The Predictive Utility of Risk and Needs Assessment

Douglas H. Spence, Ph.D. and Stephen M. Haas, Ph.D.

Highlights:

- The Level of Service/Case Management Inventory (LS/CMI) is a highly effective predictor of recidivism among day report center and institutional corrections populations
- LS/CMI risk scores are strongly correlated with many different offender outcomes including new arrests, jail bookings, incarcerations, and successful completion of day report center programs
- LS/CMI risk and needs information can play an important role in guiding decisions about the level of supervision and the types of services that offenders receive in West Virginia

EXECUTIVE SUMMARY

Risk and needs assessment plays a crucial role in determining the services offenders receive while in correctional custody and their level of supervision after release. According to the principles of effective correctional intervention, clients assessed as having a higher risk of recidivism should receive both a greater treatment dosage and a higher level of case supervision. This strategy of providing more services to higher risk individuals is frequently described as adhering to the “risk principle” (Andrews and Dowden, 2006). In order to adhere to the risk principle, however, correctional programs must first ensure that they are accurately assessing offenders’ risk and needs.

The Level of Service/Case Management Inventory (LS/CMI), and its predecessor the Level of Service Inventory-Revised (LSI-R), are two of the most prominent and widely-used tools for assessing offenders. Both have been subjected to extensive empirical research and have been shown to accurately predict the likelihood of recidivism for a variety of offender populations (Vose, Cullen and Smith, 2008). The LS/CMI is currently used by all correctional agencies in West Virginia to assess risk for recidivism. The tool is completed through a process that involves an offender interview combined with the use of official records. The collective information is used to calculate risk scores that indicate an overall risk for recidivism as well as
identify specific criminogenic needs (i.e., dynamic risk factors shown to be empirically related to recidivism). These factors include: education/employment, family/marital relationships, substance abuse, procriminal attitudes, antisocial peers, leisure/recreation activities, antisocial personality, and past criminal behavior. LS/CMI scores are utilized to make a variety of decisions including level of supervision and services to be provided to protect public safety.

Several recent and forthcoming studies conducted by researchers from the Office of Research and Strategic Planning (ORSP) assess the effectiveness of the LS/CMI for predicting recidivism by offenders in WV. These studies investigate the statistical relationships between various offender characteristics (including LS/CMI scores) and the likelihood of committing a new offenses during a 24 month follow-up period.

**KEY FINDINGS**

West Virginia recidivism research and validation results provide strong evidence that the LS/CMI is an accurate predictor of recidivism for offenders released from a variety of correctional settings, specifically day report center programs and Division of Corrections facilities (see, Spence & Haas, 2014; Spence & Haas, Forthcoming; Orsini, Haas & Spence, Forthcoming). **Selected observations include:**

- Risk scores are strongly predictive of recidivism, even when controlling for other factors such as age, gender, and ethnicity.

- On average, logistic regression models predict that each 1 point increase in an offender’s total risk score increases the odds of a jail booking by about 3-4% and the odds of incarceration by about 5-9%.

- LS/CMI risk scores are the strongest predictor of recidivism for both DRC clients and DOC inmates. Using only LS/CMI risk scores, it is possible to correctly predict recidivism in 60-70% of cases. The inclusion of other variables (i.e., offender age, race, etc.) increases predictive accuracy.
Table 1
Post-Release Outcomes for DOC Inmates by LS/CMI Risk Level (N = 1,288)

<table>
<thead>
<tr>
<th>LS/CMI Risk Level</th>
<th>Very Low (n = 5)</th>
<th>Low (n = 66)</th>
<th>Medium (n = 430)</th>
<th>High (n = 629)</th>
<th>Very High (n = 158)</th>
<th>Total (n = 1,288)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Booked</td>
<td>2 (40.0%)</td>
<td>19 (28.8%)</td>
<td>140 (32.6%)</td>
<td>267 (42.4%)</td>
<td>78 (49.4%)</td>
<td>506 (39.3%)</td>
</tr>
<tr>
<td>Reincarcerated</td>
<td>1 (20.0%)</td>
<td>4 (6.1%)</td>
<td>38 (8.8%)</td>
<td>112 (17.8%)</td>
<td>32 (20.3%)</td>
<td>187 (14.5%)</td>
</tr>
<tr>
<td>Any Recidivism</td>
<td>2 (40.0%)</td>
<td>19 (28.8%)</td>
<td>141 (32.8%)</td>
<td>280 (44.5%)</td>
<td>80 (50.6%)</td>
<td>522 (40.5%)</td>
</tr>
</tbody>
</table>

Note: * p < 0.05, ** p < 0.01, *** p < 0.001. Source: Orsini, Haas and Spence (Forthcoming).

Table 2
DRC Program Completion Rates by LS/CMI Risk Level (N = 2,030)

<table>
<thead>
<tr>
<th>LS/CMI Total Risk Score</th>
<th>Successful Program Completions (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Low</td>
<td>80.9</td>
</tr>
<tr>
<td>Low</td>
<td>63.6</td>
</tr>
<tr>
<td>Medium</td>
<td>55.7</td>
</tr>
<tr>
<td>High</td>
<td>41.5</td>
</tr>
<tr>
<td>Very High</td>
<td>34.7</td>
</tr>
<tr>
<td>Chi-Square Value (χ²)</td>
<td>66.5***</td>
</tr>
</tbody>
</table>

Note: * p < 0.05, ** p < 0.01, *** p < 0.001. Source: Spence and Haas (2014).

by only an additional 10%.

