LSI-R and ASUS Data Reassessment Update Report

A total of 1,036 Level of Service Inventory – Revised (LSI-R) and 748 Adult Substance Use Survey (ASUS) reassessments were examined in November 2005 to determine the extent to which aggregate scores have changed over time. In cases where an offender had more than one reassessment, the initial score was compared to the most recent one.

The results of the LSI-R reassessments are encouraging. Approximately half (51%) of offenders' total LSI-R scores decreased since their initial assessments. Moreover, the average decrease was larger for higher risk offenders, possibly reflecting the increased time and resources being focused on this group. For the ASUS reassessments, however, the overall average total scores did not change significantly. Nevertheless, there are a couple positive trends. Much like with the LSI-R, the average ASUS total score decrease is larger for higher risk offenders. Moreover, although lower risk offenders' total scores did not decrease as much, their ASUS MOTIVATION subscale scores did increase significantly, suggesting that this group as a whole is at least more willing than before to engage in intervention services and change their alcohol and other drug use patterns. It is possible that this reflects ICIS' emphasis on implementing motivational interviewing and cognitive behavioral therapy.

Level of Service Inventory – Revised (LSI-R)

Two-thirds of the LSI-R items are inherently static (e.g., "Were you ever arrested under the age of sixteen?"). Therefore, the total score cannot measure change very well over relatively brief reassessment periods (ideally, six months). A more helpful method is to examine change in the LSI-R protective score, which is comprised of thirteen dynamic items (e.g., "What kind of things do you typically do with your free time?"). The LSI-R total score and protective score are strongly inversely related, i.e., when one is high the other is invariably low, and vice-versa. Therefore, the desired outcome is an <u>increase</u> in the protective score, reflecting an increase in pro-social reinforcement.

In sum, the LSI-R reassessment data indicate two important positive trends:

1. A majority of the offenders (55%) had LSI-R protective scores that increased upon reassessment (35% decreased and 10% did not change). Further, for the entire sample, the average LSI-R protective score increased by a statistically significant total of 2.12 points. (The term "statistically

significant" is used throughout this report to indicate a result that can be mathematically demonstrated to be at least 95 percent unlikely to have occurred merely by chance.)

2. The LSI-R protective scores for higher risk offenders increased at a greater average amount than did those for lower risk offenders, possibly reflecting the increased time and resources being focused on this group. Specifically, scores for offenders in the surveillance, high, and medium risk categories increased by a statistically significant 5.65, 4.17, and 1.76 points, respectively. Scores for offenders in the administrative and low risk categories, on the other hand, increased by 0.07 and 0.18 points, respectively (these increases are not statistically significant).

It should be noted that for a majority of the sample (low, medium, and high risk offenders), the three protective score items that measure change in offenders' education and/or employment situation showed the largest average increases. It is unclear, however, if this increase is a result of particularly effective treatment/intervention outcomes, or simply due to the fact that this criminogenic need is being targeted more frequently and intensively by probation and parole officers.

Adult Substance Use Survey (ASUS)

In sum, the ASUS reassessment data indicate several presumably undesirable trends:

1. Almost half of the offenders' (49%) ASUS scores increased upon reassessment (45% decreased and 6% did not change).

2. The average ASUS score for the entire sample increased 1.17 points. (This increase is not statistically significant, however.)

3. For all risk categories (except surveillance), the average score for the ASUS GLOBAL subscale increased or did not change. However, none of these increases are statistically significant. (The ASUS GLOBAL subscale provides an overall measure of risk and life-functioning disruption caused by alcohol and drug use.)

4. For lower risk offenders (administrative and low risk categories, combined), the average score for the ASUS DISRUPTION subscale increased by a statistically significant 5.0 points. (The ASUS DISRUPTION subscale is a broad measure of disruptive symptoms associated with alcohol or other drug use. It, along with the LSI-R total score, determines recommended treatment levels for offenders.)

Dr. Kenneth Wanberg, creator of the ASUS, has indicated that ASUS scores may increase during initial treatment as offenders admit to more issues and become less defensive, then decrease with longer-term treatment. It is possible (though presently unclear) that the trends above are consistent with this pattern.
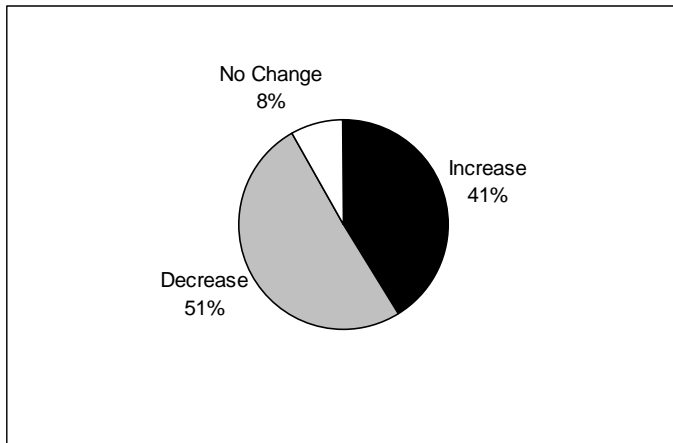
Although the results listed above for the ASUS data are a possible concern, there are several encouraging trends:

1) The ASUS scores for higher risk offenders decreased at a greater average amount than did those for lower risk offenders, possibly reflecting the increased time and resources being focused on this group. Specifically, offenders falling into the categories of surveillance, high, and medium risk had scores that decreased by 1.63, 0.45, and 0.41 points, respectively. Offenders falling into the categories of administrative and low risk, on the other hand, had scores that increased by 3.95 and 2.78 points, respectively. However, none of these increases or decreases are statistically significant.

2) For lower risk offenders (administrative, low, and medium risk categories, combined), the average score for the MOTIVATION subscale increased by a statistically significant 4.7 points. (MOTIVATION measures the perceived need to make changes, a willingness to stop or not continue using alcohol or other drugs, and a stated felt need and willingness to enter treatment. An increasing score for this subscale suggests offenders overall are responding to supervision and treatment in a positive way.)

3) For higher risk offenders (surveillance and high risk categories, combined), the average score for the MOOD subscale decreased by a statistically significant 6.7 points. (MOOD measures emotional and psychological disruption, indicating depression, worry, anxiety, anger, irritability, feelings of not wanting to live, uncontrolled acting out behavior, and being unable to control emotions.)

PDF copies of this report are available from the Interagency Council
on Intermediate Sanctions web site at **cpja.ag.state.hi/icis**

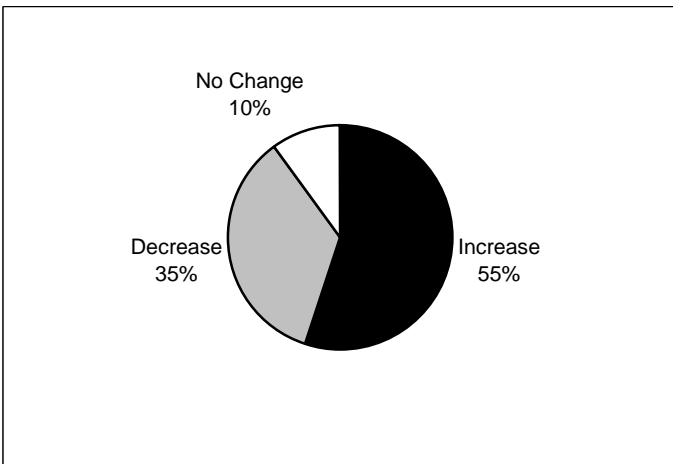## Figure 1: Change in LSI-R Reassessment Total Scores

N = 1,036 total reassessments

The LSI-R total score, which is comprised of fifty-four dynamic and static items, provides an overall measure of risk for each offender. Theoretically, a high score means an offender is more likely to recidivate. Therefore, the desired outcome is a <u>decrease</u> in the total score.

Figure 1 shows that 51% of LSI-R total scores decreased upon reassessment, compared to 41% that increased and 8% that did not change.

