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# An Evaluation of the Use of the LSI-R with Colorado Inmates

Kasey Weber
Dionisia DeLaCerda
Maureen O'Keefe

**COLORADO DEPARTMENT OF CORRECTIONS**

**OFFICE OF PLANNING AND ANALYSIS**

**2862 SOUTH CIRCLE DRIVE**

**COLORADO SPRINGS, CO 80906**

**www.doc.state.co.us**

**ARISTEDES W. ZAVARAS**

**Executive Director**

**ROBERT CANTWELL**

**Director of Prison Operations**

**MAUREEN O'KEEFE**

**Director of Research**

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# EXECUTIVE SUMMARY

With the number of people entering the criminal justice system on the rise and the decrease of state budgets, correctional managers are working harder than ever to reduce the rate at which offenders return to prison while, at the same time, operating with limited resources. One method in which criminal justice agencies are trying to meet these goals is by targeting and treating the re-entry needs of offenders. Risk and needs assessment tools play an important role in this objective by aiding in the identification of offenders with higher likelihoods of re-offending and targeting the appropriate services to these individuals.

Risk assessments have developed over the years, today these instruments not only use a reliable set of factors associated with risk, but also look at predicting risk by measuring both static and dynamic factors (Bonta, 1996). The Level of Service Inventory-Revised (LSI-R) is a dynamic risk and needs assessment. It consists of 54 items across 10 subscales that are administered in a semi-structured interview with the offender.

The present evaluation is a formative evaluation of the current processes in place at the Colorado Department of Corrections (CDOC) specific to the utilization of the LSI-R. This evaluation seeks to examine how the LSI-R is administered in the department during an offender's assessment and classification. The second part of this study includes a survey of other U.S. state correctional agencies to gain a more comprehensive understanding of how the LSI-R is administered and utilized by these departments.

PART I

- This sample included both supervisors and eight programmers who were randomly selected from the 21 programmers currently employed in the Assessment and Classification unit at the Denver Reception and Diagnostic Center and Denver Women's Correctional Facility.
- Data was collected by interviewing programming staff and observing their interviews with offenders. Research notes and written summaries were reviewed by the researchers and data was categorized to identify commonalities and variations among the participant responses and observations.

*Results and Discussion*

- Programmers in the Assessment and Classification unit have a large responsibility in collecting and reviewing a great deal of information. Results indicated that they perform their job duties at the level that they are required and as they were trained.
- The "style" of interview utilized by the programmers varied among participants. Some styles lent themselves to a greater exchange of information (e.g., use of open-ended questions) whereas others used more closed-ended forms of communication with the offender.
- The programmer's ability to build rapport and engage the offender also existed along a continuum with some showing a great capacity to achieve a strong rapport and others demonstrating little of this skill.
- The administration of the LSI-R in assessment and classification differs slightly from how it was originally designed. To date, there is no existing research that has determined if the

current method of LSI-R administration (e.g., greater dependence on file and database information, little use of motivational interviewing techniques) is reliable and valid.

- Issues concerning administration and scoring of the LSI-R appear to be largely due to the lack of the measure's utility. Due to little perceived utility, the LSI-R holds a low priority in the assessment and classification process, which in turn is reflected in the low priority given to training and quality assurance.
- The errors identified in the scoring of the LSI-R must be addressed to improve the reliability and validity of this instrument. Regular training, accountability and quality assurance procedures would greatly improve this area.
- The data system must be corrected to allow new LSI records to be created, enabling the accurate input of LSI-R scores and dates.
- Qualitative methods of data collection are not free of limitations. Although the participants were randomly selected, caution must be used when generalizing these findings to wider populations. There is risk of researcher bias when interview and observation methods are utilized; care was taken to minimize these limitations as much as possible.

PART II

- Through the help of Association of State Correctional Administrators, surveys were distributed to the state correctional departments in all 50 states in the U.S. to learn more about their use of the LSI-R.
- There were 34 states (including Colorado) that responded to the survey. Of these, 16 states use the LSI-R.
- Of those that use the LSI-R, 81% administer it to incarcerated offenders, 75% to parolees, 56% to probationers, 56% to community corrections offenders and 6% to 'other.'
- Sixty-two percent of respondents indicated they first administer the LSI-R upon admission to the facility, 14% reported administration was at 30 days after release to parole, and 25% indicated 'other' (e.g., 30 days within sentencing).
- Some of the most common reported uses of the LSI-R are for facility case management and treatment planning (75%) and community treatment planning (69%).
- This survey provides only cursory insight into what other agencies are doing with the LSI-R. Follow-up with these departments would aid in gaining a deeper understanding about how the LSI-R is being administered and utilized nationwide.

RECOMENDATIONS

- A primary focus should be to establish a solid plan to implement the LSI-R, with particular attention on developing a sound training and quality assurance program. National LSI-R evaluations have found one of the most valuable strategies for successful implementation is the establishment of staff buy-in and commitment. It is important that all staff feel ownership in the process, therefore communicating the rationale and purpose regarding LSI-R to frontline staff is vital.

- All staff should be formally trained in utilizing the LSI-R properly; new staff should not administer the instrument until properly trained and existing staff should attend regular follow-up sessions. Training objectives should provide the underlying theory of the LSI-R, explain its purpose, justify certain item's presence on the test, and provide realistic experiences through practical examples and exercises (Whiteacre, 2004).
- Departments must establish a quality assurance program that will monitor data entry, administration, and use of the LSI-R. This quality assurance program should include review of the scoring to identify errors and misuse of items and monitor the offender interview process and data systems.
- Until the implementation and administration of the LSI-R has been addressed, further evaluation is not recommended. Until the instrument is accurately administered and the quality of the data improved, the results from the evaluation studies will not be entirely meaningful. However, future evaluation should first focus on local LSI-R reliability and validity testing to verify the measure is performing correctly within the correctional system and with desired populations.

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# INTRODUCTION

With the number of people entering the criminal justice system on the rise and the decrease of state budgets, correctional managers are working harder than ever to reduce the rate at which offenders return to prison while, at the same time, operating with limited resources. One method in which criminal justice agencies are trying to meet these goals is by targeting and treating the re-entry needs of offenders. Risk and needs assessment tools play an important role in this objective by aiding in the identification of offenders with higher likelihoods of re-offending and targeting the appropriate services to these individuals.

Risk assessments have developed over the years; historically, the first generation of assessments required "professional judgment" or "intuition" to determine decisions, but this method was proven unreliable when used exclusively. Second generation tools improved reliability by assessing a set of factors associated with risk, but these factors were often static and therefore did not capture the factors that changed overtime. The third generation of tools, used today, takes the process a step further by not only using a reliable set of factors associated with risk but also looking at predicting risk by measuring both static and dynamic risk factors (Bonta, 1996).

The idea that certain dynamic factors can predict risk of re-offending is an underlying assumption that drives the three-pronged Risk-Need-Responsivity (RNR) model (Andrews & Dowden, 2007). The *risk principle* asserts that the provided level of treatment must match the offender's level of risk to re-offend. The *need principle* requires that the needs of the offender, particularly those most strongly linked to their criminal behavior (e.g., education, alcohol and drug use), are identified and subsequently addressed in treatment. Finally, the *responsivity principle* requires that the most effective and evidence-based treatment techniques for offenders (e.g., cognitive behavioral methods) are utilized in the treatment process. This principle also necessitates that the treatment intervention is tailored to the offender's learning style, motivation, abilities, and strengths. While the RNR model is built on these central principles, its success also depends on the establishment of a collaborative and respectful working relationship between the offender and the correctional and treatment staff. In this environment, it is necessary that staff demonstrate pro-social lifestyles through positive role modeling, reinforcement and problem-solving (Andrews & Bonta, 2006).

In identifying and treating the needs of the offender, the RNR model distinguishes eight factors that are linked to increases in recidivism when present. Andrews and Bonta (2003) state that these factors, commonly referred to as *criminogenic needs,* include antisocial attitudes, antisocial associates, history of antisocial behavior, antisocial personality patterns, problematic circumstances at home (familial/marital), problematic circumstances at school or work, problematic leisure circumstances, and substance abuse. The first four criminogenic needs, known as the "Big Four," have been identified as the strongest predictors of an offender's risk to recidivate. Under the RNR model, the "ability to predict criminal behavior increases with the number and variety of major risk factors assessed and with the number of different sources of information employed" (Andrews & Bonta, p. 86). The premise of the RNR model is that the presence of risk factors can indicate future criminal behavior, and therefore an instrument that can effectively identify who is at higher risk of recidivating is vital to its application. This targeted dynamic approach allows offenders with greater needs to get the help they require, while at the same time avoiding undue treatment of lower risk individuals.

