

## SSAS Evaluation Report (June 2018)

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### **Overview and Evaluation Logic**

The Nebraska Administrative Office of Probation (NAOP) commissioned the Law/Psychology Program at the University of Nebraska/Lincoln (LPUNL) to conduct a process and outcome evaluation of the Specialized Substance Abuse Supervision (SSAS) program that NAOP administers for high risk, substance abusing clients. This is the final report of the work that LPUNL completed to examine the process and outcomes of SSAS. The report provides a brief overview of SSAS, the SSAS goals, the logic of the analysis and a summary of the outcomes of the analysis LPUNL completed to examine program effectiveness.

### **Description of the SSAS Program.**

Specialized Substance Abuse Supervision (SSAS) is a Nebraska Probation service that the NAOP initiated in order to decrease the overcrowded Nebraska prison population by offering specialized programming to offenders with substance abuse disorders. Individuals with high assessed risk to recidivate, who demonstrate antisocial behavioral tendencies and who have committed a felony or third offense of driving while under the influence (DUI) were eligible for SSAS programming. Highly skilled SSAS officers provide evidence based services in an attempt to create positive behavior change that will lead to successful completion of probation, lowered recidivism and ultimately increased community safety. SSAS clients are individuals who, if not for SSAS, would likely have served prison sentences for the criminal activity that they committed.

SSAS programming consists of intensive supervision and substance abuse treatment. The program has as its short term goals: lower levels of relapse, successful completion of treatment, education and employability programming, all of which ultimately lead to successful completion of probation. The longer term goals include successful reintegration into the community and lowered levels of recidivism. The program model aims to achieve these outcomes through substance abuse treatment (including random drug tests), cognitive behavioral programming, use of reporting centers and perhaps above all else, quality case management and intensive supervision.

### **Program Evaluation of SSAS.**

*Experimental vs. Quasi-experimental analysis.* Evidence Based Practices (EBP) are those that have undergone experimental or quasi-experimental outcome analysis. The ideal evidence based study uses a randomized control trial in which researchers randomly assign eligible clients to either undergo an innovative treatment being tested, or withhold the experimental treatment, and instead offer control clients “business as usual” programming. In the case of SSAS that would require the evaluator to select a representative sample of high risk, substance abusing

offenders and randomly assign half to SSAS treatment and the other half to prison. For obvious legal, moral and ethical reasons, testing the SSAS program using a randomized control trial is not a possibility and is very unlikely to be a possibility in the future.

A fall back approach to EBP is to apply a quasi-experimental analysis to test the effects of programs under real world conditions. Using a rigorous quasi-experimental alternative to randomized control trials is an established and accepted alternative in the program evaluation literature. Quasi-experimental approaches examine existing groups of participants who have and have not engaged in the program of interest instead of constructing new groups to assign to treatment and control conditions. The critical aspect of the quasi-experiment is to make the comparison groups as similar as possible in all ways except for the presence and absence of the treatment. The stronger the similarity and the fewer are all other differences, the greater is the ability to infer that the agent of change was the intervention. In other words, experiments use random assignment to control for extraneous differences between comparison groups, while quasi-experiments try to mimic randomization in order to rule out third variable explanations and strengthen the inference that the program caused the observed differences between the treatment and comparison groups.

*Process measures, outcome measures and comparison groups.* Given the goals and objectives of SSAS, LPUNL identified 2 process measures (violations and sanctions) and 2 outcome measures (completion of probation and recidivism) to use to assess SSAS participants and control offenders who did not participate in SSAS. We expected SSAS participants to show a higher number of violations and sanctions because their probation officers subject them to intensified supervision with regular and randomized drug tests and careful guidance of their daily activities. Furthermore, as a result of the intensified supervision and the offender's participation in a number of evidence based programs to address their substance and other criminogenic needs, we expected the SSAS participants to finish probation with a lower rate of revocation than the control sample. Finally, we expected that as compared to offenders who had not participated in SSAS, SSAS participants would show a lower level of recidivism after discharge.

