

Further Development of *Asset*

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Executive summary

Asset has been in use by all youth offending teams (YOTs) since April 2000 and is a central part of the effective practice agenda for the youth justice system (Youth Justice Board 2002, 2003a). It is also now used as an important source of data for major research projects (for example, Moore et al 2004, Feilzer and Hood 2004). It is therefore essential that its value, validity and reliability are the subject of ongoing research.

An earlier report (Baker et al 2002) showed that the accuracy of *Asset* in predicting reconviction was comparable to that of any of the other tools currently used in the UK with adults or young people who offend. This accuracy was maintained for different groups, e.g. for females and minority ethnic groups.

This study builds on the earlier research and presents the results of recent work on the development of *Asset* and further investigation of its validity and reliability. The key areas to be addressed by the study were as follows:

- further development of the *Asset* forms in preparation for a relaunch of *Asset*, including revisions to the Bail and Risk of Serious Harm *Asset* forms
- a two-year reconviction study to provide further evidence about the predictive validity of *Asset*
- analysis of changes in *Asset* scores over time and their association with reconviction
- further testing of the inter-rater reliability of *Asset*
- exploratory analysis of the link between assessments and Intervention Plans
- development of a pre-crime screening tool.¹

Asset development

All the *Asset* forms (and accompanying sets of guidance) were revised to take account of the findings from previous research and feedback received from youth justice practitioners. Copies of the amended forms were distributed to YOTs² and the software systems updated accordingly.

¹ Development of the pre-crime screening tool (known as ONSET) is not covered in the report as this has now developed into a separate study, due to be completed in spring 2007.

² Also available online at www.youth-justice-board.gov.uk.

Two-year reconviction study

The first study of the validity and reliability of *Asset* used 12-month reconviction data (Baker et al 2002). This report presents the results of further analysis made using 24-month data. The results (based on a sample of 2,233 cases) provide further evidence of the value of *Asset* for predicting the occurrence, frequency and seriousness of reconviction. Key findings from the study in relation to the current *Asset* score were as follows.

- Predictive validity (in relation to whether a young person was reconvicted or not) increased over time. Using the 'per cent correctly predicted' method the accuracy figure was 69.4% (compared to 67% at 12 months). The 'area under curve' measure also improved slightly.
- Accuracy in predicting frequency and seriousness of reconviction was maintained at 24 months.
- Predictive accuracy for population sub-groups (female offenders, ethnic minorities and younger offenders) was maintained at 24 months.
- Current *Asset* performed reasonably well in predicting reconviction among Final Warning cases at 12 months but was less accurate at 24 months.

Baker et al (2002) described the construction of revised scores for *Asset* that included criminal history data and item weightings, and these were also tested during the study.

- The accuracy of Revised Scores 1 and 2 at predicting the occurrence of reconviction increased at 24 months.
- Revised Scores 1 and 2 outperformed current *Asset* in predicting the frequency and seriousness of reconviction at 24 months.
- Revised Scores 1 and 2 outperformed current *Asset* in predicting the occurrence of reconviction among population sub-groups at 24 months.

Significance of change in *Asset* scores over time

- A sample of 696 cases (collected from nine YOTs around the country) was used to investigate whether *Asset* scores changed over time and to examine the extent to which this was associated with changes in reconviction.
- The results showed that *Asset* total scores and component scores were sensitive to both positive and negative change.
- For both community and custodial cases, the *Asset* sections showing the greatest improvement in scores over time were 'education/training', 'lifestyle', 'thinking and behaviour' and 'attitudes to offending'.
- For young people serving community sentences, analysis of 12-month reconviction data showed that in cases where *Asset* scores increased over time there was an increased likelihood of reconviction. A decrease in *Asset* scores was associated with a reduced likelihood of reconviction.

- Young people whose *Asset* scores increased were also likely to be reconvicted more frequently and more quickly than those whose scores reduced or stayed the same.
- Similar patterns were observed for custodial cases but, given the small number of cases involved, the results were not statistically significant. Further analysis using a larger sample of custodial cases is therefore recommended.

Inter-rater reliability of Asset

- Video case studies were used to test the inter-rater reliability of *Asset* (i.e. how much scores given to the same young person might vary depending on the assessor/rater). YOT practitioners were asked to complete a shortened version of *Asset* (focused on the ratings and evidence) based on information obtained through watching the video. Consistency was tested in relation to both total *Asset* scores and the scores given for each of the component sections of core *Asset*.
- Analysis of completed *Asset* assessments from the two cases studies for which sufficient data were available showed an acceptable level of consistency. However, comparison of practitioner ratings with normative ratings suggested that in some cases (e.g. female offenders with lots of ‘welfare needs’) YOT staff may be allocating ratings on the basis of perceived problems rather than on the extent to which these were associated with a likelihood of further offending.

Link between Asset and Intervention Plans

- A small number of completed Intervention Plans (N=150) from two YOTs were studied.
- Data suggested that plans often did not reflect the outcome of assessments. For example, issues identified in *Asset* as being associated with a high risk of reoffending were not always incorporated into Intervention Plan targets.
- There appeared to be a tendency to create ‘standardised’ plans, which resulted in targets being set for areas that were not identified in *Asset* as being closely associated with reoffending.
- Intervention plans often used ‘YOT jargon’, and the language would have been difficult for most young people to understand.
- Further guidance and training on Intervention planning may be required.

Conclusions

The results of the study provide further support for the Youth Justice Board for England and Wales' (YJB) strategy of putting *Asset* at the centre of YOT practice. The data suggest that practitioners and managers can have confidence in using *Asset* as an indicator of risk of reoffending, and also therefore of the level and intensiveness of intervention required to address offending behaviour. As the study has shown a link between changes in *Asset* scores over time and reconviction, *Asset* could also now be used more systematically for 'tracking' developments in young people's lives over time.

The study has highlighted areas in which local managers and the YJB may need to take action to ensure continued improvements in practice. In particular, the problems highlighted concerning the quality of Intervention Plans and the possibility that some staff are not giving sufficient emphasis to offending behaviour when allocating scores suggest there may be benefits to providing additional guidance, training and staff supervision.

Overall, the study provides encouraging data regarding use of the current version of *Asset*, but also reinforces the findings from Baker et al (2002) concerning the possible benefits of revising the scoring system to incorporate criminal history data and item weightings. The YJB will need to give consideration to this (and to other data on predictive accuracy emerging from studies such as the evaluation of the Intensive Supervision and Surveillance Programme, Moore et al 2004) when planning the future modifications to *Asset* and its use. Further research – for example, having a larger sample for testing inter-rater reliability – should also contribute to the ongoing development of *Asset* and assessment practice in youth justice.

Introduction

Asset has been in use by all YOTs since April 2000 and is a central part of the effective practice agenda for the youth justice system (Youth Justice Board 2002, 2003a). It is also now used as an important source of data for major research projects (for example, Moore et al 2004; Feilzer and Hood 2004). It is therefore essential that its value, validity and reliability are the subject of ongoing research.

Merrington (2004) identified a number of areas in which effective risk-need assessment tools should be able to demonstrate value. These include having value for: assessment of needs; assessment of risk of reconviction; matching service levels to risk; supervision-planning and targeting interventions; improving offender engagement; and measuring change over time. The previous 'Validity and Reliability of *Asset*' study (Baker et al 2002) showed that *Asset* could be used to profile offender risks and needs, and also that *Asset* scores were a valid indicator of risk of reconviction.

However, it was not possible at that time to investigate issues such as the ability of *Asset* to measure change over time or the links between assessments and supervision plans. This study was commissioned in order for the programme of *Asset* research and development to continue.

The key areas to address were as follows:

- further development of the *Asset* forms in preparation for a relaunch of *Asset*, including revisions to the 'Bail and Risk of Serious Harm' *Asset* forms
- a two-year reconviction study to provide further evidence about the predictive validity of *Asset*
- analysis of changes in *Asset* scores over time and their association with reconviction
- further testing of the inter-rater reliability of *Asset* (i.e. how much it scores of the same young person might vary depending on the assessor/rater)
- exploratory analysis of the link between assessments and Intervention Plans
- development of a pre-crime screening tool.³

An interim report was completed in July 2003. This final report builds on these earlier findings in order to provide a detailed and up-to-date account of the current situation in regard to the development of *Asset*. It is hoped that the report will be of value to the YJB in informing ongoing policy development, to practitioners by highlighting ways in which *Asset* can be used more effectively when working with young people who offend, and to the wider research community through prompting further debate about the use of risk assessment tools.

³ Development of the pre-crime screening tool (known as ONSET) is not covered in the report as this has now developed into a separate study which is due to be completed in spring 2007.

1 Further Asset development

In addition to the statistical analyses described in subsequent chapters, a key part of this project was to continue the process of refining the *Asset* forms and promoting their use. Two features of this work are described below.

Revision of Asset forms

The Core Profile *Asset*, ‘What do YOU think?’ self-assessment form, Final Warning *Asset*, standardised Intervention Plan and the explanatory notes were all revised and updated in time for the ‘relaunch’ of *Asset* in summer 2003 (Baker et al 2003). Since then, the remaining two forms – Bail *Asset* and Risk of Serious Harm – have also been revised.

Bail Asset

Bail *Asset* was updated following consultation with a number of YOTs and colleagues at Nacro with expertise in bail and remand management. The revised form focuses more clearly on the factors that would either help a young person to comply with bail requirements or hinder them from doing so, and this should assist practitioners in assessing the suitability of a young person for different intervention options at the bail/remand stage. It also follows more closely the structure and headings of the ‘Core Profile’ – this is intended to make it easier to complete, and a clearer point of reference for staff who may subsequently carry out a more detailed assessment (for example, completing an *Asset* at pre-sentence report stage).

Under the Crime and Disorder Act 1998, a court can order the remand of a 15- or 16-year-old boy to local authority secure accommodation if it believes that it would be undesirable for him to be remanded to prison service accommodation due to his physical or emotional immaturity or his propensity to self-harm. Bail *Asset* therefore includes a specific additional assessment of vulnerability for 15- and 16-year-old boys facing a custodial remand, and this has been expanded and updated as part of the *Asset* revision. The criteria for assessing ‘physical and emotional immaturity’ have been revised to take closer account of the key developmental factors used in the Department of Health’s *Framework for the Assessment of Children in Need and Their Families*. In addition, the revised form includes more information about a young person’s previous remand experiences and about possible triggers for self-harm.

‘Risk of serious harm’ Asset

This has also been revised, again in consultation with a number of YOT staff. It has been designed so that the risk classifications used are the same as in OASys, the assessment tool used by the prison and probation services with adult offenders. This will ensure greater consistency with regard to referrals to Multi-Agency Public Protection Panels (MAPPA) and will facilitate the transfer of information on young people who may subsequently have contact with adult criminal justice services. In addition, clear links are made with new MAPPA guidance for YOTs (Youth Justice Board 2005b), and the form now asks practitioners to specify which MAPPA level is most appropriate for the individual young person being assessed. The form is also much clearer in the way that it asks assessors to specify how

quickly action needs to be taken in order to manage any risks identified.

The process of revising the form also prompted the design of two new *Asset* documents: the risk management plan, which focuses on the interventions needed to manage any risk of serious harm to others, and the vulnerability management plan, which relates to the interventions needed to manage any risk to the young person him or herself. Guidance on the use of these new forms has also been provided.

Use of Asset in Scotland

An increasing number of local authorities and youth justice teams in Scotland have shown interest in, and started to use, *Asset*. There have been two main strands to this work. First, the Core Profile and Final Warning version (known in Scotland as ‘mini *Asset*’) have been amended to reflect the specific legislative context and organisational structure of youth justice services. The essential components of *Asset* remain the same for example, the section headings, the issues addressed, the 0–4 rating scale and the use of evidence boxes). The differences are in sections such as ‘criminal and care history’, where the legislation differs from England and Wales, and in some of the terminology used, for example in the ‘Education’ section. The guidance notes for Scottish teams have been updated to reflect these changes.

The second strand of work has involved the provision of training events for a number of teams. This has included the development of a ‘training the trainers’ pack of material and the management of two one-day events for those responsible for providing training.

Areas in Scotland known to be using *Asset* include: Dundee, Edinburgh, Falkirk, Stirling, Orkney, Moray, Aberdeen, Midlothian, Perth and Kinross, East Dunbartonshire, Highlands, North Lanarkshire, and Argyll & Bute. Some organisations (e.g. some Safeguarding Communities – Reducing Offending projects) are currently using ‘What do YOU think?’ but not the Core Profile. In some areas, paper copies of *Asset* are used, although the majority of teams are now integrating *Asset* into wider case management systems.

The Criminal Justice Social Work Development Centre for Scotland (based at Edinburgh University) has been involved in promoting the use of *Asset* and co-ordinating training events. The Centre and some of the youth justice teams are very interested in undertaking a validation study to test the predictive accuracy of *Asset* with a Scottish sample of young people who offend. Although there are no definite timescales in view at the moment, it is envisaged that this would be a collaborative piece of work, with Oxford providing expertise based on experience of research in England and Wales, and Edinburgh providing access to Scottish data.

The benefits for the YJB of these developments are:

- increased recognition of the value of *Asset*
- access to additional data sources (this would contribute to the evidence base concerning risk and protective factors for young people who offend and provide an interesting point of comparison with the data currently available on *Asset* from England and Wales).

2 Two-year reconviction study

Following an initial 12-month reconviction study, Baker et al (2002) reported encouraging data on the predictive validity of *Asset*, but also indicated that further analysis should be undertaken over a longer time period.

Design of the two-year reconviction study

The present study extends the validation process over a further 12 months, giving a 24 month follow-up period in total.

The same validation criteria were used as previously, that is:

- accuracy in predicting whether someone is reconvicted or not
- accuracy across the score range
- accuracy in predicting frequency of reconviction
- accuracy in predicting seriousness of reconviction
- prediction accuracy for selected population sub-groups.

Only one amendment was made to the methodology. Previously offence seriousness was measured by examining the first reconviction offence. This time, the most serious offence in the follow-up period was used instead. This is a more effective way of identifying offenders likely to commit more serious offences in the future, and is the method generally preferred by the YJB.⁴

The validation tests are carried out on the current version of *Asset* (which uses only dynamic factors to calculate a total score), and the Revised Scores 1 and 2 developed by Baker et al (2002), which also include static factors. Further details of how the revised scores were constructed can be found in Appendix 1.

The sample

The sample was constructed by combining the construction and validation samples used in the 12-month study.⁵ However, the Police National Computer (PNC) search was restricted to cases where there was a PNC match previously and where a valid *Asset* score was available. This amounted to 2,333 cases. Table 2.1 shows the results of the PNC search.

⁴ See *Youth Justice Board Counting Rules*, October 2002.

⁵ All references to the 'previous study' or '12-month study' refer to Baker et al 2002.

Table 2.1 The 24-month study sample

Cases submitted to Home Office	2,333
No match found	93 (4%)
Match found, but 24 month follow-up not possible	294 (13%)
Match found, and 24 month follow-up possible	1,946 (83%)

Whereas, in the previous study, 20% of cases did not have an acceptable PNC match, this time the number of non-matches was only 4%. Arguably, all cases should have matched, as there was a PNC identification present, and the case gave an acceptable match previously: but there was insufficient time to examine in detail the reasons for the non-matching cases.

Of cases, 13% could not be followed up for 24 months at liberty due to time spent in custody, which was a much higher proportion than previously (2%). It seems that over a 24-month period more offenders were spending periods in custody which, when aggregated, exceeded the buffer of time available before the PNC cut-off date (the buffer averaged four months). However, these 294 cases were not lost altogether from the study as, for almost all of them (287), it was possible to ascertain that they had offended at least once during the follow-up period. This meant that they could be included when testing the first and second validation criteria but they could not be used when testing the frequency and seriousness criteria.

