Outcomes for Cocaine Addicted Patients at Castle Craig Hospital

the 2007 evaluation for all cocaine addicted patients admitted between 15.01.2004 to 31.07.2006

Independent analysis of outcome data
Christo Research Systems

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Castle Craig Hospital
Medical director: Dr Margaret McCann MB, Bch, BAO.
Non Executive director: Dr. Michael McCann MD, MA, DIH, MFOM
Address: Castle Craig Hospital, West Linton, Peeblesshire, Scotland EH46 7DH.
Tel: 01721 722763

Christo Research Systems
Director: Dr George Christo DipHE, BSc, PhD, PsychD, CPsychol, CSci, AFBPsS.

Summary of findings

- The sample comprised of all cocaine addicted patients who entered treatment between 15th January 2004 to 31st August 2006 and stayed in treatment for one or more days.

- 141 one patients met these criteria, 74 from Scotland, 66 from the Netherlands, and 1 from the USA.

- Scottish patients' average age of 34 years was significantly lower than the Dutch patients' average age of 37 years.

- Scottish patients' average CISS total score of 14.1 was significantly higher than the Dutch patients' average CISS total score of 12.6.

- Patients' greatest problems were with drug or alcohol use, lack of occupation, lack of support, and psychological problems.

- Patients dependent only on cocaine and alcohol tended to have fewer problems with Viral Risk and Criminal Behaviour.

- Patients with higher levels of dysfunction at intake tended to either drop out of primary or go on to extended care.

- In comparison to those entering extended care, drop outs from primary (excluding 21 primary completers) were more likely to have greater social functioning problems, greater criminal involvement, and greater compliance problems.

- 48% of patients left treatment prematurely. However 92% of patients completed detoxification.

- The average treatment duration of 19 weeks for patients completing treatment was significantly longer than the prematurely discharged patients' average treatment duration of 8 weeks.

- The average CISS total score of 12.3 for patients completing treatment was significantly lower than the prematurely discharged patients' average CISS score of 14.5.

- At treatment entry, completers tended to have fewer social functioning problems, fewer occupation problems, less criminal involvement, and fewer compliance problems.

- Patients' age, gender, nationality, and drug use patterns were unrelated to premature discharge.

- Follow-ups were successfully completed on 107 of the 141 patients (76%).

- The average follow-up period was 79 weeks.

- Patients completing treatment were significantly more likely to have a good outcome.

- The average treatment duration (16 weeks) of the 84 good outcome patients was significantly longer than the average treatment duration (10 weeks) of the 57 poor outcome

patients.

- Patients entering extended care were significantly more likely to have a good outcome.

- Patients' gender, nationality, drug use pattern, age, and CISS total score at treatment entry were unrelated to outcome.

- There was no significant relationship between CISS total scores at treatment entry and subsequent outcome among the 60 patients who did not go into extended care.

- Among the 81 patients entering extended care, the average CISS score of 12.8 for patients with a good outcome was significantly lower than the poor outcome patients' average CISS score of 14.2.

- Reductions in all of the 10 CISS outcome domains were highly significant. Thus indicating that reductions in drug / alcohol use were generally accompanied by improvements in all other aspects of the patients' lives.

For all 141 Patients 92% successfully completed detoxification.

For all 141 Patients the following 'Success' rates are conservatively based on the assumption that the 34 patients not followed-up all showed no improvement or otherwise had poor outcomes.

- **Being totally abstinent from all drugs or alcohol at follow-up   46%**
- **Achieving low problem severity at follow-up (CISS < 7, see appendix)   60%**
- **Showing any reduction in measured levels of dysfunction   74%**

For the 73 Patients who completed all their treatment the following 'Success' rates are conservatively based on the assumption that the 10 patients not followed-up all showed no improvement or otherwise had poor outcomes.

- **Being totally abstinent from all drugs or alcohol at follow-up   66%**
- **Achieving low problem severity at follow-up (CISS < 7, see appendix)   78%**
- **Showing any reduction in measured levels of dysfunction   84%**

General approach

Castle Craig Hospital provides an abstinence oriented residential treatment for alcohol or drug dependent individuals. It uses an established treatment model developed in the US around 1950 and first imported to the UK in 1974 (Cook, 1988a). Outcomes generated by this approach are very good (Cook, 1988b) and have recently been shown to be at least equal to and in some cases better than other commonly used treatments for substance misuse (Project MATCH, 1997; Ouimette et al, 1997; Longabaugh et al, 1998).

It is an intensive psychologically oriented approach consisting of regular group work, one to one counselling, lectures and written assignments. Many similar therapeutic communities are well established throughout the UK and their programme facilitates engagement with the independent free after care resource provided by Alcoholics Anonymous and Narcotics Anonymous (AA & NA) groups. Regular attendance of AA and NA has been shown to be associated with reduced drug or alcohol use (Emrick, 1987; McLatchie & Lomp, 1988; Alford et al, 1991; Christo & Franey, 1995; Gossop et al, 2003; Moos & Moos, 2005), improved psychological health (Christo & Sutton, 1994; DeSoto et al, 1989; DeSoto et al, 1985; McCown, 1989; McCown, 1990), improved physical health (Mann et al, 1991), and reduced use of mental health services (Humphreys & Moos, 2007).