There is no ideal comparison group for all of these process and outcome measures. To examine differences in violations, sanctions and success in probation, the best comparison group consists of high risk probationers with substance abuse, but who do not participate in SSAS. However, these individuals will still participate in NAOP's other evidence based services but without the intense and specialized supervision, so that their outcomes and especially recidivism rates might approach those of the SASS clients. The best comparison group for the recidivism rates would be individuals who had served time in prison for substance related offenses but who did not undergo the EBP programming and intensified supervision that makes up NAOP programming. Once again, to qualify as a rigorous quasi-experiment, the researcher could not simply identify a convenient sample of offenders, but would have to match the offenders to the SSAS sample so that the two groups are equivalent on all relevant factors other than participation in SSAS supervision and programming. To select equivalent treatment and comparison groups requires that the researcher start with a large sample of offenders with demographic data, charge information, risk measures, violation records, sanction records and outcome measures. NAOP

provided LPUNL with a data set of high risk, substance abusing probationers, some of whom were SSAS participants and some who were not SSAS participants. (Unfortunately, a sample of comparable prison inmates was not available for analysis.) The first task was to select samples of equivalent participants in the treatment and comparison groups.

*Propensity Matching.* The current favored method of matching in quasi-experimental studies entails generating a propensity score for each individual in both samples. The propensity score for each individual is the probability that the participant would have ended up in the treatment group, given his or her background information (e.g., demographics, criminal history and criminogenic risk). Notably, in a randomized control trial the probability of each eligible person ending up in the treatment group (and not the control group) is equal. To generate propensity scores in a quasi-experiment, the researcher conducts logistic regression analyses to predict which group the participant would have ended up in (treatment or comparison, that is, SSAS or not SSAS) based upon the relevant background information. The logistic regression estimates or models the selection process, striving to select a treatment group and a comparison group, which represents what would have happened had the researcher actually been able to randomly assign individuals to a treatment and control condition. Thus, propensity analysis is an attempt to construct equivalent groups without using a randomized control trial. After generating the propensity scores, the program retains pairs of people, one from each group such that the probability of each pair member to have been assigned to the treatment group is the same. At the end of the process, there should be no differences on average between the two groups on any of the selection factors (demographics, crime background, or risk). Thus, the only difference between the groups on relevant factors is that one received the treatment (SSAS) and the other did not (non-SSAS). This strengthens the ability of the researcher to infer causality and conclude that any of the differences on process or outcome factors was due to the presence of the treatment (SSAS intensified supervision and evidence based services).

## **Methodology and Results**

### **Original Sample.**

*Overview of the full sample.* NAOP provided LPUNL with a sample of 5029 high risk probationers, all of whom were eligible for SSAS and whose probation start date ranged from January 10, 2010 until July 21, 2016. Of these, 677 (13.5%) were SSAS referrals and 4352 (86.5%) were not. All probationers were either high risk (3972, 79%) or very high risk (1057, 21%) to reoffend on the LS/CMI. The average score on the LS/CMI alcohol and drug factor was 5.31 (Median = 6.00). The most severe crime committed for 92.5% of the sample was either a felony 3 or felony 4. (Note: we measured crime severity on a 4 point scale.) With regard to their probation status, 3294 (65%) had finished probation and 1735 (34.5%) were still active in probation at the time of data collection.

*Comparison of the samples before propensity matching.* Table 1 displays the demographic, LS/CMI risk scores and crime background for the SSAS and non-SSAS clients before propensity matching. It shows several selection factors differentiated the groups with statistically significant differences (*i.e., those shown in red*). First, SSAS probationers were

