of Nebraska/Lincoln -- Law and Psychology Program (LPP) to produce accurate recidivism data for Nebraska Probation.

Analysis Goals. The primary objective of this work was to calculate the rates of recidivism for adult probationers discharged during the time interval beginning on January 1, 2006 and ending on January 1, 2012, and to do so as accurately as the available data allowed. A secondary objective was to disaggregate recidivism ratings according to offender risk level using the Level of Service Case Management (LS/CMI) risk tool. Nebraska probation officers administer the LS/CMI to all felony clients and to those misdemeanor clients who show (an elevated) more than minimal risk of reoffending. This report separates recidivism rates by each year during the 2006-2012 interval and by level of LS/CMI Risk.²

Definition of Recidivism. The research literature on offender recidivism offers a diverse set of recidivism measures that vary based upon legal action (arrest vs. conviction), seriousness of crime (misdemeanor vs. felony), type of violation (crime against property vs. crime against persons) and harmfulness of outcomes (violent crimes vs. non-violent crimes). Although the database offers the opportunity to examine recidivism using a variety of definitions commonly found in the literature, the current work adopted the Nebraska Supreme Court's definition of recidivism. It reads "As applied to adults, recidivism shall mean a final conviction of a Class I or II misdemeanor, a Class IV felony or above, or a Class W misdemeanor based on a violation of state law or an ordinance of any city or village enacted in conformance with state law, within 3

¹ The University of Nebraska/Law and Psychology Program (LPP) could not have conducted these analyses without the time and effort that Tyson Jenkins, Office of Probation Administration Alternatives to Incarceration Specialist, generously contributed to this project. This work resulted from collaboration with Mr. Jenkins on a great deal of the data collection. In addition, LPP wishes to thank Deputy Administrators Deb Minardi and Gene Cotter for their support in this work. Finally, this analysis would not have been possible without the assistance of a team of graduate students in the UNL Psychology Doctoral Program (Rosa Delgado, Colin Holloway, Alisha Caldwell and Trace Vardsveen).

² As noted in the definition of recidivism paragraph in this report, recidivism in this data analysis was calculated using a three-year window post discharge for each client. As a result, data included probation offenders discharged on or before 2012 and after 2006.

years of being successfully released.” (Nebraska Supreme Court Administrative Operations, Article 10, §1-1001).

Analysis Strategy

NPACS Database. The Nebraska Probation Application for Community Safety (NPACS) database contains all the records of the case management system into which probation officers enter information for all offenders that they serve. NPACS organizes records according to case and contains, among other data, dates and types of arrests, dates and types of convictions, offender demographics, offender risk scores, services provided, violations, sanctions, and probation outcomes (type of discharge). The first step was extracting a recidivism flat data file from NPACS, one organized by individual offender rather than by case. The file included demographic information (e.g., offender name, offender probation number, offender age, sex, race and ethnicity), LS/CMI scores immediately after entering probation, LS/CMI scores immediately prior to discharge, discharge date, type of discharge³ and a record of each offense post discharge (including date of offense, description of offense and misdemeanor or felony status of the offense). The Nebraska Office of probation prepared this NPACS flat file with the above information organized by probationer for UNL to use for recidivism calculations.

JUSTICE Database. The Nebraska JUSTICE database is the repository for Nebraska State Trial Court's case information. Administrative staff in each jurisdiction enter and update these data on a case-by-case procedure. Justice includes offender demographic information (e.g., offender name, offender identification number, offender age, sex, race and ethnicity), case details including date of adjudication, court costs, and a register of court actions. JUSTICE is also organized according to case with at least one entry for each offender, sometimes with multiple entries when there are multiple offenses.