- *Average change in total score for the entire sample: -0.99 (statistically significant)*
- *Average change in total score for cases that showed an increase: 5.55 (statistically significant)*
- *Average change in total score for cases that showed a decrease: -6.44 (statistically significant)*

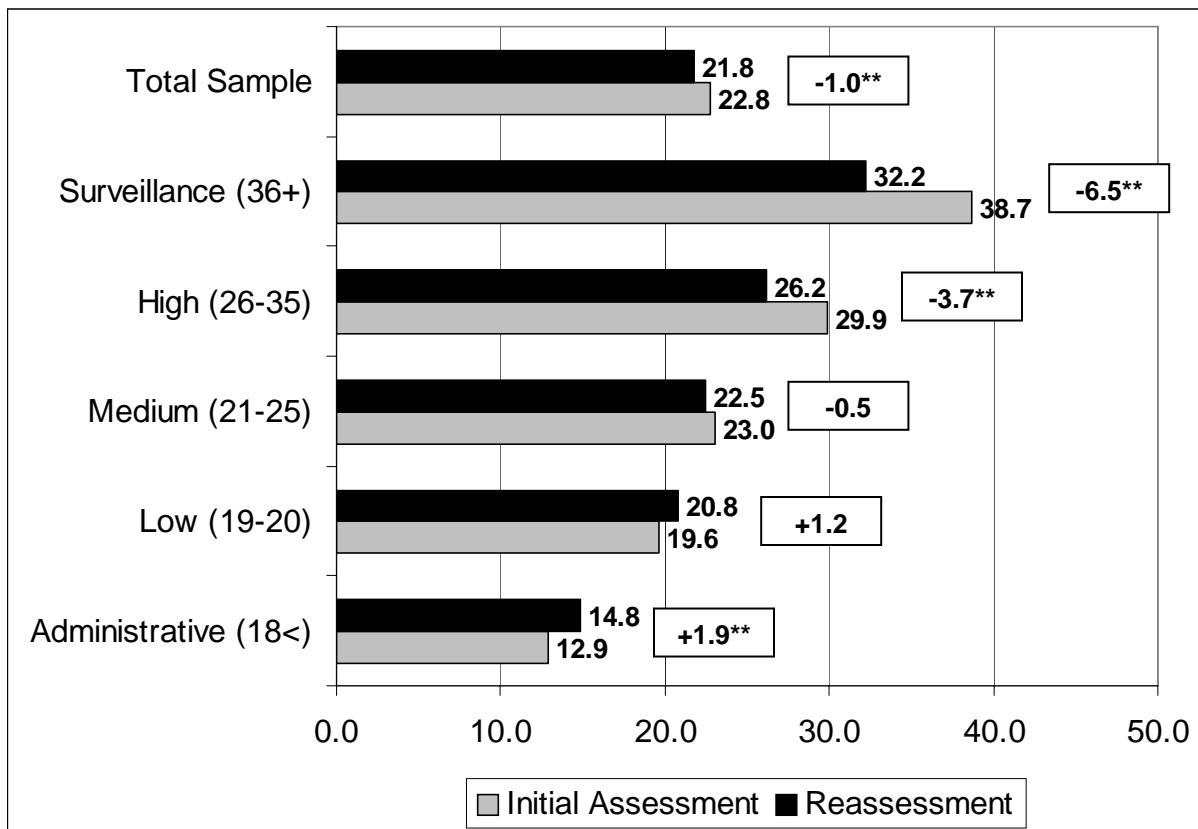## Figure 2: Change in LSI-R Reassessment Protective Scores

N = 1,036 total reassessments

The LSI-R protective score is comprised of thirteen dynamic items and is strongly inversely related to the LSI-R total score, i.e., when one is high the other is invariably low and vice-versa. Therefore, the desired outcome is an <u>increase</u> in the protective score, reflecting an increase in pro-social reinforcement.

Figure 2 shows that 55% of protective scores increased upon reassessment, compared to 35% that decreased and 10% that did not change.

- *Average change in protective score for the entire sample: 2.12 (statistically significant)*
- *Average change in protective score for cases that showed an increase: 7.02 (statistically significant)*
- *Average change in protective score for cases that showed a decrease: -5.09 (statistically significant)*

Figure 3: Change in LSI-R Reassessment Total Scores by Risk Category

Total Sample — Reassessment: 21.8, Initial Assessment: 22.8, Change: -1.0**
Surveillance (36+) — Reassessment: 32.2, Initial Assessment: 38.7, Change: -6.5**
High (26-35) — Reassessment: 26.2, Initial Assessment: 29.9, Change: -3.7**
Medium (21-25) — Reassessment: 22.5, Initial Assessment: 23.0, Change: -0.5
Low (19-20) — Reassessment: 20.8, Initial Assessment: 19.6, Change: +1.2
Administrative (18<) — Reassessment: 14.8, Initial Assessment: 12.9, Change: +1.9**
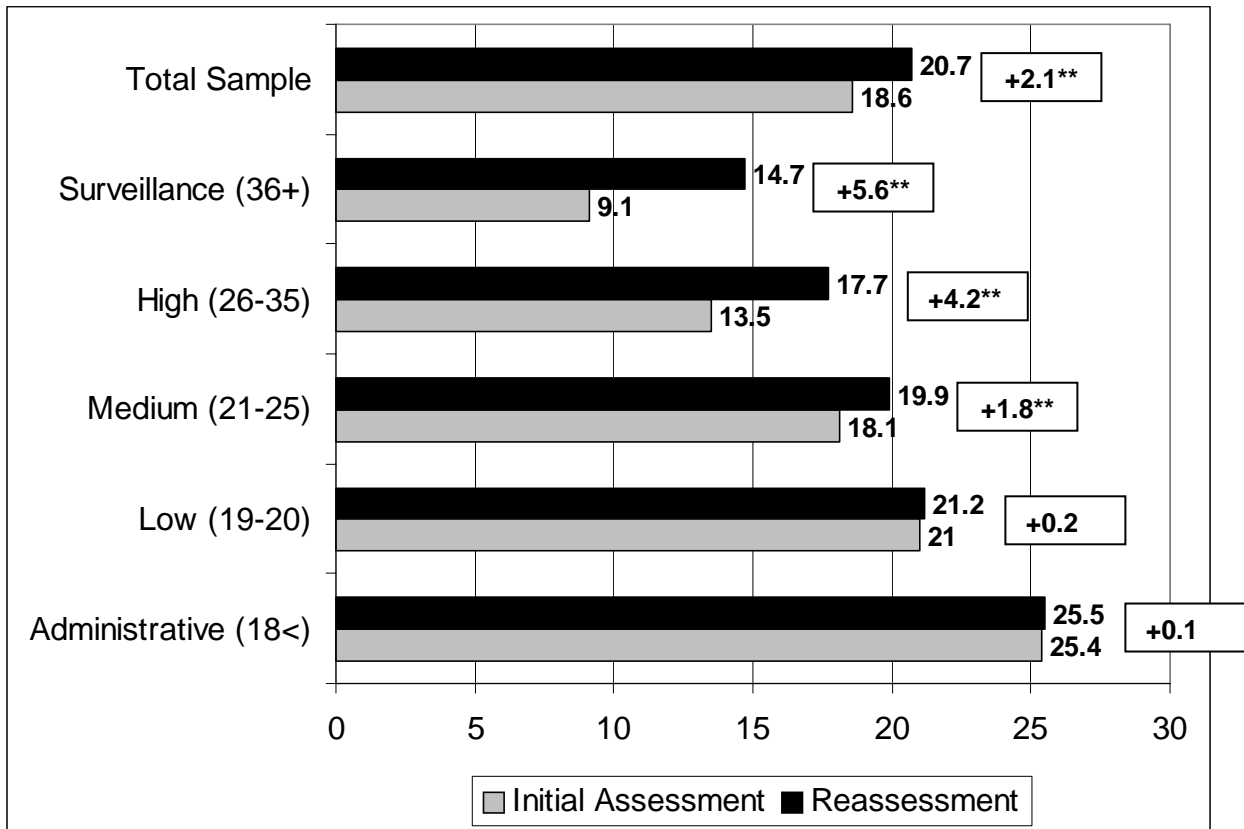
☐ Initial Assessment ■ Reassessment

**The increase or decrease is statistically significant.

Figure 3 shows a comparison of the average initial and reassessed LSI-R total scores for each risk category. The box to the right of each cluster shows the amount each score increased or decreased.

The largest average LSI-R total score decreases are for offenders in the surveillance and high risk categories (-6.5 and –3.7 points, respectively). The average total scores for offenders in the administrative and low risk categories, however, increased (+1.9 and +1.2 points, respectively).

Total number of reassessments: 1,036. (Offenders were assigned to risk categories based on initial LSI-R results.)