slightly but significantly older than the non-SSAS clients. However, both groups were largely male with no significant gender differences. Thirdly, there were significantly more minorities in the SSAS than non-SSAS groups. Fourth, the SSAS probationers were at a significantly higher risk of recidivism than the non-SSAS clients but more importantly, a Multivariate Analysis of Variance produced a significant difference between the SSAS and Non-SSAS groups on the LS/CMI scales as taken all together<sup>1</sup>. More specifically the SSAS clients scored significantly higher on drug and alcohol problems, criminal history, and education and employment domains of the LS/CMI than did the comparison non-SSAS probationers. Furthermore, the non-SSAS group scored higher on risk due to pro-criminal attitudes. In addition, the SSAS group was slightly but significantly higher in overall risk than was the non-SSAS group. Fifth, significantly more of the non-SSAS clients had committed a felony 3 or felony 4 crime and finally, a significantly higher percentage of the clients in the SSAS group were in probation at the time of the data pull. In summary, before matching, the SSAS probationers were different enough from the non-SSAS probationers to render valid conclusions about the cause of any significant differences on violations, sanctions, successful outcomes or recidivism rates very difficult to reach, so that any causal inferences about the SSAS program effectiveness with the unmatched participants would be spurious.

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<sup>1</sup>  $F(8,5020) = 24.99, p = .000, \eta^2 = .038$ .

Table 1: Initial differences on demographic factors, risk and criminal background between SSAS and non-SSAS probationers

Factor	SSAS Probationer Mean (S.D.) or %	Non-SSAS Probationer Mean (S.D.) or %	$t$ or $\chi^2$	Significance Level ( $\eta^2$ or $\phi$ effect size)
<i>Age (years)</i>	32.90	31.68	$t_{(1)} = 2.72$	.007 (.001)
Gender (% male)	73	74	$\chi^2_{(1)} = 3.82$	.762 (.004)
<i>Minority Status (% minority)</i>	32	28	$\chi^2_{(1)} = .09$	.049 (.028)
<i>LS/CMI (Total Risk Score)</i>	26.70	25.11	$t_{(1)} = 2.67$	.008 (.001)
<i>LS/CMI (Alcohol and Drugs)</i>	6.19 (1.27)	5.17 (2.00)	$t_{(1)} = 12.93$	.000 (.032)
LS/CMI (Antisocial)	2.19 (0.99)	2.24 (1.07)	$t_{(1)} = 1.36$	.174 (.000)
<i>LS/CMI (Criminal History)</i>	4.74 (1.54)	4.56 (1.57)	$t_{(1)} = 2.72$	.007 (.001)
LS/CMI (Companions)	3.04 (1.08)	3.09 (1.15)	$t_{(1)} = 1.08$	.281 (.000)
<i>LS/CMI (Educ./Employment)</i>	3.88 (2.32)	4.24 (2.36)	$t_{(1)} = 3.69$	.000 (.003)
LS/CMI (Family/Marital)	2.24 (1.11)	2.24 (1.13)	$t_{(1)} = 0.05$	.954 (.000)
LS/CMI (Leisure/Recreation)	1.65 (0.57)	1.65 (0.60)	$t_{(1)} = 0.09$	.928 (.000)
<i>LS/CMI (Pro-criminal Attitudes)</i>	1.76 (1.12)	1.90 (1.26)	$t_{(1)} = 2.75$	.006 (.002)
<i>Highest Charge (% felony 3 or 4)</i>	3.30 (0.72)	3.50 (0.66)	$t_{(1)} = 7.13$	.000 (.011)
<i>Still in Probation (% ongoing)</i>	46	33	$\chi^2_{(1)} = 41.85$	.000 (.091)

### Propensity Matched Samples.

*Process measures: violations and sanctions.* LPUNL collected and counted violation and sanction data from the 5029 probationers in the data file, thereby calculating two new variables, the total number of violations and the total number of sanctions. We reasoned that if the SSAS officers were engaged in more intensive supervision, then their clients, as compared to the non-SSAS clients, would show higher levels of each type of process measure. That is, the SSAS clients because of the close supervision would have a greater number of violations and sanctions during their probation period. To test this, LPUNL first conducted a propensity match analysis to predict group membership (SSAS vs. non-SSAS) from all the factors in Table 1, thereby controlling for demographics, risk level, and prior criminal conduct. The propensity analysis calculates the likelihood of each individual landing in SSAS or the non-SSAS group and then selects pairs of clients from each group share an equal probability of winding up in the treatment group (i.e., the propensity score). After the match is completed, the propensity average for each group will be similar, if not exactly the same. Because the database contained scores only for the highest crime committed, the propensity analysis started with those 4764 individuals and proceeded to construct two matched and equivalent groups of SSAS and non-SSAS clients. (Note: we assumed that those without violations or sanctions had not committed any violations.)