Services offered

Castle Craig Hospital offers detoxification from alcohol, tranquillisers, or opiates. Patients are encouraged to engage with all aspects of the programme during detoxification because it serves as a useful distraction from withdrawal symptoms and assists in their orientation. Patients are also assessed to identify specific medical (e.g. liver dysfunction), psychological (e.g. cognitive deficits, anxiety, abuse or traumatic events), or psychiatric (e.g. dual diagnosis, suicide risk, epilepsy) problems that may need to be addressed in their individual care plans.

The primary stage of treatment is quite intensive and is of about six weeks' duration. Counselling staff employ a full range of psychotherapeutic approaches depending upon their training and interests (e.g. Rational Emotive Behavioural Therapy, Cognitive Behavioural Therapy, Reality Therapy, and many others).

Individuals with brain damage, poor support networks or social functioning may then go on to a less intensive secondary stage of rehabilitation usually at Castle Craig's Extended Care Unit. As well as using the same elements found in primary treatment, extended care also assists patients to re-integrate with society by focusing on practical issues of occupation, housing, financial, legal and family problems.

Castle Craig Hospital can offer aftercare group therapy held in four locations in Scotland and two in the Netherlands at Amsterdam and Den Haag. All clients are encouraged to attend one or more of these aftercare sessions weekly for a period of up to two years after completing their residential treatment.

Aims of treatment

- Detoxification and stabilisation, abstaining from alcohol and other drugs.

- Creating a therapeutic bond to facilitate engagement with support from staff, peers, and AA or NA.

- Separating from people, places and things that promote substance use and establishing a new social network that supports recovery.

- Identifying recurrent problems, resolving painful / traumatic memories.

- Stopping compulsive self-defeating behaviours that suppress awareness of painful feelings and irrational thoughts.

- Relapse warning sign identification and management strategies. Identifying past causes of lapse and appropriate future coping strategies.

- Learning how to manage feelings and emotions responsibly without resorting to compulsive behaviour or the use of chemicals.

- Identifying and changing dysfunctional core beliefs (about self, others, and the world) that promote the use of irrational thinking and create painful feelings and self-defeating behaviours.

- Learning to change maladaptive behaviour patterns developed during childhood in dysfunctional families of origin.

- Increasing self-esteem by feeling worthwhile to self and helping others, promoting engagement with society, dealing with practical problems and establishing meaningful occupation.

How outcome was measured

Outcome was measured by the Christo Inventory for Substance-misuse Services (CISS) which is a standardised, validated tool (Christo, Spurrell & Alcorn, 2000, Christo, 2000a) now commonly used in Scotland (Effective Interventions Unit, 2001), England & Wales (Audit Commission, 2002; Christo, 1999a,b,c; Christo, 2000b,c,d,e,f, Christo, 2001), and abroad (Christo & Da Silva, 2002). The CISS is a single page outcome evaluation tool completed by drug / alcohol service workers either from direct client interviews or from personal experience of their client supplemented by existing assessment notes. Its purpose is to elicit workers' impressions of their clients in a quick, quantitative, standardised and reliable way. The 0 to 20 scale consists of 10 items reflecting clients' problems with:

Social functioning	Criminal involvement
General health	Drug / alcohol use
Sexual / injecting risk behaviour	Ongoing support
Psychological functioning	Compliance
Occupation	Working relationships

These outcome areas are scored on a three point scale of problem severity (0 = none, 1 = moderate, 2 = severe), each point is illustrated with relevant examples for guidance. Thus, a CISS score of 0 would indicate no problems and a score of 20 would indicate severe problems in all outcome areas.

Evaluation procedure

CISS is incorporated as a regular part of Castle Craig Hospital's intake and follow-up procedures. Baseline CISS forms were completed by staff from information gathered at the first assessment. They were then completed again during follow-up interviews on average about 80 weeks after admission to treatment. A table of relevant dates, CISS information and other data for all relevant patients was delivered to Christo Research Systems for analysis.

Statistical information

- *n* indicates the number of individuals contributing to each statistical sample.
- *m* indicates a mean value, all averages in this report are means.
- *sd* indicates a standard deviation, thus giving an idea of the spread of scores around the mean. (In a normal distribution, 68% of all data points lie plus or minus one sd about the mean.)
- *range* indicates the total range of values within a measured variable (minimum - maximum).
- *t , f, χ^2* and *U* are statistical tests to show if groups of patients are significantly different from each other.
- *p* indicates the level of significance of a statistical test, the smaller the better.