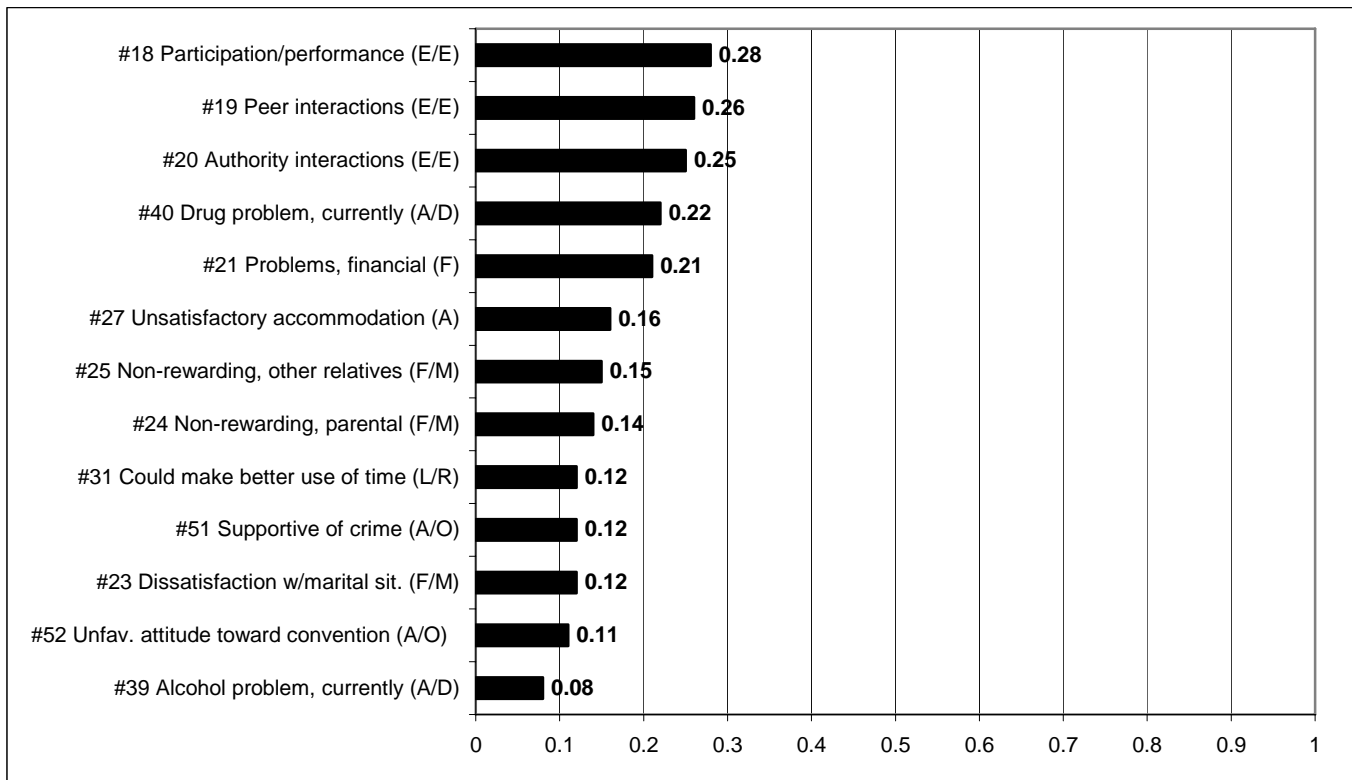**Figure 4: Change in LSI-R Reassessment Protective Scores by Risk Category**

**The increase or decrease is statistically significant.

Figure 4 shows a comparison of the average initial and reassessed LSI-R protective scores for each risk category. The box to the right of each cluster shows the amount each score increased or decreased.

The largest average protective score increases are for offenders in the surveillance and high risk categories (+5.6 and +4.2 points, respectively). The average protective scores for offenders in the administrative, low, and medium risk categories also increased, but to a smaller degree (+0.1, +0.2, and +1.8 points, respectively).

Total number of reassessments: 1,036. (Offenders were assigned to risk categories based on initial LSI-R results.)

**Figure 5: Average Score Change for Each LSI-R Protective Score Item
(Entire Sample)**

N = 1,036 total reassessments
*The LSI-R domain to which each protective score item belongs is noted parenthetically on the graph above

Figure 5 shows that for the entire sample, the average scores for all thirteen of the LSI-R protective score items increased upon reassessment. (Please note that the largest possible change for each item, positive or negative, is 3 points.)
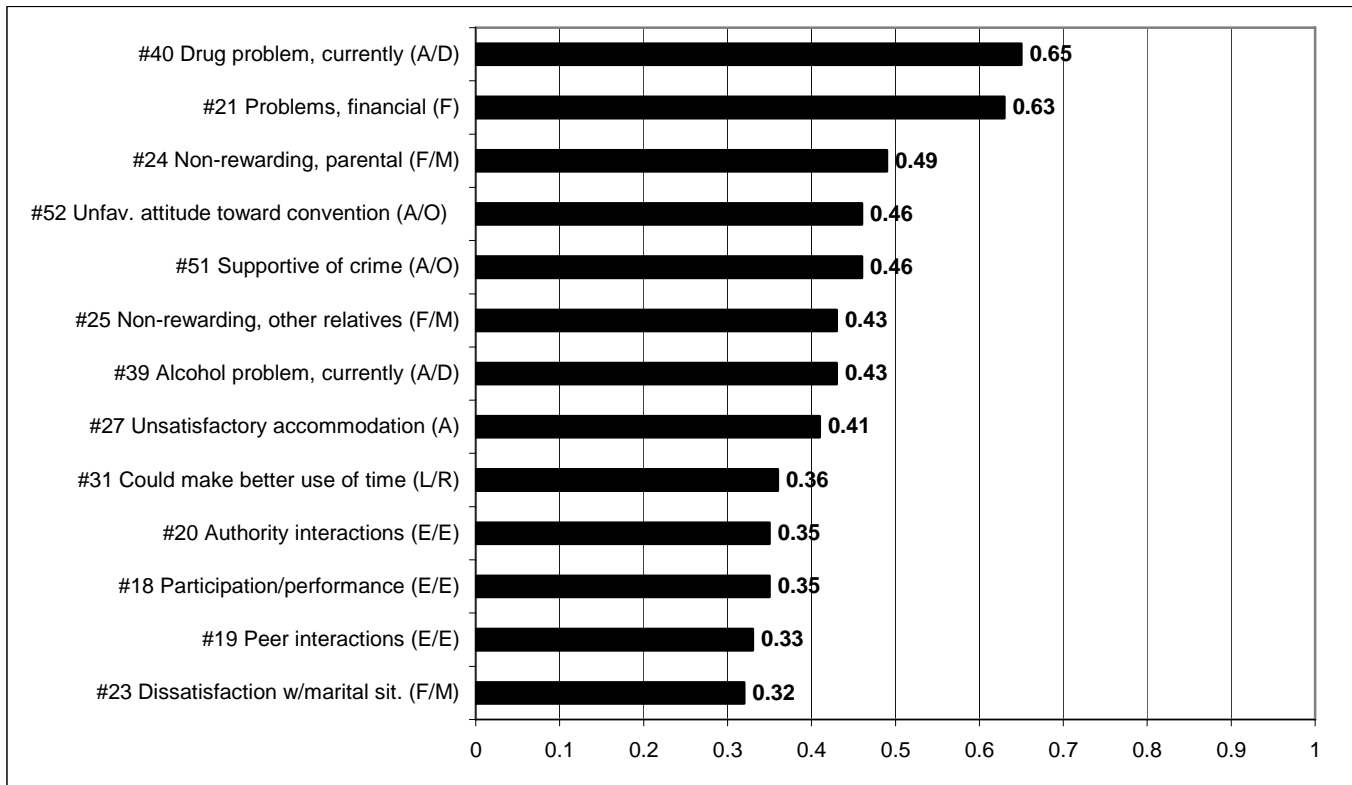
The LSI-R protective score item demonstrating the largest increase is *#18 participation/performance* (+0.28), followed closely by *#19 peer interactions* (+0.26) and *#20 authority interactions* (+0.25). The item showing the smallest increase is *#39 alcohol problem, currently* (+0.08), followed by *#52 unfavorable attitude toward convention* (+0.11).