Table 2 displays the demographic, LS/CMI risk scores and crime background for the SSAS and non-SSAS clients after this first propensity match.

Table 2: Differences on demographic factors, risk and criminal background, violations and sanctions between SSAS and non-SSAS probationers after propensity matching

Factor	SSAS Probationer Mean (S.D.) or %	Non-SSAS Probationer Mean (S.D.) or %	$t$ or $\chi^2$	Significance Level (eta <sup>2</sup> or phi effect size)
Age (years)	33.08 (10.1)	33.61 (11.29)	$t_{(1)} = .86$	.387 (.001)
Gender (% male)	73	74	$\chi^2_{(1)} = .20$	.654 (.013)
Minority Status (% minority)	33	28	$\chi^2_{(1)} = 2.56$	.110 (.045)
LS/CMI (Total Risk Score)	25.66 (4.63)	25.52 (5.38)	$t_{(1)} = .51$	.612 (.000)
LS/CMI (Alcohol and Drugs)	6.19 (1.28)	6.19 (1.48)	$t_{(1)} = .08$	.935 (.000)
LS/CMI (Antisocial)	2.18 (0.98)	2.13 (1.07)	$t_{(1)} = .80$	.424 (.001)
LS/CMI (Criminal History)	4.73 (1.55)	4.67 (1.53)	$t_{(1)} = .61$	.545 (.000)
LS/CMI (Companions)	3.03 (1.08)	3.00 (1.17)	$t_{(1)} = .43$	.669 (.000)
LS/CMI (Educ./Employment)	3.90 (2.33)	3.99 (2.40)	$t_{(1)} = .71$	.480 (.000)
LS/CMI (Family/Marital)	2.25 (1.12)	2.21 (1.11)	$t_{(1)} = .56$	.567 (.000)
LS/CMI (Leisure/Recreation)	1.66 (0.56)	1.63 (0.62)	$t_{(1)} = .76$	.445 (.000)
LS/CMI (Pro-criminal Attitudes)	1.75 (1.12)	1.69 (1.23)	$t_{(1)} = .87$	.387 (.001)
Highest Charge (% felony 3 or 4)	3.31 (0.72)	3.31 (0.72)	$t_{(1)} = .62$	.844 (.000)
Still in Probation (% ongoing)	55	55	$\chi^2_{(1)} = .05$	.820 (.006)
<i>Total Number of Violations</i>	<i>8.23 (5.74)</i>	<i>7.39 (5.80)</i>	<i><math>t_{(1)} = 2.55</math></i>	<i>.011 (.005)</i>
<i>Total Number of Sanctions</i>	<i>16.29 (8.17)</i>	<i>14.04 (6.91)</i>	<i><math>t_{(1)} = 5.24</math></i>	<i>.000 (.022)</i>

*Comparison of the samples after propensity matching for process factors.* Table 2 displays the matching variables and process variables (i.e., violations and sanctions) for SSAS and non-SSAS clients after propensity matching. The new sample of SSAS ( $n = 623$ ) and non-SSAS clients ( $n = 623$ ) was well balanced<sup>2</sup>, with each group's mean propensity score equal to .19<sup>3</sup> Table 2 shows, the matching was completely successful as evidenced by the fact that the two groups are not significantly different on any of the matching factors that we used in the propensity analysis. Most importantly, the SSAS probationers showed no differences on any of the LS/CMI risk factors after matching. A Multivariate Analysis of Variance produced no significant differences between the SSAS and Non-SSAS groups on the LS/CMI scales taking all domains together<sup>4</sup> or considering them individually. In addition, the two groups displayed almost

<sup>2</sup>  $\chi^2_{(15)} = 11.90$ ,  $p = .686$  – a non-significant lack of balance test.