Reconviction data for the 24-month sample

Using all cases where a match was found (N=2,233⁶), 65% were reconvicted at least once during the 24-month follow-up period. The reconviction rate was significantly higher for males than females – 68% compared to 50%. Minority ethnic offenders as a whole had a similar reconviction rate to White offenders (though the rate for Asians was lower than the rest). Older offenders (aged 16 or over) had a higher rate than younger ones – 69% compared to 61%. These results mirror those found at the 12-month stage.

Frequency of reconviction was measured by the number of offences committed in the 24- month follow-up period and the number of sentencing occasions corresponding to those offences. Data are shown in Table 2.2 below.

Table 2.2 Frequency of reconviction for reconvicted offenders only at 24 months (N=1,160)

	Offences	Occasions
Mean number	6.1	2.9
Minimum	1	1
Maximum	40	14

⁶ Including the 1,946 complete matches and the 287 partial matches referred to above.

Seriousness of offence on reconviction was measured by offence gravity and by disposal. The mean offence gravity was 3.8, which is more serious than that recorded at the 12-month stage (3.2). As explained above, this may be partly due to the fact that this time the most serious offence was recorded rather than the first reoffence. Table 2.3 shows that most offences were of medium gravity (3–5).

Table 2.3 Offence seriousness on reconviction (N=1,111)

Offence gravity	Frequency
1	–
2	18%
3	28%
4	22%
5	26%
6	5%
7	1%
8	–

Disposal following this offence was analysed by grouping sentences into three bands: custodial, community supervision, and other (mostly fines and discharges). As Table 2.4 shows, the most common disposal was a community penalty.

Table 2.4 Disposal on reconviction (N=1,159)

Disposal	Frequency
Custody	20%
Community penalty	43%
Other	37%

Accuracy of current *Asset* score

Accuracy in predicting whether reconvicted or not

The same procedure as in Baker et al (2002) was used to determine the ‘per cent correctly predicted’ score (see Raynor et al 2000). *Asset* scores are split into ‘high’ and ‘low’ at a point corresponding to the proportions actually reconvicted. All high scores are expected to predict reconviction and low scores to predict non-reconviction. Reconvicted high scorers and non-reconvicted low scorers are therefore counted as correct, and the rest as incorrect. As Table 2.5 shows, the current *Asset* score is 69.4% correct (obtained by adding together the two correct percentages – 19.6% and 49.8%). This figure can be compared to the performance of the current *Asset* scale at the 12-month stage, which was 67.0% correct in the construction sample and 66.4% correct in the validation sample. The 24-month accuracy level is therefore encouraging.

Table 2.5 Percent correctly predicted: current *Asset* score (N=2,233)

	Reconvicted	Not reconvicted	Total
Score 0–8	336 (15.0%)	438 (19.6%)	774 (34.6%)
Score 9–8	1111 (49.8%)	348 (15.6%)	1459 (65.4%)
Total	1447 (64.8%)	786 (35.2%)	2233 (100%)

Significance of difference (chi-square) = .000

A second accuracy check is to compare the mean *Asset* scores of those reconvicted and not reconvicted. Table 26 shows a large and significant difference between the two groups.

Table 2.6 Difference in current *Asset* scores between those reconvicted and not reconvicted (N=2,233)

	No. of cases	Mean score	Std dev.	Significance of difference (t-test)
Reconvicted	1447	17.8	10.5	.000
Not reconvicted	786	9.3	8.0	

Accuracy across the score range

Whereas the ‘percent correct’ statistic is mainly a test of *Asset*’s ability to discriminate near the centre of the score range, it is equally important to test the accuracy of prediction at the extremes of the range. This was done by dividing the *Asset* scores of the sample into five equal-sized bands (quintiles) and examining the proportion of each band who were reconvicted at least once within 24 months. As Table 2.7 shows, there was generally a good differentiation of risk levels, except that the ‘low’ band starts from a higher baseline than one would ideally want. This may be because the overall reconviction rate for the sample is so high and this has raised risk levels across the board. Another explanation may be that, in some cases, practitioners are unwilling or unable to identify specific risk factors even though a young person subsequently goes on to reoffend.⁷

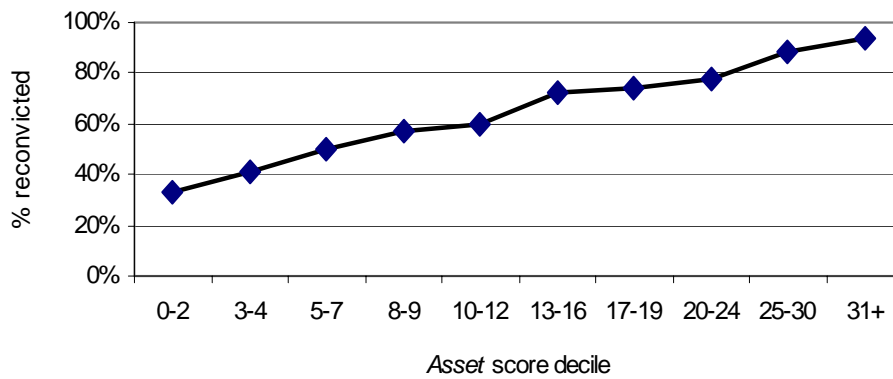
Table 3.7 Percent reconvicted within 24 months by current *Asset* score band (N=2233)

Score band (quintiles)	No. of cases	Percent reconvicted
0–4 (Low)	418	36%
5–9 (Low–medium)	437	52%
10–16 (Medium)	477	66%
17–24 (Medium–high)	448	76%
25–48 (High)	453	91%
<i>All cases</i>	2233	65%

⁷ One further issue to consider is whether tools like *Asset*, which rely on judgements as the basis for scores, allow practitioners to avoid the ‘extremes’ more easily than would be the case with tools comprising largely factual questions.

Figure 2.1 shows similar information graphically, only this time by breaking scores down further into deciles. This shows a smooth relationship between scores and reconviction, but the lowest decile still has a fairly high reconviction rate (33%).

Figure 2.1 Percent reconvicted at 24 months by score decile (current *Asset*)



Another measure which summarises accuracy across the whole score range is the ‘area under curve’ (AUC) statistic (which varies between 0.5 and 1.0). For the basic *Asset* score, this is 0.731 at the 24-month stage (at the 12-month stage the figure for the construction sample was slightly lower at 0.719). By way of comparison, research by the Home Office suggests an AUC of around 0.75 for OGRS and 0.74 for OASys using 24-month data.⁸ In other words, basic *Asset* is slightly less accurate.

Accuracy in predicting frequency of reconviction

The third way of testing the accuracy of the current version of *Asset* was to look at its ability to predict frequency of reconviction. This was measured in two ways: number of offences committed during the 24-month follow-up, and number of sentencing occasions corresponding to these offences.

The first step was to compare the *Asset* scores of those reconvicted on three or more occasions with the scores of those sentenced only once or twice. As Table 2.8 shows, the average *Asset* score of those convicted more frequently was significantly higher. The correlation between *Asset* score and number of sentencing occasions was significant ($p < 0.1$) and went in the expected direction: but it was low (Spearman’s rho = 0.29).

Table 2.8: Difference in current *Asset* scores by number of reconviction occasions (N=1,159)

	No. of cases	Mean score	Std dev.	Significance of difference (t-test)
Reconvicted once or twice	631	13.8	9.6	.000
Reconvicted more than twice	528	18.7	10.0	

⁸ Personal communication from Home Office OASys Development, Evaluation and Analysis Team.

The same check was carried out using number of offences. As Table 2.9 shows, those convicted of four or more offences had significantly higher *Asset* scores. Again, the correlation between *Asset* score and number of offences was significant ($p < 0.1$) but low (Spearman's $\rho = 0.27$).

Table 2.9 Difference in current *Asset* scores by number of reconviction offences (N=1,159)

	No. of cases	Mean score	Std. Dev.	Significance of difference (t-test)
Reconvicted of 1–3 offences	560	13.6	9.6	.000
Reconvicted of 4 or more offences	599	18.3	10.0	

Accuracy in predicting seriousness of reconviction

The next way of testing current *Asset* was to examine its ability to predict seriousness of reconviction. First, the mean *Asset* score of those reconvicted of lower gravity offences was compared with those reconvicted of higher gravity offences. As Table 2.10 shows, offenders convicted of more serious offences had slightly higher *Asset* scores, but this was only significant at the 95% confidence level. The correlation between *Asset* score and offence gravity was significant ($p < 0.5$) but low (Spearman's $\rho = 0.07$).

Table 2.10 Difference in current *Asset* scores by gravity of offence on reconviction (N=1,110)

	No. of cases	Mean score	Std dev.	Significance of difference (t-test)
Gravity 1–4	749	15.6	10.1	.015
Gravity 5–8	361	17.2	9.9	

This test was repeated in relation to disposal. As Table 2.11 shows, there was a significant difference between the mean *Asset* scores of those getting all three disposals, with custodial disposals having the highest scores. This suggests that *Asset* is a better predictor of future disposals than of future offence gravity.

Table 2.11 Difference in current *Asset* scores by disposal on reconviction (N=1,158)

	No. of cases	Mean score	Std dev.	Significance of difference (t-test)
Custody	233	19.3	9.9	.000
Community penalty	501	16.5	10.1	.000
Other e.g. fines, discharges, warnings	424	13.7	9.6	.000

Prediction accuracy for population sub-groups

In Baker et al (2002), current *Asset* was found to be an accurate predictor of reconviction over 12 months for females, minority ethnic, and younger offenders. The same tests were repeated using 24-month data.

Table 2.12 gives the results for females. *Asset* predicts accurately in 65.4% of cases, which is lower than for the sample as a whole, but still satisfactory.

Table 2.12 Accuracy in predicting reconviction by females using current *Asset* score (N=399)

	Reconvicted	Not reconvicted	Total
Score 0–10	66 (16.5%)	128 (32.1%)	194 (48.6%)
Score 11–48	133 (33.3%)	72 (18.0%)	205 (51.4%)
Total	199 (49.9%)	200 (50.1%)	399 (100%)

Significance of difference (chi-square) = .000

The results for minority ethnic offenders are given in Table 2.13. The percentage correctly predicted is higher than for females: 68.8%, which is similar to that for the sample as a whole. Although the sample is rather small, it appears that *Asset* performs well in relation to ethnic minorities at the 24-month stage.

Table 2.13 Accuracy in predicting reconviction by ethnic minorities using current *Asset* score (N=189)

	Reconvicted	Not reconvicted	Total
Score 0–8	29 (15.3%)	35 (18.5%)	64 (33.9%)
Score 9–48	95 (50.3%)	30 (15.9%)	125 (66.1%)
Total	124 (65.6%)	65 (34.4%)	189 (100%)

Significance of difference (chi-square) = .000

Table 2.14 performs a similar analysis for younger offenders aged 10–15. This time the percentage correctly predicted is 67.4%, which is almost as accurate as for the sample as a whole.

Table 2.14 Accuracy in predicting reconviction by younger offenders using current *Asset* score (N=1,077)

	Reconvicted	Not reconvicted	Total
Score 0–10	176 (16.3%)	242 (22.5%)	418 (38.8%)
Score 11–48	484 (44.9%)	175 (16.2%)	659 (61.2%)
Total	660 (61.3%)	417 (38.7%)	1,077 (100%)

Significance of difference (chi-square) = .000

Review of predictive accuracy of current *Asset* score

This section has shown that the current version of *Asset* can predict reconviction over a two-year period to a high level of accuracy. The same tests were applied as at the one-year stage, and show that *Asset* assessments are as predictive, or even more so, over a longer period. Higher initial *Asset* scores are also indicative of more frequent and more serious offending. *Asset* predicts accurately with minority ethnics, and almost as well for younger and female offenders.

Accuracy of Revised Asset Scores 1 and 2

Accuracy in predicting whether reconvicted or not

Baker et al (2002) found that Revised Scores 1 and 2 were more accurate than the current *Asset* scale in predicting whether or not someone would be reconvicted over the following 12 months. Revised Scale 1 produced a 'percent correct' figure of 68 to 69% (depending whether the construction or validation sample was used). Revised Scale 2, which introduced differential weighting of the items, was 68 to 70% correct.

Tables 2.15 and 2.16 give the equivalent percent correct figures at the 24-month stage. As Table 2.15 shows, Revised Scale 1 is 71.3% correct, which is better than the figure of 69.4% for current *Asset* at 24-month stage quoted in Table 2.5.

Table 2.15 Percent correctly predicted by Revised Scale 1 at 24-month stage (N=2,144)

	Reconvicted	Not reconvicted	Total
Score 0–12	298 (13.9%)	429 (20.0%)	727 (33.9%)
Score 13–64	1,099 (51.3%)	318 (14.8%)	1,417 (66.1%)
Total	1,397 (65.2%)	747 (34.8%)	2,144 (100%)

Significance of difference (chi-square) = .000

Table 2.16 gives the corresponding figure for Revised Scale 2, which is even better: 72.4% correct.

Table 2.16: Percent correctly predicted by Revised Scale 2 at 24-month stage (N=2,144)

	Reconvicted	Not reconvicted	Total
Score 0–12	302 (14.1%)	456 (21.3%)	758 (35.4%)
Score 13–64	1,095 (51.1%)	291 (13.6%)	1,386 (64.6%)
Total	1,397 (65.2%)	747 (34.8%)	2,144 (100%)

Significance of difference (chi-square) = .000

Accuracy across the scoring range

Table 2.17 gives details of the proportions reconvicted if scores are divided into five equal-sized groups (quintiles) from lowest to highest. The results can be compared with those for the current version of *Asset* given in Table 2.7 above. Both revised scores show better discrimination between the bottom and top ends than current *Asset*, with higher reconviction rates in the top two quintiles.

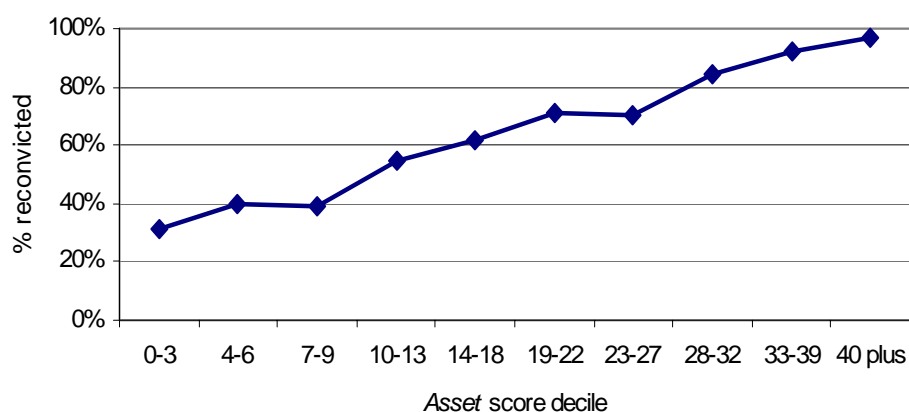
Table 2.17 Percent reconvicted within 24 months by Revised Scale quintiles (N=2,144)

Score band	Revised Scale 1	Revised Scale 2
Low (0–8; 0–7*)	35%	36%
Low–Medium (9–14; 8–14)	52%	49%
Medium (15–23; 15–24)	66%	67%
Medium–high (23–32; 25–34)	80%	82%
High (33–64; 35–64)	94%	95%
All cases	65%	65%

*Bands vary slightly between revised scores 1 and 2

Figure 2.2 shows similar information to Figure 2.1, but for Revised Scale 2, where there is a more uneven relationship between scores and reconviction; but the differentiation between top and bottom deciles is increased by 6%.

Figure 2.2 Percent reconvicted at 24 months by score decile (Revised Scale 2)



The ROC AUC statistic for both revised scores is 0.728, which is very similar to the figure of 0.731 quoted above for current *Asset*.