Combined Recidivism Database. The major obstacle in analyzing recidivism for Nebraska Probationers is the absence of a shared identification number or code to yoke together offender data in NPACS and JUSTICE. However, both databases contain pieces of information that together allow programmers to calculate a matched identification code within known limits of confidence. The variables available to generate a matching code include offender name (which unfortunately can vary from case to case and entry to entry), offender date of birth, and various demographic factors (age, sex, race, ethnicity and so forth). The complexity of linking the information between these two databases is substantial considering that NPACS includes over 60,000 offenders during the interval of interest (2006 – 2012) and that there are over 4 million records in JUSTICE. Nebraska Administrative Office of Probation (NAOP) contracted with EKS&H Consulting to write a match program that calculated an identification code linking offender data in the two databases. The resulting combined database included only those offenders whose match in the two databases achieved a confidence equal to or greater than 99 percent certainty. NAOP and EKS&H Consulting organized the resulting matched data into a

³ This report does not disaggregate recidivism rates by type of charge, number of charges, or type of discharge. Additional analyses to explore these relationships were underway at the time that LPP was writing this report.

flat file organized by individual offender using the identification-linked code so that there was exactly one record for each offender, complete with all the needed information.

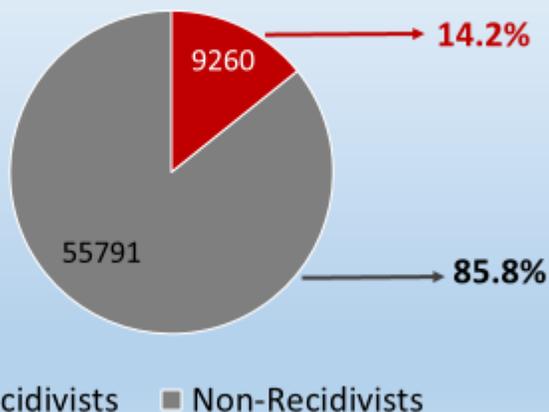
Every offender in NPACS has at least one case entry in JUSTICE, the one for the offense and case that resulted in the probation sentence. Many offenders will have multiple offenses in JUSTICE some during the three-year interval of interest and some after the interval. LPP analyzed recidivism based only on the offenses that occurred after discharge but not after the three-year interval to satisfy the elements of the Nebraska Supreme Court's definition of recidivism. The **combined recidivism database** contained 65,058 cases with matched NPACS data and JUSTICE data post discharge for the full three-year window. There was no identifying information in the new COMBINED file. LPP analyzed these data for the administrative purposes of NAOP and not for the purpose of research or general dissemination. This report to NAOP provides the results of the LPP analyses.

LPP combined fields of information in the recidivism file using both Excel and SPSS programs to calculate additional variables to use in the recidivism calculations. First, LPP calculated a **Recidivism Score** for each of the 65,058 offenders: "0" if there were no new convictions in the three-year post discharge window, "0" if there were convictions in the 3-year window but none reached the redline -- "Class I or II misdemeanor, a Class IV felony or above, or a Class W misdemeanor" as per the Nebraska Supreme Court's definition of recidivism, and "1" if at least one of the convictions reached or went beyond the redline. LPP calculated a **Risk Level** based on the LS/CMI scores (the higher the score the more risk) for each probationer by adopting the cutoffs that Nebraska Probation uses to classify offenders into five risk levels (Very Low, Low, Medium, High and Very High). Next, LPP calculated a **Year Tag** based upon the year that probation discharged each offender. Finally, LPP calculated a **Pretest Risk Score** based upon the LS/CMI total risk score from the first testing at the beginning of probation, [range: 0 to 42, $N=10058$, $Mean(M) = 15.23$, $Median(Md) = 15.00$, $Standard\ Deviation(S.D.) = 7.726$] and a **Posttest Risk Score** from the LS/CMI testing just prior to discharge if it was available in the file. ($N=5334$, $M= 12.87$, $Md = 12.00$, $S.D. = 6.797$).

Results.