Key to LSI-R Domain Abbreviations
in Figure 5

A = ACCOMMODATION
A/D = ALCOHOL/DRUGS
A/O = ATTITUDES/ORIENTATION
C = COMPANIONS
C/H = CRIMINAL HISTORY
E/E = EDUCATION/EMPLOYMENT
E/P = EMOTIONAL/PERSONAL
F = FINANCIAL
F/M = FAMILY/MARITAL
L/R = LEISURE/RECREATION

*For a brief description of each domain, please see Appendix 1.

Figure 6: Average Change for Each LSI-R Protective Score Item
("Surveillance Risk" Cases Only)

Item	Value
#40 Drug problem, currently (A/D)	0.65
#21 Problems, financial (F)	0.63
#24 Non-rewarding, parental (F/M)	0.49
#52 Unfav. attitude toward convention (A/O)	0.46
#51 Supportive of crime (A/O)	0.46
#25 Non-rewarding, other relatives (F/M)	0.43
#39 Alcohol problem, currently (A/D)	0.43
#27 Unsatisfactory accommodation (A)	0.41
#31 Could make better use of time (L/R)	0.36
#20 Authority interactions (E/E)	0.35
#18 Participation/performance (E/E)	0.35
#19 Peer interactions (E/E)	0.33
#23 Dissatisfaction w/marital sit. (F/M)	0.32

N = 83 total reassessments
*The LSI-R domain to which each protective score item belongs is noted parenthetically on the graph above

Figure 6 shows that for all surveillance risk cases, the average score for each LSI-R protective score item increased upon reassessment. (Please note that the largest possible change for each item, positive or negative, is 3 points.)
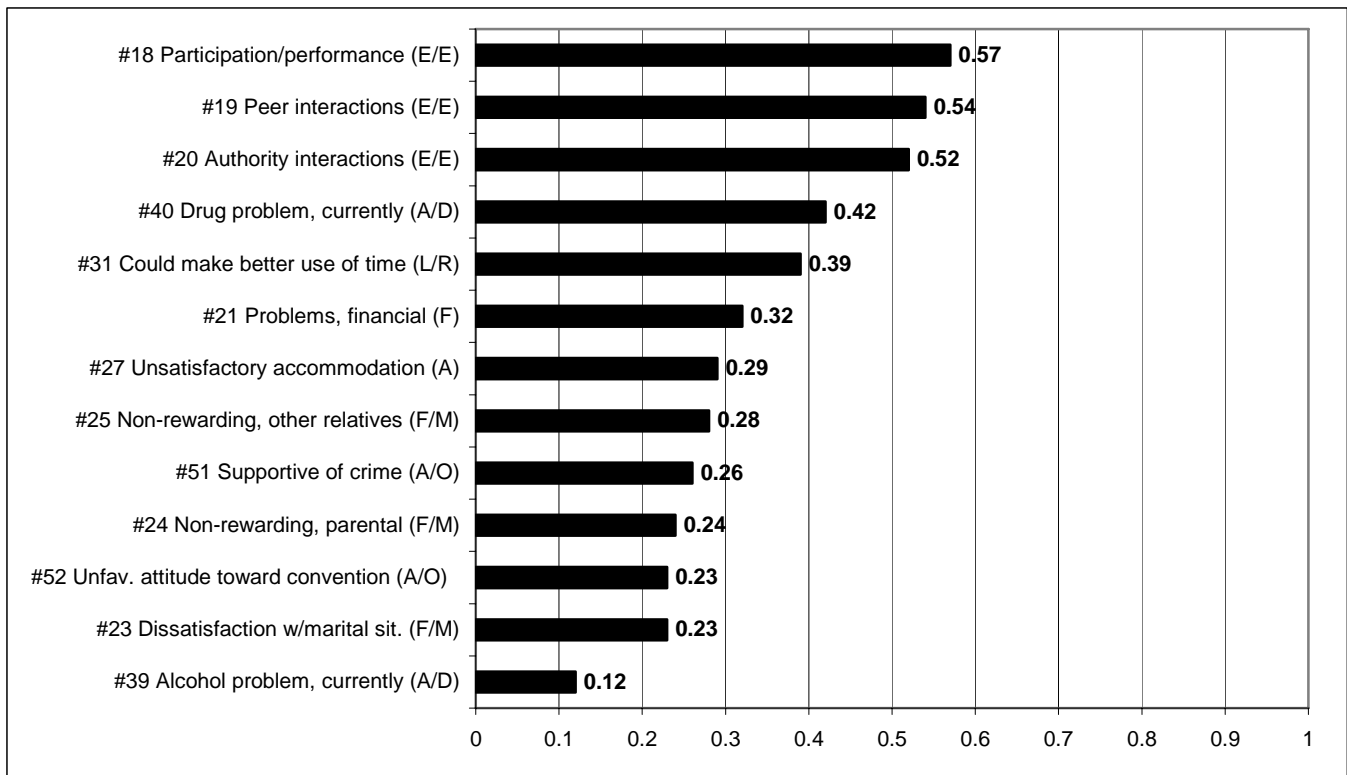
The LSI-R protective score item demonstrating the largest increase is *#40 drug problem, currently* (+0.65), followed by *#21 problems, financial* (+0.63) and *#24 non-rewarding, parental* (+0.49). The item showing the smallest increase is *#23 dissatisfaction with marital situation* (+0.32), followed by *#19 peer interactions* (+0.33) and *#18 participation/performance* (+0.35).

Key to LSI-R Domain Abbreviations in Figure 6

A = ACCOMMODATION
A/D = ALCOHOL/DRUGS
A/O = ATTITUDES/ORIENTATION
C = COMPANIONS
C/H = CRIMINAL HISTORY
E/E = EDUCATION/EMPLOYMENT
E/P = EMOTIONAL/PERSONAL
F = FINANCIAL
F/M = FAMILY/MARITAL
L/R = LEISURE/RECREATION

*For a brief description of each domain, please see Appendix 1.

Figure 7: Average Change for Each LSI-R Protective Score Item ("High Risk" Cases Only)

N = 308 total reassessments
*The LSI-R domain to which each rater item belongs is noted parenthetically on the graph above

Figure 7 shows that for high risk cases, the average score for each LSI-R protective score item increased upon reassessment. (Please note that the largest possible change for each item, positive or negative, is 3 points.)
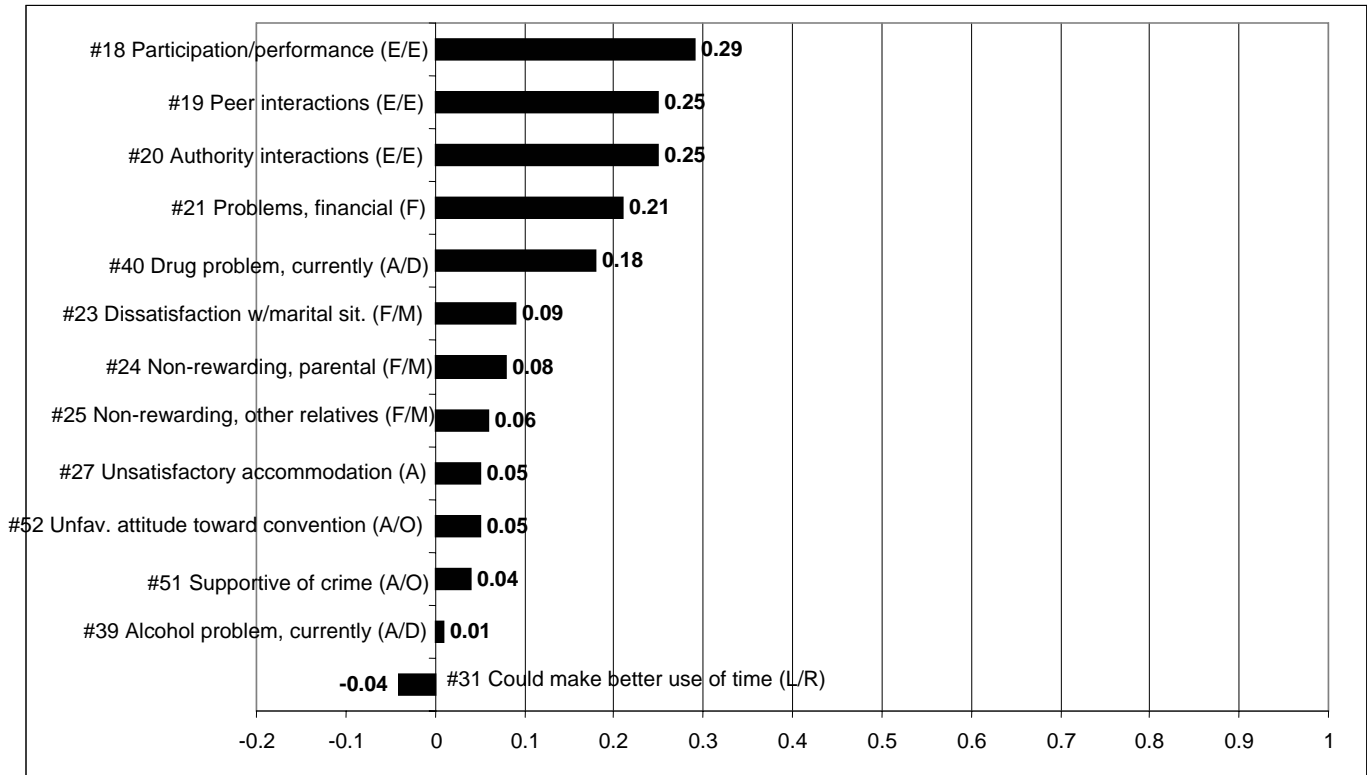
The LSI-R protective score item demonstrating the largest increase is *#18 participation/performance* (+0.57), followed closely by *#19 peer interactions* (+0.54) and *#20 authority interactions* (+0.52). The item showing the smallest increase is *#39 alcohol problem, currently* (+0.12), followed by *#23 dissatisfaction with marital situation* (+0.23) and *#52 unfavorable attitude toward convention* (+0.23).