Accuracy in predicting frequency of reconviction

As before, frequency of reoffending was measured by number of offences and number of sentencing occasions. Table 2.18 shows that both revised scales produce significantly higher scores where people are reconvicted more frequently. Revised Scale 2 differentiated slightly better.

Table 2.18 Difference in Revised Scores 1 and 2 depending on number of sentencing occasions (N=1,119)

Mean score (and Std dev) if:	Revised Score 1	Revised Score 2
- reconvicted 1–2 times	19.1 (11.3)	19.1 (12.5)
- reconvicted more than twice	26.2 (11.9)	27.1 (12.5)
Significance of difference (t-test)	.000	.000

The correlation between *Asset* score and number of sentencing occasions was significant for both of the revised scores ($p < .01$) but low (Spearman's $\rho = 0.34$ for Revised Score 1 and 0.36 for Revised Score 2).

Table 2.19 shows a similar pattern if offences are counted instead of sentencing occasions.

Table 2.19 Difference in Revised Scores 1 and 2 depending on number of reconviction offences (N=1,119)

Mean score (and Std dev) if:	Revised Score 1	Revised Score 2
reconvicted of 1–3 offences	18.7 (11.3)	18.7 (12.3)
reconvicted of 4+ offences	25.8 (11.9)	26.7 (12.7)
Significance of difference (t-test)	.000	.000

The correlation between *Asset* score and number of reconviction offences was significant for both of the revised scores ($p < .01$) but low (Spearman's $\rho = 0.34$ for Revised Score 1 and 0.36 for Revised Score 2).

Accuracy in predicting seriousness of reconviction

As before, seriousness is measured in two ways: by considering the gravity of the most serious offence during the follow-up period, and by examining the disposal for that offence.

Table 2.20 shows the difference in Revised Scale scores for people reconvicted of more and less serious offences. The scores of people committing more serious offences are significantly higher than for those committing less serious ones. A comparison with Table 2.10 shows that both revised scores perform better than the current version of *Asset*.

Table 2.20 Difference in Revised Scores 1 and 2 by gravity of offence on reconviction (N=1,071)

	No. of cases	Mean score	Std dev.	Significance of difference (t-test)
Revised score 1				
gravity 1–4	725	21.2	12.2	.000
gravity 5–8	326	25.0	11.7	
Revised score 2				
gravity 1–4	725	21.4	13.3	.000
gravity 5–8	346	26.1	12.3	

The correlation between *Asset* score and reconviction offence gravity was significant for both of the revised scores ($p < .01$) but low (Spearman's $\rho = 0.13$ for Revised Score 1 and 0.15 for Revised Score 2).

Table 2.21 repeats the comparison in relation to disposal following reconviction. It shows that people receiving custody have significantly higher scores than those receiving community penalties, who in turn have significantly higher scores than those receiving fines and discharges. In other words, both revised scores discriminate offence seriousness, whether measured by offence gravity or subsequent disposal. Of the two, Scale 2 discriminates slightly more accurately.

Table 2.21 Difference in Revised Scores 1 and 2 by disposal on reconviction (N=1,118)

Mean score (and Std dev) if sentenced on reconviction to:	Revised Score 1	Revised Score 2
- custody (N=227)	28.1 (11.5)	29.4 (11.9)
- community penalty (N=488)	22.4 (11.9)	22.7 (12.8)
- other, e.g. fine, discharge (N=403)	19.1 (11.5)	19.2 (12.7)
Significance of difference (t-test)		
- custody v. community penalty	.000	.000
- community penalty v. other	.000	.000

Prediction accuracy for population sub-groups

As noted in Table 2.12 above, current *Asset* performed reasonably well in relation to females at the 24-month stage (65.4% correct). Table 2.22 below shows that both revised scores perform better than current *Asset* in this respect.

Table 2.22 Percent correctly predicted by Revised Scores 1 and 2: females at 24-month stage (N=384)

	Revised Score 1	Revised Score 2
Percent correctly predicted	68.2%	68.5%

The results for minority ethnic offenders are shown in Table 2.23. Again, the results are better than for current *Asset*, and it is clear that both revised scores perform well.

Table 2.23 Percent correctly predicted by Revised Scores 1 and 2: minority ethnics at 24-month stage (N=384)

	Revised Score 1	Revised Score 2
Percent correctly predicted	69.6%	71.7%

Table 2.24 does a similar analysis in relation to younger offenders aged 10 to 15. Following the same pattern, both revised scores perform well, and better than current *Asset*.

Table 2.24 Percent correctly predicted by Revised Scores 1 and 2: offenders aged 10 to 15 at 24-month stage (N=844)

	Revised Score 1	Revised Score 2
Percent correctly predicted	69.4%	70.3%

Review of predictive accuracy of Revised *Asset* scores

This section has shown that the two revised versions of *Asset* outperform current *Asset* at the 24-month stage, as they did at the 12-month point. Initial high scores are indicative not only of reconviction but also of frequency and seriousness of reconviction. The revised versions perform well with predicting females, minority ethnics and younger offenders.

Predictive accuracy of Asset with Final Warning cases

Baker et al (2002) noted that the reconviction rate for Final Warning cases was lower than for PSR cases – 32% compared to 68% over the first 12 months. While this was in line with what could be expected, the accuracy of *Asset* in predicting reconviction with Final Warning cases was not reported on at that time. Arguably it could be more difficult for YOT staff to assess the importance of risk factors at the start of a criminal career than later on, so it is important to examine how well *Asset* performs with this specific group.

Accuracy of current Asset at 12-month stage

Table 2.25 shows the proportion of Final Warning cases correctly predicted at the 12-month stage. At 65.9%, this is slightly lower than for all cases at this stage (67.0% in the construction sample and 66.4% in the validation sample). Perhaps surprisingly, the reconviction rate among the high scorers is less than that for the group of low scorers.

Table 2.25 Proportion of Final Warning cases correctly predicted by current Asset at 12-month stage (N=923)

	Reconvicted	Not reconvicted	Total
Score 0–12	153 (16.6%)	467 (50.6%)	620 (67.2%)
Score 13–48	141 (15.3%)	162 (17.6%)	303 (32.8 %)
Total	294 (31.9%)	629 (68.1%)	923 (100%)

Significance of difference (chi-square) = .000

Table 2.26 shows how *Asset* discriminates across the score range, splitting the scores into five equal-sized groups (quintiles). The differentiation of risk is not great, there being a difference of only 33% between the lowest and highest quintiles. Part of the explanation lies in the fact that the *Asset* scores for Final Warnings are concentrated at the low end, where reconviction rates are also lower, giving less scope for differentiation.

Table 3.26 Percent of Final Warning cases reconvicted within 12 months by current Asset score band (N=923)

Score band (quintiles)	No. of cases	Percent reconvicted
0–2 (Low)	166	18%
3–6 (Low–medium)	209	25%
7–10 (Medium)	180	28%
11–17 (Medium–high)	171	35%
18–48 (High)	197	51%
All cases	923	32%

Accuracy of current Asset at 24-month stage

Table 2.27 repeats the picture given in Table 2.25, but gives information from 12 months later. By this time, the proportion correctly predicted has dropped to 61.8%, which represents a deterioration. It was shown above that the accuracy level for all types of case actually improved at the 24-month stage (see Table 2.5).

Table 2.27 Proportion of Final Warning cases correctly predicted by current Asset at 24-month stage (N=888)

	Reconvicted	Not reconvicted	Total
Score 0–9	170 (19.1%)	327 (36.8%)	497 (56.0%)
Score 10–48	222 (25.0%)	169 (19.0%)	391 (44.0 %)
Total	392 (44.1%)	496 (55.9%)	888 (100%)

Significance of difference (chi-square) = .000

Table 2.28 gives a 24 month equivalent to Table 2.26, looking at accuracy across the score range. Paradoxically, this shows an improvement on the 12-month picture, with slightly better differentiation between top and bottom quintiles. However, it still falls well short of the differentiation at 24-month stage for all cases, as shown in Table 2.7 above.

Table 2.28 Percent of Final Warning cases reconvicted within 24 months by current Asset score band (N=888)

Score band (quintiles)	No. of cases	Percent reconvicted
0–2 (Low)	161	26%
3–6 (Low-medium)	203	34%
7–10 (Medium)	170	45%
11–17 (Medium-high)	165	50%
18–48 (High)	189	65%
All cases	888	44%

Accuracy of Revised Scores 1 and 2

Since the revised scores incorporate criminal history information, it is important to test how well they predict for Final Warning cases, where the only criminal history is likely to be a Reprimand. As Tables 2.15 and 2.16 above showed, the revised scores achieved high accuracy at the 24-month stage when tested against all types of case (71.3% and 72.4% respectively). However, their performance in relation to Final Warnings was disappointing. As Table 2.29 indicates, accuracy dropped to 62.3% for both scores. This is lower than the ‘percent correct’ figures given for the validation sample at 12-month stage, which were 64.3% and 66.1% respectively (Baker et al 2002). It appears that having a lack of criminal history creates prediction problems for both revised scores over a longer time period.

Table 2.29 Percent correctly predicted by Revised Scores 1 and 2: Final Warning cases at 24-month stage (N=844)

	Revised Score 1	Revised Score 2
Percent correctly predicted	62.3%	62.3%

Review of predictive accuracy of *Asset* with Final Warnings

For Final Warning cases, the current version of *Asset* performs quite well at the 12-month follow-up stage using a simple 'percent correct' measure, but it shows poor discrimination across the score range. However, at the 24-month stage the accuracy deteriorates, even though there is better discrimination at the high and low score extremes. The two revised scores behave similarly. At the 12-month stage they work quite well in relation to Final Warning cases (Baker et al 2002), but accuracy is less good at the 24-month stage. Perhaps it is harder for staff to identify the risk factors which are likely to have an enduring effect at the start of someone's criminal career than it is, once they have a more established pattern of offending. In addition, more rare events are usually more difficult to predict accurately, and given the lower reconviction rate for Final Warning cases this may also help to explain the lower accuracy of *Asset* for this group.

Summary

The main conclusion from extending the reconviction study is that the predictive accuracy of *Asset*, which was established at the 12-month point, is maintained over 24 months. *Asset* performed well in relation to all five criteria set out at the beginning of this chapter, namely, accuracy:

- in predicting whether someone will be reconvicted or not
- across the score range
- in predicting frequency of reconviction
- in predicting seriousness of reconviction
- for selected sub-groups: females, minority ethnics and younger offenders.

The Revised Scores 1 and 2 developed by Baker et al (2002) also continued to be as accurate, or more so, than the current version of *Asset*. However, findings in relation to the predictive accuracy of *Asset* with Final Warning cases were more complex. While the accuracy of the current and revised *Asset* scores over a 12-month period was acceptable, results from the 24-month study were disappointing. There may be a number of reasons for this, but the conclusion at present is that risk assessments on Final Warning cases are valid for a shorter time than those done at PSR stage.

3 Effectiveness of *Asset* in measuring risk-related change

Sutton and Davies (1997) argued that dynamic risk and need assessment tools should be able to provide three things:

- an estimate of risk of reconviction, based on static and dynamic factors
- a profile of where to target interventions in order to achieve greatest impact on recidivism
- a measure of the change in risk and need during a period of supervision

Previous research (Baker et al 2002) validated *Asset* in respect of the first two items but, as it was not possible at that stage to collect repeat assessments, the third item could not be examined. The aims of this current study were therefore:

- to investigate the extent to which *Asset* scores change over time
- to examine whether such change is related to reconviction outcomes.

Methodology and sample size

Ten YOTs initially agreed to take part in this project, although one subsequently withdrew. The teams were selected in order to provide data from a range of geographical areas and from teams of varying size and structure. Data from completed *Asset* profiles were collected electronically via Youth Offending Information System (YOIS) case management, and then fed into SPSS for analysis. The data sample consists of cases in which an initial *Asset* was completed between November 2002 and February 2003, and in which a community or custodial disposal was made (excluding Final Warnings). The repeat measurements were either *Assets* completed at the end of the relevant order or – where this was not available – another *Asset* completed at approximately the time when the original order would have finished (this occurred, for example, if a young person received another sentence before the completion of the order linked to the initial *Asset*). The reconviction follow-up period was 12 months. Reconviction data were supplied by the Home Office Research Development and Statistics Directorate (RDSD). The PNC was used as a data source, rather than the alternative source, the Offender Index (OI). The main reason for this was that the PNC is more up to date and therefore has a more complete offence record (Friendship et al 2001); it also provides the date of offences. This is important when establishing which offences were committed during the 12-month follow-up period, and helps to avoid the problem of pseudo-reconvictions (offences sentenced during the follow-up period but committed before it).

- RDSD were able to provide some of the PNC ID numbers (required for matching cases with relevant reconviction data) that could not be obtained from the YOTs. In addition, a manual process was used subsequently to check the accuracy of the matching. The date of the first *Asset* completion was the key item used to match against the PNC. *Assets* could be carried out at PSR stage or at start of supervision, so the matching involved checking a window of two months either side of the PNC sentence date. A match was achieved for 81% of the sample, which was lower than in the previous *Asset* study (84%).⁹ Cases were then followed up for 12 months ‘at liberty’ (for young people who had spent time in custody, the follow-up period had to be extended).
- To be used in the analysis, each case had to meet a number of criteria, namely:
 - having at least two valid *Asset* scores (as in previous research, at least 80% of items making up the total score needed to have been completed for an *Asset* to be included)
 - having an acceptable interval between *Asset* assessments (this was defined as at least one month and no longer than 12 months)
 - having complete, or at least partial, information on reconvictions following the PNC matching process (partial data are those which permit a reconviction rate to be calculated – i.e. whether reconvicted within 12 months or not – but do not allow for analysis of frequency or seriousness of reconviction).

All cases from within the specified time period that satisfied these three criteria were included in the study. This meant that data were usable from 696 cases: this is the figure used in the analysis that follows.

Profile of the sample

Table 3.1 shows the distribution of cases received from the participating teams. A majority of the sample are from urban and metropolitan areas, which gives it a slightly more urban bias than the sample used in the first *Asset* study.

Table 3.1 Data sources (N=696)

Youth offending team	No. of cases	
YOT 1	27	(4%)
YOT 2	60	(9%)
YOT 3	90	(13%)
YOT 4	91	(13%)
YOT 5	72	(11%)
YOT 6	147	(21%)
YOT 7	99	(14%)
YOT 8	45	(7%)
YOT 9	65	(9%)

⁹ All references in this chapter to the ‘previous’ or ‘first’ *Asset* study relate to Baker et al (2002).

Table 3.2 gives an analysis of the sample by gender, age and ethnic group. The gender distribution was slightly more weighted to males than in the previous study (86% compared to 82%). The mean age was similar (16.0 compared to 15.9). A similar proportion were also non-white (11% compared to 10%).

Table 3.2: Demographic data (N=696)

Gender, age and ethnicity		%
Gender	Male	86%
	Female	14%
Age	10 to 12	4%
	13 to 14	19%
	15 to 16	47%
	17 to 18	30%
Ethnicity	White	86%
	Black/British	8%
	Asian/British	2%
	Mixed	1%
	Not known/Other	3%

Table 3.3 below shows court disposals for this sample. First-tier disposals not resulting in supervision (e.g. fines and discharges) were excluded, as there would be no repeat administration of *Asset* with these young people. Final Warnings were also excluded on the grounds that it would be unrealistic to expect significant change in *Asset* scores following such a short period of intervention.

Table 3.3 Court disposal (N=696)

Disposal	%
Referral order	43%
Reparation order	6%
Action Plan order	10%
Supervision Order	19%
CPO/CRO	5%
ISSP	4%
DTO/other custody	14%

Due to the restricted range of disposals, it is not surprising that the current sample have committed more serious offences than previous samples. Table 3.4 shows offence seriousness using the YJB's 8-point gravity scale. It shows that 31% scored 5 or more, compared to 23% previously.