Scottish sample

The sample comprised of all cocaine addicted patients who entered treatment between 15th January 2004 to 31st August 2006 and stayed in treatment for one or more days. Seventy-four Scottish patients met these criteria.

- 45 Males (60.8%)
- 29 Females (39.2%)

- Attempts were made to follow up all of them and 57 patients were successfully followed-up (77% follow-up rate).

- There was no significant relationship between gender and successful follow-up.

- Average age = 33.9 years (*sd* = 8.2, range = 18.1 to 59.7).
- There was no significant relationship between age and gender.

Scottish sample, patterns of drug use

- 14 (18.9%) patients were dependent on cocaine and alcohol.
- 47 (63.5%) patients were dependent on cocaine and other specific drugs.
- 13 (17.6%) patients were polysubstance dependent, i.e. cases in which patterns of psychoactive substance -taking are chaotic and indiscriminate, or in which the contributions of different psychoactive substances are inextricably linked, should the diagnosis of disorders resulting from multiple drug use be used.

The cocaine was primarily sourced as powder and used as powder as well as converted to rocks and smoked, most users freebasing.

- There was no significant relationship between gender and pattern of drug use.
- There was no significant relationship between age and pattern of drug use.

Scottish patients' problems at intake

The average intake CISS total score of the 74 Scottish patients was 14.9 (*sd* = 3.5, *range* 0 - 20) and there was no significant difference between males' and females' average total scores. This figure is indicative of a high level of dysfunction and suggests that these patients are generally more dysfunctional than drinkers and drug users attending outpatient alcohol services (based on the CISS comparison scores for these groups, see Appendix). Patients' greatest problems were with lack of support, psychological problems, drug or alcohol use, lack of occupation and physical health problems.

For 74 Scottish patients:

- 1.4% of patients had low problem severity (CISS score 0 to 5)
- 28.3% of patients had average problem severity (CISS score 6 to 12)
- 70.3% of patients had high problem severity (CISS score 13 to 20)

Scottish sample, treatment given

Seventy patients went into primary treatment, 4 patients had their primary treatment elsewhere and went directly into the Extended Care Unit.
- 43 patients completed primary treatment and their average length of stay was 5.6 weeks (*sd* = 1.1)
- 25 patients prematurely left primary treatment against staff advice and their average length of stay was 2.5 weeks (*sd* = 2.0)
- 2 patients prematurely left primary treatment on a therapeutic discharge (for rule violation, poor motivation, or persistent lack of change) and their average length of stay was 4.1 weeks (*sd* = 4.8)

Thirty-seven (50%) patients went into the Extended Care Unit
- 24 patients completed extended care treatment and their average length of stay was 19.6 weeks (*sd* = 7.1)
- 9 patients prematurely left extended care treatment against staff advice and their average length of stay was 8.9 weeks (*sd* = 5.5)
- 4 patients prematurely left extended care treatment on a therapeutic discharge (for rule violation, poor motivation, or persistent lack of change) and their average length of stay was 16.2 weeks (*sd* = 5.6)
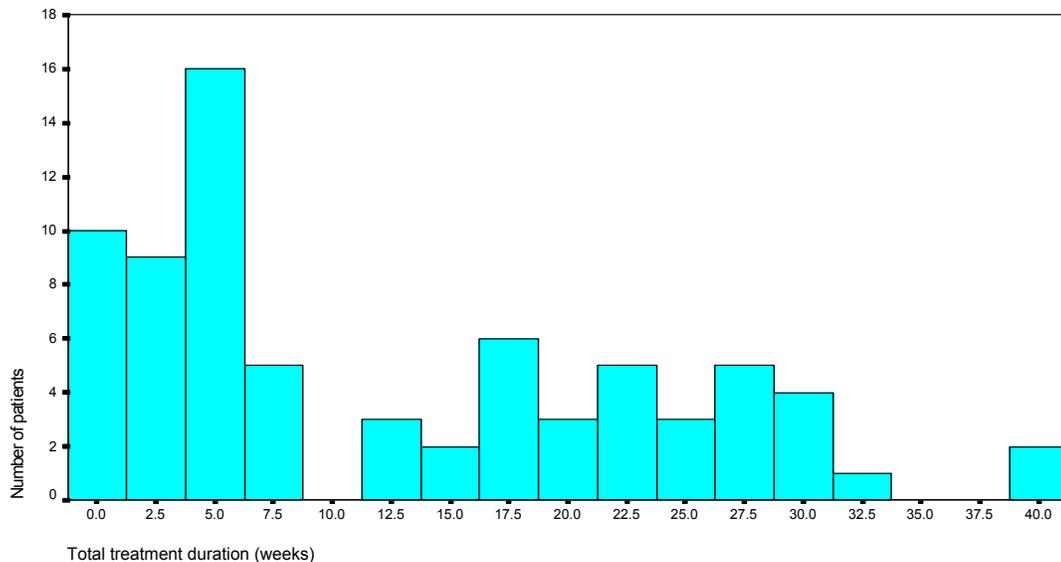

Total treatment duration (weeks)

Figure 1 above is a histogram of treatment duration (primary and extended care combined) for all 74 Scottish patients.