<sup>3</sup>  $t_{(1)} = .23$ ,  $p = .818$ , eta squared = .000.

<sup>4</sup>  $F(8,1237) = .334$ ,  $p = .953$ , eta squared = .000.

identical levels of overall risk. Thus, Table 2 demonstrates post-match groups equivalency, which strengthens causal inferences about the effectiveness of process differences between the SSAS and non-SSAS matched groups. In fact, as shown in Table 2 (in red) SSAS clients showed significantly more violations and significantly more sanctions than did the non-SSAS clients and these differences are not due to demographic, criminogenic risk or charge differences between the two groups. Therefore, the data confirmed the first process expectation, that probation officers subject SSAS clients to intensified supervision which results in a greater number of violations and resulting sanctions.

*Probation Outcomes.* To test whether the intensified supervision and increased services produced better outcomes for SSAS clients, LPUNL constructed a slightly modified database, which included only those clients who had finished probation that is, those who were no longer actively in probation for the index offense that they had committed (3294 of the original 5029 individuals). We dropped an additional 260 individuals for whom there was no data for the highest criminal charge or for whom probation outcome data was unavailable. Thus, the final pre-matched sample included 3034 (60%) of the original 5029 clients. LPUNL conducted a second propensity match, again predicting group membership (SSAS vs. non-SSAS) from all the factors in Table 1, once more controlling for demographic factors, risk level, and prior criminal conduct.

*Comparison of the samples after propensity matching for probation outcome.* The new matched sample of SSAS ( $n = 334$ ) and non-SSAS clients ( $n = 334$ ) who were no longer in probation was well balanced<sup>5</sup>, with each group's mean propensity score similar and not significantly different (SSAS = .19 and non-SSAS = .18)<sup>6</sup> Probation outcomes for those in the sample included 379 (57%) successfully completing probation, 79 (12%) unsuccessfully completing probation and 210 (31%) resulting in a revocation. Broken down by group, 215 (65%) SSAS clients successfully completed, 34 (10%) completed unsuccessfully, and 85 (25%) SSAS clients were revoked. For non-SSAS clients, 164 (49%) were successful completers, 45 (14%) were unsuccessful completers and 125 (37%) were revoked. This overall relationship showing that SSAS clients were more likely to successfully complete probation than non-SSAS clients was statistically significant<sup>7</sup>.

Table 3, which displays probation outcomes for SSAS and non-SSAS clients after propensity matching, shows the matching was again completely successful as evidenced by the fact that the two groups were not significantly different on any of the matching factors. Most importantly, the SSAS probationers showed no differences on any of the LS/CMI risk factors after matching, taking all domains together<sup>8</sup> or considering them individually. In addition, the two groups displayed almost identical levels of risk. Thus, Table 3 demonstrates post-match groups equivalency, which strengthens causal inferences about the effectiveness of probation outcome analysis between the SSAS and non-SSAS matched groups. In fact, as shown in Table 3

<sup>5</sup>  $\chi^2_{(14)} = 5.93, p = .968$  – a non-significant lack of balance test.

<sup>6</sup>  $t_{(1)} = .27, p = .790, \eta^2 = .000$ .

<sup>7</sup>  $\chi^2_{(2)} = 16.01, p < .001, \phi = .16$

<sup>8</sup>  $F(8,1237) = .334, p = .953, \eta^2 = .000$ .

(in red) SSAS clients were significantly more likely to finish probation without a revocation than were non-SSAS clients. (Note: Table 1 collapses across successful and unsuccessful completions and compares them against revocation.) Therefore, the data confirmed the outcome expectation, that SSAS clients finish probation at a higher rate than non-SSAS clients.