Table 3.4 YJB 8-point scale offence gravity scores (N=696)

Gravity score	%	Gravity score	%
Gravity 1	-	Gravity 5	16%
Gravity 2	9%	Gravity 6	14%
Gravity 3	36%	Gravity 7	1%
Gravity 4	23%	Gravity 8	-

To summarise, the sample is similar in most ways to that used in the previous study, and thus broadly representative of the national picture. The main difference is the bias towards more serious offenders because of the exclusion of Final Warnings, fines and discharges.

Initial Asset scores

The mean initial *Asset* score for the present sample was 15.8, which was slightly higher than in the previous study (14.4). Table 3.5 compares the spread of scores in both studies. The main difference is that the present study had approximately 10% less cases in the low-risk band, and 10% more in the low-medium band. This upward shift is probably caused by the omission of Final Warning and other disposals (as discussed above).

Table 3.5 Initial Asset scores

	Present study (N=696)	Previous study (N=3,161)
0–9 Low	29%	40%
10–19 Low-medium	39%	30%
20–29 Medium	23%	20%
30–39 Medium-high	8%	9%
40–48 High	1%	1%

Table 3.6 profiles the components making up the initial *Asset* score using data from the present study. It shows that ‘thinking and behaviour’ was the component judged to be most likely to cause a risk of further offending, followed by ‘lifestyle’ and ‘statutory education’. The least problematic area was ‘physical health’. The same pattern was found in the previous study.

Table 3.6 Initial Asset component risk scores

	N	% with 'risk'*	Mean rating
Living arrangements	696	36%	1.2
Family/personal relationships	694	50%	1.5
Statutory education	452	57%	1.7
Employment, training and further education	246	43%	1.3
Neighbourhood	695	31%	1.0
Lifestyle	695	60%	1.9
Substance abuse	694	39%	1.3
Physical health	696	9%	0.3
Emotional/mental health	696	36%	1.2
Perception of self and others	695	34%	1.1
Thinking and behaviour	695	71%	2.1
Attitudes to offending	696	47%	1.5
Motivation to change	682	32%	1.1

* defined here as scoring 2 or more on a scale of 0–4

Asset score change

This section examines the extent to which *Asset* scores change over time. In the case of custodial disposals, change is measured at two points: on release, and after a period of post-release supervision. For community disposals, change is only measured once.

Community disposals

The mean time interval between first and second assessments was 169 days, i.e. just under six months. However, this varied considerably, with the standard deviation being 82 days. There was a small but significant reduction in mean *Asset* scores over the period, from 14.8 to 13.9 (t-test $p < .001$). As Table 3.7 shows, 35% of scores did not change, but 40% reduced and 25% increased. This indicates that *Asset* is sensitive enough to show change over a period such as six months (although it remains to be seen if this is linked to reconviction). It also shows that *Asset* scores can change in both directions, although it is encouraging that more improved than deteriorated.

Table 3.7: Asset score change by direction of change (community disposals, N=607)

Score change	%
Reduction of 7 or more	10%
Reduction of 4 to 6	11%
Reduction of 1 to 3	19%
No change	35%
Increase of 1 to 3	14%
Increase of 4 to 6	6%
Increase of 7 or more	6%

Table 3.8 addresses the question of which components show the greatest change. By calculating change in average scores, this analysis underestimates the amount of change, since some reductions will be cancelled out by increases. Nevertheless, seven of the 12 components show significant reductions. The most important of these are in ‘education/education, training and employment (ETE)’, ‘lifestyle’, ‘thinking and behaviour’, and ‘attitudes to offending’.

Table 3.8 Change in *Asset* component scores between first and second assessment (community disposals, N=607)

	Mean score change
Living arrangements	-.07*
Family/personal relationships	-.08*
Statutory education/ETE ¹⁰	-.14***
Neighbourhood	no change
Lifestyle	-.15***
Substance abuse	-.08*
Physical health	-.02
Emotional/mental health	-.03
Perception of self and others	no change
Thinking and behaviour	-.20***
Attitudes to offending	-.12***
Motivation to change	-.01

Significance of change (t-test) ***=p<.001 **=p<.01 *=p<.05

Change within sub-groups

The research also examined whether the amount the *Asset* score changed varied between sub-groups. This was tested in relation to gender, age, ethnicity and initial *Asset* score.

There was no significant difference in the amount of change when analysed by gender, age or ethnicity (p>.05). However, as Table 3.9 shows, people with higher initial *Asset* scores recorded a larger score reduction than those with lower initial scores. At first sight, this result is encouraging, suggesting that people with greater risk-related needs benefit more from supervision. However, some of the difference may be because people with higher initial scores have greater scope for improvement. A phenomenon known as ‘regression to the mean’ explains why people with extreme scores at first observation tend to move towards the average at second observation (Cook and Campbell 1979). An alternative explanation might be the ‘ceiling effect’, which explains why high scores cannot rise any further.

¹⁰ For this purpose, it has been necessary to combine the statutory education and ETE components as only one of these is scored in any individual assessment.

Table 3.9 Change in Asset score by initial score grouping

	N	Mean initial Asset score	Mean score change	Significance of change (t-test)
Low initial <i>Asset</i> score (0 to 15)	341	8.4	-0.1	not significant
High initial <i>Asset</i> score (16 plus)	266	23.0	-1.8	p<.001
TOTAL	607	14.8	-0.9	p<.001

Custodial disposals

As explained above, in the case of custodial disposals, change is measured over two periods: from sentence to release, and following a period of post-release supervision. Only cases with all three assessments are considered here, giving a rather small sample of 57 which limits the possibilities for analysis.

The mean time interval between both first and second, and second and third assessments was 131 days (between four and five months). These are both shorter than the figure for community disposals (170 days), and this may be explained by differences in sentence length. As before, there was a wide spread around these averages.

As Table 3.10 shows, there was a significant reduction in mean *Asset* scores at each stage. Each reduction was considerably larger than that found in the community sample, though this might partly be expected because of the much higher initial level of scores among young people in custody (the statistical confidence level is also lower in the custodial sample because of the small sample size.)

Table 3.10: Mean Asset scores at three assessment stages (custody cases, N=57)

	Mean Asset score	Mean change	Significance of change (t-test)
On sentence	22.0		
On release	19.5	-2.5	p<.01
During post-release supervision	17.1	-2.4	p<.05

As with the community disposals, these mean changes conceal shifts in both directions. Table 3.11 shows the proportions moving in each direction. It shows less detail than that for community disposals, because of the reduced sample size. What it does indicate is the larger proportion whose risk levels do not seem to change during custody, and the relative volatility during subsequent post-release supervision. During this second period, an encouraging proportion show improvements of 4 or more points, and this increased to 45% when both periods were combined.

Table 3.11 Asset score changes by direction of change (custody cases, N=57)

	During custody	During post-release	Overall
Reduction of 4 or more	24%	31%	45%
Reduction of 1 to 3	21%	26%	25%
No change	38%	19%	7%
Increase of 1 to 3	10%	12%	9%
Increase of 4 or more	7%	12%	14%

Table 3.12 provides details of change at *Asset* component level and shows that there were significant improvements in eight components when first and third assessments were compared (although the small sample size should be noted). Of the more significant components, ‘lifestyle’, ‘thinking/behaviour’ and ‘attitudes to offending’ were common to custodial and community disposals.

Table 3.12: Change in Asset component scores between first and third assessment (custody cases, N=57)

	Mean score change
Living arrangements	-.49**
Family/personal relationships	-.39**
Statutory education/ETE	-.43*
Neighbourhood	-.08
Lifestyle	-.60**
Substance abuse	-.37*
Physical health	+.04
Emotional/mental health	-.32*
Perception of self and others	-.28
Thinking and behaviour	-.63**
Attitudes to offending	-.54**
Motivation to change	-.35

Significance of change (t-test) ***=p<.001 **=p<.01 *=p<.05

The overall conclusion is that, in both community and custodial contexts, *Asset* scores appear to change over time and in both directions (i.e. increasing and decreasing). Change can be detected at the level of individual *Asset* components, as well as overall scores.

Measuring reconviction

As explained above, reconviction data were sought from the Home Office Research Development and Statistics Directorate. A follow-up period of 12 months was used, starting at the date of the disposal with which the initial *Asset* assessment was associated. The following methods of measuring reconviction were used:

- whether or not reconvicted within 12 months (‘reconviction rate’)

- number of offences during the 12-month period ('frequency')¹¹
- time to first reoffence ('survival rate')
- seriousness of first reoffence ('seriousness').

The purpose of collecting various measures of recorded reoffending was to enable a thorough and robust examination of the relationship between *Asset* score change and reconviction.

For the sample, as a whole (N=696), 62% were reconvicted at least once during the following 12 months at liberty. This figure can be compared with the 68% of non-Final Warning cases reconvicted within a year (found in the previous *Asset* study). It is also comparable with recent Home Office figures for one-year juvenile reconviction rates: 62% for community penalties and 68% for custodial disposals (Home Office 2004).

For those reconvicted at least once (N=432), they committed an average of 5.5 offences during the follow-up period. This is higher than the 4.8 average found in the previous study, but that lower figure included Final Warning cases and may therefore still be consistent with the pattern seen in this study.

The mean offence gravity on reconviction was 3.5 on the YJB's 1–8 scale, which is similar to the 3.2 figure found in the previous study. Another measure of offence seriousness is the disposal on reconviction. In the present study, 19% received custody compared to only 13% before, whereas fewer received tier 1 disposals (33% compared to 41%).

Finally, the average number of days between index disposal and first reoffence was 139 days (excluding those who did not reoffend). No data were collected on this in the previous study.

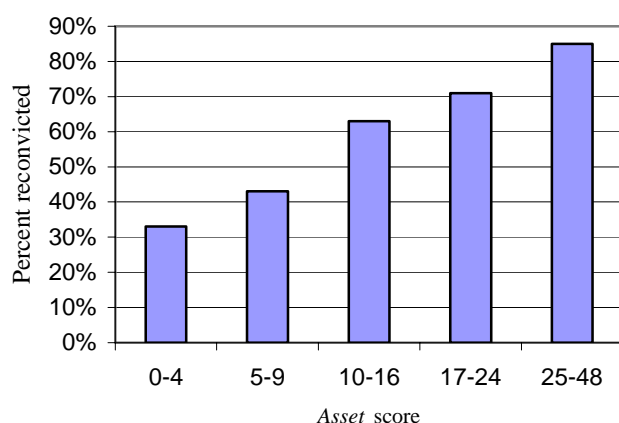
To summarise the data on reoffending: this sample is fairly typical of the YOT caseload if Final Warning cases are removed. These data provide the outcome measures against which changes in *Asset* scores will be tested.

Initial Asset scores and reconviction

Baker et al (2002) showed a clear association between initial *Asset* scores and the likelihood of reconviction. Figure 3.1 below shows that the same is true of the present sample.

¹¹ It would have also been possible to use 'number of sentencing occasions', but in previous *Asset* research this produced very similar results to those obtained using 'number of offences' (Baker et al 2002).

Figure 3.1 Initial Asset score and reconviction (N=696)



The relationship between initial *Asset* component scores and reconviction was also tested. In Table 3.13, the higher the phi value, the stronger the relationship. Except for the two health items, all were significantly predictive of reconviction. The strongest predictors were ‘lifestyle’, ‘motivation to change’ and ‘education’ (this was confirmed by a logistic regression, which showed these three to be the only significant predictors once controls were in place for all the others). This finding suggests that reductions in scores in these three areas are most likely to be associated with a reduced risk of reconviction.

Table 3.13 Initial Asset component scores and reconviction (N=696)

	Phi
Living arrangements	.22***
Family/personal relationships	.24***
Statutory education/ETE	.26***
Neighbourhood	.23***
Lifestyle	.31***
Substance abuse	.18***
Physical health	.11
Emotional/mental health	.10
Perception of self and others	.22***
Thinking and behaviour	.21***
Attitudes to offending	.24***
Motivation to change	.29***

Significance of phi ***=p<.001 **=p<.01 *=p<.05

Relating Asset score changes to reconviction – part one

The aim of this section is to investigate whether there is a relationship between changes in *Asset* score and levels of reconviction. The methodology is based on that used in earlier research with two other assessment tools, ACE and LSI-R (Raynor et al 2000). Community and custodial samples will again be considered separately.

It is important to eliminate the influence of initial scores in order to isolate the effect of score change. This is done in two ways: first, by separate analysis of those having low and high initial *Asset* scores; and second, by using logistic regression to control for differences in initial *Asset* score.

Community disposals

The first stage of analysis was to consider the effect of score change on the simplest outcome measure: the reconviction rate. Table 3.14 splits the sample into two: those with low and those with high initial *Asset* scores. Within each half, the sample is further split according to the direction of *Asset* change. As column three shows, the initial *Asset* score is similar within each half of the sample. Column four shows clear differences in reconviction, which can be related to whether scores go up or down. These differences are statistically significant, though more so in the 'low' band. One can reasonably conclude that *Asset* score change is predictive of reconviction, independent of initial risk score.

Table 3.14 Changes in *Asset* score and reconviction (community disposals)

First <i>Asset</i> score band	Direction of change	First <i>Asset</i> Mean	Percent reconvicted	Significance of difference (chi square)
Low band (0–15)	Decrease (N=134)	9.1	34%	<.001
	No change (N=127)	7.1	47%	
	Increase (N=80)	9.3	73%	
High band (16–48)	Decrease (N=108)	22.5	64%	<.01
	No change (N=86)	23.4	84%	
	Increase (N=72)	23.2	85%	

The effect of score change on frequency of reconviction follows a similar pattern. Those with increased scores are reconvicted more frequently than those whose scores go down or stay the same. However, the difference between those whose scores reduce and those whose scores stay the same is not significant. Table 3.15 presents the result for high and low initial score bands combined, since the pattern is the same for both.

Table 3.15 Changes in *Asset* score and frequency of reoffending (community disposals – reoffenders only)

	N	Mean no. of offences	Significance of difference (t-test)
Score decrease	109	4.5	row 1 v 2, not signif
No change	129	4.9	row 2 v 3, p<.01
Score increase	111	6.7	row 1 v 3, p<.01

Table 3.16 examines whether score change can predict the time interval to the first reoffence. Again, the pattern is as expected. Those whose scores get worse reoffend most quickly, and those whose scores improve have the longest interval before reoffending. As was the case when looking at offence frequency, there is no significant difference between those whose scores improve and those whose scores remain the same.

Table 3.16 Changes in Asset score and interval to first reoffence (community disposals – reoffenders only)

	N	Days to first reoffence	Significance of difference (t-test)
Score decrease	114	141	row 1&2, not signif.
No change	129	132	row 2&3, p<.01
Score increase	117	96	row 1&3, p<.001

When the gravity of the first reoffence was compared, there were no significant differences related to score change. Mean offence gravities for the three groups were 3.4, 3.4 and 3.3. When the alternative measure of offence seriousness was tested (i.e. disposal on reconviction), this also did not show any relationship with score change. There was a slight tendency for the use of custody to be higher where scores increased than when they decreased (17% compared with 12%), but because of the small sample size this was not significant.

To summarise, the data on community disposals show a clear relationship between *Asset* score change and reconviction. Where scores improve there is a lower likelihood of reconviction, a longer interval to first reoffence, and a lower offence frequency over 12 months. Where scores deteriorate, the reverse is the case. However, there was no relationship between *Asset* score change and seriousness of reoffending. The finding on reconviction rates was further tested using logistic regression. The impact of score change on reconviction was tested while controlling for differences in initial *Asset* score. This confirmed that initial score and score change were both significant predictors (p<.001) independent of one another.

Custodial disposals

This section aims to measure the impact of score changes on reconviction following a custodial disposal. As seen above, the custodial sample showed a reduction in mean *Asset* scores during custody and then a further reduction during the post-release period. Since the reconviction follow-up period can only start on release, it seemed logical to combine the two score changes for the purposes of measuring their impact.