## LEVEL OF SERVICE (SUPERVISION) INVENTORY- REVISED[1]

The Level of Service Inventory-Revised (LSI-R), a dynamic risk and needs assessment developed by Andrews and Bonta in the 1970s, measures both static and dynamic risk factors. The administration of the LSI-R requires a semi-structured interview with the offender in order to gather information pertinent to several different risk areas. Proper administration of the LSI-R incorporates the techniques of motivational interviewing (MI), which is a focused, goal directed, and client-centered interview style that seeks to help offenders change their behavior (Rollnick & Miller, 1995). The MI style reinforces motivational statements, monitors readiness to change, and seeks to understand the offender's frame of reference. Techniques trained specifically for MI use open-ended questions, affirmations, reflective listening, and summarizations. The MI style differs from other interview styles because it does not require the interviewer to aggressively confront the offender, give direct advice, use an authoritative stance (leaving the offender in the

[1] Originally called the Level of Supervision Inventory, the test authors sold the tool to Multi-Health Systems who renamed the tool, the Level of Service Inventory (both tools have since been revised). Because the tools are identical, this paper will refer to the first set of versions as the LSI and to the revised versions as the LSI-R. Currently the Colorado Department of Corrections uses the Level of Supervision Inventory – Revised as permissions for use were purchased (and subsequently renewed) directly from the authors, not through Multi-Health Systems.

passive role), or do most of the talking (Rollnick & Miller, 1995). While the majority of the information used to score the LSI-R comes from the offender interview, it should also be supplemented with information from official records (Andrews & Bonta, 2003).

The LSI-R assessment consists of 54 items across 10 subscales (i.e., criminal history, education/employment, financial, accommodation, family/marital, leisure/recreation, companions, alcohol/drug problems, emotional personal, and attitude/orientation), each of which have items that are scored as a 1 or 0 indicating the presence or absence of the risk factor. With a total score range of 0 to 54, higher scores represent a greater likelihood of recidivating. Typically, the total score is divided into three bands, also known as ranges or cutoffs, which represent low, medium, and high risk categories. Time frames for each item add another dimension by which risk is assessed. Assigned time frames influence how an item is scored, which directly influences how dynamic the item is in contributing to the likelihood of risk. For example, a lifetime item is one that is scored if the factor was present any time over the offender's life history, whereas other items are only scored if the factor is present at the time of the assessment or within the past 12 months. The assessment also incorporates 13 rater boxes that the assessors score to provide additional information about the severity of a risk factor. Using a scale from 0 to 3, the assessor can indicate the level at which a particular item is a strength or weakness to the offender's rehabilitation (Andrews & Bonta, 2003).

## RELIABILITY OF THE LSI/LSI-R

In considering how well an assessment tool performs, it must meet certain standards to be psychometrically sound and appropriate for use. One of these standards is the instrument's ability to demonstrate sufficient reliability, or the ability to consistently measure a concept across different situations. Internal consistency is a type of reliability that measures the relationship among all items on an assessment to determine how well they relate to one another, measured by the strength of the correlation ranging from 0 to 1.

Research examining the reliability of the LSI-R has shown results that demonstrate adequate internal consistency. These findings were evidenced in early testing conducted by Andrews (1982) using a sample of 598 Canadian probationers. Results indicated that the internal consistency of the tool across all items was adequate, yielding an alpha of .72 (as cited in O'Keefe, Klebe, & Hromas, 1998). Other studies have since produced similar results (Andrews

& Bonta, 2003; Arens, Durham, O'Keefe, Klebe & Olene, 1996; Hollin, Palmer, & Clark, 2003; O'Keefe, 1996). In a 1996 Colorado study of offenders, Arens et al. found that the LSI exhibited acceptable internal consistency for inmates ($\alpha = .80$) as well as for parolees ($\alpha = .78$). Internal consistency for the subscales and comparisons between subscale components was also examined and correlations were found to be moderate, none of them exceeding the estimates of the overall measure.

Based on the evidence of their research, Arens et al. (1996) concluded the LSI is a unidimensional measure. This was evidenced by an initial factor analysis that accounted for only one factor. Although an ancillary factor analysis of the inmate data found the subscales loaded onto either a "risk" or a "needs" factor, these results could not be replicated for the parole sample. Thus, the researchers further supported the notion that the LSI is a unidimensional scale and cautioned against using individual items or subscales alone until future evaluation can verify the presence of multiple factors.

Inter-rater reliability is another commonly tested criterion in the development of a measure. This form of reliability measures the consistency of scores between two assessors (or raters). Inter-rater reliability can be measured by percent agreement (usually adjusted for chance levels of agreement) or by the strength of correlations between the raters' scores. Several studies examining the LSI-R found that it demonstrated acceptable levels of inter-rater reliability with percent agreement exceeding 80% (Andrews, 1982; Austin, Coleman, Peyton, & Johnson, 2003; Lowenkamp, Holsinger, Brusman-Lovins, & Latessa, 2004). However, across several of these studies, researchers found that the consistency of these findings was directly related to the training and experience of the raters (Austin et al., 2003; Lowenkamp, Holsinger, et al., 2004). The results led the authors to conclude that reliable performance of the LSI-R directly rests on the training and monitoring of how the assessments are conducted (Austin et al., 2003; Flores, Lowenkamp, Holsinger & Letessa, 2006; Lowenkamp, Holsinger, et al., 2004).

## PREDICTIVE VALIDITY OF THE LSI/LSI-R

Establishing the validity of an assessment instrument is a basic requirement to determining if the instrument is acceptable for use. In doing this, there are several types of validity evidence that should be evaluated. Across the national LSI-R research, the predictive validity of the assessment stands out as the most critical. Predictive validity is how accurately the

tool predicts behaviors believed to be associated with the construct the instrument is intended to measure. If an instrument has high predictive validity, one would expect to see high correlations between its score and one or more related outcome events. In this case, predictive validity would indicate how well the LSI-R predicts behaviors associated with criminal risk. Depending on the agency, the LSI-R may be used to predict different behaviors, such as the likelihood of committing a new crime, a technical violation, or a facility disciplinary violation. Within the predictive validity research, studies have also concentrated on more specific populations to determine how well the LSI-R performs among minority populations.

Over several decades, the predictive validity of the LSI and LSI-R has been tested frequently. Initial studies focused primarily on validating the instrument using Caucasian male offenders in Canada; later evaluations began to test its predictive power among U.S. samples as well. The 1982 study conducted by Andrews found satisfactory predictive validity ($r$ = .47) of the LSI in a study assessing 598 Canadian offenders. In 1985, Bonta and Motuik evaluated two samples of Canadian halfway house residents and compared LSI scores to successful program completion and 1-year re-incarceration rates. For the first sample of 75 offenders, the correlation between LSI scores and program completion rates was good ($r$ = .52), however the correlation for the second sample of 89 offenders was more moderate and considerably lower compared to the first ($r$ = .29). Correlations between LSI scores and re-incarceration rates at 1 year post-release were in adequate range for both samples ($r$ = .40; $r$ = .32).

In an attempt to duplicate the results from the earlier Canadian studies, several researchers have sought to validate the LSI using U.S. samples. The majority of the findings supported the validation of the LSI/LSI-R in predicting identified behaviors (Andrews & Bonta, 2003; Arens et al., 1996; Austin et al., 2003; Bonta & Higginbottom, 1991; Dowdy, Lacy, & Unnithan, 2002; O'Keefe et al., 1998;). Studies conducted in Colorado focused on parole, community corrections, and probation offenders. In 1998, O'Keefe et al. examined the predictive validity of the LSI for a sample of 172 parolees and 85 community correction offenders. Using a 12-month follow-up period, the LSI was found to adequately predict the recidivism of the parolees ($r$ = .31). However, the correlation for the community corrections sample was weak ($r$ = .08), revealing that the LSI did not predict recidivism for offenders under this jurisdiction. While this finding was concerning, the researchers concluded that LSI scores produced from

community corrections might not have been a reliable sample due to significant differences in training, which likely would have impacted the validity testing.

The second part of the 1998 O'Keefe et al. study used the same sample of community corrections offenders and parolees in addition to 403 probationers and 135 diversion offenders (O'Keefe & Wensuc, 1998). LSI scores were compared to three outcome measures: (a) any recidivating behavior, (b) re-arrest, and (c) program termination. Results indicated the LSI was acceptable in predicting the identified outcomes for probationers (recidivating behavior, $r$ = .32; re-arrest, $r$ = .28; program termination, $r$ =.25), parolees (recidivating behavior, $r$ = .36; re-arrest, $r$ = .30; program termination, $r$ = .28), and diversion offenders (recidivating behavior, $r$ = .25; re-arrest, $r$ =.24; program termination data was not available). As in the previously mentioned study, the one exception to these findings was the poor results related to the community corrections group, in which results indicated that the LSI was unable to predict outcomes (recidivating behavior, $r$ = .02; re-arrest, $r$ = -.07; program termination, $r$ = .13). Again, due to the same concerns around the reliability of this sample, it was further recommended that additional research explore the use of the LSI for the community corrections population.

A 2002 study (Dowdy et al.) of 140 male offenders also found that the LSI-R was *unable* to predict outcomes for the community corrections population. LSI-R scores were compared to halfway house failure ($r$ = .11), new crime within 2 years ($r$ = .14), and new felonies within 2 years ($r$ = .13). The researchers were unable to identify specific factors that could explain these poor results.

Recognizing that the validity of the LSI-R may vary due to the population and system in which it is implemented, a more recent study (Flores et al., 2006) sought to determine how well the LSI-R predicted correctional outcomes for a sample of federal probationers ($N$ = 2,107). A moderate correlation of .28 led the authors to conclude the LSI-R is a significant predictor of re-incarceration. Testing also found that the LSI-R would accurately assign a higher score for a randomly selected recidivist, compared to a non-recidivist, 69% of the time. These results were maintained when age, sex, and ethnicity were controlled.