Scottish sample, follow-up times

Fifty-seven Scottish patients were successfully followed-up.

Standard follow-up times were hard to implement due to administrative constraints and the long sampling period required to capture all the Scottish patients' treatment entry dates.

The average follow-up period was 84.7 weeks (sd = 33.1, range = 32.6 to 150.1 weeks)

Scottish sample, follow-up outcomes

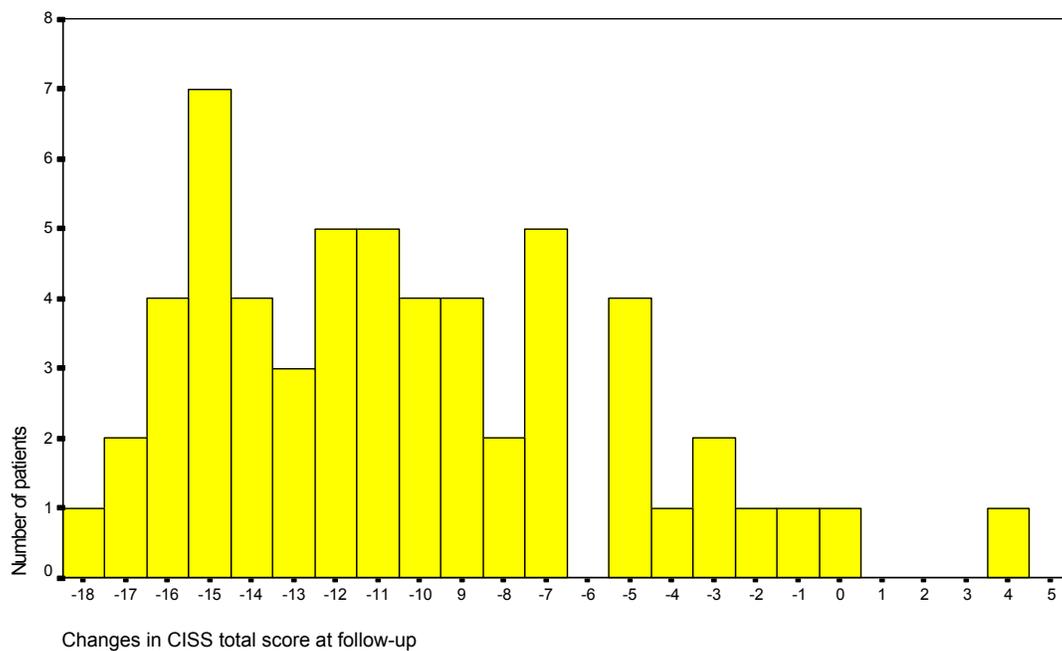Changes in CISS total score at follow-up

Figure 2 above illustrates the reductions in CISS total scores achieved by the 57 Scottish patients who were followed-up. The inter-rater reliability of the CISS (Christo et al., 2000) would indicate that a score fluctuation of plus or minus one point is attributable to variations of CISS interpretation between raters. As such, only changes of 2 or more points are recognised as 'genuine' and on that basis:

- 94.7% of patients improved
- 3.5% of patients remained the same
- 1.8% of patients got worse

Thirty-five patients achieved reductions of 10 CISS points or more. Changes of this magnitude are not uncommon among those who achieve total abstinence but would likely be perceived by the patients and their significant others as nothing short of miraculous.

'Success' rates at key milestones

For all 74 Scottish Patients 88% successfully completed detoxification

The following 'Success' rates are conservatively based on the assumption that the 17 patients not followed-up all showed no improvement or otherwise had poor outcomes.

- **Being totally abstinent from all drugs or alcohol at follow-up   47%**
- **Achieving low problem severity at follow-up (CISS < 7, see appendix)   60%**
- **Showing any reduction in measured levels of dysfunction   77%**

For 35 Scottish Patients who completed all their treatment

The following 'Success' rates are conservatively based on the assumption that the 4 patients not followed-up all showed no improvement or otherwise had poor outcomes.

- **Being totally abstinent from all drugs or alcohol at follow-up   71%**
- **Achieving low problem severity at follow-up (CISS < 7, see appendix)   83%**
- **Showing any reduction in measured levels of dysfunction   86%**

Dutch sample

The sample comprised of all cocaine addicted patients who entered treatment between 15th January 2004 to 31st August 2006 and stayed in treatment for one or more days. Sixty-six Dutch patients met these criteria.

- 57 Males (86.4%)
- 9 Females (13.6%)

- Attempts were made to follow up all of them and 49 patients were successfully followed-up (74.2% follow-up rate).
- There was no significant relationship between gender and successful follow-up.