Table 3: Demographics, risk, criminal background, and probation outcomes between SSAS and non-SSAS probationers after propensity matching

Factor	SSAS Probationer Mean (S.D.) or %	Non-SSAS Probationer Mean (S.D.) or %	$t$ or $\chi^2$	Significance Level (eta <sup>2</sup> or phi effect size)
Age (years)	32.62 (10.34)	31.57 (10.79)	$t_{(1)} = 1.29$	.197 (.002)
Gender (% male)	71	72	$\chi^2_{(1)} = .03$	.864 (.007)
Minority Status (% minority)	34	37	$\chi^2_{(1)} = .53$	.466 (.028)
LS/CMI (Total Risk Score)	25.14 (4.78)	24.81 (4.75)	$t_{(1)} = .88$	.381 (.001)
LS/CMI (Alcohol and Drugs)	6.23 (1.33)	6.10 (1.64)	$t_{(1)} = 1.09$	.277 (.002)
LS/CMI (Antisocial)	2.11 (.97)	2.11 (1.05)	$t_{(1)} = .03$	.969 (.000)
LS/CMI (Criminal History)	4.55 (1.62)	4.41 (1.48)	$t_{(1)} = 1.12$	.261 (.002)
LS/CMI (Companions)	2.85 (1.11)	2.80 (1.19)	$t_{(1)} = .54$	.591 (.000)
LS/CMI (Educ./Employment)	3.72 (2.35)	3.77 (2.37)	$t_{(1)} = .28$	.781 (.000)
LS/CMI (Family/Marital)	2.24 (1.20)	2.18 (1.17)	$t_{(1)} = .62$	.535 (.001)
LS/CMI (Leisure/Recreation)	1.67 (.55)	1.68 (0.61)	$t_{(1)} = .13$	.895 (.000)
LS/CMI (Pro-criminal Attitudes)	1.78 (1.11)	1.76 (1.25)	$t_{(1)} = .13$	.896 (.000)
Highest Charge (felony 3 or 4)	3.26 (0.69)	3.27 (0.66)	$t_{(1)} = .11$	.909 (.000)
<i>Finished Prob. Not revoked (%)</i>	<i>75</i>	<i>63</i>	$\chi^2_{(1)} = 11.11$	<i>.001 (.129)</i>

*Recidivism Analysis.* The final analysis in this report tested whether SSAS clients, after release would show a lower rate of recidivism than offenders that did not participate in SSAS. LPUNL completed this analysis knowing that the best test of the effects of SSAS on recidivism would compare SSAS clients who finished probation with equivalent (propensity matched) inmates after they left prison. However, because a sample of released inmates was not available, we conducted these analyses using as our comparison group, non-SSAS matched probationers.

The data measuring recidivism were those that LPUNL relied upon in 2017 to analyze the adult probation recidivism rate across the years 2005 to 2013. That study along with 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 years of being successfully released."

(Nebraska Supreme Court Administrative Operations, Article 10, §1-1001). LPUNL slightly modified this definition of recidivism because analyses of probationers who successfully complete probation does not tell the full story. It includes a biased sample, which includes only the least difficult cases. In order to understand recidivism fully, we included data from probationers who were unsuccessfully discharged or whose probation the courts has revoked. The other substantive content of the Nebraska Supreme Court's definition, the language identifying which convictions amounted to recidivism and the post-discharge time frame, was the same.

To test whether the intensified supervision and increased services produces lower recidivism rates for SSAS clients, LPUNL included only those clients who had finished probation and for whom we had completed recidivism data. Thus, the final pre-matched sample included 2126 (42%) of the original 5029 clients. LPUNL calculated a recidivism score for each of the clients in this file: "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. With this new sample, we conducted a third propensity match, predicting group membership from all the factors in Table 1, again controlling for demographic factors, risk level, and prior criminal conduct.

*Comparison of the samples after propensity matching for recidivism.* The new matched sample of SSAS ( $n = 251$ ) and non-SSAS clients ( $n = 251$ ) who were no longer in probation and for whom recidivism data were available was well balanced<sup>9</sup> with each group's mean propensity score equivalent and not significantly different (SSAS = .19 and non-SSAS = .18)<sup>10</sup>