**Race and gender populations.** Because earlier evaluations of the LSI-R did not distinguish among demographic variables, more recent literature has concentrated on providing specific information on the validity of the instrument for different racial groups as well as

females (Holsinger, Lowenkamp, & Latessa, 2006; Holtfreter & Cupp, 2007; Reisig, Holtfreter, & Morash, 2006; Schlager & Simourd, 2007; Smith, Cullen, & Latessa, 2009; Vose, Lowenkamp, Smith, & Cullen, 2009; Whiteacre, 2006). While the LSI-R has been touted for its use with all groups of offenders (Andrews & Bonta, 2003), recent discussion in the literature has raised some questions about its performance with these groups.

When norming the LSI-R for the U.S. population in 2003, it was determined by Andrews and Bonta that the measure could be generalized to non-White offenders. However, this was not supported in a 2006 study (Whiteacre) that sought to examine the LSI-R for racial bias by assessing a sample of 532 Canadian male offenders in a community corrections center. The sample was divided into three groups of Caucasian, African American, and Hispanic offenders. Contingency tables were used to compare the offenders' measured risk (i.e., LSI total score) with two different outcomes: actual program success/failure and disciplinary incidents. Contingency tables were developed for two different cutoff points (i.e., 16 points or higher and 24 points or higher), and any offender scoring higher than the cutoff was classified as high risk for re-offending. Results indicated for both the 24-point and 16-point cutoffs that African American offenders were more likely to be both over- and under-classified when LSI-R was compared to actual program success or failure. Results were similar when compared with disciplinary incidents (although under-classification virtually disappeared for all of the groups with the lower cutoff points).

Similarly, when the validity of the LSI-R was evaluated for Native American offenders (Holsinger et al., 2006) the researchers found slightly higher correlations between LSI-R scores and new arrests for white offenders ($r$ = .23) compared to Native American offenders ($r$ = .11). Although the measure appears to make slightly better predictions for white males, the authors concluded that the use of only one outcome variable (e.g., re-arrest) limited the generalizability of the findings and the use of additional outcome measures would better explore the reasons for the weak predictions.

Another study (Fass, Heilbrun, DeMatteo, & Fretz, 2008) not only assessed how well the LSI-R performed with minority populations but it also made comparisons to how well it performed against another risk assessment called the Correctional Offender Management Profiling for Alternative Sanctions (COMPAS; Brennan & Oliver, 2000). The assessments were

administered to Caucasian, Hispanic, and African American offenders; approximately half of the 975 participants were administered the LSI-R and the other administered the COMPAS. Outcomes were measured by re-arrest within 12 months of release to a halfway house. The results showed the LSI-R over-classified African Americans (i.e., predicted they would be re-arrested but they were not) compared to Caucasian or Hispanic offenders and under-classified Caucasian and Hispanic offenders compared to African American offenders. The COMPAS did not perform any better, consistently under-classifying African Americans compared to the other offender groups.

Like race, the gender of an offender may also influence the psychometric properties of an assessment. While there is research that supports the use of the LSI-R with female offenders (Smith et al., 2009; Vose et al., 2009), there is a counter argument contending that female offenders arrive in the criminal justice system for reasons that do not always mirror those of males. Therefore, it has been argued that the LSI-R may not be "gender neutral" (Smith et al., 2009) and may exclude many of the key factors that contribute to female recidivism (Holtfreter & Cupp, 2007; Reisig et al., 2006).

The LSI-R gender debate stems from a larger debate in the criminal justice field in which Daly (1992) argues that female offenders *enter* the criminal justice system through trajectories (e.g., sexual victimization, domestic violence, caring for children) that are dissimilar from men. It is for this reason, it is hypothesized, that females transition *out* of crime differently as well. Reisig et al. (2006) built upon Daly's conceptual "pathways to crime" framework arguing the LSI-R is too general in its assertion that the factors related to criminal behavior directly apply to females and males alike. To test this hypothesis a sample of 235 female offenders were grouped according to the pathways that led them to their felony convictions. Some of these pathways paralleled those followed by male offenders (e.g., economically motivated), whereas others were determined to be female-specific (e.g., battered). At this time the participants were also administered the LSI-R and its predictive ability was measured by recidivism outcomes. Results indicated that the LSI-R did not equally predict recidivism for all females. It was found that the LSI-R accurately predicted risk for female offenders whose criminal pathways resembled those of males. However, for women who followed female gendered pathways, the results indicated that the LSI-R often misclassified participants into low, medium, and high-risk groups.

Holtfreter and Cupp (2007) conducted a meta-analysis which incorporated the Reisig et al. (2006) study among 10 others that included female-only samples. However, at the conclusion of this evaluation the authors were unable to reach a definitive conclusion about whether the LSI-R was appropriate for females. These inconclusive results stemmed from problems with limited generalizability and the inability to compare findings due to varied follow up periods (e.g., 6 months to 3 years) and outcome variables (e.g., new arrests, program completion, technical violations, return to prison). Although statistically the results were uncertain, the authors strongly argued that the gender debate cannot be resolved without further research into the roles childcare, self-esteem, relationships, victimization, and mental health factors play in female recidivism.

Although there is argument that the LSI-R is not appropriate for females, there is also research supporting the view that the instrument performs equally well for both male and female offenders. Smith et al. (2009) conducted a meta-analysis evaluating the effect sizes of 25 published and unpublished LSI-R studies that included both female and male samples (four of these studies were also included in the Holtfreter and Cupp 2007 study). When the relationships between the scores of the LSI-R and recidivism outcomes were compared for both genders the results demonstrated that the LSI-R performed virtually the same for both populations.

Similarly, when samples of 402 females and 2,447 males were reviewed for misdemeanor and felony convictions after five years, comparisons to LSI-R scores revealed the instrument was accurate in predicting outcomes for both male and female offenders (Vose et al., 2009). When initial and follow-up LSI-R scores were compared, findings remained consistent, revealing the assessment predicted outcome behavior for both genders equally well at both time points.

While there is evidence that the LSI-R is appropriate to use for females, it has been recognized that the issues raised by the gendered pathways framework are complex. In the discussion of their findings, Vose et al. (2009) did not discount that there may be separate pathways that lead males and females to crime. However, they maintained that the LSI-R focuses on criminogenic factors that are common across all offenders. They argue that gender-specific issues are not separate, but rather a part of the broader risk framework targeted by the assessment tool.

**Comparison to other measures.** An important consideration when selecting and implementing a risk and needs measure is how well it compares to other measures similar in nature. One of the earliest studies that responded to this question was a meta-analysis that broadly assessed which factors best predicted recidivism (Gendreau, Little, & Goggin, 1996). As part of this analysis, the authors compared the LSI-R to other risk and anti-social personality scales overall. The results indicated that the risk measures were better predictors of outcome behaviors than the anti-social personality scales. Among the risk measures the LSI-R produced stronger correlations between predicted risk scores and outcomes. The LSI-R also accurately identified re-offending behavior 62% to 76% of the time, which was more accurate compared to the Wisconsin classification system (Baird, 1981) and Salient Factor Score (Hoffman, 1983).

Another meta-analysis conducted in 2002 explored the predictive power of the LSI-R compared to a specific anti-social personality scale called the Psychopathy Checklist – Revised (PCL-R; Gendreau, Goggin, & Smith). After searching the available literature for studies validating both the LSI-R and PCL-R, the analyses revealed that the LSI-R outperformed the PCL-R in predicting general recidivism as well as violent recidivism. It was concluded by the authors that the LSI-R is a superior measure because it samples from a greater range of factors related to criminal behavior.

Other studies have directly compared the LSI-R to similar instruments using the same offender sample. The 1998 Colorado study (O'Keefe et al.) compared the use of the LSI to the Wisconsin assessment system to determine the likelihood of recidivism among parolees ($n$ = 172). The LSI-R and Wisconsin were administered at two different times (i.e., baseline, 6 months) and composite scores were compared to re-incarceration rates within 12 months. Results found that the LSI-R was a better predictor (Time 1, $r$ = .31; Time 2, $r$ = .22) compared to the Wisconsin (Time 1, $r$ = .09; Time 2, $r$ = .11) at both test administrations.

Kroner and Mills (2001) tested the accuracy of five different risk instruments to determine how well they predicted institutional misconduct and convictions for a nonviolent offense. Sample participants were administered five risk assessments, and scores on different assessments were compared to actual outcomes. The PCL-R, HCR-20 (Webster, Eaves, Douglas, & Wintrup, 1995), Violence Risk Appraisal Guide (VRAG; Harris, Rice, & Quinsey, 1993), Lifestyle Criminality Screening Form (LCSF; Walters, White, & Denney, 1991), and the LSI-R

made up the list of assessments for comparison; 87 federal custody offenders were included in the sample. Slightly higher correlations for the LSI-R and VRAG indicated that these two measures might have somewhat greater accuracy when predicting future convictions. From a statistical perspective, however, no significant difference was found between the five measures and the outcome variable (Kroner & Mills). This is likely due to the measures overlapping a great deal in the content and factors they measured.

While it appears that the LSI-R outperforms other measures of risk assessment and anti-social personality scales. There remains debate around how well the measure performs with minority populations. Although there is adequate evidence that the LSI-R performs equally well among all offenders, much of this work acknowledges the need for further research to explore the potential differences in these sub-populations. What is most common, however, among all of this research is the recommendation to test the assessment with the populations in which it will be used, specific to each criminal justice agency.