Sample Characteristics and Overall Recidivism. The combined database contained conviction data that LPP used to calculate recidivism scores (0 no recidivating convictions vs. 1 at least one recidivating conviction) for 65,058 probationers. Of these, 51,563 were Caucasian European (79.8%), 4911 were African American (7.6%), 699 were Native American (1.1%), 390 were Asian or Pacific Islanders (.6%) and 7036 were classified as other (10.9%). The file did not contain race information on 459 probationers (.7%). With regard to ethnicity, 6992 (10.7%) were Hispanic. The file included 46,131 men (70.9%) and 18,927 women (29.1%). The average age of the probationers at the time of the arrest was 40 years and 3 months ($M = 40.29$, $Md = 36.85$, $S.D. = 11.85$). As depicted in Figure 1, 14.24 percent of discharged probationers (9266) had been convicted of at least 1 redline offense ("Class I or II misdemeanor, a Class IV felony or above, or a Class W misdemeanor") during the three-year window following discharge ($M = .1424$, $Md = 0$, $S.D. = .3495$).

Figure 1: Number of Probationers Discharged from 2006 until 2012



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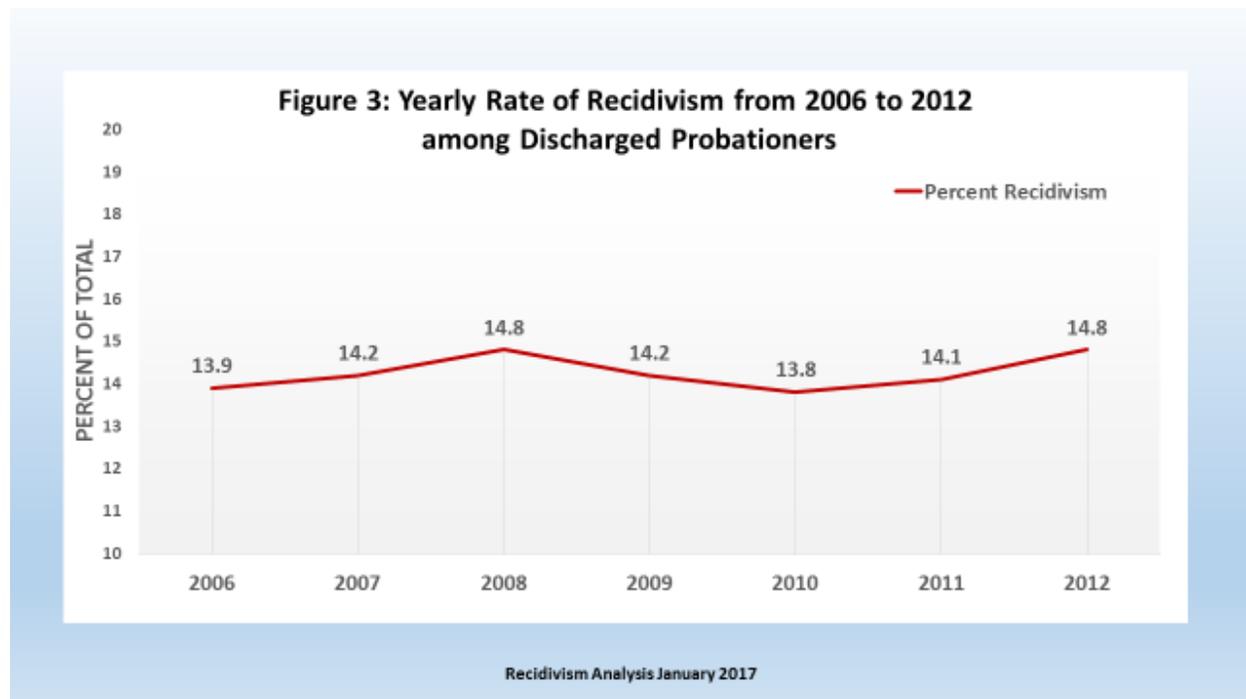
Yearly Recidivism Rate. The first step in calculating recidivism across the years in the interval of interest was to list number of probationers in the combined recidivism file for each of the discharge years (2006 – 2012). (Note: Recidivism data using a three-year window was not available for those discharged after 2012. However, these additional data will be included in future analyses when available. Data from 2013 will be available shortly.)