Table 3.17 shows the relationship between score change and reconviction rate. Given the small sample size, it is simpler than the equivalent table for community disposals. The sample is not split into those with high and low initial *Asset* scores, and the ‘no change’ group is omitted (as it only contains four cases). Despite the fact that the improvers have a lower reconviction rate, the difference is not significant with this sample size. One reason for this is that the groups’ initial *Asset* scores are not similar.

Table 4.17: Changes in Asset score and reconviction (custodial disposals, N=53)

	N	First <i>Asset</i> mean	Percent reconvicted	Significance of difference (chi square)
Score decrease	40	23.6	65%	Not significant
Score increase	13	17.2	85%	

A logistic regression was therefore used to test the effect of score change on reconviction rate, while controlling for differences in initial *Asset* score. Once again, score change was not a significant predictor ($p > .05$). It seems that, with this small custodial sample, *Asset* score change is not related to reconviction rate.

A test of the impact of score change on offence frequency was prevented by an even smaller sample size (only 25 cases had data on the number of reoffences). The reason why these data were missing for so many of the cases was that a large proportion of the custodial disposals could not be followed up at 12 months due to time spent in custody.

In an attempt to increase the sample size, analysis was then focused on the cases that had undergone the first two assessments only (i.e. had change measured during custody). Although the number of cases increased from 57 to 89, all the additional cases were ones which showed no *Asset* change at all during that period. As this would not have shed any more light on the relationship between score change and reconviction, the attempt was abandoned.

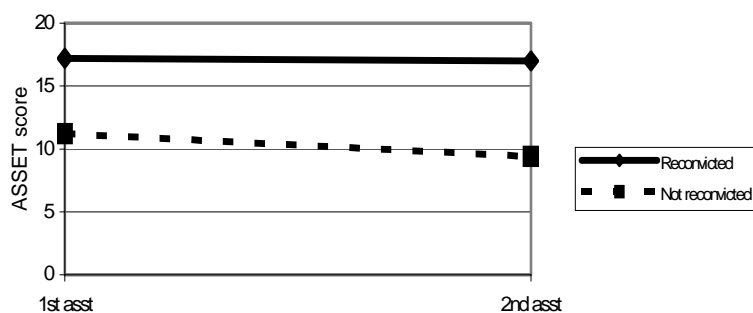
To summarise the findings on custodial disposals, there is an encouraging sign that reconviction rates may be lower when *Asset* scores go down, but due to the small number of cases this difference did not reach statistical significance.

Relating *Asset* score changes to reconviction – part two

The method used above was to compare reconviction rates for *Asset* improvers and those whose scores got worse. An alternative method used by Raynor et al (2000) was to compare *Asset* change for those who were reconvicted and those who were not reconvicted.

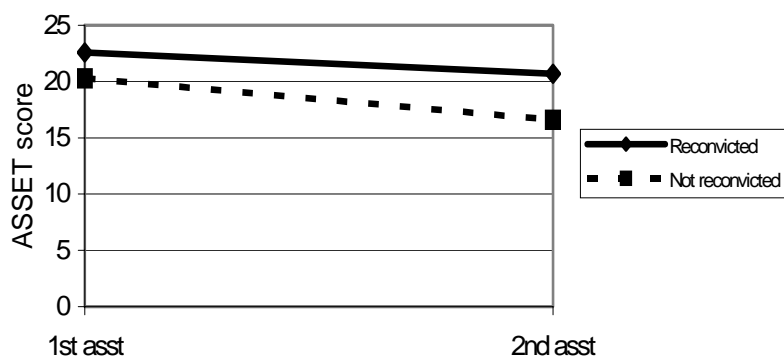
Figure 3.2 shows the mean *Asset* scores at first and second assessment for the community disposal group. While the scores for those reconvicted show no improvement ($p > .05$), there is a significant reduction in scores for those who were not reconvicted ($p < .001$).

Figure 3.2: *Asset* score change and reconviction (Community disposals, N=607)



A similar comparison was made for the custodial group. Although both groups appear in Figure 3.3 to show a reduction, neither is statistically significant ($p > .05$). One possibility is that this is due to the small sample and a larger sample would therefore be required to test if this finding is significant.

Figure 3.3 Asset score change and reconviction (custodials, N=57)



This form of analysis reaches the same conclusion as in the previous section: that while there are insufficient data on the custodial group to draw any conclusions with confidence, the data on community disposals once again show a positive relationship between score reduction and lower rates of reconviction.

Summary of results

The data need to be interpreted with caution, given that there may be a small number of cases in which reconviction occurred before the second assessment was completed and this would have influenced practitioners' decisions to give lower scores at that stage. However, on the basis of the available data, it appears that *Asset* can indicate change over time and that this is related in some degree to reconviction outcomes.

Community disposals will be considered first, since the larger sample makes it possible to draw more definite conclusions. The study found the following.

- There was a small but significant drop in average *Asset* scores between first and second assessment, a period that averaged about 6 months.
- *Asset* scores show change in both directions, suggesting that assessments are not naively optimistic.
- The greatest improvements were in the areas of 'education/training', 'lifestyle', 'thinking/behaviour' and 'attitudes to offending'.
- Young people with higher initial *Asset* scores were more likely to show improvement in scores over time.
- Young people whose scores improved had a lower reconviction rate than those whose scores deteriorated. They also committed fewer offences and had a longer delay before the first reoffence.

The custodial sample was much smaller, and this made it difficult to draw definite conclusions. However, the following did apply.

- There was a significant drop in average *Asset* scores at both the release and end of post-custodial supervision stages.

- The areas showing improvement over both stages were similar to the community sample.
- There was a tendency for score improvements to be associated with lower reconviction rates, but this did not reach statistical significance. One possibility is that this is due to the small sample – a larger sample is needed before significance can be tested.

4 Inter-rater reliability

A preliminary analysis of the consistency or inter-rater reliability of *Asset* use was undertaken as part of the previous 'Asset validity and reliability' study (Baker et al 2002). While the data were encouraging, the limitations of the methodology meant that the findings could only be treated as preliminary results. It was necessary therefore for the issue of inter-rater reliability to be investigated again, in greater detail and using a more robust method.

Methodology

Other assessment tools have also tried to establish levels of inter-rater reliability. The LSI-R manual, for example, reports tests involving independent assessments by two practitioners of the same offender (matched pairs: Andrews and Bonta 1995). Total scores for all pairs were within 5 of each other (maximum score of 54), and correlations (r) between pairs of test scores were high ($>.80$). The UK validation of LSI-R also used matched pairs and researchers reported that 9 out of 10 fell within 3 points of each other. The study also found that disagreement over ratings was greatest for: involvement in organised activities; relationship with parents; mental health; and educational qualifications (Raynor et al 2000).

The ACE validation study did not collect any repeat assessments, so using matched pairs was not possible (Raynor et al 2000). Instead, inter-rater variations in mean scores were examined. Selection effects (offender differences) were controlled for by using the OGRS static predictor. This was done by dividing ACE scores by OGRS scores to create a simple ratio. A t-test was then used to compare mean ratios between assessors. This suggested that 1 out of 10 assessors were significantly different from the rest.

The *Asset* validation study (Baker et al, 2002) did not collect repeat assessments, but used the same method as quoted above for ACE: a static score for each young person based on offending history was used to control for variations in the assessed population. This score was used to test the consistency of completed *Assets* across YOTs, within YOTs, and between staff from different professional groups. The level of consistency was generally good, although there were some differences (for example, among assessors with a social services/probation background, 3 out of 13 gave *Asset* scores that were significantly different from the rest).¹²

Frude et al (1994) do not quote IRR levels for Crime-Pics. However, they did a test-retest reliability check, which involved the same assessor repeating the assessment after a short period of time. The correlation of initial and second scores was $>.55$, which is not as high as in the LSI-R test quoted above.

As the aim of this study was to compare the use of *Asset* by different practitioners there were two main approaches from which to choose.

¹² One potential weakness of this approach is that the static score does not necessarily correlate with the *Asset* rating. The methodology makes an a priori assumption that a high static score means a high *Asset* rating, but it is feasible that a young person with a high *Asset* score may have few or no previous offences, thus making his or her static score low, and vice versa.

- The same young person is interviewed twice by different practitioners and results are compared (matched pairs). Analysis then requires comparisons of pairs.
- Larger numbers of practitioners make an assessment of the same person through use of a case study (either real or fictional).

The second option was chosen, using a video of young people being interviewed. This was the preferred method because of the following.

- It is easier for YOTs to organise and for practitioners to fit in to their busy schedules.
- It does not involve young people having to go through two intensive interviews in a short period of time.
- It provides an opportunity for participating YOTs to discuss issues of consistency and reliability.
- The production of video materials provides a lasting resource that could be used for future staff training – not just on inter-rater reliability but also on basic assessment skills.

A video could involve either a recording of a real interview or a case study using actors. It was decided that case studies would be used for the following reasons:

- issues surrounding confidentiality
- ease of ensuring that assessors are provided with enough information – when using real cases there is no control over the content of an interview
- possibility of including information designed specifically to test assessors in problem areas, e.g. recognising the cues to identify a risk of serious harm to others.

Case studies and data collection

Case studies were created by the researchers based on real young people and information in *Asset* forms collected for the study. The young people being interviewed were played by drama students from Evesham High School and the children of colleagues. Creative assistance was provided by the resident drama teacher and expert advice was provided by Gill Kelly and Bernadette Wilkinson of KWP. The videos were produced by a professional team from the Media Production Unit at the University of Oxford – the expertise of the crew ensured higher picture and sound quality and enabled the raw footage to be edited appropriately.¹³

¹³ Our thanks go to everyone involved in the production of this video.

The finished product was a research video containing four case studies of young people of different gender, ethnicity and age: Billy, Georgina, Alex and Victoria. The scenarios reflected offences of varying seriousness and covered a range of issues relating to vulnerability and risk of serious harm to others. The young actors used in the films spent a day becoming familiar with the case study they were going to play and were then ‘interviewed’ in character. The interviews (after editing) lasted approximately 20–30 minutes each. In contrast to some real life cases, each of the interviewees was highly articulate and provided all the information requested of them. However, this was an intentional technique to ensure that a) the assessors could hear the answers being provided by a young person and b) there was enough information to complete and rate each section of *Asset* appropriately. As well as verbal information, the actors were able to convey cues by body language and the way they presented themselves (for example, attire) in front of the camera, thus adding an extra dimension to the realism of the case studies.

In addition to the filmed interview, a pack of materials was produced to accompany each of the case studies. For each young person, this provided practitioners with:

- background information on previous offending and a summary of information collected from other sources, for example, family, school, care home, victim
- a completed ‘What do YOU think?’ self-assessment form.

For research purposes, a shorter version of the *Asset* core profile was provided that required assessors to give scores and evidence for each section (but omitted the more detailed yes/no questions). This was justified on the grounds that the scoring would be the main focus of the subsequent analysis and because practitioners would be more likely to participate if the task did not seem too long. Information on the assessors was also collected, including which YOT they worked in; their professional backgrounds; whether they had received any training on *Asset*; and their opinions on the value of *Asset*.

Research packs (containing instructions, a copy of the video and additional information) were sent to 20 teams across England and Wales – some selected on the basis of existing contacts, and others as the result of ‘cold calling’. While there were many YOTs who made no returns, there were several other teams who made contact to inform us they were unable to participate. Reasons for this included staff absence, apparent staff apathy and teams being too busy (preparing for inspections, for instance). Only 60 questionnaires were returned, which equates to an approximate 16% return rate. This figure is lower than hoped for (but was partly affected by the research being conducted over the summer holiday period). Table 4.1 shows the response rate per returning YOT.

Table 4.1 Response rate per YOT

Team	Frequency
YOT 1	4
YOT 2	2
YOT 3	5
YOT 4	9
YOT 5	8
YOT 6	4
YOT 7	11
YOT 8	2
Not Known	15

Practitioners were advised that if they did not have time to complete all four assessments they should concentrate on the first two. This was reflected in the returns: as Table 4.2 below shows, the majority focused on the first two case studies.

Table 4.2 No. of Assets completed per case study

Case Study (N=60)	Completed
Billy	43
Georgina	45
Alex	24
Victoria	6

For the current study, the staff who responded represent about 16% of all those canvassed. In addition, the 116 assessments represent 48% of the maximum number possible if respondents had completed all four case studies. This presents two problems for the analysis: first, it is not clear how representative the 60 respondents are of YOT staff generally; and second, the sample size for the fourth case study (Victoria) is not large enough to permit analysis. Alex was included in the analysis but the small n size should be considered when reading the results.

Testing consistency for each case study

To test the inter-rater reliability, the assessment variations are first considered for each case study separately. Variations are considered for two levels: the total *Asset* score and the component scores.

Billy

Billy Samson is a 13-year-old white male who has been prosecuted for three counts of shoplifting. He has a history of shoplifting, with seven different occasions recorded over the past year and a half, and mostly steals presents for his mum. Billy's dad died two years previously and since that time his mum has suffered from severe mental health problems, culminating in several stays at the local hospital. During these times, Billy stays with neighbours or in local authority care as there are no other family members to look after him. He has very few friends and spends a lot of time alone and worrying about his mum. He claims he will not stop shoplifting until his mum is better, as the gifts he steals make her happy.

Basic frequencies relating to the ratings for Billy are shown below, in order of *Asset* section.

Section	n	0	1	2	3	4
Living arrangements	43	7%	12%	33%	39%	9%
Family/personal rels	43	--	2%	10%	58%	30%
ETE	42	19%	31%	38%	7%	5%
Neighbourhood	37	33%	35%	24%	8%	--
Lifestyle	43	--	7%	35%	51%	7%
Substance abuse	43	95%	5%	--	--	--
Physical health	43	58%	28%	9%	5%	--
Emotional health	43	--	5%	19%	58%	18%
Perception of self	42	5%	19%	38%	29%	9%
Thinking/behaviour	41	2%	22%	37%	32%	7%
Attitude to offending	42	2%	12%	48%	26%	12%
Motivation to change	39	5%	8%	41%	41%	5%

It can be seen that practitioners rated family and personal relationships, lifestyle and emotional and mental health as the most problematic aspects of Billy's life related to his offending.

The 43 *Asset* scores give a median total score of 23 and a mean of 22.6, indicating a symmetrical distribution. The inter-quartile range (middle 50%) was 20–25, and the standard deviation 4.9. Figure 4.1 shows the concentration of scores in the middle risk range.

Figure 4.1 Asset score distribution for Billy

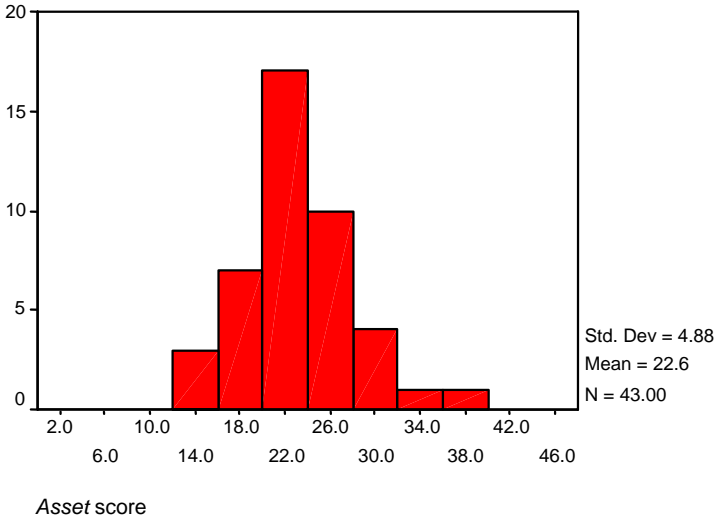


Table 4.3 shows how much individual assessors deviate from the median: in this case, 60% of cases were within 3 points of the median.