## TRAINING AND IMPLEMENTATION

It is imperative when considering the implementation of a measure like the LSI-R that the training and intended utilization of the assessment tool are given as much time and thought as the selection of the instrument itself. Initial and subsequent booster training is a fundamental part of establishing and maintaining the reliability and validity of any assessment. Andrews and Bonta (2003) not only recommended proper initial and follow-up training to maintain LSI-R reliability, but also warned that "reliability is subject to deterioration should enthusiasm for the approach wane or should [raters] begin to feel comfortable with the approach" (p. 7). Additionally, it was noted by Lowenkamp, Latessa and Holsinger (2004) that "a lack of training or 'bootleg' training conducted informally by non-certified trainers will also result in reduced accuracy and effectiveness" (p.53). In the study conducted by Austin et al. (2003) it was found that only 71% of the raters agreed when administering the LSI-R to a group of 120 inmates. Of those not in agreement, 60% of the scores differed by as much as three points. However, after the staff was re-trained and the time between assessments was reduced, the inter-rater reliability increased to 88%.

Similarly, Flores et al. (2006) found that inadequate training led to a breakdown in the predictive validity of the LSI-R. The researchers divided their sample into trained and untrained

groups and results indicated higher correlation coefficients for the trained group ($r$ = .21) compared to the untrained group ($r$ = .08). Furthermore, when the trained group was divided into assessors with more than three years of experience compared to assessors with less experience, the predictive ability of the LSI-R was slightly higher when administered by more experienced individuals (i.e., over three years, $r$ = .25; less than three years $r$ =.14).

Implications of poor training and administration of a measure can adversely affect the research as well. When attempting to verify the use of the LSI-R with minority populations (African American, $n$ = 333; Hispanic, $n$ = 112) Schlager and Simourd (2007) found their unexpectedly low correlations between LSI-R scores and re-arrest and reconviction outcomes might have been confounded by poor data coding, scoring errors and training issues that existed during the study. Until these factors are controlled research is greatly limited in its ability to determine the value and performance of the instrument.

Proper implementation and procedures directed by management are also vital to the efficacy of the instrument. Policy implementation includes clear decisions about who will be assessed, when they will be assessed, and how the LSI-R scores will be utilized specific to the agency's programs. Whiteacre (2006) ranks the following as some of the most important implementation decisions to consider: (a) determine the purpose of the instrument within the agency's system, (b) identify most appropriate outcome measures for validity testing, and (c) determine the most appropriate cutoff scores to identify low, medium, and high risk offenders.

Once an implementation plan is in place, correctional managers should work to ensure staff acceptance of the tool and build their confidence in its ability to function as intended. Whiteacre (2004) examined how staff's perception of the measure affected its use within the organization. In a federal community correction facility, Whiteacre randomly sampled 14 case managers and three administrators. Results from the interviews conducted with case managers revealed that not all participants found the LSI-R equally helpful to their job objectives. Some case managers reported using the instrument as a way to double-check information and guide their interview, supervision planning, and referrals. However, half of the sample indicated that the assessment tool was burdensome, that it did not relate to their job or contribute anything useful, and others found that it duplicated information they already had. The primary recommendations that evolved from this research were the need for administration to better

communicate the role of the LSI-R and its intended utilization to front-line staff. Staff and administration also suggested that training and quality assurance procedures need to be improved and made more applicable to the assessors' positions (Whiteacre).

Finally, it is vital to continued success and integrity of the LSI-R that there is a quality assurance and evaluation plan in place. The quality assurance plan can ensure proper data collection and scoring of the LSI-R assessment (Flores et al., 2006; O'Keefe, 1996; O'Keefe et al., 1998). Empirical evaluation can provide necessary feedback and insight into how well the instrument is functioning, if it is appropriate for the desired populations, and whether it is meeting the required outcomes to accomplish the agency's objectives.

## PRESENT STUDY

The present evaluation consists of two parts. The first part is a formative evaluation of the current processes in place at the Colorado Department of Corrections (CDOC) specific to the utilization of the LSI-R. This evaluation seeks to examine how the LSI-R is administered in the department during an offender's assessment and classification. The goals of the study are to discern how the assessment is administered and identify the strengths and challenges of the current assessment process. The second part of the study includes a survey of other U.S. state correctional agencies to gain a more comprehensive understanding of how the LSI-R is administered and utilized by these departments. The objective of this survey is to improve the understanding of how the LSI-R is used and to provide other examples of its implementation and application throughout the country.

# PART I

## INTAKE

All offenders entering a CDOC facility begin the admission process at the Denver Reception and Diagnostic Center (DRDC) or the Denver Women's Correctional Facility (DWCF). The intake process involves photographs, fingerprints, and orientation. At this time offenders are also screened to determine potential custody issues and immediate mental health or medical needs. In the days following the initial intake, the offenders are given a full physical, dental, and mental health exam. They are also processed through assessment and classification at which time they are administered a series of tests (e.g., substance abuse screening, vocational, education, personality) and interviewed by an assessment and classification programmer.

## ASSESSMENT AND CLASSIFICATION

There are currently 21 programmers and two supervisors in the Assessment and Classification unit. Up to 45 male offenders are processed through intake daily, which averages 12 offenders per week assigned to each programmer (16 per week for females). The programmers' primary objectives are to complete the Admission Data Summary (ADS) report, enter criminal history data, calculate initial needs levels, administer the LSI-R, and determine an offender's custody level and boot camp eligibility. All of this offender information is entered into the CDOC mainframe database (i.e., DCIS/PCDCIS) and printed for the offender's hard file. This information is available for case planning, program placement, and treatment services. In order to meet these objectives, programmers collect information by interviewing and surveying offenders and searching available databases (e.g., National and Colorado Crime Information Centers, Criminal Justice Information System, DCIS/PCDICIS), court documents (e.g., pre-sentence investigation report [PSIR], mittimus), and jail and community corrections reports. Once the programmer has completed this process with an offender, his or her file is submitted to the Assessment and Classification supervisors for review. Upon approval, the offender waits at DRDC/DWCF until moved to his or her receiving facility[2].

[2] Generally, this is the same process for female offenders at DWCF. Females have their own orientation process and classification system; however, these differences are relatively minimal as they relate to assessment and classification.

## METHOD

**Sample.** A total of 10 programmers and supervisory staff in the Assessment and Classification unit at DRDC and DWCF participated in this evaluation. This sample included both supervisors and eight programmers who were randomly selected from the 21 programmers currently employed in the unit. It was ensured that the two programmers currently working with the female offenders were also included in this sample. Participants have been employed by the CDOC between 11 and 22 years and have worked in the Assessment and Classification unit between 3 and 16 years. There were six males and four females who participated in this study.

**Procedure.** The method of data collection was a qualitative approach that included research interviews with the participants and observations of the interviews conducted with offenders. Researchers scheduled times to meet with each programmer separately. Programmers were asked to allow time for the research interview as well as an opportunity to observe at least one offender interview. Research interviews were semi-structured and took approximately 30 to 40 min to complete. Broadly, the questions addressed participant's work history (e.g., in CDOC and in the Assessment and Classification unit), the objectives of the programming position, and the assessment and classification process. More detailed questions targeted the use of the LSI-R in this process specifically addressing the administration, scoring, data entry, training, and utilization of the instrument. Interviews with the supervisors covered the same range of questions; additional questions also explored the quality assurance processes in place (see Appendix A).

In all cases, the researcher was able to conduct the observation of the interview with the offender on the same day as the research interview with the programmer. Twelve observations were completed, nine of which involved new court commitments (although it may not have been a first time incarceration) and three involved technical parole violations. Both researchers were present for the first four interviews and corresponding observations. The remaining six interviews and observations were attended by one researcher. Depending on the programmer's caseload, the researchers had the opportunity to observe one to two offender interviews during a visit. During the interview with an offender, the researcher was present but did not participate. The researchers used an observation checklist (see Appendix B) to record information regarding the length of the interview, location, question topics, interview style (e.g., open-ended vs. closed-

ended questions), and programmer's rapport with the offender. After the observation, the programmers were asked to walk the researchers through their scoring of the LSI-R and explain what information was used to score each item. After each interview and corresponding observation was complete, the researchers recorded their notes and wrote a detailed summary of the interview and observation. Although notes were taken and recorded separately, following each interview and observation, each case was discussed and the notes were cross-reviewed by the researchers to ensure reliability.

At the end of the data collection period the notes from the interviews, observations, and summaries were again reviewed by the researchers. Emerging themes were identified and the data were categorized based on key areas (e.g., training, scoring, rapport, communication style). This process was used to identify commonalities and variations among the observations and participant responses.

## RESULTS

**Assessment and classification process.** Participants were asked to describe the role of the programmer in the assessment and classification process. All of the respondents identified several job duties including determining classification, identifying custody concerns, and determining boot camp requirements. More specifically, participants stated that the programmer's role was to gather baseline information to complete the ADS report, update the offender's conduct and criminal history information, provide the initial needs levels for screening and programming, and score the LSI-R. A few participants described the role of the programmer as someone who is the first point of contact to answer the offender's questions.

Similarly, participants were in agreement regarding the role of the interview in the assessment process as well. The primary reason for the interview, cited by all participants, is to fill in the holes when information is missing from the file or other data sources. Some programmers also stated that the interview helped to confirm or clarify information and/or determine the truthfulness of the offender. To some the interview was useful because it allowed for a more personal exchange of information and opportunity to observe non-verbal cues about how the offender was coping (e.g., physical appearance, affect).