Key to LSI-R Domain Abbreviations
in Figure 7

A = ACCOMMODATION
A/D = ALCOHOL/DRUGS
A/O = ATTITUDES/ORIENTATION
C = COMPANIONS
C/H = CRIMINAL HISTORY
E/E = EDUCATION/EMPLOYMENT
E/P = EMOTIONAL/PERSONAL
F = FINANCIAL
F/M = FAMILY/MARITAL
L/R = LEISURE/RECREATION

*For a brief description of each domain, please see Appendix 1.

Figure 8: Average Change for Each LSI-R Protective Score Item ("Low-Medium Risk" Cases Only)

N= 313 total reassessments
*The LSI-R domain to which each protective score item belongs is noted parenthetically on the graph above

Figure 8 shows that for low-medium risk cases (the low and medium risk categories were combined in order to obtain a larger sample size), the average scores for all LSI-R protective score items (except one) increased upon reassessment. (Please note that the largest possible change for each item, positive or negative, is 3 points.)
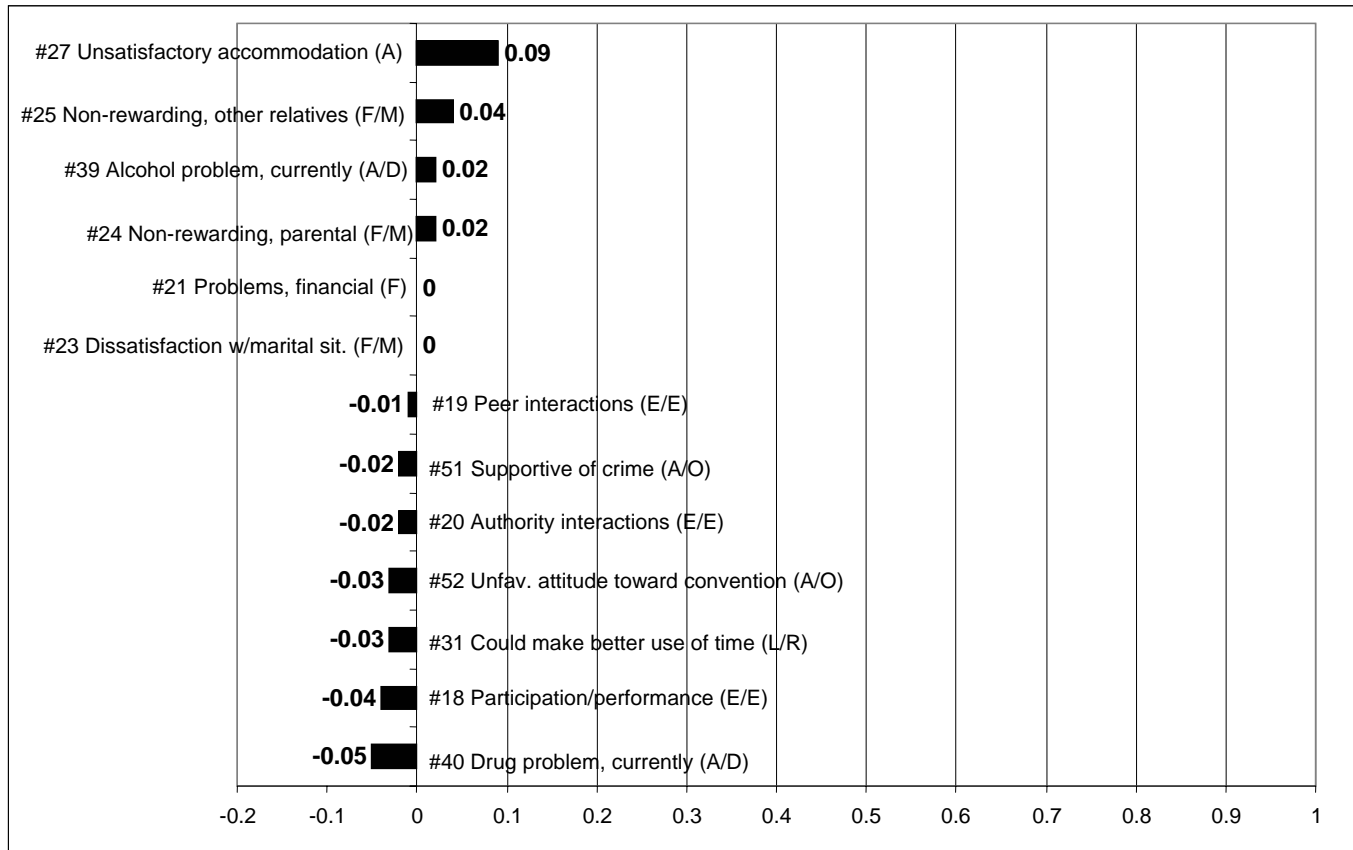
The LSI-R protective score item demonstrating the largest increase is *#18 participation/performance* (+0.29), followed closely by *#19 peer interactions* (+0.25) and *#20 authority interactions* (+0.25). The one item showing a small decrease is *#31 could make better use of time* (+0.11).

Key to LSI-R Domain Abbreviations
in Figure 8

A = ACCOMMODATION
A/D = ALCOHOL/DRUGS
A/O = ATTITUDES/ORIENTATION
C = COMPANIONS
C/H = CRIMINAL HISTORY
E/E = EDUCATION/EMPLOYMENT
E/P = EMOTIONAL/PERSONAL
F = FINANCIAL
F/M = FAMILY/MARITAL
L/R = LEISURE/RECREATION

*For a brief description of each domain, please see Appendix 1.

Figure 9: Average Change for Each LSI-R Protective Score Item
("Administrative Risk" Cases Only)

#27 Unsatisfactory accommodation (A)	**0.09**
#25 Non-rewarding, other relatives (F/M)	**0.04**
#39 Alcohol problem, currently (A/D)	**0.02**
#24 Non-rewarding, parental (F/M)	**0.02**
#21 Problems, financial (F)	**0**
#23 Dissatisfaction w/marital sit. (F/M)	**0**
-0.01	#19 Peer interactions (E/E)
-0.02	#51 Supportive of crime (A/O)
-0.02	#20 Authority interactions (E/E)
-0.03	#52 Unfav. attitude toward convention (A/O)
-0.03	#31 Could make better use of time (L/R)
-0.04	#18 Participation/performance (E/E)
-0.05	#40 Drug problem, currently (A/D)

-0.2   -0.1   0   0.1   0.2   0.3   0.4   0.5   0.6   0.7   0.8   0.9   1

N = 332 total reassessments
*The LSI-R domain to which each protective score item belongs is noted parenthetically on the graph above

Figure 9 shows that for administrative risk cases, the average score increase or decrease (upon reassessment) for each of the LSI-R protective score items is minimal or nonexistent. (Please note that the largest possible change for each item, positive or negative, is three points.)