- Average age = 36.7 years (*sd* = 8.2, range = 21.9 to 51.7).
- There was no significant relationship between age and gender.

Dutch sample, patterns of drug use

- 11 (16.7%) patients were dependent on cocaine and alcohol.
- 34 (51.5%) patients were dependent on cocaine and other specific drugs.
- 21 (31.8%) patients were polysubstance dependent, i.e. cases in which patterns of psychoactive substance -taking are chaotic and indiscriminate, or in which the contributions of different psychoactive substances are inextricably linked, should the diagnosis of disorders resulting from multiple drug use be used.

The cocaine was primarily sourced as powder and used as powder as well as converted to rocks and smoked, most users freebasing.

- There was no significant relationship between gender and pattern of drug use.
- There was a significant relationship between age and pattern of drug use (f [2] = 3.2, $p <$ .05). The mean age of patients dependent on cocaine and alcohol (41.5 years) was higher than patients dependent on specific drugs (34.7 years) or polysubstance dependent (37.4 years).

Dutch patients' problems at intake

The average intake CISS total score of the 66 Dutch patients was 12.6 (*sd* = 3.3, *range* 5 - 19) and there was no significant difference between males' and females' average total scores. This figure is indicative of a high level of dysfunction and suggests that these patients are generally more dysfunctional than drinkers and drug users attending outpatient alcohol services (based on the CISS comparison scores for these groups, see Appendix). Patients' greatest problems were with lack of occupation, lack of support, and drug or alcohol use.

For 66 Dutch patients:

- 1.5% of patients had low problem severity (CISS score 0 to 5)
- 51.5% of patients had average problem severity (CISS score 6 to 12)
- 47.0% of patients had high problem severity (CISS score 13 to 20)

Dutch sample, treatment given

Sixty-six patients went into primary treatment.

- 51 patients completed primary treatment and their average length of stay was 5.6 weeks (*sd* = 1.5)
- 9 patients prematurely left primary treatment against staff advice and their average length of stay was 2.0 weeks (*sd* = 0.9)
- 3 patients prematurely left primary treatment on a therapeutic discharge (for rule violation, poor motivation, or persistent lack of change) and their average length of stay was 3.4 weeks (*sd* = 2.4)
- 3 patients prematurely left primary treatment for other reasons and their average length of stay was 5.2 weeks (*sd* = 1.9)

Forty-four (66.7%) patients went into the Extended Care Unit

- 28 patients completed extended care treatment and their average length of stay was 19.4 weeks (*sd* = 6.5)
- 7 patients prematurely left extended care treatment against staff advice and their average length of stay was 7.7 weeks (*sd* = 7.3)
- 9 patients prematurely left extended care treatment on a therapeutic discharge (for rule violation, poor motivation, or persistent lack of change) and their average length of stay was 8.0 weeks (*sd* = 7.0)
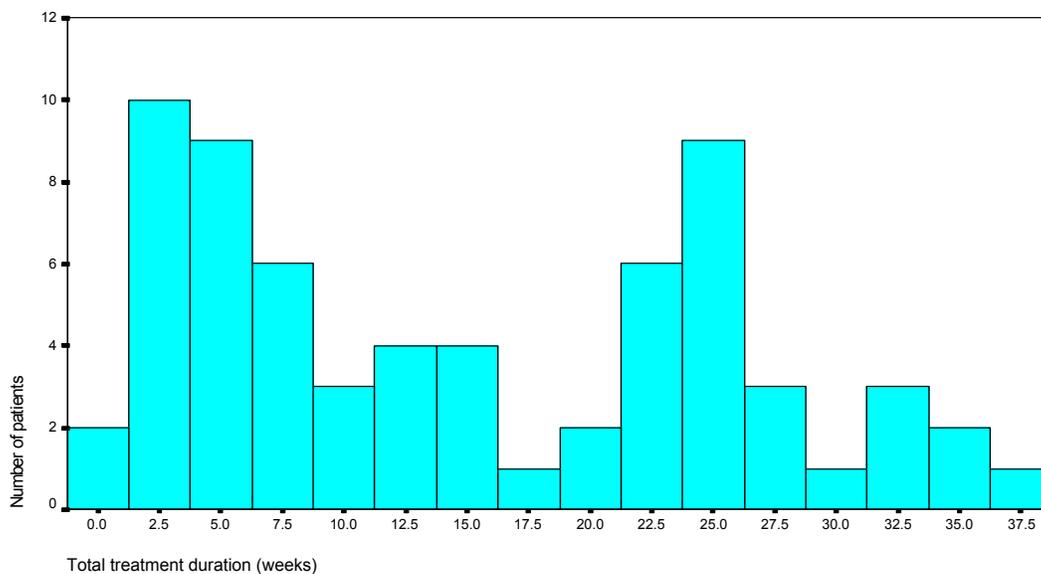

Figure 3 above is a histogram of treatment duration (primary and extended care combined) for all 66 Dutch patients.