Table 4.3 Spread of scores round median (Billy, N=43)

Score range	Assessments
Median	6 (14%)
Within 1	17 (40%)
Within 2	22 (51%)
Within 3	26 (60%)
Within 4	29 (67%)
Within 5	35 (81%)

What agreement is there on *Asset* component scores? These are measured on a 5-point scale between 0 and 4. Table 4.4 shows that overall there was an exact match on half the components, with 89% agreeing to within one point. The areas of greatest agreement were substance abuse, family relationships and emotional health; agreement was lowest on ETE.

Table 4.4 Component score variation (Billy, Max N=43)

Component	Mode	Exact match	% within 1 point
Living arrangements	3	40%	81%
Family/personal rels	3	58%	98%
ETE	2	38%	76%
Neighbourhood	2	35%	92%
Lifestyle	3	51%	93%
Substance abuse	0	95%	100%
Physical health	0	58%	86%
Emotional health	3	58%	95%
Perception of self	2	38%	86%
Thinking/behaviour	2	37%	90%
Attitude to offending	2	48%	86%
Motivation to change	2 / 3	41%	90%
All components		50%	89%

Note: Mode means most frequently chosen item. Where there are two modes both are shown.

Georgina

Georgina Bates is a 14-year-old white girl who has been prosecuted for robbery of a mobile phone using a knife. Her victim was a younger Asian girl and there are also concerns that the offence was racially motivated. Georgina currently lives in local authority care after her mum and step-dad told her to leave the family home, the offence being seen as the final straw. She has no previous convictions but is known to the local Splash team. Georgina is currently excluded from school with permanent exclusion being considered. She has very few female friends and prefers to spend her time with older males whom she sees as being more exciting. Since being in the home she has been spending a lot of time with the resident older males, drinking heavily with them (having been hospitalised twice) and engaging in unprotected sex. She is also partially deaf in her right ear but refuses to receive medical care for this. The deafness impacts greatly on her education. Her real dad is missing, having been recently released from prison, and her mum and step-dad are both known to drink to excess.

Basic frequencies relating to the rating of Georgina are shown below.

Section	n	0	1	2	3	4
Living arrangements	45	--	--	33%	42%	25%
Family/personal rels	45	--	--	9%	42%	49%
ETE	43	--	2%	12%	51%	35%
Neighbourhood	38	18%	32%	21%	24%	5%
Lifestyle	45	--	5%	11%	42%	42%
Substance abuse	43	2%	5%	35%	42%	16%
Physical health	43	5%	2%	39%	33%	21%
Emotional health	45	2%	9%	33%	45%	11%
Perception of self	45	--	2%	7%	53%	38%
Thinking/behaviour	45	--	2%	9%	38%	51%
Attitude to offending	44	--	2%	11%	50%	37%
Motivation to change	42	--	7%	26%	48%	19%

The sections rated as most associated with offending in the opinion of the practitioners are family and personal relationships, perception of self and others, thinking and behaviour, and attitudes to offending.

Using the sample of 44 valid *Asset* assessments¹⁴ the median total score is 34 and the mean is also 34.0. Once again, this indicates a remarkably symmetrical distribution. The inter-quartile range is 30–37 and the standard deviation is 5.4. There appears to be agreement that, compared to Billy, Georgina is a much higher risk case. The range of scores is slightly wider, indicating slightly less agreement, but this is not likely to be significant. Figure 4.2 shows a concentration of scores in the upper risk range.

Figure 4.2 Asset score distribution for Georgina

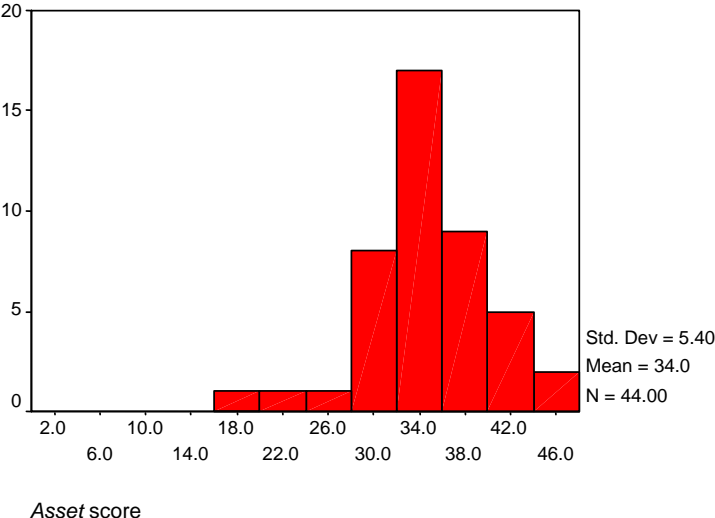


Table 4.5 shows how much individual scores deviate from the median. There were 57% of cases within 3 points of the median, slightly less than Billy’s 60%.

Table 4.5: Spread of scores round median (Georgina, N=44)

Score range	Assessments
Median	4 (9%)
Within 1	13 (30%)
Within 2	20 (45%)
Within 3	25 (57%)
Within 4	29 (66%)
Within 5	34 (77%)

What agreement is there on *Asset* component scores? Table 4.6 shows a slightly lower level of exact match than with Billy – 46% overall, but a similar proportion within one point. The highest agreement this time is on education, training and employment, perception of self and attitudes to offending, with least agreement on neighbourhood.

¹⁴ One of the original 45 cases had to be excluded from further analysis because of incomplete data.

Table 4.6 Component score variation (Georgina, Max N=44)

Component	Mode	Exact match	Within 1 point
Living arrangements	3	43%	100%
Family/personal rels	4	48%	91%
ETE	3	51%	98%
Neighbourhood	1	32%	71%
Lifestyle	3	43%	95%
Substance abuse	3	43%	93%
Physical health	2	40%	74%
Emotional health	3	46%	89%
Perception of self	3	52%	98%
Thinking/behaviour	4	52%	89%
Attitude to offending	3	51%	98%
Motivation to change	3	49%	95%
All components		46%	91%

Alex

Alex Simmons is a 17-year-old white male and has been prosecuted for supplying class C and being in possession of both class A and C drugs. He has offended previously, increasing in severity from possession to supply. Alex lives with his grandfather as his parents moved away for work – he does not see much of them but stays in contact with his mum more than his dad. Alex is currently studying for his A-levels and is thought of as very academically capable. However, due to increasing truancy and the nature of his offending, his place at the school is being reconsidered. His peer group is very important to him and these are the people he spends most time with: many of them are also known to the YOT for similar offences. Alex is very outspoken on his views about the use of cannabis, believing that it should be legalised. He is also very reluctant to stop using cannabis on this basis.

Basic frequencies relating to the rating of Alex are shown below:

Section	n	0	1	2	3	4
Living arrangements	24	12%	42%	25%	21%	--
Family/personal rels	24	--	29%	17%	42%	12%
ETE	24	21%	50%	25%	4%	--
Neighbourhood	24	21%	29%	38%	12%	--
Lifestyle	22	--	--	14%	41%	45%
Substance abuse	24	--	--	--	12%	88%
Physical health	24	38%	42%	12%	8%	--
Emotional health	24	29%	29%	42%	--	--
Perception of self	24	37%	38%	17%	8%	--
Thinking/behaviour	24	12%	13%	21%	33%	21%
Attitude to offending	24	--	--	8%	33%	59%
Motivation to change	24	4%	4%	13%	58%	21%

Practitioners rated the sections on lifestyle, substance use, attitudes to offending and motivation to change as being the most closely related to Alex's offending.

On a reduced sample of 24 *Asset* assessments, the median total score is 24.5 and the mean 25.1. The inter-quartile range is 20–30 and the standard deviation 5.8. The reason for the greater spread of scores is likely to be linked to there being a smaller sample size than in the other case studies. As Figure 4.3 shows, the smaller sample size also accounts for a non-normal score distribution.

Figure 4.3 Asset score distribution for Alex

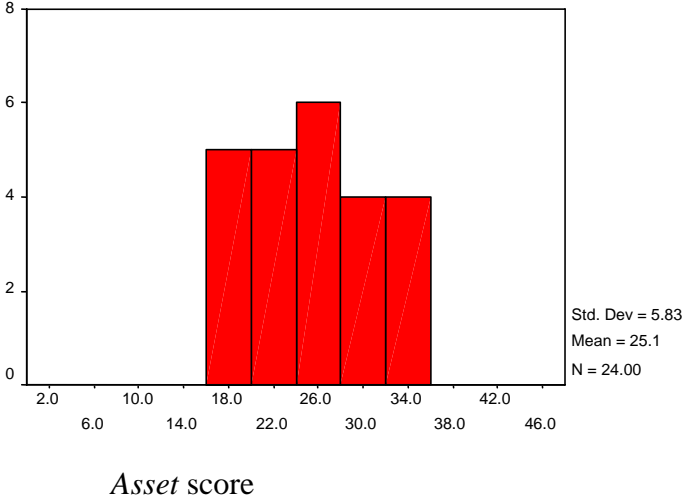


Table 4.7 shows how much individual scores deviate from the median. Only 33% of cases were within 3 points of the median, but this may again be due to the small sample size.

Table 4.7 Spread of scores round median (Alex, N=24)

Score range	Assessments
Median	2 (8%)
Within 1	4 (17%)
Within 2	7 (29%)
Within 3	8 (33%)
Within 4	10 (42%)
Within 5	14 (58%)

What agreement is there on *Asset* component scores? Table 4.8 shows that, despite the smaller sample size, there is a similar level of agreement on component scores as for the other two case studies. This time the highest agreement is on substance abuse, attitudes to offending and motivation. There is least agreement on thinking/behaviour and family and personal relationships.

Table 4.8 Component score variation (Alex, Max N=24)

Component	Mode	Exact match	Within 1 point
Living arrangements	1	42%	79%
Family/personal rels	3	42%	71%
ETE	1	50%	96%
Neighbourhood	2	38%	79%
Lifestyle	4	46%	86%
Substance abuse	4	88%	100%
Physical health	1	42%	92%
Emotional health	2	42%	79%
Perception of self	0 / 1	38%	92%
Thinking/behaviour	3	33%	75%
Attitude to offending	4	58%	92%
Motivation to change	3	58%	92%
All components		48%	86%

Victoria

Victoria is a 15-year-old black girl who has been prosecuted for theft. She has previously been found guilty of stealing from the bags of other pupils at her school. Her parents moved the family to another part of the city to give Victoria a fresh start at a new school. She is more than academically capable with a 100% attendance record. She also makes friends very easily. Victoria is very close to her grandparents but sometimes argues with her parents, who can be quite strict. Victoria also has some issues with her older sister: for example, she believes their parents prefer the sister. Victoria uses her time constructively. She does not see that her offence was wrong, stating that 'everybody does it'.

Basic frequencies relating to the rating of Victoria are shown below:

Section	n	0	1	2	3	4
LA	5	80%	20%	--	--	--
FPR	6	--	33%	50%	17%	--
ETE	6	33%	50%	--	17%	5%
NGH	5	80%	20%	--	--	--
LS	6	17%	33%	50%	--	--
SU	5	60%	40%	--	--	--
PH	6	83%	17%	--	--	--
EMH	6	33%	50%	17%	--	--
PSO	6	--	33%	50%	17%	--
TB	6	--	17%	66%	17%	--
AO	6	--	50%	33%	17%	--
MC	6	--	--	83%	17%	--

Practitioners assessed perception of self and others, “thinking and behaviour and motivation to change” as the factors most closely linked with offending behaviour.

Further analysis on Victoria’s case study was not possible due to the small number of respondents.

Variability across case studies

Taking total scores first, the standard deviation from the mean score averages 5.3 across the three case studies used (i.e. Billy, Georgina and Alex).¹⁵ Looking at it another way, 53% of scores are within 3 points of the median and 75% are within 5 points.

Table 4.9 shows the variations at component level. Across all components there is an exact match in almost half of all judgements, and an agreement to within one point in almost 90% of all judgements. This second figure is perhaps the most important in the study, and is very reassuring. The only item which gives cause for concern as to its reliability and consistency is neighbourhood.¹⁶

Table 4.9 Component score variation (all case studies, max N=111)

Component	Exact match	Within 1 point
Living arrangements	41%	88%
Family/personal rels	50%	89%
ETE	45%	89%
Neighbourhood	34%	81%
Lifestyle	56%	93%
Substance abuse	73%	97%
Physical health	48%	83%
Emotional health	50%	89%
Perception of self	43%	92%
Thinking/behaviour	42%	86%
Attitude to offending	51%	92%
Motivation to change	49%	93%
All components	49%	89%

Variation due to rater characteristics

Some analysis was carried out to see whether the professional background or experience of raters seemed to affect their assessments. This was inconclusive because of small sample sizes. Only the larger case studies could be used – Billy and Georgina. But even here, the only professional group with significant numbers was social services (N=19). Their *Asset* scores could not be compared to the next largest group, probation, because only five probation staff had participated. This group was too small for any differences to be significant.

When length of experience was examined, the groups were slightly larger, but there were no significant differences in *Asset* scores.

¹⁵ This is done by averaging the standard deviations above, and weighting the result by the number of assessors in each case study.

¹⁶ This may be because raters find it difficult to distinguish between the problems in a neighbourhood and the impact of these on the offending behaviour of specific young people.

Correlation between scores

The simple measure of percentage agreement, though easily understood, has disadvantages. This is because some agreement occurs purely by chance, exaggerating the apparent level of inter-rater reliability (Lewis 1999). There are several statistical measures of reliability and the choice is dependent on factors such as the number of raters and subjects. Where two practitioners rate the same *n* subjects, Cohen's Kappa would be appropriate (Fleiss 2003), but where a number of assessors rate two or more subjects, the intra-class correlation coefficient (ICC) is the preferred statistic (Shrout and Fleiss 1979).

The version of ICC used here was the two-way randomised block design, in which the raters, who each rate the same subjects, are assumed to be representative of a wider population. As not all practitioners rated each of the four case studies, it was necessary to consider each case separately in order to maximise sample size. Also, because some raters did not complete all components, it was necessary to exclude assessments with missing values. ICC also requires a choice between ways of dealing with systematic variability between raters. As this was considered relevant, the measure used was absolute agreement rather than consistency (Nicholls 1998). Finally, a choice has to be made between the reliability of a single rating, and the reliability of a number of ratings (average measure). As one would normally rely on a single rating, the former is advisable, although both are shown. The latter gives a higher reliability estimate, which is closer to alpha, the reliability co-efficient often quoted for psychometric scales.

As Table 4.10 shows, the single measure correlation coefficients are moderate for Billy and Alex, but fairly low for Georgina. The latter result is unexpected, and not explained by the variations in component scores shown above. Nevertheless, all the results are statistically significant, suggesting an acceptable level of consistency. Spearman rank correlations¹⁷ were also used to test all pairs of ratings. This produced a similar result to the ICC single measure, suggesting it is a robust finding.

Table 5.10 Intra-class correlation co-efficients for each case study

	Billy	Georgina	Alex
ICC – single measure	.52	.23	.57
ICC – average measure	.97	.91	.97
Alpha reliability co-efficient	.98	.93	.97
Mean Spearman correlation	.55	.22	.66
Number of raters included	32	33	22

Note: coefficients all significant at $p < .001$ level

Normative testing

Normative scores for each of the case studies were agreed by a panel of the researchers and trainers on *Asset*. Table 4.11 compares the resulting *Asset* total score with the rater results already reported above. They show close agreement (within 3 points and one standard deviation) for Billy and Alex. In the case of Georgina, however, the normative score is 10 points and almost two standard deviations lower than the raters' average. This suggests serious differences of interpretation between the two groups.

¹⁷ Spearman's correlation is more appropriate than Pearson's for non-interval data

Table 4.11 Comparison of rater and normative *Asset* scores

	Billy	Georgina	Alex
Normative score	20	24	23
Rater median score	23	34	24.5
Rater mean score	22.6	34.0	25.1
Rater std deviation	4.9	5.4	5.8
<i>Number of raters</i>	43	44	24

These differences are explored further in relation to Georgina in Table 4.12 below. The differences of opinion vary considerably by section components. The ratings of substance misuse and education, training and employment are most divergent, with practitioners much more likely to give scores higher than the normative ratings for these sections. Either Georgina is an unrepresentative and misleading case study, or consideration needs to be given to further *Asset* training. There is further discussion of this point below.