The average score for four LSI-R protective score items increased slightly: *#27 unsatisfactory accommodation* (+0.09); *#25 non-rewarding, other relatives* (+0.04); *#39 alcohol problem, currently* (0.02); and *#24 non-rewarding, parental* (+0.02). The average scores for the rest of the items did not change or decreased slightly.

Key to LSI-R Domain Abbreviations in Figure 9
A = ACCOMMODATION
A/D = ALCOHOL/DRUGS
A/O = ATTITUDES/ORIENTATION
C = COMPANIONS
C/H = CRIMINAL HISTORY
E/E = EDUCATION/EMPLOYMENT
E/P = EMOTIONAL/PERSONAL
F = FINANCIAL
F/M = FAMILY/MARITAL
L/R = LEISURE/RECREATION
*For a brief description of each domain, please see Appendix 1.

**Figure 10: Change in ASUS
Reassessment Total Scores**

No Change
6%

Decrease
45%

Increase
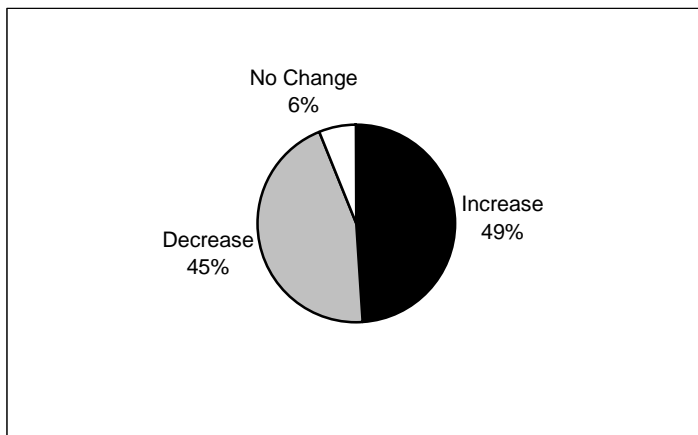49%

N = 748 total reassessments

Figure 10 shows that 49% of ASUS total scores increased upon reassessment, compared to 45% that decreased and 6% that did not change.

Average change in score for the entire sample: 1.17 (not statistically significant)
Average change in ASUS total score for cases that showed an increase: 18.34 (statistically significant)
Average change in ASUS total score for cases that showed a decrease: -17.47 (statistically significant)

Figure 11: Average Change in ASUS Reassessment Total Scores by LSI-R Risk Category

Category	Initial Assessment	Reassessment	Change
Total Sample	52.3	53.5	+1.2
Surveillance (36+)	70.2	68.6	-1.6
High (26-35)	60.7	60.3	-0.4
Medium (21-25)	53.4	53	-0.4
Low (19-20)	49.6	52.4	+2.8
Administrative (18<)	40.1	44.1	+4.0

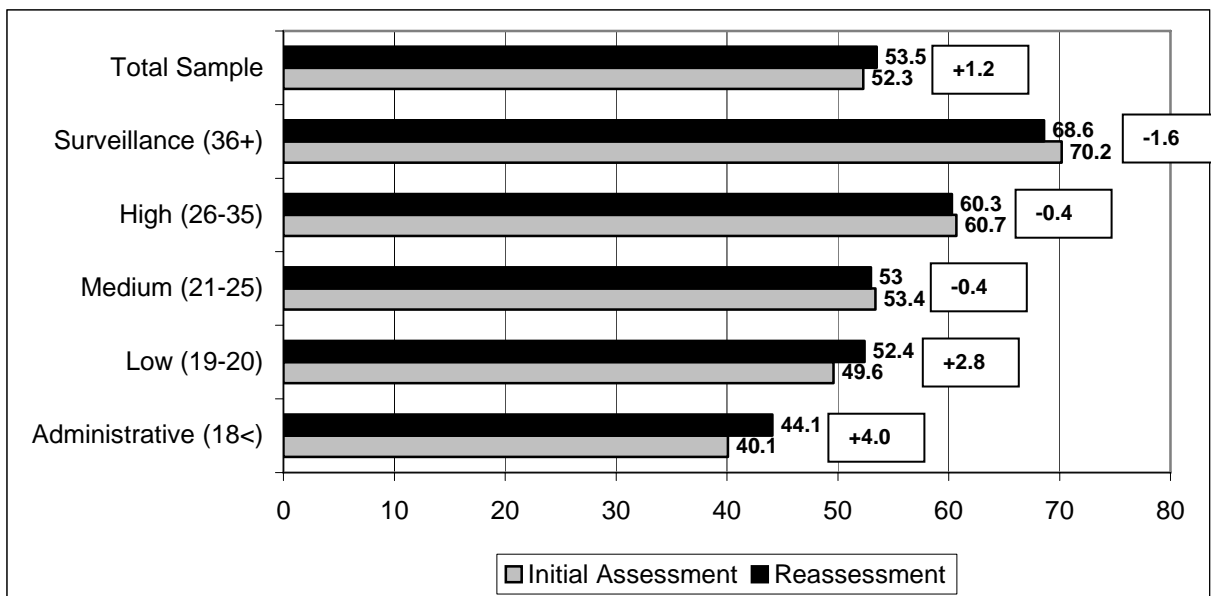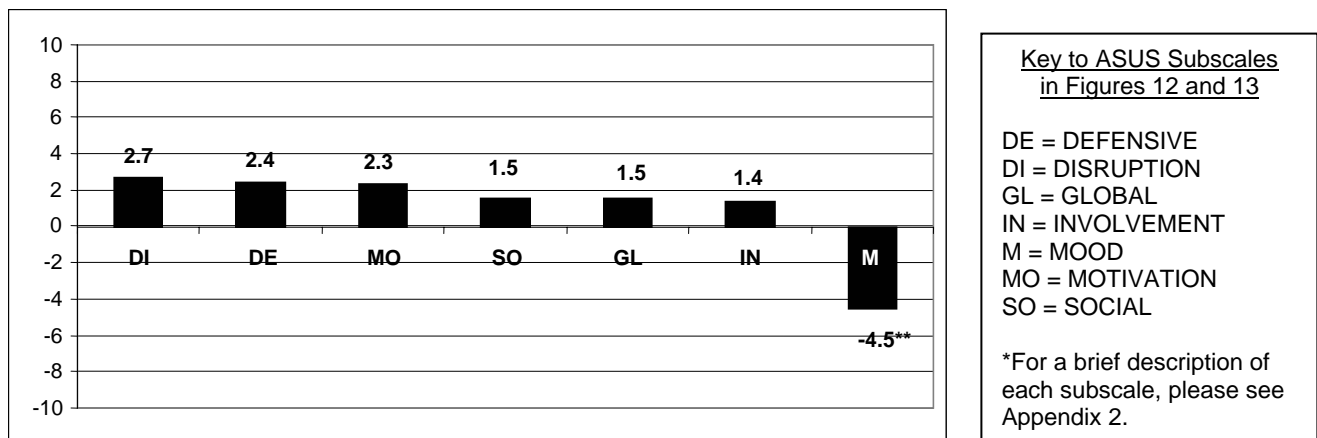□ Initial Assessment   ■ Reassessment

Figure 11 shows a comparison of the average initial and reassessed ASUS total scores for each risk category. The box to the right of each cluster shows the amount each score increased or decreased. The average ASUS total scores for surveillance, high, and medium risk offenders decreased (-1.6, –0.4, and –0.4 points, respectively). However, the average scores for administrative and low risk offenders increased (+4.0 and +2.8 points, respectively).

Total number of reassessments: 1,036. (Offenders were assigned to risk categories based on initial LSI-R results.)

Figure 12: Average Score Change for ASUS Subscales
(Entire Sample)

Key to ASUS Subscales
in Figures 12 and 13

DE = DEFENSIVE
DI = DISRUPTION
GL = GLOBAL
IN = INVOLVEMENT
M = MOOD
MO = MOTIVATION
SO = SOCIAL

*For a brief description of each subscale, please see Appendix 2.

**The increase or decrease is statistically significant.

Figure 12 shows the change in average score (upon reassessment) for each ASUS subscale for the entire sample. The desired outcome is a decrease for each scale, with the exception of MOTIVATION: an increasing score for this subscale suggests that offenders overall are responding to supervision and treatment in a positive way. The average scores increased the most for DISRUPTION (+2.7), DEFENSIVE (+2.4) and MOTIVATION (+2.3). The only subscale with a score that decreased is MOOD (-4.5).