Dutch sample, follow-up times

Forty-nine Dutch patients were successfully followed-up.

Standard follow-up times were hard to implement due to administrative constraints and the long sampling period required to capture all the Dutch patients' treatment entry dates.

The average follow-up period was 74.1 weeks (sd = 35.6, range = 14.7 to 150.7 weeks)

Dutch sample, follow-up outcomes
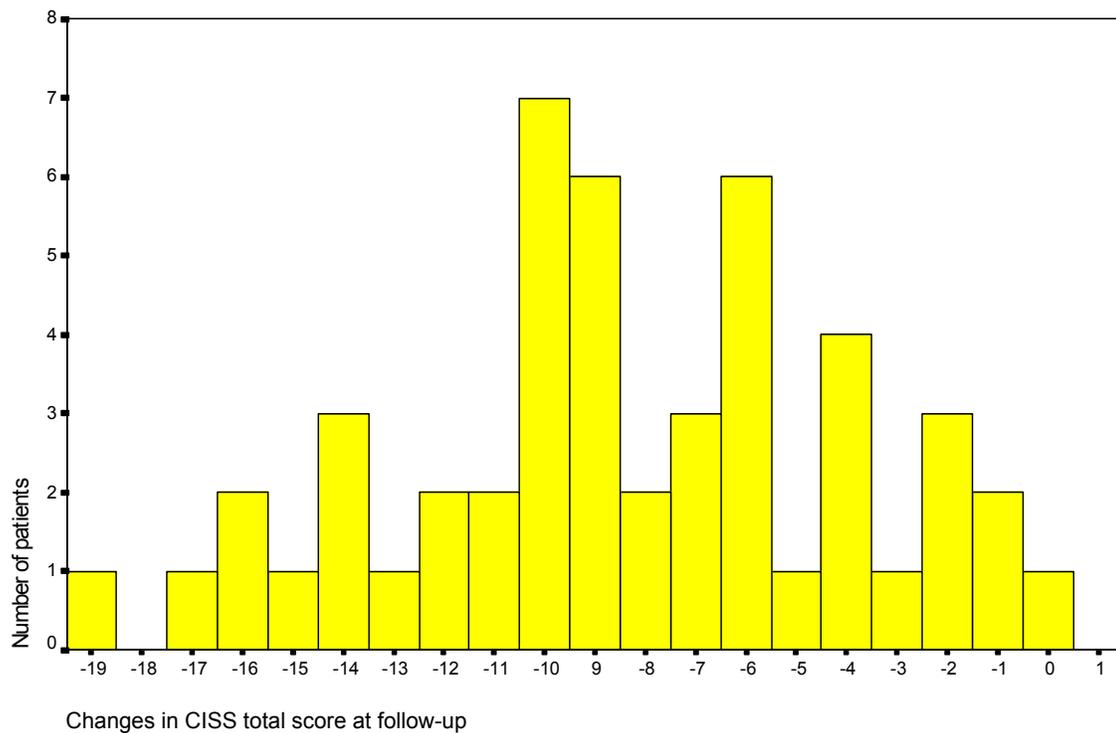
Changes in CISS total score at follow-up

Figure 4 above illustrates the reductions in CISS total scores achieved by the 49 Dutch patients who were followed-up. The inter-rater reliability of the CISS (Christo et al., 2000) would indicate that a score fluctuation of plus or minus one point is attributable to variations of CISS interpretation between raters. As such, only changes of 2 or more points are recognised as 'genuine' and on that basis:

- 93.9% of patients improved
- 6.1% of patients remained the same
- no patients got worse

Twenty patients achieved reductions of 10 CISS points or more. Changes of this magnitude are not uncommon among those who achieve total abstinence but would likely be perceived by the patients and their significant others as nothing short of miraculous.

'Success' rates at key milestones

For all 66Dutch Patients 97% successfully completed detoxification

The following 'Success' rates are conservatively based on the assumption that the 17 patients not followed-up all showed no improvement or otherwise had poor outcomes.

- **Being totally abstinent from all drugs or alcohol at follow-up**   **44%**
- **Achieving low problem severity at follow-up (CISS < 7, see appendix)**   **59%**
- **Showing any reduction in measured levels of dysfunction**   **74%**

For 37 Dutch Patients who completed all their treatment

The following 'Success' rates are conservatively based on the assumption that the 6 patients not followed-up all showed no improvement or otherwise had poor outcomes.

- **Being totally abstinent from all drugs or alcohol at follow-up**   **60%**
- **Achieving low problem severity at follow-up (CISS < 7, see appendix)**   **73%**
- **Showing any reduction in measured levels of dysfunction**   **84%**

Sample

The sample comprised of all cocaine addicted patients who entered treatment between 15th January 2004 to 31st August 2006 and stayed in treatment for one or more days. One hundred and forty one patients met these criteria, 74 from Scotland, 66 from the Netherlands, and 1 from the USA. Attempts were made to follow up all of them and 107 patients were successfully followed-up in order to obtain the detailed outcome information presented below.