Table 4.12 Normative and rater scores for Georgina (Max N=44)

Component	Norm	Mode of raters	Difference
Living arrangements	2	3	+1
Family/personal rels	3	4	+1
ETE	1	3	+2
Neighbourhood	0	1	+1
Lifestyle	2	3	+1
Substance abuse	1	3	+2
Physical health	3	2	-1
Emotional health	2	3	+1
Perception of self	3	3	0
Thinking/behaviour	3	4	+1
Attitude to offending	2	3	+1
Motivation to change	2	3	+1

Agreement using a simpler risk scale

Data on the use of LSI-R (with adult offenders) show a greater degree of concentration and, hence, consistency than for *Asset*. This may be due to the fact that the scoring system in LSI-R is simpler – items are scored on a 2-point scale (problem/no problem), whereas in *Asset* a 5-point scale is used. This gives more scope for variation at item level. In addition, some LSI-R questions are factual (e.g. currently unemployed?), which also reduces the chance of disagreement. In contrast, *Asset* requires not simply an assessment of problems but of whether a problem is likely to lead to further offending, and this allows for greater variation in responses.

Another way of looking at the *Asset* data is therefore to consider the level of inter-rater agreement if risk assessment is reduced to a simple yes/no judgment for each component. In order to enable a comparison, *Asset* judgments on a 5-point scale were reduced to a yes/no level with scores of 0–1 equating to ‘no risk’ and 2–4 equating to ‘risk’. On this simplified scale, young people may score between 0 and 12, depending on the number of components deemed to be associated with a risk of reoffending.

This produced a higher level of exact agreement between raters. There was agreement on 81% of all component ratings for Billy, and even greater agreement for Georgina (93%). The level of agreement was lower for Alex (77%), but over all three cases the figure was a satisfactory 85%. The main component showing a poor level of agreement was risk related to neighbourhood (59%).¹⁸

Summary of results

It was possible to test inter-rater reliability thoroughly against two case studies, Billy and Georgina. The third case study, Alex, had fewer raters and the results were less reliable. A variety of tests were used to show that the inter-rater reliability of *Asset* use is fairly consistent. These tests raised the following points.

- There was a reasonable level of agreement on *Asset* scores within each case study – 53% were within 3 points of the median score and 75% were within 5 points.
- There was quite a high level of agreement on scores given to individual components. About 50% of ratings were in complete agreement, and about 90% agreed to within one point on the 5-point scale used. This result is encouraging. The component showing greatest variability is risk of reoffending associated with neighbourhood factors.
- It was not possible to examine variations due to professional background or length of professional experience due to the limited numbers for some groups.
- A standard measure called the intra-class correlation co-efficient was used, which measures the proportion of variation due to assessors. The version based on average ratings produces an encouraging result, which is similar to the alpha co-efficient (an often quoted reliability measure). The version which tests the reliability of a single rating – arguably closer to normal practice – is less encouraging.
- When the scores of raters, as a group, are compared to norms provided by *Asset* ‘experts’, there is good agreement on two case studies, but not in relation to Georgina. This may be because Georgina is a misleading case study, and the result should be treated with caution. It might also suggest that, for some types of cases, practitioners are allocating ratings on the basis of perceived problems rather than on the link between these factors and the likelihood of further offending.

¹⁸ As suggested above, this may be because assessors find it difficult to distinguish between the problems in a neighbourhood and the impact of these on the offending behaviour of specific young people. Further training/guidance may be required in relation to both *Asset* and ONSET.

This final point highlights the need for more attention to be given to ensuring that practitioners understand how to use the rating system in *Asset* (i.e. that scores should be linked to the likelihood of future offending, not just to problems or perceived needs). The case studies on the video have already been used with this purpose in mind: for example, as the basis for workshops with YOT staff on assessment, planning and supervision. So far, the events have been very well received (especially the 'Georgina' case study). The workshop format appears to provide a welcome opportunity for staff to discuss their concerns about consistency of assessment and to consider how use of *Asset* can promote greater openness and transparency in team practice. The positive way in which these videos have been utilised suggests the potential for further work to be carried out in this area.

The slight variations in scoring patterns evidenced here do not present a significant problem, given that practitioners are recommended to use 'score bands' rather than the specific score (for example, Youth Justice Board 2005a) and the data are therefore sufficient to support the use of *Asset* scores as an indicator of risk of reconviction and of the level of intervention required. In addition, practitioners are encouraged to use the *Asset* section scores as the basis for Intervention Plans (Youth Justice Board 2003a) and this is supported by the generally encouraging level of consistency shown here in relation to individual *Asset* components.

5 Intervention Plans

Design of the standard Intervention Plan

As part of the relaunch of *Asset* in summer 2003, a standard format for Intervention Plans was made available to all YOTs. This was designed with two key aims in mind:

- to help ensure that Intervention Plans took account of the issues identified during assessment as being most closely associated with offending behaviour, e.g. the sections of *Asset* scoring 3 or 4
- to produce a clear and simple format that practitioners could explain to young people and which young people could both contribute to and understand.

The importance of having a plan that offenders can understand was highlighted by Morris and Mason in a study of probation supervision contracts for adults. They found that the traditional format and language of supervision contracts in the service studied (Kent) were relatively complex, and they were concerned that offenders might be “signing a document of which they have little understanding” (1999: 261). If this can be a problem in working with adult offenders, it is also likely to be a significant issue in engaging with young people who offend.

Morris and Mason argue that “[t]he user contract should be made as simple as possible to understand because successful completion is in everybody’s interest” (1999: 262) and provide the following guidelines for improving the readability of texts.

- keep words as short as possible.
- keep sentences as short as possible.
- use words common in daily life.
- simplify concepts as much as possible.
- place conceptually consistent information together.
- exclude unnecessary information.
- optimise clarity of presentation.

An example of this in the *Asset* Intervention Plan would be the use of the word ‘targets’ instead of ‘objectives’. Also, sentences are written in the first person to make them easier to understand, for example: “We are going to help you stop offending again by working on ...”; “This means that you have to...”

Data collection

Two of the teams participating in this study piloted the new Intervention Plan before it was made available to all YOTs. As part of this study, 150 completed Intervention Plans were collected from these two YOTs. These were all paper copies, so data were entered into an SPSS database for analysis. Originally it was intended that some analysis would be made of the association between different types and/or intensities of intervention and patterns of reconviction, but this was not possible, given the relatively small number of completed plans collected. In addition, the poor quality of many of the plans (see below) meant that it was not possible to extract information of sufficient detail about the nature of interventions to allow for this type of analysis.

Consequently, the analysis below focuses on three more limited questions.

- How closely do Intervention Plans fit with assessments of risk and offending related needs made using *Asset*?
- Are practitioners writing SMART¹⁹ targets for Intervention Plans?
- How far are Intervention Plans written in clear language that young people are likely to be able to understand?

Links between Asset and Intervention Plans

The plan provided space for practitioners to list up to five objectives for work in the first three months of an order. The mean number of objectives given was 3.87 and the mode was 3.00. As can be seen from Table 5.1 below, the average number of targets was slightly greater for the more serious disposals.

Table 5.1 Average number of objectives by type of order

	Mean	Mode
Reparation /Referral Order ²⁰ (n=68)	3.58	3.00
Community supervision ²¹ (n=66)	4.00	4.00
Custody (n=16)	4.56	5.00

Table 5.2 below shows the proportion of cases in which a target was given for each of the main *Asset* sections.

¹⁹ That is, targets which are specific, measurable, achievable, realistic and relevant, and time limited.

²⁰ A significant proportion of these cases had 'practical' targets, for example 'regular reporting' (46%) and 'make reparation' (67%).

²¹ Includes Action Plan Orders, Supervision Orders and Community Reparation Orders.

Table 5.2 Percentage cases with target for each *Asset* section (N=150)

Area for intervention	% of cases with target
Living arrangements	16%
Family and personal rels	12%
Education	33%
Employment/training	39%
Neighbourhood	0%
Lifestyle	18%
Alcohol use	9%
Drug use	16%
Health	14%
Perception of self and others	3%
Thinking/behaviour	40%
Attitudes to offending	99% ²²
Motivation to change	1%
Victim empathy	37%

Guidance to staff on effective practice in relation to assessment and planning emphasises that Intervention Plans should reflect the assessment of risk and needs made using *Asset* (Youth Justice Board 2002, 2003a). In general, it would be expected that targets should be related to the high-scoring sections of *Asset* (i.e. sections scored as 3 or 4). Table 5.3 below shows, for each section of *Asset*, the proportion of cases scoring 3 or 4 for which a relevant target was given in the Intervention Plan.

²² This figure also includes all the targets relating to victim empathy (37% of cases had such a target), as the attitudes to offending section of *Asset* covers the issue of a young person's views about victims.

Table 5.3 Link between high *Asset* section scores and intervention targets

Asset section with score of 3 or 4	% with a target addressing that area
Living arrangements (n=30)	33%
Family/personal relationships (n=41)	15%
Education (n=24)	67%
Employment/training (n=8)	40%
Lifestyle (n=49)	22%
Substance use (n=33)	67%
Health ²³ (n=32)	20%
Perception of self/others (n=25)	8%
Thinking and behaviour (n=62)	35%
Attitudes to offending (n=34)	100%
Motivation to change (n=23)	0% ²⁴

Attitudes to offending, substance use and education were the areas with the highest proportion of relevant targets. Others are unexpectedly low (for example family and personal relationships, and lifestyle). This may suggest that practitioners find it more difficult to think of appropriate targets for working with a young person when the problems identified involve other people (e.g. parents/carers or friends and peer groups).

An alternative way to examine the link between *Asset* scores and targets is to look at the proportion of cases in which sections scored either as '0' or '0 & 1' had intervention targets pertaining to those sections. If targets are regularly being set in relation to issues that were not identified in *Asset* as being particularly associated with offending behaviour, it would suggest that plans are being written without much reference to the preceding assessment.

For areas such as living arrangements and family and personal relationships, the proportion of cases with both low-scoring *Asset* sections and associated Intervention Plan targets was negligible. However, in some other areas, it appears that practitioners were regularly including targets in plans for issues which had not been identified in *Asset* as problematic, as shown in Table 5.4 below.

Table 5.4 Low *Asset* section scores and Intervention Plan targets

Asset section	Proportion of 0 score cases with a target	Proportion of 0 & 1 score cases with a target
Education	37% (n=19)	33% (n=42)
Employment and training	28% (n=46)	42% (n=69)
Thinking and behaviour	27% (n=11)	34% (n=41)
Attitudes to offending	52% (n=42)	60% (n=85)

²³ Combines physical health with emotional and mental health.

²⁴ Tables 5.2 and 5.3 both show very high proportions of cases with targets relating to the offending behaviour section of *Asset* but almost no targets for the motivation to change section. This may be because practitioners assumed that changing a young person's attitudes towards offending implicitly included an element of promoting motivation to change. Any further investigation would require more detail to be recorded in Intervention Plans and the use of a more specific coding framework for analysis.

These figures need to be treated with some caution owing to the small n values. However, it appears that some plans are written with ‘standard’ targets (e.g. victim empathy, making reparation and referral to Connexions) which are used regardless of any link with *Asset*.

An additional caveat is that the descriptive categories used here are quite broad – each heading relates to a section of *Asset* which encompasses a variety of more specific issues. For example, attitudes to offending includes issues such as: a young person’s attitudes towards victims; whether he or she denies the seriousness of previous offending behaviour; whether he or she is willing to accept responsibility for involvement in offences; and whether he or she has beliefs that certain types of offences are acceptable or that certain people are acceptable ‘targets’ of offending behaviour.

Given the lack of detail in the sample of Intervention Plans, it is not possible at this stage to say whether an ‘attitudes to offending’ target actually addresses the key issues identified in *Asset*. For example, it is possible that the ‘attitudes to offending’ section of *Asset* was scored 3 or 4 on the basis of a young person’s reluctance to accept any responsibility for involvement in serious offending behaviour, and an Intervention Plan target has then been given concerning the development of victim empathy. Under the current analysis, this would be classified as an attitudes-to-offending target and would appear to match well with *Asset* although in practice the target may not really be addressing the most pertinent issues.

The figures presented here give a general guide to the extent to which practitioners are linking *Asset* to Intervention Plans but more detailed analysis would be useful – this could only be done if more specific information was provided within Intervention Plans.

SMART targets and use of language in plans

In addition to being linked to *Asset*, targets should be SMART, i.e. specific, measurable, achievable, realistic and relevant, and time-limited (Youth Justice Board 2002, 2003a). Writing targets in such a way also fits with the principle of trying to make plans easy for young people to engage with and understand. The discussion below does not attempt to provide any statistical analysis of targets but rather is intended to provide examples of practice and to highlight key issues of concern.

The plans collected for this study did show some examples of SMART targets. For example:

- to achieve enhanced level on incentive scheme
- to turn up to Gateway on time every day
- to follow house rules: home for tea, in at a reasonable time and no smoking in the bedroom
- to save £30 each week towards a car.

However, the majority of targets (over 80%) were not well written. Many just referred to a particular ‘area’ or topic of work. For example, responses to the question ‘What are our targets?’ included:

- reading/writing
- anger management

- employment and training
- victim empathy
- offending behaviour
- health
- community payback.

These targets gave no indication of the type of work that needed to be done or of the end results that practitioners hoped to see.

In other cases, targets were more specific in that they at least indicated the direction of desired change. For example:

- to gain victim awareness
- to reduce offending behaviour
- to avoid offending peer group.

However, these are not really SMART targets either, as they are still rather general and there is no clear indication of how progress would be measured.

Other problems included:

- confusion between targets and methods
For example, 'Referral to Connexions' was sometimes listed as a target rather than as a way of achieving the goal of finding suitable employment or training. 'Write a letter of apology' was another example of an action being listed as a target rather than as a method for achieving objectives such as increasing victim empathy or making reparation to victims.
- the rationale for some targets was not clear
For example, one plan included the target 'Design and create a leaflet' but there was no explanation of what this was for or why it was important.
- use of language
Despite attempts to design the Intervention Plan in a way that would make it easier to share with young people, few of the targets or methods were written in 'young-person friendly' language. Phrases such as 'To work on offending behaviour', 'To do indirect reparation' or 'Engage in offender behaviour interventions' are likely to be difficult for young people to understand. Without knowing what they are supposed to do or why it is important, young people may be less likely to engage with YOT interventions. However, there were some good examples of use of language. One young person on a supervision order, for example, had the target 'To keep attending the Arrow group' and this was going to be achieved by 'Sarah to go to bed earlier and set reminder on phone. Helen to ask if YOT can help with bus fare to college.'

Summary

A recent summary of YOT inspection visits concluded that “the quality of supervision planning still required attention”, although there were also many good examples of the use of appropriate and creatively designed intervention programmes (HMIP 2004: 21). The findings from this study were less encouraging, with concerns being raised regarding the lack of SMART targets, poor use of language and a relatively weak link between *Asset* and Intervention Plans.

Although the quality of these Intervention Plans was somewhat disappointing, the following caveats should be borne in mind. First, the forms were collected from only two YOTs, so any general statements on wider practice should be made with caution. Second, this was a new form that staff were asked to use and there would have been some unfamiliarity with it at first. Also, there is only a limited amount of space on the paper copy of the form in which practitioners can describe the selected targets and methods, and this may have affected quality of completion.²⁵ Finally, it is possible that staff may have discussed the targets with young people more fully in supervision but not recorded all of this on the form. Nevertheless, the evidence from this sample suggests that the guidance issued by the YJB on effective practice in the area of intervention planning has not really been absorbed by YOTs or integrated into everyday practice.