Figure 2: Recidivism for 2006 to 2012 Discharged Probationers



Figure 2 shows the number of probationers discharged each year and the number who were convicted of a redline offense (a new offense under the Court’s recidivism definition) during the three-year window following the offender’s discharge. For example, while the figure shows that 1363 of the 9775 discharged probationers in 2006 committed and were convicted of a redline (recidivating) offense, that offense (or those offenses) could have occurred anytime during the three-year window following discharge date for each offender.

Figure 3 displays the same information but in percent units based upon the total number of probationers discharged each year. The redline displays a stable relationship across time with a total variation of less than 1%. The slight increases and decreases in the line are due to random variation and not to any observed systematic pattern. In summary, the variability in this curve is minimal.⁴



Recidivism Disaggregated by Risk Levels. LPP calculated the recidivism rates at each of the Pretest LS/CMI Risk levels for all 10,058 probationers in the data set for whom these scores were available. LS/CMI data were available for all offenders tried in district court and those tried in county court with a limited high risk charge (e.g., sex offenses, domestic violence, third offense DUI and above, and those with high Nebraska Adult Probation Screener scores).

⁴ A Logistic Regression analysis using these years of independent observations as a predictor and recidivism as the criterion tested whether there was any significant differences across the interval. LPP found that the differences were not significant, $Wald(6) = 6.745, \chi^2(6) = 6.717, p = .345$. Thus, the fluctuations from year to year in recidivism rates reflect nothing more than random error due to chance.

Figure 4 displays the results of these analyses with risk level in the first column, number of recidivating offenders in the second column and the recidivism rate at each risk level in the third column. As described above, Nebraska probation officers administer the LS/CMI to all felony clients but only to those misdemeanor clients who show (an elevated) more than minimal risk of reoffending. Consequently, the clients with LS/CMI risk data are, on average, higher risk offenders than those without that data. The fact that the overall recidivism rate during the three-year window for the probationers with LS/CMI pretest scores was 20.1%, higher than for the full sample is not surprising because officers do not administer this risk evaluation tool to lower risk offenders. Figure 4 shows that the recidivism rate increases from very low risk through high risk and then levels off and changes very little between high risk to very high risk. The differences between all Risk Levels with regard to recidivism are significantly different from each other ($p < .001$) except for high and very high risk levels which are not significantly different from each other ($p = .17$).⁵

Figure 4: Nebraska Probation Recidivism by Risk Level on the LS/CMI (2006 – 2012 Discharges)

Risk Level (LS/CMI)	Number of Clients	Recidivism Rate
Very Low	765	7.1%
Low	2188	12.8%
Medium	4243	19.9%
High	2434	29.0%
Very High	428	32.2%
Total	10,058	20.1%

All Risk Levels are significantly different from each other ($p < .001$) in recidivism rate except High and Very High are not different from each other ($p = .17$)