Total number of reassessments: 748

Figure 13: Average Score Change for ASUS Subscales
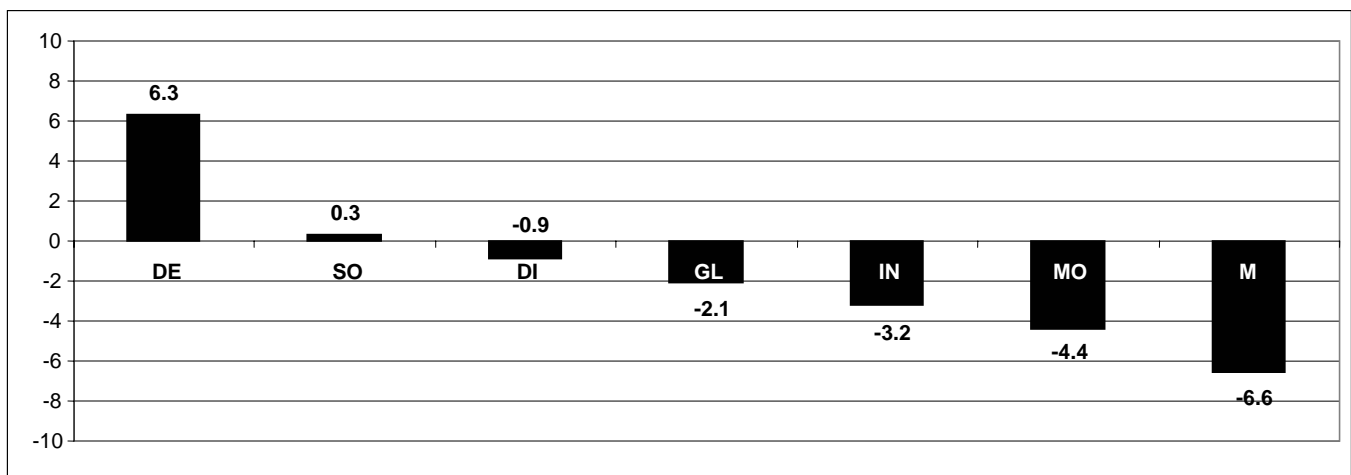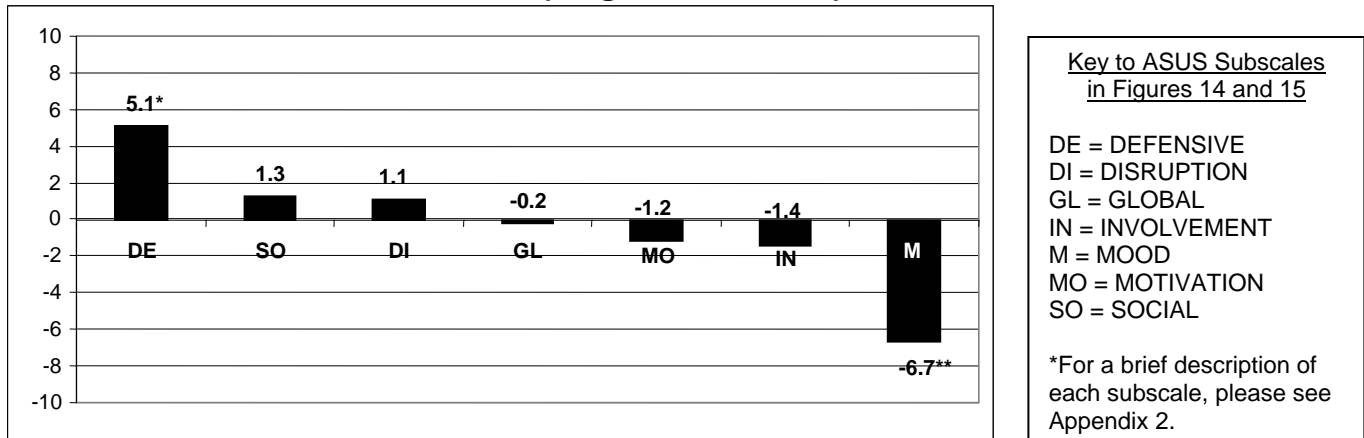**("Surveillance Risk" Cases)**

Figure 13 shows the change in average score (upon reassessment) for each ASUS subscale for surveillance risk offenders. The desired outcome is a decrease for each scale, with the exception of MOTIVATION: an increasing score for this subscale suggests offenders overall are responding to supervision and treatment in a positive way. The average scores increased for DEFENSIVE (+6.3) and (slightly) SOCIAL (+0.3). The scores decreased the most for MOOD (-6.6), MOTIVATION (-4.4), and INVOLVEMENT (-3.2). None of the increases or decreases are statistically significant.

Total number of reassessments: 52

**Figure 14: Average Score Change for ASUS Subscales
("High Risk" Cases)**

Key to ASUS Subscales
in Figures 14 and 15

DE = DEFENSIVE
DI = DISRUPTION
GL = GLOBAL
IN = INVOLVEMENT
M = MOOD
MO = MOTIVATION
SO = SOCIAL

*For a brief description of each subscale, please see Appendix 2.

**The increase or decrease is statistically significant .

Figure 14 shows the change in average score (upon reassessment) for each ASUS subscale for high risk offenders. The desired outcome is a decrease for each scale, with the exception of MOTIVATION: an increasing score for this subscale suggests offenders overall are responding to supervision and treatment in a positive way. The average scores increased for DEFENSIVE (+5.1), SOCIAL (+1.3), and DISRUPTION (+1.1). The scores decreased the most for MOTIVATION (-1.2), INVOLVEMENT (-1.4), and MOOD (-6.7).

Total number of reassessments: 225

**Figure 15: Average Score Change for ASUS Subscales
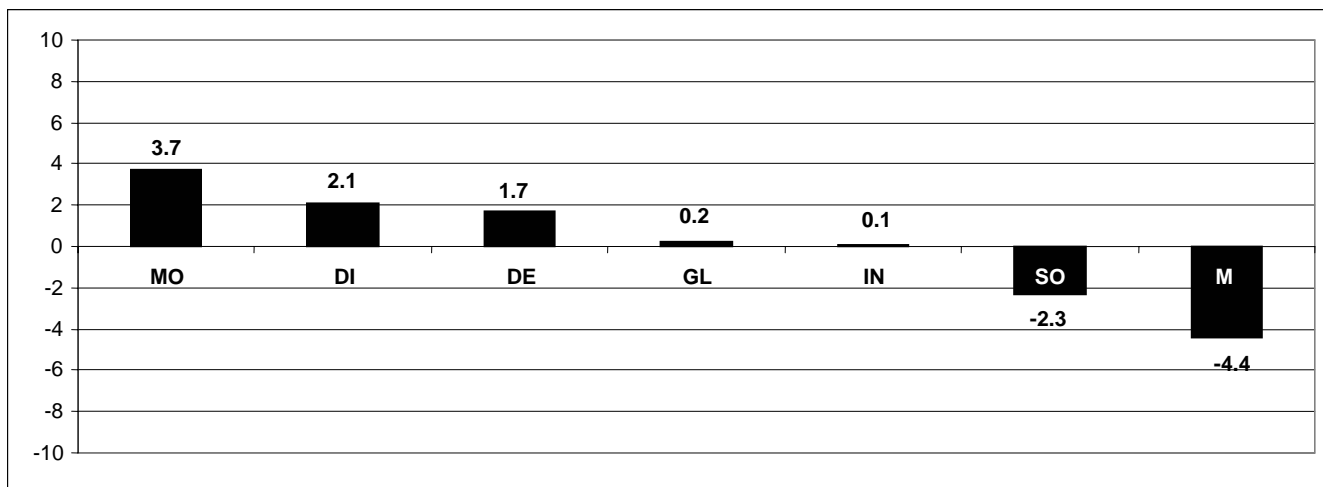("Medium Risk" Cases)**

Figure 15 shows the change in average score (upon reassessment) for each ASUS subscale for medium risk offenders. The desired outcome is a decrease for each scale, with the exception of MOTIVATION: an increasing score for this subscale suggests offenders overall are responding to supervision and treatment in a positive way. The average scores increased the most for MOTIVATION (+3.7), and DISRUPTION (+2.1). The subscales with scores that decreased are SOCIAL (-2.3), and MOOD (-4.4). None of the increases or decreases are statistically significant.