Other studies on this topic have shown similar results. For example, Bonta and Ruge looked at case management practice with offenders in Manitoba, including the link between the Primary Risk Assessment (PRA) and subsequent target setting. They concluded that ‘[w]hen needs were identified by the PRA, they often did not find their way into the Intervention Plan’ (2004: 27).

It has been shown that, for this sample of cases, some issues which were scored highly on *Asset* were more likely to be translated into Intervention Plan targets than other issues that were scored similarly. This is similar to findings relating to the use of the ACE assessment tool with adult offenders in England and Wales (Merrington 2001, Haslewood-Pócsik and Skinns 2000). The reasons for these discrepancies were not explored in this study but might include: availability of resources for addressing particular problems; whether staff feel that they have the appropriate skills to work on specific issues; and differences in offenders’ willingness to engage with certain interventions. As Haslewood-Pócsik and Skinns suggest: ‘[W]e need to know more about the decision-making process and patterns of prioritisation used by practitioners faced with offenders with numerous needs and sometimes chaotic lifestyles: setting an appropriate limited number of objectives for supervision would be where practitioners’ skills and experience matter the most’ (2000: 5).

²⁵ This should, it is hoped, be less of a problem now that the Intervention Plan is available on IT systems with text boxes that expand to provide more space for practitioners to describe targets and methods.

There may be practical steps that can be taken to reduce some of the problems highlighted here. For example, with reference to the systems used in Manitoba Probation, Bonta and Rugge suggest that “the physical separation of the assessment instrument from the Intervention Plan (they are two separate forms) hinders decisions linking the two” (2004: 28), and that integrating the two might lead to improvements in planning. There may be scope for considering whether similar changes could be made to the *Asset* paperwork and IT systems currently used by YOTs.

Conclusion

Given the extensive use of *Asset* within YOTs and the secure estate, ongoing research and evaluation is important in order to ensure that *Asset* continues to work effectively as a valid and reliable tool. This report builds on earlier YJB-funded research to provide additional data concerning the use of *Asset* in practice.

Key findings

The initial analysis of the validity and reliability of *Asset* (Baker et al 2002) was based on a 12-month reconviction follow-up period. In this study, further analysis was undertaken using 24-month reconviction data, and the results confirmed the earlier findings about the accuracy of *Asset* in predicting the occurrence and frequency of reconviction. The predictive accuracy of *Asset* is as good as, or in some cases slightly better than, comparable tools used with adult offenders. This holds true for population sub-groups (female offenders, minority ethnics and younger offenders) as well as for the overall sample.

Effective risk-need assessment tools should be able to provide a meaningful measure of changes in risk and need levels over time (Merrington 2004). Comparison of ‘initial’ and ‘end’ *Asset* scores showed that *Asset* was able to measure change – both positive and negative – in community and custodial contexts. Change could be detected at the level of individual *Asset* components as well as in the total score. Young people serving community sentences whose scores improved had a lower reconviction rate than those whose scores deteriorated. They also committed fewer offences and had a longer time gap before the first reconviction offence. For young people serving custodial sentences, there was a tendency for score improvements to be associated with lower reconviction rates, although the small sample size for this group meant that statistical significance could not be demonstrated.

The data on inter-rater reliability presented in Chapter 4 were also generally encouraging, as they showed reasonably high levels of agreement between practitioners on *Asset* scores for the case studies used in this project. However, the inter-rater reliability analysis also suggested that practitioners may not always be allocating scores on the basis of the strength of the association between a section of *Asset* and the likelihood of reoffending. The difference between the normative ratings and those given by practitioners for the ‘Georgina’ case study suggested that, for this young person at least, scores were given on the basis of perceived problems rather than the strength of the link between such factors and offending behaviour.

The preliminary analysis of the completed Intervention Plans described in Chapter 6 highlighted two significant issues: first, that the link between *Asset* and Intervention Plans was often weak; and second, that the language used to describe targets and methods was often vague or difficult for young people to understand.

The generally positive results of this study therefore provide further evidence to support the YJB’s policy of making *Asset* central to all aspects of YOT work and practice (Youth Justice Board 2002, 2003a, 2003b, 2005a, 2005b), but also indicate issues for ongoing practice development which have implications for practitioners, managers and the YJB. These are explored below.

Implications for youth justice practitioners and managers

Using *Asset* scores to inform decision-making

The YJB recommends that staff should use *Asset* scores as an indicator of risk of reoffending (Youth Justice Board 2005a). The additional evidence presented here regarding the predictive validity of *Asset* supports this and indicates that the scores can usefully be used as a guide to the level and intensity of intervention required to address offending behaviour. Individual practitioners will need to consider how this will affect their own work with young people and managers should also think about how *Asset* scores could inform local policies (for example, in regard to case allocation).²⁶

Tracking changes over time

A tool's ability to measure change over time should provide practitioners 'with evidence of progress or the opposite, and should assist the review of supervision plans' (Merrington et al, 2003: 36). The results from this study concerning the link between score change over time and association with reconviction are not just of academic interest therefore, but have implications for practice. Although there has been some improvement in the completion rate for end *Assets* (Youth Justice Board 2004a), there is still some resistance from staff to the idea of re-doing *Asset* during or at the end of an intervention. This may mean that either *Asset* is not done at all or that the initial *Asset* is simply duplicated without any revision or amendment. However, a greater understanding of the link between score changes over time and the risk of reconviction may help practitioners to see that there are practical benefits to the repeated use of *Asset* for their work with young people.

Planning interventions

The indications from this study are that more attention needs to be given to the process of intervention planning to ensure that plans reflect assessments more closely – in particular, that targets are designed to address the highest scoring sections of *Asset* rather than simply offering a 'standard' package of interventions.

Staff supervision

More effective use of *Asset* can be promoted through means such as staff induction, supervision and discussions in team meetings. There may be scope for managers to do more in the way of checking quality (e.g. seeing whether plans follow on clearly from assessments). Preliminary use of the video material produced for this study in team workshops also suggests that practitioners welcome the opportunity to have an open discussion with colleagues about *Asset* completion and, in particular, about the basis and evidence for scoring. This can help to promote a culture in which scoring is determined on the basis of offending-related risks rather than just the occurrence of problems in a young person's life.

²⁶ Future revisions to National Standards could also reflect these findings by, for example, giving practitioners greater flexibility to decide on the appropriate frequency of contact based on the outcome of *Asset* assessments.

Implications for the Youth Justice Board

In the light of this study, the YJB should consider the following issues.

Communication and dissemination of findings

An effective risk/need assessment tool can have benefits for practitioners, managers and researchers (Merrington 2004), and among these groups there is a wide variety of views about the value of *Asset* (Baker 2004, Smith 2003, PA Consulting 2003, Feilzer et al 2004). The YJB therefore needs to have a clear strategy for communicating and disseminating *Asset* research findings to a wide audience.

The positive results from this study should be used to promote greater confidence in, and use of, *Asset* as an assessment tool. For example, the demonstrated link between score change and real change in patterns of reconviction could be used to emphasise the value of *Asset* for tracking developments in a young person's life over time. However, publications which focus only on positive results and ignore problematic areas are likely to be viewed with suspicion and the YJB therefore also needs to provide information about aspects of *Asset* use which have been less successful – not to criticise YOT staff, but to highlight problems with a view to encouraging positive change and practice improvement. This study, for example, showed that the link between *Asset* and Intervention Plans was often weak, and this may be an area that needs more attention. A balanced and realistic presentation of *Asset* research findings is therefore required.

Promoting effective use of *Asset*

The YJB has already provided guidance and training materials on the use of *Asset* (Youth Justice Board 2003a, 2004b) but the results of the study suggest some additional areas requiring attention. For example, the 'Georgina' case study suggests that, at least for some young people, practitioners are allocating scores on the basis of welfare issues rather than offending-related problems. Future revisions to training material could usefully be amended to place more emphasis on the rationale and principles of the scoring system. The link between assessments and Intervention Plans is covered in existing training materials, but may need to be strengthened.

Other initiatives currently being piloted and/or evaluated by YJB, such as the *Asset* Sentence Management Project, which facilitates the use of *Asset* by the secure estate as the basis for sentence planning, also need to be sustained.

Use of *Asset* for research and evaluation

Given the evidence regarding the validity and reliability of *Asset*, more use could be made of aggregate *Asset* data at team, regional and national level. Doubts about the 'integrity and reliability' of *Asset* and about "[t]he accuracy and suitability of *Asset* scores to assess change' have sometimes hindered evaluations of youth justice projects" (Feilzer et al 2004: 18). These findings should help to promote more confidence in the use of *Asset* data for performance monitoring, research and evaluation.

The demonstrated link between *Asset* scores and reconviction suggests that there is potential for *Asset* to be used as a proxy measure for reconviction for research and evaluation purposes. The YJB should obviously continue to collect reconviction data as an outcome measure, but this necessarily involves a substantial time lag and there are of course a number of other well-documented problems associated with its use (Lloyd et al 1994, Friendship et al 2002). Using *Asset* scores as an intermediate proxy measure is something that the YJB could now consider. The data presented here show that the association between *Asset* scores and reconviction is stronger for community disposals than for custodial cases: the YJB may therefore wish to begin by using *Asset* data as a proxy for reconviction for community cases only.

Asset development

The data do not suggest a need for any significant restructuring of *Asset*, although one area where there may be scope for improvement is in the scoring system. The results of this study suggest that there could be an argument for adopting a revised scoring system that includes both criminal history data and weightings for the dynamic variables. In addition, there are now other data which would need to be taken into account before making any decisions about changes to *Asset* scoring. These include:

- recent data on the predictive accuracy of *Asset* with particular groups, for example young people on ISSP (Moore et al 2004)
- research which suggests there may be value in scoring positive or protective factors (Sutherland et al, forthcoming)
- possible changes to *Asset* in the light of the introduction of a common assessment framework (Department for Education and Skills 2004).

One other area where change could be considered would be the design of the Intervention Plan. Chapter 5 identified several problems with practice, including the use of non-child friendly language and weak links between assessments and Intervention Plans. Given these findings, there may be scope for improving the design of the standard Intervention Plan and/or developing electronic systems to help practitioners complete plans more effectively.²⁷

²⁷ Any such changes could also take account of recommendations made by Sutherland et al (2005) regarding the need to encourage practitioners to make positive factors more integral to Intervention Plans.

ONSET development

ONSET is the assessment tool designed for use by Youth Inclusion and Support Panels (YISPs) with 8 to 13-year-olds at risk of involvement in offending or anti-social behaviour. It is closely based on *Asset*, having a similar structure and content. There is less data currently available on ONSET but these results for *Asset* highlight two issues that may be particularly important for ONSET development and will need to be considered as part of the YJB-funded ONSET evaluation.²⁸ First, encouraging practitioners to focus on risks of future offending behaviour when allocating scores may be more difficult at this stage. If some practitioners using *Asset* have difficulty with this then staff working with young people at an early intervention stage may also find it problematic. Second, ensuring a clear link between assessments and plans could be difficult. Both issues suggest a need for thorough training and effective managerial oversight, particularly as the YJB is currently considering the potential use of ONSET for all preventative programmes.

Future research agenda

Potential areas for further research include the following.

- **further analysis of score changes over time**
The data provided by the nine YOTs in this study showed a reasonable degree of change in both total *Asset* scores and component scores over time. However, recent data emerging from Themis (based on YOT quarterly returns to the YJB) shows much less change over time and further analysis may be required of the reasons for, and the implications of, this discrepancy.
- **additional analysis of custody cases**
It was noted in Chapter 2 that some of the findings in relation to the predictive accuracy of *Asset* with young people serving custodial sentences were tentative because of the relatively small sample sizes available. Further analysis using a larger sample could therefore be of value.
- **wider testing of inter-rater reliability**
Further testing of inter-rater reliability could be carried out using a larger sample of practitioners. This might usefully be done after the roll-out of new training for YOT staff on managing risk (Youth Justice Board, 2005c). The training material incorporates some of the video case-study material created for this research project, which can be used to highlight the need for *Asset* scores to reflect offending behaviour risks and be informed by clear evidence. Some additional testing of the consistency of *Asset* use by different practitioners (possibly involving a pre and post-training comparison) could therefore be informative.
- **analysis of vulnerability and risk of serious harm to others *Asset* components**
Both this study and the previous *Asset* research project focused primarily on the ability of *Asset* to measure risk of reconviction. Less attention has been paid to the assessment of vulnerability (i.e. risk of harm to a young person) or risk of serious harm to others, and these are both areas in which some further research could be of benefit in the development of the *Asset* forms and relevant guidance.

²⁸ A two-year evaluation of ONSET is currently underway, with findings due to be reported in spring 2007.

- **use of data from other jurisdictions**

Once data from the use of *Asset* in other areas (particularly Scotland) are available, there will be potential for additional comparative analysis of offender profiles, predictive accuracy of the scoring system for different groups of young people, and inter-rater reliability.

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Appendix 1 Components of Asset Revised Scores

The tables below show the items used to construct Revised Scores 1 and 2. Full details can be found in Baker et al (2002).

Components of Revised Score 1 (dynamic Asset factors plus criminal history data)

Item	Scoring	Score range
1. Offence type	Motoring offences=4, Burglary=3, Other=0	0-4
2. Age at first reprimand	10 to 12=4, 13 to 17=2, No previous reprimand=0	0-4
3. Age at first conviction	10 to 13=4, 14 to 17=3, Not previously convicted=0	0-4
4. No. of previous convictions	4 or more=4, 1 to 3=3, No previous convictions=0	0-4
5. Living arrangements risk	0, 1, 2, 3, 4	0-4
6. Family and personal relationships risk	0, 1, 2, 3, 4	0-4
7. Statutory education or ETE risk	0, 1, 2, 3, 4	0-4
8. Neighbourhood risk	0, 1, 2, 3, 4	0-4
9. Lifestyle risk	0, 1, 2, 3, 4	0-4
10. Substance use risk	0, 1, 2, 3, 4	0-4
11. Physical health risk	0, 1, 2, 3, 4	0-4
12. Emotional and mental health risk	0, 1, 2, 3, 4	0-4
13. Perception of self and others risk	0, 1, 2, 3, 4	0-4
14. Thinking and behaviour risk	0, 1, 2, 3, 4	0-4
15. Attitudes to offending risk	0, 1, 2, 3, 4	0-4
16. Motivation to change problem	0, 1, 2, 3, 4	0-4
TOTAL		0-64

Components of Revised Score 2 (Revised Score 1 plus item weightings)

Item	Scoring	Score range
1. Offence type	Motoring offences=6, Burglary=5, Other=0	0-6
2. Age at first reprimand	10 to 12=4, 13-17=2, No previous reprimand=0	0-4
3. Age at first conviction	10 to 13=6, 14 to 17=5, Not previously convicted=0	0-6
4. No. of previous convictions	4 or more=6, 1 to 3=5, No previous convictions=0	0-6
5. Living arrangements risk	0, 1, 3, 5, 6	0-6
6. Family and personal relationships risk	0, 0, 1, 2, 2	0-2
7. Statutory education or ETE risk	0, 1, 3, 5, 6	0-6
8. Neighbourhood risk	0, 0, 1, 2, 2	0-2
9. Lifestyle risk	0, 1, 3, 5, 6	0-6
10. Substance use risk	0, 1, 2, 3, 4	0-4
11. Physical health risk	0, 0, 1, 2, 2	0-2

12. Emotional and mental health risk	0, 1, 2, 3, 4	0-4
13. Perception of self and others risk	0, 1, 2, 3, 4	0-4
14. Thinking and behaviour risk	0, 0, 1, 2, 2	0-2
15. Attitudes to offending risk	0, 0, 1, 2, 2	0-2
16. Motivation to change problem	0, 0, 1, 2, 2	0-2
TOTAL		0-64