- Risk scores are also predictive of the likelihood that DRC clients will complete their programs successfully, with each 1 point increase in risk score decreasing the odds of successful completion by about 5%.
- DRC clients with higher risk scores tend to recidivate more quickly, with most new offenses occurring within the first 6-12 months post-release.
- LS/CMI subcomponent scores are significantly correlated with recidivism for both DRC clients and DOC inmates. Subcomponent scores for procriminal attitudes and family/marital issues are less strongly correlated with recidivism compared to findings from other states and jurisdictions.

RECOMMENDATIONS

While the ORSP studies provide evidence that the LS/CMI is an effective predictor of recidivism for the offender population in WV, they also indicate specific areas for improvement. Primary recommendations for improving the accuracy of assessments, applying assessment results in practice, and refining quality control activities are described below.

- **Conduct assessments early in admission.** Early assessment is crucial for providing high risk/needs offenders with an appropriate level of supervision and treatment. Developing case treatment and supervision plans prior to an assessment can lead to substantive violations of the RNR principles.
- **Conduct re-assessments often to monitor changes in risk and needs.** The LS/CMI is designed to capture dynamic risk factors that change over time. Reassessments are vital for identifying changes in offender risk/needs and for incorporating this information into treatment and supervision. Scores from reassessments further provide a means for appraising the impact of rehabilitation programs.
- **Focus training and provide tools for better assessing procriminal attitudes and family/marital factors.** Research has consistently shown that the presence of procriminal attitudes is one of the strongest predictors of offender recidivism. However, the studies conducted by the ORSP indicate this domain
is less predictive than other dynamic risk factors. This suggests assessors are having difficulty in assessing offender attitudes. Similar results are found for family/marital relationships. It is recommended that trainers work to improve assessment in these areas among staff, and consider the adoption of supplemental tools and strategies to more accurately assess procriminal sentiments and family/marital relationships.

- **Utilize quality assurance procedures.** The LS/CMI quality assurance process (QA-TIPS) is designed to ensure proper implementation and integrity of the LS/CMI and its related components. LS/CMI results in WV indicate that the QA process is highly beneficial. It is recommended that treatment and supervision staff continue their participation in the QA-TIPS program to better ensure that all certified LS/CMI Users retain their skills and follow proper procedures.

- **Develop methods to focus resources on high risk offenders and adhere to the risk principle.** Adhering to the “risk principle” entails high risk offenders receiving more intensive treatment and supervision compared to low risk offenders. Supervision officers and treatment staff should develop methods for identifying and monitoring high risk offenders. Greater dosage should be provided to high risk offenders. Treatment services provided to low risk offenders should be kept to a minimum.

### Table 3
Bivariate Correlations for LS/CMI Section Scores with Jail Bookings and Incarcerations

<table>
<thead>
<tr>
<th>LS/CMI Section</th>
<th>DOC Inmates (N = 1,288)</th>
<th>DRC Clients (N = 2,030)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Jail Booking</td>
<td>Incarceration</td>
</tr>
<tr>
<td>Anti-social Attitudes</td>
<td>0.021</td>
<td>0.013</td>
</tr>
<tr>
<td>Anti-social Companions</td>
<td>0.098***</td>
<td>0.125***</td>
</tr>
<tr>
<td>Anti-social Personality</td>
<td>0.100***</td>
<td>0.111***</td>
</tr>
<tr>
<td>History of Criminal Behavior</td>
<td>0.067*</td>
<td>0.066*</td>
</tr>
<tr>
<td>Family/Marital</td>
<td>0.013</td>
<td>0.044</td>
</tr>
<tr>
<td>Education/Employment</td>
<td>0.111*</td>
<td>0.089**</td>
</tr>
<tr>
<td>Leisure/Recreation</td>
<td>0.070*</td>
<td>0.057*</td>
</tr>
<tr>
<td>Substance Abuse</td>
<td>0.063*</td>
<td>0.095**</td>
</tr>
</tbody>
</table>

Note: *p < 0.05, **p < 0.01, ***p < 0.001. Source: Spence and Haas (2014), Orsini, Haas and Spence (Forthcoming).
REFERENCES


Orsini, M., Haas, S. M., & Spence, D. (Forthcoming). Predicting Recidivism of Offenders Released from the West Virginia Division of Corrections: Validation of the Level of Service/Case Management Inventory. Charleston, WV: Criminal Justice Statistical Analysis Center, Division of Justice and Community Services, Department of Military Affairs and Public Safety.


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The Division of Justice and Community Services is the designated state criminal justice planning agency. The Division is responsible for fostering public safety in West Virginia by providing planning, system coordination, grant administration, training & technical assistance, monitoring, research, statistical services, and law enforcement training.

The Office of Research and Strategic Planning’s mission is to generate statistical and analytical products concerning crime and the criminal justice system for the public and justice system professionals and policy-makers, establishing a basis for sound policy and practical decisions for the criminal justice system in West Virginia.

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