Gender

	Scotland	Netherlands	USA	
Females	29 (39.2%)	9 (13.6%)	0	38
Males	45 (60.8%)	57 (86.4%)	1	103
Total	74	66	1	141

Fewer of the Netherlands patients were female (only 13.6%) and this is a significantly different gender distribution from the Scottish sample (χ^2 [2] = 11.9, p = .003).

Gender was not significantly related to any other variables measured in this study.

Patterns of drug use

- 26 (18.4%) patients were dependent on cocaine and alcohol.
- 81 (57.4%) patients were dependent on cocaine and other specific drugs.
- 34 (24.1%) patients were polysubstance dependent, i.e. cases in which patterns of psychoactive substance -taking are chaotic and indiscriminate, or in which the contributions of different psychoactive substances are inextricably linked, should the diagnosis of disorders resulting from multiple drug use be used.

The cocaine was primarily sourced as powder and used as powder as well as converted to rocks and smoked, most users freebasing.

Patterns of drug use were related to two CISS domains of 'Viral Risk' and 'Criminal Involvement' but not significantly related to the CISS total score or other demographic variables measured in this study. Patients dependent on cocaine and alcohol tended to have fewer problems with Viral Risk (χ^2 [4] = 11.4, p = .02) and Criminal Behaviour (χ^2 [4] = 9.2, p = .05).

Figure 5, Age
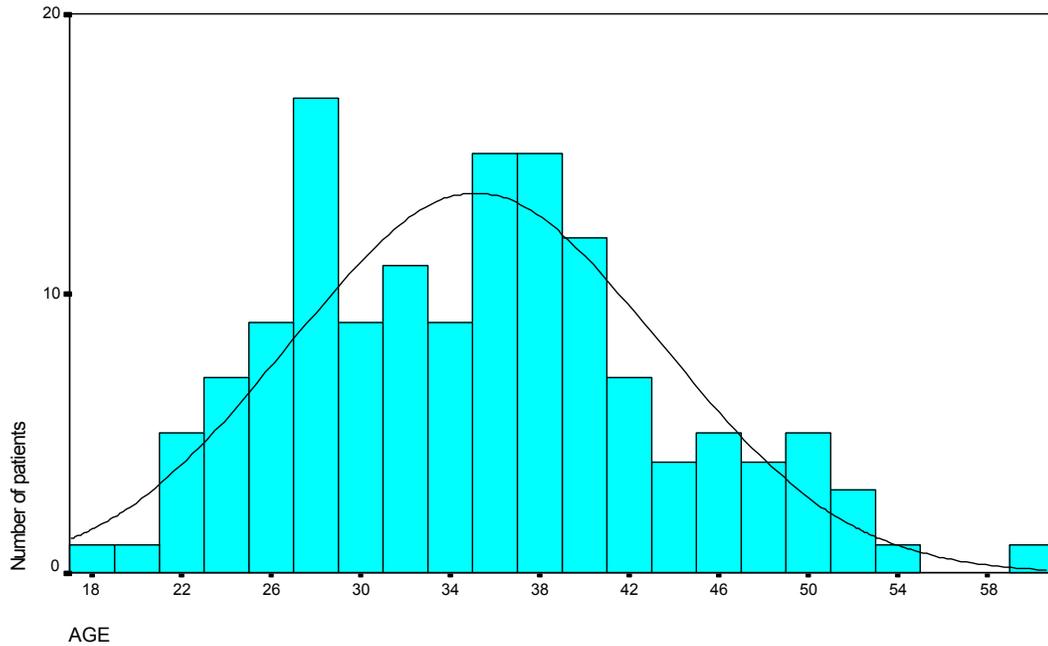
The patients' average age was 35.2 years (*n* = 141, *sd* = 8.3, *range* = 18 - 59) and there was no difference between the average age of males and females.

However the Scottish patients' average age of 33.9 years (*n* = 74, *sd* = 8.2) was significantly lower than the Dutch patients' average age of 36.7 years (*n* = 66, *sd* = 8.2), (*t* [138] = 2.0, *p* < .05).

Age was not significantly related to other demographic variables measured in this study.

Patients' problems at intake

The average intake CISS total score of the 141 patients was 13.4 (*sd* = 3.5, *range* 0 - 20) and there was no significant difference between males' and females' average total scores. This figure is indicative of a high level of dysfunction and suggests that these patients are generally more dysfunctional than drinkers and drug users attending outpatient alcohol services (based on the CISS comparison scores for these groups, see Appendix). Patients' greatest problems were with drug or alcohol use, lack of occupation, lack of support, and psychological problems.

Scottish patients' average CISS total score of 14.1 (*n* = 74, *sd* = 3.5) was significantly higher than the Dutch patients' average CISS total score of 12.6 (*n* = 66, *sd* = 3.3), (*t* [138] = 2.5, *p* = .01).