The observed diagnostic interviews ranged in length from 15 min to just over 1 hour. This range in length appeared to be affected by the admission status of the offender and the amount of information already available in the offender's file and various database systems. If the offender was a new admission but had been in the CDOC before, more information was often available in comparison to offenders who were new admissions without prior incarcerations. Generally, questioning tended to be more extensive if the offender was a new admission; especially among first time offenders, though, the overall quality of the PSIR and other documents appeared to be a primary influence on the depth of the interview. If there was a good deal of available information, the interview tended to be shorter and used more closed-ended questions. Less information required more exploration and a greater number of open-ended and follow-up questions.

Aside from the amount of information that was sought during the interviews, there was also variability in how the programmers communicated with offenders. This "style" of interviewing varied in the use of open-ended and closed-ended questions, use of follow-up questions, pace of the interview, and time allowed for the offender to respond. It appeared that some of the programmers' styles lent themselves to a greater exchange of information and, at times, slightly longer interviews. This variability was also seen in the rapport established between the programmer and offender. Across all programmers, the ability to build rapport and engage the offender existed along a continuum with some showing a great capacity to achieve a strong rapport within a relatively short period and others demonstrating little of this skill throughout the interview. The programmers who established good rapport did so by making introductions, maintaining eye contact, sustaining an open body posture (e.g., only briefly turning to the computer to enter information), using appropriate voice volume and speaking speed, providing feedback about scoring (e.g., classification), and openness to answering questions. There were other programmers who demonstrated few of these skills; this was apparent in the absence of introductions and little or no information provided about the purpose of the interview or scoring. Similarly, such programmers exhibited closed posture (e.g., often turned to the computer to enter information for long periods), abrupt voice tones, and quick-paced speaking rates.

**Administration and scoring of the LSI-R.** All of the programmers completed the LSI-R as part of the larger assessment process. Several programmers stated that the subscales of the LSI-R are very similar to the sections of the ADS report and therefore they gather information for the ADS and LSI-R at the same time. No one reported using the LSI-R manual to assist in the interview or scoring of the LSI-R, although the majority of the programmers had the manual on the day the researchers were present. Only a few reasons were offered for why the manual was rarely referenced, one being that there was no need to use it due to the experience in administering the instrument daily. Others reported that the manual was not practical, partly because it assumes that the assessor has more time than is actually available and partly because the manual's recommended interview questions are more clinical and not suited to the objectives of the programmer.

These latter points of view tended to be common among the programmers and were the main reasons cited for why the administration of the LSI-R in the Assessment and Classification unit has deviated from how it was designed. It was explained that programmers do not have the time to conduct a "full" LSI-R interview that incorporates MI. One of the participants reported that many of the programmers use a style of interview more akin to a law enforcement approach, involving direct and closed-ended questions. MI incorporates the use of open-ended questions, affirmations, reflections, and summaries. While not all of the programmers appeared to subscribe to the law enforcement approach to questioning, it was not evident that they were using MI techniques either. Many programmers believed that the large amount of information available in an offender's file and in various databases made up for the abbreviated interview. However, programmers further reported that not all information was available for every offender and that the quality of this information widely varied. For example, the PSIR was identified as one of the primary sources used to score the LSI-R. However, estimates showed that the PSIR was available to the programmers in only 15% to 30% of the new commitment cases and that the quality is dependant on the criminal justice staff (e.g., probation officer) who wrote it.

When asked about using the mainframe database (e.g., PCDCIS) to enter LSI-R scores, all programmers stated that it was easy to use (i.e., entering and reading information). The data system is designed with several automatic functions that assist in scoring the instrument. For instance, the subscale scores and total scores are automatically calculated. The measure also has

a few checks and balances built into its scoring; these rules are programmed into the data system so that they automatically fill when appropriate. These were all features identified as very helpful by the programmers.

Although everyone agreed that each offender in the CDOC should be assessed on the LSI-R, there was disagreement about when to complete a new assessment. Some programmers reported that they complete a new LSI-R on every offender; others reported that they do not complete a new LSI-R if a previous one is less than one year old. It was through this discussion, however, that a greater problem was identified. There are times when the data system will not allow a programmer to create a new (i.e., blank) LSI-R record. In these instances, the programmers use the previous LSI-R record and change the scoring to reflect the offender's current situation. However, when this is done the date on the record is not updated, and therefore the newly entered scores appear to be from the old assessment. If the record is saved, the old assessment scores are lost and the new scores appear under the date of the previous administration. Some programmers do not save the record but instead print a copy of the updated scores for the offender's file (as typically done with all LSI-R assessments), yet again the date on the hard copy goes unchanged and no record of the new scores exists in the data system.

While it was not a primary objective of this study to evaluate the scoring accuracy of the LSI-R, scoring errors across all programmers were noted during the observations. Largely, these errors related to the programmers' definition of certain items as well as incorrect uses of the timeframes and rater boxes. In several cases, different definitions and logic rules related to the items seemed to be used, diverging from the directives of the scoring manual. For example, if an offender had drug and alcohol problems, subsequent scoring would also reflect that he or she had no pro-social companions. Or if an offender's mother lived in another state, the scoring indicated that they had a poor relationship. While this may be accurate in some cases, it appeared to be an assumption made for others. Scoring errors also occurred when the directions on specific timeframes were not followed. For example, an item is only scored if the offender has had family members involved in criminal activity in the past 12 months, but this item was often scored if a family member had *ever* been involved in criminal activity.

Currently, there are no procedures that specifically address the quality assurance of the LSI-R administration or scoring. The review process currently in place relates more broadly to

the entire assessment and classification process. Once an offender has been through assessment and classification, his or her file is reviewed by the supervisors who ensure the file is complete and classification is accurate. Files are selected at random for more thorough review. How often this is done is dependent on available time, although a new programmer's cases are more thoroughly reviewed while he or she is in training. While the LSI-R is part of this basic review process to determine that it has been done, it is not specifically checked for scoring accuracy.

**Utility of the LSI-R.** Programmers identified only one use for the LSI-R scores in their unit, the LSI-R Alcohol and Drug subscale score and Total score are required in determining classification levels for female offenders. Other departments that can be considered end-users of the LSI-R in the department were identified as Alcohol and Drug Services and Parole. When opinions regarding the LSI-R were explored, the overall sentiment of the programmers could be described as indifferent. A common opinion was that the LSI-R is something programmers are required to complete, but that it has no perceived meaning in regards to their job. Others felt that it was something tacked on to the diagnostic process years ago. Furthermore, others thought that the LSI-R might be more effectively administered if it were completed by the divisions of the CDOC that utilize its scores. A few programmers voiced concerns regarding the accuracy and perceived subjectivity of the assessment. Much of these concerns stemmed from the LSI-R's use of self-report information and questions pertaining to its appropriateness in a facility setting.

**Training.** Most of the programmers stated that they first learned to administer the LSI-R through a mentorship approach to training. This is the method used for teaching the entire assessment and diagnostic process in which the trainee sits with an experienced, senior programmer and learns through shadowing and one-on-one instruction. In addition to this, all of the programmers attended a more formal, LSI-R classroom training in 2006. Only a small number of programmers reported that this training helped them recognize some of their administration or scoring errors. A few programmers expressed the desire for the training to be more practical and geared toward the role of the programmer, that would encompass more realistic circumstances and applicable scenarios. Other programmers referenced the demonstration video by Andrews and Bonta (Multi-Health Systems, 1996), stating that this was not a realistic method of administering the LSI-R given the programmers' time constraints. When asked if they believed they would benefit from booster training only one programmer felt

that this would be helpful. Most stated that they administered the LSI-R quite regularly so that there would be no need for a refresher.

## DISCUSSION

The programmers in the Assessment and Classification unit have been charged with collecting and reviewing a great deal of offender information in a short period. Collectively, the participants in this study also bring to this position a great number of years of experience working with offenders. As a programmer, they are required to assemble vital information that is used throughout the department by case managers, parole officers, educational and vocational programs, and clinical services. In order to assemble this information they must have extensive knowledge of file sources and data systems. Working with these sources is often impeded by variability in the availability and quality of information.

The results showed that the role of the programmer is clearly understood by all of the participants and that their performance in this position was consistent. That is to say, the objectives of the position, as reported by the supervisors, were consistently identified and supported by each programmer. The findings suggest that the programmers perform their job duties as required and as they were trained. However, as the evaluation concentrated more specifically on the administration and scoring of the LSI-R within this process, some concerning findings emerged. The results indicated that across all participants, the LSI-R has no meaningful purpose for the programmers. While programmers were able to identify other divisions in the department that use the assessment, they did not seem to have a deeper understanding about its usefulness and value within the department.