Table 4, which displays recidivism rates for SSAS and non-SSAS clients after propensity matching shows, that the matching was once again completely successful as evidenced by the fact that the two groups were not different on any of the matching factors. As before, the SSAS probationers showed no differences on any of the LS/CMI risk factors after matching, taking all domains together<sup>11</sup> or considering them individually. In addition, the two groups displayed almost identical levels of overall risk. Thus, Table 4 demonstrates post-match groups equivalency, which strengthens causal inferences about the effectiveness of our recidivism analysis between the SSAS and non-SSAS matched groups. In fact, as shown in Table 4 (in red) SSAS clients were significantly less likely to recidivate in a three year window following probation (9% less) than were non-SSAS clients. Therefore, the data confirmed the outcome expectation, that SSAS clients finish probation at a higher rate than non-SSAS clients. Once again, we present these results with a note of caution because the comparison here of SSAS vs. non-SSAS probationers would be stronger and probably yield greater differences if it were between SSAS clients and matched inmates released from prison.

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<sup>9</sup>  $\chi^2_{(14)} = 5.573$ ,  $p = .976$  – a non-significant lack of balance test.

<sup>10</sup>  $t_{(1)} = .31$ ,  $p = .756$ , eta squared = .000.

<sup>11</sup>  $F(8,493) = .388$ ,  $p = .927$ , eta squared = .006.

Table 4: Demographics, risk, criminal background, and probation outcomes between SSAS and non-SSAS probationers after propensity matching

Factor	SSAS Probationer Mean (S.D.) or %	Non-SSAS Probationer Mean (S.D.) or %	$t$ or $\chi^2$	Significance Level (eta <sup>2</sup> or phi effect size)
Age (years)	32.85 (9.57)	31.53 (10.35)	$t_{(1)} = 1.48$	.139 (.004)
Gender (% male)	77	76	$\chi^2_{(1)} = .04$	.834 (.009)
Minority Status (% minority)	33	32	$\chi^2_{(1)} = .15$	.703 (.017)
LS/CMI (Total Risk Score)	25.52 (4.59)	25.79 (5.39)	$t_{(1)} = .60$	.551 (.001)
LS/CMI (Alcohol and Drugs)	6.31 (1.18)	6.30 (1.37)	$t_{(1)} = .07$	.945 (.001)
LS/CMI (Antisocial)	2.18 (0.97)	2.14 (1.13)	$t_{(1)} = .51$	.611 (.001)
LS/CMI (Criminal History)	5.07 (1.41)	5.10 (1.34)	$t_{(1)} = .23$	.820 (.000)
LS/CMI (Companions)	2.85 (1.14)	2.91 (1.16)	$t_{(1)} = .62$	.535 (.001)
LS/CMI (Educ./Employment)	3.70 (2.31)	3.96 (2.37)	$t_{(1)} = 1.26$	.208 (.003)
LS/CMI (Family/Marital)	2.11 (1.16)	2.07 (1.13)	$t_{(1)} = .35$	.726 (.000)
LS/CMI (Leisure/Recreation)	1.60 (0.59)	1.683 (.63)	$t_{(1)} = .51$	.608 (.001)
LS/CMI (Pro-criminal Attitudes)	1.71 (1.13)	1.70 (1.32)	$t_{(1)} = .22$	.827 (.000)
Highest Charge (felony 3 or 4)	3.31 (0.66)	3.32 (.64)	$t_{(1)} = .20$	.837 (.000)
<b>Recidivism Rate (%)</b>	<b>51</b>	<b>59</b>	$\chi^2_{(1)} = 3.90$	<b>.048 (.088)</b>

## Conclusions

The results of this process and outcome analysis show strong empirical evidence that the SSAS program succeeds in meeting all of its major goals for high risk, substance abusing offenders with felony convictions: 1) offering a program of intensive supervision, 2) increasing the likelihood of successful completion of probation, and 3) lowering recidivism after discharge from probation. After carefully constructing equivalent SSAS treatment and non-SSAS “business as usual” comparison groups, LPUNL was able to demonstrate that while SSAS clients received more violations and a greater number of sanctions, they were more likely to successfully complete probation and less likely to be revoked. Furthermore, these process and outcome differences are not due to demographic, criminogenic risk or criminal charge differences between the groups because successful propensity matching controlled all these differences. Furthermore, compared to other probationers not in the SSAS program, SSAS clients were significantly less likely to recidivate using the Nebraska Supreme Court’s definition of recidivism, measured in a three year window. LPUNL concludes that Nebraska Probation’s SSAS program is an effective intervention that successfully treats high risk, felons with serious substance abuse problems. We encourage its continued and expanded use in Nebraska and

recommend further study of its processes and outcomes to demonstrate that SSAS is a fully evidence based program and as such it can serve as a valuable alternative to incarceration for treating high risk/high need, substance abusing felons.<sup>12</sup>