Total number of reassessments: 158

**Figure 16: Average Score Change for ASUS Subscales
("Low Risk" Cases)**

Key to ASUS Subscales
in Figures 16 and 17

DE = DEFENSIVE
DI = DISRUPTION
GL = GLOBAL
IN = INVOLVEMENT
M = MOOD
MO = MOTIVATION
SO = SOCIAL

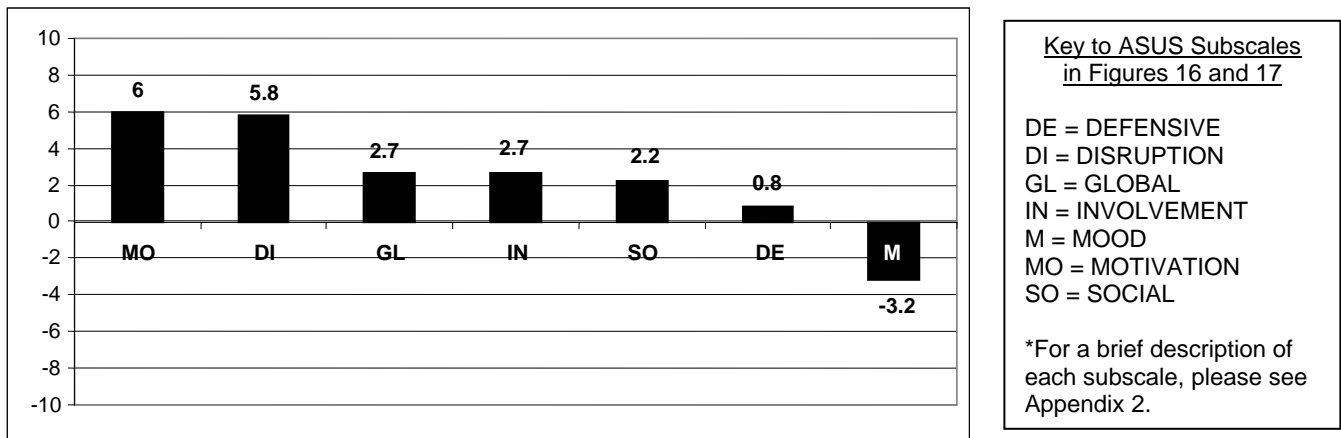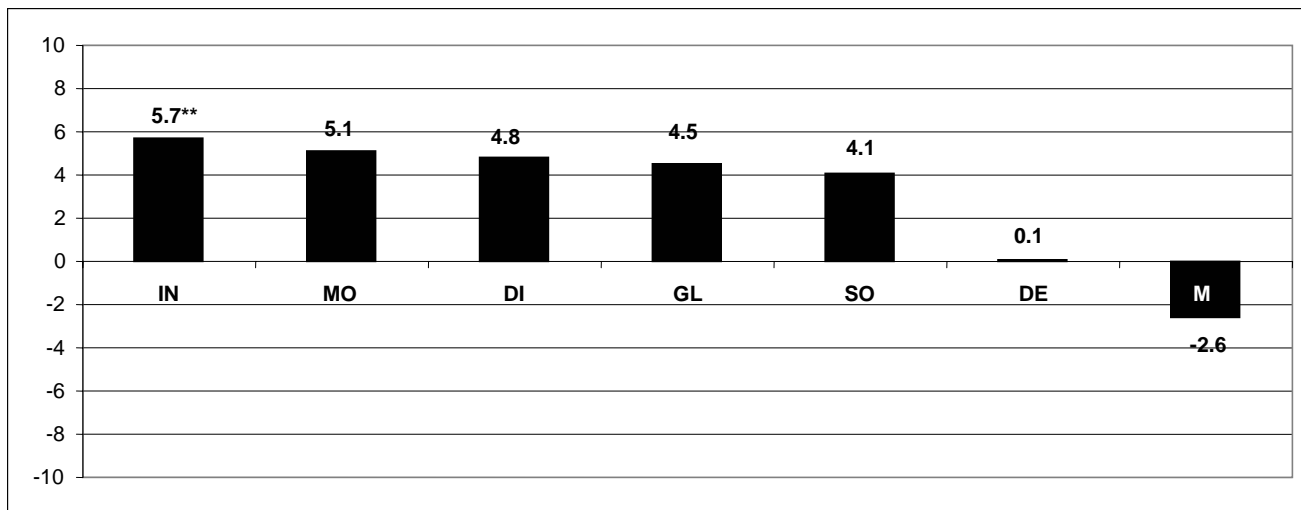*For a brief description of
each subscale, please see
Appendix 2.

Figure 16 shows the change in average score (upon reassessment) for each ASUS subscale for low risk offenders. The desired outcome is a decrease for each scale, with the exception of MOTIVATION: an increasing score for this subscale suggests offenders overall are responding to supervision and treatment in a positive way. The average scores increased the most for MOTIVATION (+6), and DISRUPTION (+5.8). The only subscale with a score that decreased is MOOD (-3.2). None of the increases or decreases are statistically significant.

Total number of reassessments: 68

**Figure 17: Average Score Change for ASUS Subscales
("Administrative Risk" Cases)**

**The increase or decrease is statistically significant.

Figure 17 shows the change in average score (upon reassessment) for each ASUS subscale for administrative risk offenders. The desired outcome is a decrease for each scale, with the exception of   MOTIVATION: an increasing score for this subscale suggests offenders overall are responding to supervision and treatment in a positive way. The average scores increased the most for INVOLVEMENT (+5.7), MOTIVATION (+5.1), DISRUPTION (+4.8), GLOBAL (4.5), and SOCIAL (+4.1). The only subscale with a score that decreased is MOOD (-2.6).

 Total number of reassessments: 220

Appendix 1: Brief Description of the LSI-R Domains[1]

ACCOMMODATION: Measures the orderliness of an offender's living environment.

ALCOHOL & DRUGS: Determines the amount of disruption in an offender's life caused by substance abuse.

ATTITUDES/ORIENTATION: Gathers and scores information pertaining to an offender's overall orientation to pro-social or pro-criminal behavior. Higher scores denote greater abilities to morally disengage.

COMPANIONS: Measures the level of pro-social and pro-criminal influences associated with an offender's current social support network.

CRIMINAL HISTORY: Assesses the extensiveness and versatility of an offender's criminal history.

EMOTIONAL/PERSONAL: Assesses an offender's level of emotional instability and callousness (e.g., narcissistic, grandiose, deceitful, glib and charming, no remorse, no empathy).

EMPLOYMENT/EDUCATION: Measures an offender's "stake-in-conformity," as measured through bonds and commitment to school and livelihood.

FAMILY/MARITAL: Surveys the pro-social and pro-criminal influences an offender derives from his/her family.

FINANCIAL: Assesses the adequacy of an offender's financial situation.

RECREATION AND LEISURE: Measures an offender's level of idle and unstructured time.

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[1] Descriptions taken from a sample Adult Probation LSI-R "Offender Assessment Report."

Appendix 2: Brief Description of the ASUS Subscales[2]

DEFENSIVE: A brief measure of willingness and ability to disclose personal and sensitive information. A high score suggests a defensiveness against such disclosure.

DISRUPTION: A broad measure of disruptive symptoms associated with alcohol or other drug use. High scores indicate that drugs cause loss of control over behavior, disruption of psychological and physiological functioning, and cause problems at home, work, and at school.

GLOBAL: Combined sum scores on INVOLVEMENT, DISRUPTION, SOCIAL, and MOOD. It provides an overall measure of risk and life-functioning disruption.

INVOLVEMENT: Measures lifetime involvement in drugs in ten different drug categories.

MOOD: Measures emotional and psychological disruption, indicating depression, worry, anxiety, anger, irritability, feelings of not wanting to live, and being unable to control emotions and uncontrolled acting out behavior.

MOTIVATION: Measures the perceived need to make changes, a willingness to stop or not continue using alcohol or other drugs, and a stated felt need and willingness to enter treatment.

SOCIAL: Measures rebellious, antisocial behavior and attitudes, both in history and in the present.

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[2] Descriptions taken from Dr. Kenneth Wanberg's handout, "A Workshop on Case Planning Utilizing the Level of Service Inventory-R (LSI-R) and the Adult Substance Use Survey (ASUS): A Convergent Validation Model." The handout was distributed at a training session in Honolulu for treatment professionals on September 15, 2005.