The issues concerning administration and scoring appear to be largely due to the lack of the measure's utility. Because the LSI-R has little perceived utility, it holds a low priority in the assessment and classification process, which in turn is reflected in the low priority given to training and quality assurance. Thus, it is not entirely surprising to find a lack of value and accuracy in the administration of the LSI-R. Although assessment and classification may not utilize the LSI-R, there are currently three areas (i.e., Alcohol and Drug Services, Parole, the Colorado Actuarial Risk Assessment Scale utilized for Parole Board decisions) in the CDOC that continue to depend on results of this assessment. Areas in need of attention are the current

administration practices of the LSI-R. The results of this study indicate that the offender interview is not conducted as it was originally intended. The interview questions should cover all areas of the assessment and the interviewer should employ MI techniques. When scoring the instrument, programmers should take the information from both the interview process and file/database into consideration (Andrews & Bonta, 2006). Currently, the programmers derive the LSI-R score almost solely from the offender's file and database sources. It is concerning that programmers rely so heavily on these sources, because the information is not always available and it is sometimes of poor quality. This over-reliance in potentially unreliable methods can adversely affect the scoring of the measure as well as the correct utilization of timeframes. However, one of the primary obstacles to administering the test, as designed, is the amount of time a programmer has to complete an offender's assessment and classification. It was reported that the programmers do not have enough time to conduct a full LSI-R interview, which is partly the reason for stronger reliance on offender file and database information. At this time, there are no studies that have evaluated the accuracy of the instrument when scoring information is derived from official records only; further evaluation would need to be completed to determine if this is a reliable and valid method to administering the instrument. Other solutions (e.g., additional staff, reduced workload, longer turn over periods) must also be explored to allow programmers to have more time to administer the LSI-R with a full MI approach.

A second area of focus relates to reliability concerns around the scoring of the LSI-R. Results of the current study indicate that the scoring of the LSI-R is not conducted according to standardized procedures. Errors appeared to exist when failing to use specified timeframes and guidelines for scoring rater boxes. Some programmers also held inaccurate assumptions about the way scoring certain items should impact the scoring of others. Tightly controlled scoring procedures and standardization are vital to the administration of an assessment instrument (Flores et al., 2006; O'Keefe, 1996; O'Keefe et al., 1998). The quality of the assessment is dependent on controlling subjectivity and inconsistency. For these reasons, the measure's success is largely dependent on programmers undergoing regular training, establishing accountability and developing standard quality assurance procedures. Regular use of the instrument alone does not guarantee scoring accuracy. Studies have found that experience with the test coupled with adequate training on the measure greatly increases inter-rater reliability and internal validity. The quality of the training is also fundamental to maintaining a high standard of

assessment administration – informal or inadequate training can lead to reduced effectiveness of the assessment tool as well (Austin et al., 2003; Flores et al., 2006; Lowenkamp, Latessa, et al., 2004). According to the current study, the formal LSI-R training presently available does not meet the programmers' needs. Therefore, training options need to be developed that focus on training approaches that will assist staff in improving the LSI-R's administration in a way that is not overly burdensome to their scheduling demands coupled with a curriculum that is specific to their needs and job duties.

Another issue that should be addressed has to do with the error in the data system, causing programmers to be unable to enter a new LSI-R record. It is vitally important that this issue is corrected so that the appropriate data entry and tracking can occur. The issue of updating existing LSI-R records should be re-visited as well. It is essential that LSI-R updates do not replace existing data but should be recorded as a new file.

Some limitations to the current project should be considered. The methods employed to gather information for this evaluation were qualitative. While this method allows a hands-on approach to learning the assessment process, it is not free of shortcomings. Efforts were made to gather a random sample of participants whose input and results could inform the overall procedures in the unit; however, the information and opinions shared by the participants should not be generalized without precautions. Secondly, the data in this study were collected and reviewed by the researchers and, therefore, are subject to researcher bias that could influence how the data is recorded and interpreted. Even though care was taken to establish inter-rater reliability and cross-checking of the results after every session, all qualitative methods are limited by some subjectivity. It must also be noted that results related to the scoring of the LSI-R were based only on information collected during the observations. This study was not a rigorous reliability evaluation, but instead depended on the researchers to make note of certain errors and scoring concerns when they became evident during observations and one-on-one interviews.

# PART II

## METHOD

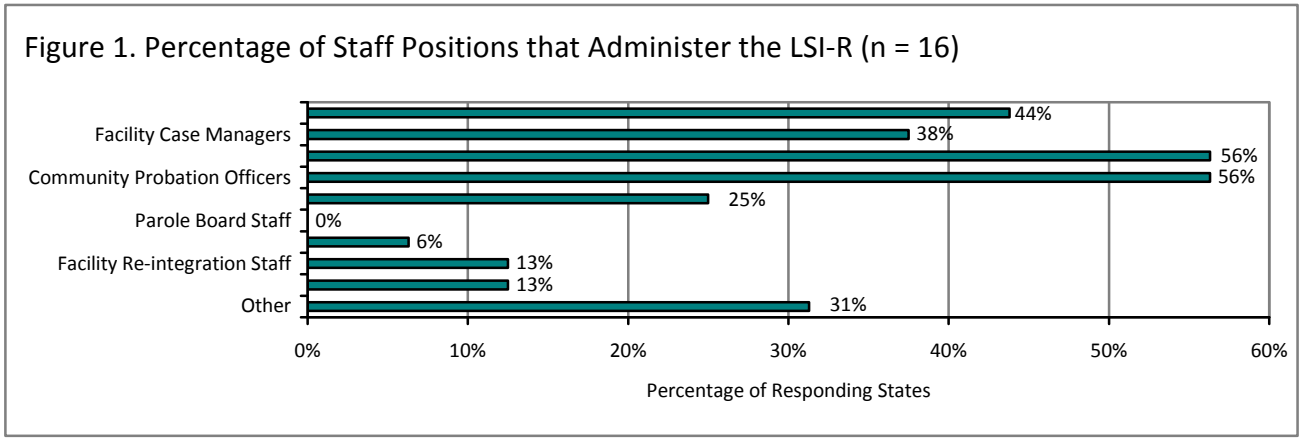
Surveys were distributed to the state correctional departments in all 50 states in the U.S. to learn more about their use of the LSI-R. The survey was distributed through the help of the Association of State Correctional Administrators (ASCA), a non-profit professional organization. All correctional facilities in the 50 states are members of ASCA. The organization's goals are to promote the exchange of information and ideas around correctional planning and policy-making. A service of ASCA is to distribute on-line surveys to which each state correctional department can respond. The ASCA survey consisted of 11 questions that explored if the state uses the LSI, and if so, what version is administered, who administers it, what populations are assessed, and how the information is used – respondents were asked to check all the answers that apply to their state's agency (see Appendix C for survey). States' respondents were given two weeks to respond to the survey. Respondents were asked to include a contact person for the respective departments should individual follow-up be necessary and indicate if they had reports available regarding their use or study of the LSI.

## RESULTS AND DISCUSSION

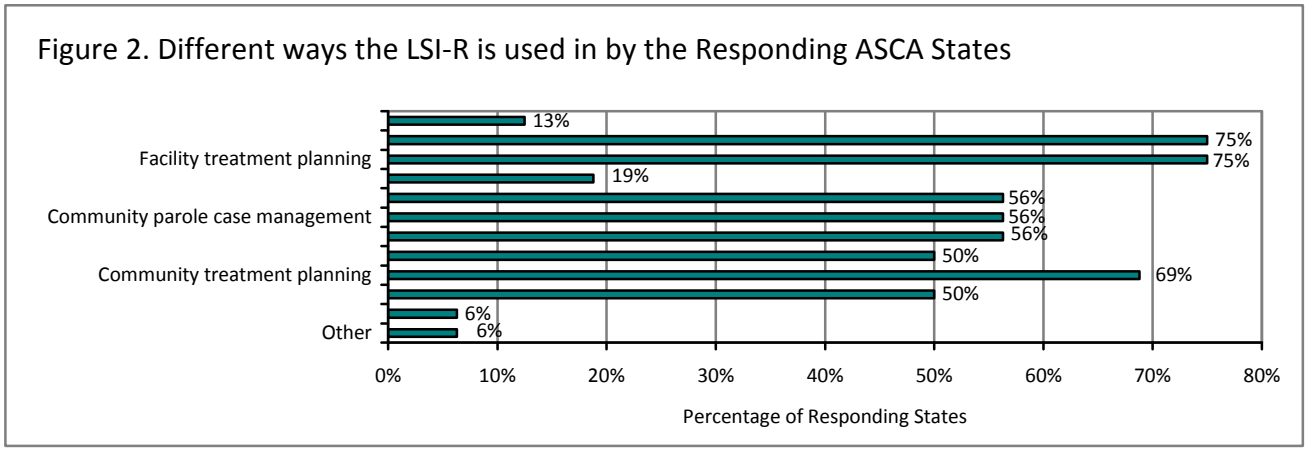
Thirty-three states (including Colorado) responded to the survey (see Appendix D for a list of the respondents). Sixteen states use the LSI-R and one uses the Level of Service/Case Management Inventory (LS/CMI; Multi-Health Systems, 2004). Of those that use the LSI-R, 81% administer it to incarcerated offenders, 75% to parolees, 56% to probationers, 56% to community corrections offenders and 6% to 'other.' When asked about the LSI-R's initial administration, 62% responded that the instrument is administered upon admission to the facility and 14% reported that the instrument is administered 30 days after release to parole. The remaining 25% stated that they administer the LSI-R at another time during an offender's sentence to include pre-sentencing, within 30 days of sentencing, and within 30 days of leaving the facility.

Fourteen of the 16 states using the LSI-R indicated that they re-administer the assessment, but the point at which this re-assessment occurs varies widely, including (a) every 6 months (19%), (b) upon release to parole (12%), and (c) other times not otherwise specified

(62%)[3]. Facility admission staff, community parole and probation officers, and facility case managers rank among the most common staff administering the assessment (see Figure 1). Results of this survey indicated that there are a variety of ways in which the states use the LSI-R (see Figure 2). Facility case management and treatment planning (75%) were selected as two of the highest uses of the instrument followed by community treatment planning (69%).