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<sup>12</sup> Most program evaluators would agree that in order to achieve fully Evidence Based status, SSAS would need a replication study, again showing positive results.

## SSAS Evaluation Report (June 2018)

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### **Executive Summary**

The Nebraska Administrative Office of Probation (NAOP) commissioned the Law/Psychology Program at the University of Nebraska/Lincoln (LPUNL) to conduct a process and outcome evaluation of the Specialized Substance Abuse Supervision (SSAS) program that NAOP administers for high risk, substance abusing clients. SSAS is a Nebraska Probation service that the NAOP initiated in order to decrease the overcrowded Nebraska prison population by offering specialized programming to offenders with substance abuse disorders. Highly skilled SSAS officers provide evidence based services in an attempt to create positive behavior change that will lead to successful completion of probation, lowered recidivism and ultimately increased community safety.

### **Process Measures, Outcome Measures and Comparison Groups.**

LPUNL identified 2 process measures (violations and sanctions) and 2 outcome measures (completion of probation and recidivism) to use to assess SSAS participants and control offenders who did not participate in SSAS. We expected SSAS participants to show a higher number of violations and sanctions because their probation officers subject them to intensified supervision with regular and randomized drug tests and careful guidance of their daily activities. Furthermore, as a result of participation in the program, we expected the SSAS participants to finish probation with a lower rate of revocation and a lower level of recidivism after discharge.

To control for differences between the SSAS and non-SSAS (“business as usual”) LPUNL started with a large sample of both SSAS and non-SSAS probationers eligible for the SSAS program for whom demographic data, charge information, risk measures, violation records, sanction records and outcome measures were available. We use propensity matching, the accepted method to select comparable groups in the program evaluation literature. Before matching, the groups were different on a number of demographic, criminogenic risk and criminal history factors. These differences would have prevented any meaningful comparison between the groups on the process and outcome measures after treatment. The propensity match was highly successful, resulting in comparable groups of SSAS and non-SSAS participants, who as a group showed no significant differences in demographic, risk or criminal history backgrounds. Comparing this new equivalent SSAS and non-SSAS groups on the process and outcome factors increases greatly the ability to make valid inferences about the impact of SSAS on probationers.

### **Results**

After propensity matching the SSAS clients showed significant differences in the process measures such that the SSAS treated probationers showed higher levels of violations and associated sanctions, demonstrating that they were under higher levels of supervision than were

the “business as usual” probationers. With regard to the outcome measures, SSAS clients, as compared to the controls were significantly more likely to successfully complete probation without revocation and were less likely to recidivate after discharge using the Nebraska Supreme Court’s definition of recidivism. Furthermore, these process and outcome differences are not due to demographic, criminogenic risk or criminal charge differences between the groups because successful propensity matching controlled all these differences.

### **Conclusions**

The results of this process and outcome analysis show strong empirical evidence that the SSAS program succeeds in meeting all of its major goals for high risk, substance abusing offenders with felony convictions: 1) offering a program of intensive supervision, 2) increasing the likelihood of successful completion of probation, and 3) lowering recidivism after discharge from probation. LPUNL concludes that Nebraska Probation’s SSAS program is an effective intervention that successfully treats high risk, felons with serious substance abuse problems. We encourage its continued and expanded use in Nebraska and recommend further study of its processes and outcomes to demonstrate that SSAS is a fully evidence based program, and as such it can serve as a valuable alternative to incarceration for treating high risk/high need, substance abusing felons.