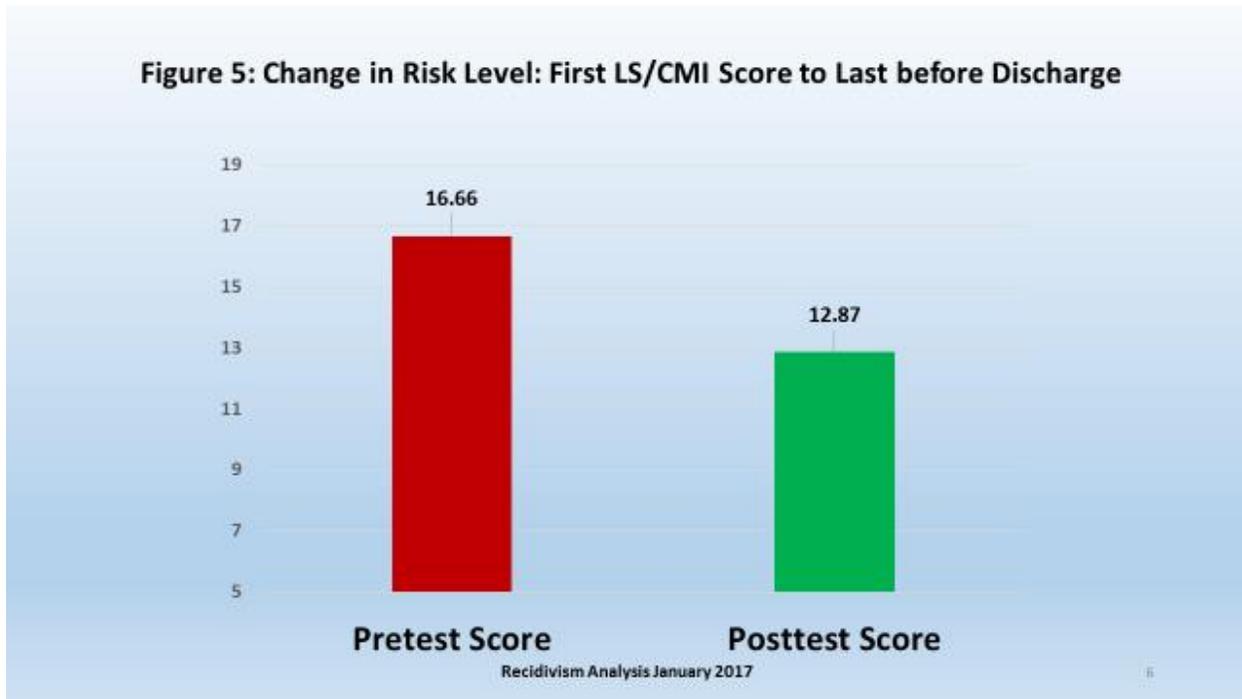
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Change in LS/CMI Risk Score from Pretest to Posttest. LPP tested the differences between LS/CMI total risk scores (the higher the score the more risk) from the beginning of probation to before discharge for the 5330 offenders for whom both LS/CMI administrations were available in the combined recidivism database. The difference between the pretest mean ($M = 16.66$) and the posttest mean ($M = 12.87$) showed a significant drop of 3.795 in total risk score.

⁵ A logistic regression analysis using the five risk levels as a predictor and recidivism as the criterion tested whether there was any significant differences in recidivism across risk. Overall the differences were significant, $Wald(4) = 291.956$, $\chi^2(6) = 327.360$, $p < .001$, $Nagelkerke R^2 = .051$. Follow-up logistic regressions comparing each group to each other showed all differences were significant at the .001 level except the one between high risk and very high risk, which was not significant, $Wald(1) = 1.880$, OR (odds ratio) = 1.167, $p = .170$.

Thus, probationers showed less risk at the end of probation than at its beginning.⁶ Figure 5 displays the result of the analysis.



Limitations

While LPP is confident of the findings in these analyses, these data like those that make up all empirical investigations have some limitations. First, the data in NPACS and JUSTICE do not share a unique probationer identifier, so that EKS&H Consulting calculated one based upon shared offender characteristics. The resulting recidivism analyses included only those probationers for whom the confidence of the match was equal to or greater than 99%. Thus, we can expect that a small number (less than 1% of matches) might have been false positives (positive matches that were in fact not matches) because the shared identification code may have produced an incorrect match. However, there is no reason to believe that any mismatching is systematic; therefore, the mean of the errors in all probability was equal to 0, indicating that errors in the analysis cancelled each other out in the recidivism calculations.

Second, probation and court staff enter data into the NPACS and JUSTICE databases, respectively. There is likely some error in data input and there are likely some cases missing in JUSTICE. However, to the extent that probation and court staff entered the data into the two databases correctly, LPP is confident of the recidivism calculations.

⁶ A repeated measures or within group correlated t-test resulted in a significant t-value, $t_{(5329)}=41.519$, $p < .001$, with a moderate to large effect size, $r = .4889$. Thus, the drop in risk was both statistically significant and practically meaningful.

Third and finally, the recidivism numbers do not reflect convictions in other states or in federal court and as such only reflect recidivism in the Nebraska system.

These limitations notwithstanding, LPP is confident that the recidivism results presented here are valid indicators of Nebraska Probationer recidivism rates calculated according to the Nebraska Supreme Court's definition of recidivism.