*Note:* The results include respondents from Colorado and 16 other states; more than one answer may have been selected.




*Note:* The results include respondents from Colorado and 16 other states; more than one answer may have been selected.

This survey of U.S. correctional departments provides only cursory insight into what other agencies are doing and how the CDOC could learn from these examples. Follow-up with the 16 states that use the LSI-R and responded to the survey is necessary in order to develop a deeper understanding about how the LSI-R is being administered and utilized. This follow-up study should include a more in-depth exploration of the LSI-R's administration across states,

[3] One state did not respond to this question (6%).

focusing not only on the procedures used but also on the staff that deal with the assessment. It should also be assessed whether there is any training or education required (e.g., masters degree) to administer the assessment and, if so, what the training entails, as well as the quality assurance procedures are that are in place at the various facilities across the states. Other states might also provide insight about the way they deal with common obstacles such as the time it takes to administer, fidelity to scoring, and use of MI techniques. It would be helpful to learn how the LSI-R scores are used to determine treatment, direct case planning, and how the individual department's programs are designed to meet these needs. All of this information would be very useful to compare to CDOC's current system, and to inform future directions for the department. This survey was advantageous because it enabled the researchers to gain some insight into how many states are using the LSI-R. Although not all states replied, the 65% response rate can be considered positive for this method of data collection. Contact information was provided by the responders from the different states, which makes follow-up assessments possible.

# RECOMMENDATIONS

In order to determine the direction of future evaluations, policies, and training regarding the use of the LSI-R in the CDOC, it is imperative that the department first re-visit the role this assessment tool should have within the agency. Its present utility and potential use need to be carefully evaluated before real and meaningful opportunities for improvement and change can be acted upon. It is acknowledged that the present study only offers a modest start to answering some of the questions raised around the issue of the LSI-R's most effective utilization within CDOC. It is for this reason many of the recommendations included in this report suggest answering some fundamental questions that preempt policy and implementation decisions.

A primary focus of moving forward using the LSI-R is to establish a solid plan to implement the instrument that will largely focus on a sound training and quality assurance program. National evaluations investigating the implementation of the LSI-R in correctional programs have concluded that one of the most valuable strategies for the assessment's successful implementation is the establishment of staff buy-in and commitment (Haas & DeTardo-Bora, 2009; Whiteacre, 2004). While most of the implementation decisions need to be made by administrators, it is important that all staff feel ownership in the process. This means that the rationale and purpose for all the decisions regarding the LSI-R should be communicated clearly to staff. Whiteacre found that understanding the goals behind the LSI-R and its relation to program practices and services was fundamental to case managers' perception of the assessment. Moreover, Haas and DeTardo-Bora (2009) found that correctional staff's attitudes toward the LSI-R played a significant role in the success or failure of the instrument. Consequently, little staff support for the LSI-R resulted in staff programming decisions that violated the RNR model.

Training is an effective way to communicate the goals and departmental commitment to the LSI-R in addition to maintaining instrument reliability and validity. Whiteacre (2004) cautioned, however, that negative attitudes towards the assessment could have an adverse impact on the training itself, and therefore building support for the instrument needs to start at the onset of implementation. Nevertheless, all staff should be formally trained in utilizing the LSI-R properly; new staff should not administer the instrument until trained and existing staff should attend regular follow-up sessions to ensure appropriate administration and scoring. The training

itself needs to take into account the skills of the staff, their ability to ascertain needs and situations, and use the instrument itself (Haas & DeTardo-Bora, 2009). Training objectives should include information about the underlying theory of the LSI-R, explain its purpose, justify certain item's presence on the test, and provide realistic experiences through practical examples and exercises (Whiteacre).

Regardless of who administers the LSI-R, the respective departments must establish a quality assurance program that will monitor data entry, administration, and use of the tool. This quality assurance program should include review of the scoring to identify errors and misuse of items and monitor the offender interview process and data systems.

While the LSI-R is vital to identifying risk and needs, the way this information is *used* is most valuable in affecting outcomes. To have the intended impact on recidivism, questions regarding the treatment programs currently in place need to be addressed. Such questions include (a) how should the LSI-R scores be used to determine program placement and service delivery, (b) are the appropriate programs and services in place to address the offenders' predominant needs, and (c) do these programs meet the objectives of the responsivity principle? The department's current practices in employing the RNR model should be explored as well as the suitability of this model for the CDOC's mission and goals. Answers to these questions are necessary to properly identify and treat offenders, keeping in mind the overall objective of reducing recidivism.

Administrators making policy decisions regarding the LSI-R should be aware of other LSI-R versions currently available. The LSI – Screening Version (LSI:SV) consists of 8 items (derived from the LSI-R) and is used to identify offenders who should go on to be assessed on the full version of the instrument. A 2009 study of the LSI:SV investigated how well it performed this screening function (Lowenkamp, Lovins, & Latessa). Results indicated that overall the LSI:SV was effective in discriminating between low, moderate, and high risk offenders, although it performed best at distinguishing low risk from both moderate and high risk offenders. Although the LSI:SV was found to predict recidivism almost as accurately as the full LSI-R, it was not recommended by the authors for use as a stand-alone assessment due to its lack of providing sufficient information about dynamic risk factors (Lowenkamp, Lovins, et al., 2009). Also available is the LS/CMI. The LS/CMI is based on the LSI-R, but this version has

combined the original 54 items into 43 items and includes an additional 10 comprehensive sections (Multi-Health Systems, 2004). This inventory includes the assessment tool, scoring forms, interpretation guides, and a series of case management reports. However, there is minimal information about the LS/CMI other than what is available through the publishing company. Before these alternative versions of the LSI-R are considered for use within the CDOC, the resources required and utility of these assessments must first be determined.

Until the implementation and thus administration of the LSI-R has been addressed, evaluation is not recommended. Until the instrument is accurately administered and the quality of the data has improved, the results from the evaluation studies will not be entirely meaningful. However, future evaluation can provide some important information regarding the LSI-R for use with the CDOC populations. For example, it should be further explored how well the assessment can be utilized in the prison environment. Historically, the LSI-R is most commonly used with offenders in the community. For this reason, the items tend to have more relevance to community situations. To date, only one study from England has attempted to better adapt the LSI-R for use within the prison setting and compare scores at intake to those at time of release (Hollin et al., 2003). To test this hypothesis, researchers used an "amplified" version of the LSI-R which included the original 54 items combined with an additional 11 items that focused on prison-specific information (e.g., how did you get your job in prison, how do you get along with other inmates, how do you spend your free time). As part of this procedure, all of the items were reviewed and identified as either static or dynamic based upon the principle that they could, in theory, change over the course of a prison sentence. Items identified as dynamic included those dealing with escape attempts and institutional misconduct, in addition to the LSI-R education, employment, family, companions, alcohol/drug, emotional/personal, and attitude/orientation sections. The findings included comparisons of the English offenders' scores to those from Canadian offenders from previous research (Loza & Simourd, 1994). Results indicated that the English inmates' scores were similar to those of Canadian inmates (the only notable differences were attributed to sample and cultural differences). Factor analyses revealed that a two-factor structure was present, one related to emotional and personal problems the other related to criminal behavior or lifestyle items. The results of the factor analyses were somewhat different from the previous study suggesting that the differences in samples had an impact on the factor loadings (Hollin et al., 2003). Analyses of the change of scores from baseline to release indicated

that the assessment tool was able to detect change in dynamic items during incarceration. While the scoring of criminal behavior related items increased over time, the other dynamic items (e.g., alcohol/drug, emotional/personal) decreased over time. It was unclear whether these reduced levels of need were a result of treatment received during incarceration or if time away from "real-life" reduced the appearance of need in these areas. While these results suggest the LSI-R can potentially be adapted to the prison setting and used in identifying areas of change, it is recommended that similar research be conducted with CDOC samples to determine if these findings can be replicated. A large limitation of this study was the ability to generalize beyond English prisoners.

Local LSI-R reliability and validity testing should be done to verify the measure is performing correctly within the correctional system and with desired populations. While earlier evaluations provided strong supporting data for the use of the LSI-R in Colorado (Arens et al., 1996; O'Keefe et al., 1998; O'Keefe & Wensuc, 1998), the department has undergone many changes that could influence its present utility. Areas for future evaluation should include reliability and validity testing for both the inmate and parole populations as well as assessing for potential gender and racial biases. Furthermore, the cutoffs utilized by the CDOC to identify low, medium, and high-risk offenders should be re-evaluated to determine if they appropriately minimize classification errors, particularly among minority groups.

The work to reduce the recidivism rates of offenders in Colorado and throughout the nation is a process that requires great dedication. The LSI-R aids in only a small part of this mission. Research on this instrument and the theory on which it is based raises important questions that must continuously be addressed through planning, policy, and evaluation.

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# APPENDIX A

| **Interview Questions for Supervisor and Programming Staff at DRDC/DWCF Intake** | |
|---|---|
| Staff ID Number:<br>Date: | Facility:<br>Interviewer: |
| **Participant Information** | |
| Gender – Female / Male<br>How long have you worked for CDOC overall?<br>How long have you worked as a programmer at DRDC?<br>Generally, what are your job duties as a programmer?<br>What is your role in the assessment and classification process?<br>What do you see is the purpose of the interview?<br>What do you do when the offender gives you information that conflicts with file/other information?<br>On average, how long does it take you to complete an intake? Interview vs. entire process?<br>How many do you complete in a day? In a week? | |
| **Administration/Utility** | |
| How long have you been administering the LSI?<br>On average, how long does it take you to administer the LSI?<br>Do you ever update an existing LSI? When? Why? Why not?<br>Are there materials you use for LSI administration (manual, cheat sheets)?<br>What sources of information are used to score the LSI (e.g., files, mittimus, interview, PSIR)?<br>Specifically, what information from the offender file is used?<br>What percentage of the LSI is informed by the interview vs. other sources?<br>Who receives an LSI (e.g., parole returns, new commits)?<br>How do you conduct/format your LSI interview (e.g., follow scoring sheet, combination with other sections of intake)?<br>Are you gathering other information/assessments at the same time you're doing the LSI?<br>What is your comfort level with administering the LSI?<br>In your opinion, are there any obstacles to administration? What are they?<br>How would you improve the LSI administration process? | |

| **Training** |
| --- |
| How did you learn to administer the LSI?<br>Did you attend a formal training(s)?<br>How many times have you attended training<br>How long was the training(s) (# hours)?<br>When was the training(s) (mm/yy)?<br>Do you have regular booster training? How long? How often?<br>Did you administer LSI before you were trained?<br>For how long prior to training?<br>Did the training help?<br>How did it help?<br>Do you feel you need or would like more training? Why?<br>Do you think additional training would be beneficial for all staff? Why?<br>Specifically, what areas would you like more training (e.g., MI, scoring, interpretation)? |
| **Data System** |
| How easy is it to enter information into the database related to the LSI?<br>When is information entered?<br>Is there certain information you enter before the interview vs. after the interview?<br>What are the strengths of the data entry?<br>Are any fields auto calculated?<br>Do you enter all the LSI data yourself or is it auto-filled from other sources?<br>What are the obstacles to data entry?<br>Can LSI scores be changed/updated?<br>How is this done?<br>Is this easy to do?<br>How often is it done?<br>Does data entry repeat any where?<br>Are the screens easy to move around in?<br>Are screen easy to read?<br>Is there any information double entered? |

# APPENDIX B

## Observation of Programming Staff at DRDC/DWCF Intake

| Date: | Observer: | Facility: | Staff Number: | Location (office, day room, cell door) |
|---|---|---|---|---|
| **Pre-interview** | | | | |
| **Sections of file reviewed:** | | **Information used to score LSI:**<br>▪ **Are any scales of LSI scored prior to start of interview?** | | |
| | | | | |

| **Offender Information:** | | **Length of interview**: | | **Setting:** |
|---|---|---|---|---|
| Gender | Incarceration Number | Start Time | End Time | ☐ Private<br>☐ Others could easily hear conversation |
| Age | Status Type (e.g., new court commit, PV): | | | ☐ There were interruptions<br>☐ Programmer did his/her best to minimize interruptions<br>☐ Programmer and inmate could face each other<br>☐ Room was comfortable (enough room to sit) |

# Interview: Programmer Style/Skills

| **Rapport** | |
|---|---|
| ☐ Initiated interview with small talk | Open-ended: |
| ☐ Open posture (face offender, lean in while listening, arms uncrossed) | Affirmations: |
| ☐ Made appropriate introductions | Reflections: |
| ☐ Appropriate voice tone (courteous, kind, professional) | Summary: |
| ☐ Made eye contact | |
| ☐ Appropriate voice volume (easily heard) | |
| ☐ Appropriate speaking speed (not too fast, not too slow) | |
| ☐ Other/Notes: | |

| **Check topics covered in interview:** | | | | |
|---|---|---|---|---|
| ☐ Criminal history | ☐ Financial | ☐ Family/Marital | ☐Employment/Education | ☐ Accommodation |
| ☐ Leisure/Recreation | ☐ Companions | ☐Alcohol/Drug Problems | ☐ Emotional/Personal | ☐ Attitude/Orientation |
| List other questions asked during interview: | | | | |

| **Pace and Direction of Interview:** | | |
|---|---|---|
| ☐ Slow<br><br>(off track continuously, irrelevant topics) | ☐ Medium<br><br>(stayed on track; allowed time for answers and follow up to explore topics appropriately) | ☐ Fast<br><br>(rushed, not enough time to explore answers or give offender time to fully address questions) |

| **Communication Skills:** | |
|---|---|
| ☐ Used easily understood language/terms | ☐ Used inappropriate terms/ slang |
| ☐ Clarified when offender did not understand question or information | ☐ Maintained open posture through out interview (face offender, lean in while listening, arms uncrossed) |
| ☐ Made effort to use offender's name/pronounce it correctly | ☐ Responds to offenders answers acknowledging they were listening (verbally, head nod) |
| ☐ Provided information about the intent of the interview | ☐ Provided feedback about scoring and what information they were collecting and why |
| ☐ Other/Notes: | |

| **General:** | |
|---|---|
| ☐ Non-judgmental (facial expressions neutral, no expression of personal opinions or beliefs, emotions remained neutral and professional) | ☐ Professional demeanor |
| ☐ Other/Notes: | ☐ Challenged with information from other sources (file, DCIS) |

| **Defensive or Reserved Offender** (body posture was closed, refused to answer questions, tone was angry/agitated, high level of rationalization) *Programmer demonstrated the following:* |
|---|
| ☐ Active listening (summarized, responded, engaged with other questions) |
| ☐ Challenged statements with information from other sources (file, DCIS) |
| ☐ Argued with offender |
| ☐ Changed topic |
| ☐ Directly addressed behaviors |
| ☐ Other/Notes: |

| **O.A.R.S:** | |
|---|---|
| ☐ Majority of questions were open ended | ☐ Asked follow up questions for clarification/additional information |
| ☐ Gave two or more affirmations | ☐ Majority of questions were closed ended questions |
| ☐ Reflected to the offender two or more times | ☐ Summarized the information two or more times |
| ☐ Offender spoke 3:1 ratio of the interview | ☐ Asked leading questions (offender is pressured to answer a certain way; question suggests an answer) |

# APPENDIX C

1. Please supply contact information for the person familiar with this material:
   Jurisdiction: _____
   Name and Title: _____
   Email Address: _____
   Phone Number: _____

2. Does your department currently use the Level of Service Inventory (LSI)?
   Yes _____ No _____

3. If yes, which version of the LSI is used? (Select all that apply)
   Level of Service Revised - LSI-R _____
   Level of Service Inventory - Revised: Screening Version - LSI-R:SV _____
   Level of Service/Case Management Inventory - LS/CMI _____
   Youth Level of Service/Case Management Inventory - LS/CMI _____
   Other _____ If Other (please specify) _____

4. How is the information from the LSI used? (Select all that apply)
   Facility classification _____
   Facility case management _____
   Facility treatment planning _____
   Community placement _____
   Community parole supervision _____
   Community parole case management _____
   Community probation supervision _____
   Community probation case management _____
   Community treatment planning _____
   Pre-release planning _____
   Parole board decisions _____
   Other _____ If Other (please specify) _____

5. Who administers the LSI? (Select all that apply)
   Facility admission staff _____
   Facility case managers _____
   Community parole officers _____
   Community probation officers _____
   Community based case managers _____
   Parole board staff _____
   Pre-release staff _____
   Facility re-integration staff _____
   Community re-integration staff _____
   Other _____ If Other (please specify) _____

6. What adult populations are assessed on the LSI? (Select all that apply)

Incarcerated offenders _____
Parolees _____
Probationers _____
Community based inmates (e.g., community corrections, halfway house) _____
Other _____ If Other (please specify) _____

7. When is the LSI first administered?

At admission to facility _____
30 days prior to parole _____
30 days prior to probation _____
30 days after release to parole _____
30 days after release from probation _____
Other _____ If Other (please specify)_____

8. How often is the LSI re-administered?

Every six months after baseline _____
At time of release to parole _____
At time of release to probation _____
Other _____
If Other (please specify) _____

9. If the LSI information is used in combination with other assessment tools, what are those tools?

_____

10. Has the department done any research or evaluation related to the use of the LSI in your department?

Yes _____ No _____

11. If YES, where can we obtain a copy of the report?

_____

# APPENDIX D

States responding to the ASCA LSI survey

| State | Use LSI-R |
|---|---|
| Alabama | |
| Arizona | |
| Arkansas | |
| Colorado | ☑ |
| Hawaii | ☑ |
| Idaho | ☑ |
| Indiana | ☑ |
| Iowa | ☑ |
| Kansas | ☑ |
| Kentucky | |
| Louisiana | |
| Maryland | ☑ |
| Massachusetts | |
| Michigan | |
| Minnesota | ☑ |
| Mississippi | |
| Missouri | |
| Montana | ☑ |
| New Jersey | ☑ |
| New York | |
| North Dakota | ☑ |
| Nevada | |
| Ohio | |
| Oklahoma | ☑ |
| Oregon | LSI/CMI |
| Rhode Island | ☑ |
| South Dakota | ☑ |
| Texas | ☑ |
| Utah | ☑ |
| Virginia | |
| Washington | |
| West Virginia | |
| Wyoming | |

Colorado Department of Corrections
Office of Planning and Analysis
2862 South Circle Drive
Colorado Springs, CO 80906
www.doc.state.co.us