For 74 Scottish patients:
- 1.4% of patients had low problem severity (CISS score 0 to 5)
- 28.3% of patients had average problem severity (CISS score 6 to 12)
- 70.3% of patients had high problem severity (CISS score 13 to 20)

For 66 Dutch patients:
- 1.5% of patients had low problem severity (CISS score 0 to 5)
- 51.5% of patients had average problem severity (CISS score 6 to 12)
- 47.0% of patients had high problem severity (CISS score 13 to 20)

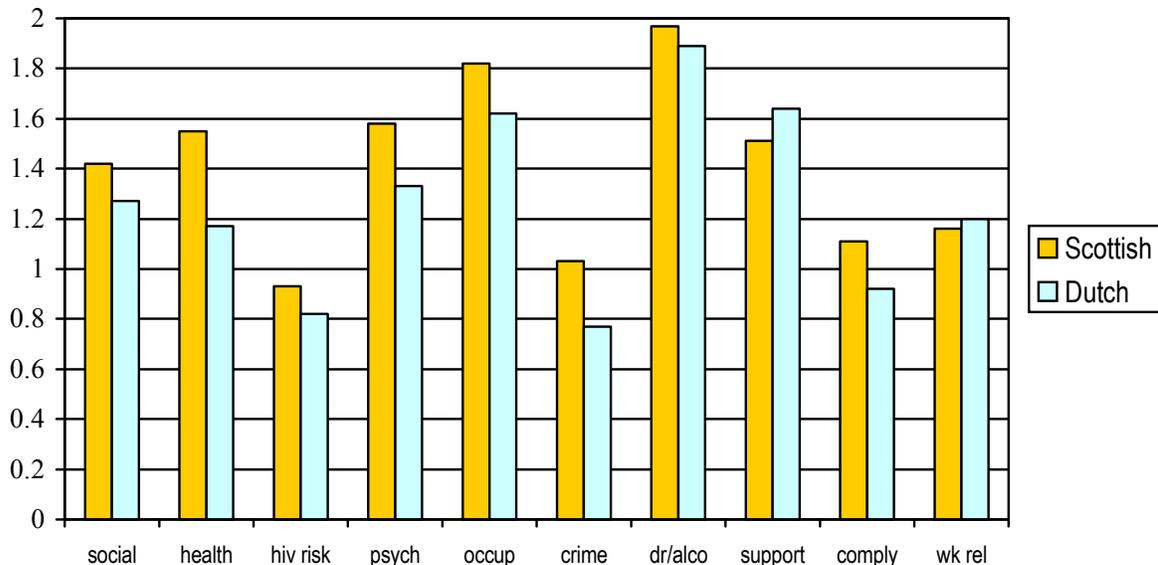Figure 6, Baseline CISS item scores by nationality

Figure 6 compares the average CISS item scores (0 to 2 scale) as assessed at intake between the 74 Scottish and the 66 Dutch patients. The taller the bars in the figure, the greater the average degree of problem within the relevant CISS domain. Dutch patients tended to have…..
- Fewer physical health problems (*U* = 1683, *p* < .001)
- Fewer psychological problems (*U* = 1880, *p* = .008)
- Less drug use (*U* = 2256, *p* = .04)

Nationality and entry into extended care

- 50% of the 74 Scottish patients went into extended care
- 66.7% of the 66 Dutch patients went into extended care

Dutch patients were significantly a little more likely to enter extended care (χ^2 [1] = 3.9, p < .05)

Baseline levels of dysfunction and entry into extended care

- 21 patients (14.9%) completed primary treatment and were discharged without needing extended care. Their average CISS total score was 10.9 (*sd* = 4.6)
- 39 patients (27.7%) dropped out before completing primary treatment. Their average CISS total score was 15.1 (*sd* = 2.8)
- 81 patients (57.4%) entered extended care. Their average CISS total score was 13.2 (*sd* = 3.0)

Patients with higher levels of dysfunction at intake tended to either drop out of primary or go on to extended care (*f* [1] = 8.0, p = .005). In comparison to those entering extended care, drop outs from primary (excluding 21 primary completers) were more likely to have…

- Greater social functioning problems (*U* = 1185, p = .01)
- Greater criminal involvement (*U* = 1035.5, p = .001)
- Greater compliance problems (*U* = 1145, p = .009).

Reasons for ultimate discharge from Castle Craig

- 73 Planned discharges (patients completing treatment)   51.8 %

- 68 Unplanned discharges (premature discharge)   48.2 %
- of which…
  - 48 patients prematurely self-discharged against medical advice   34.0 %
  - 17 patients discharged for non-compliance or rule violations   12.1 %
  - 3 patients were prematurely discharged for other reasons   2.1 %

The average treatment duration for patients' taking a planned discharge was 19.0 weeks (*n* = 73, *sd* = 10.7), it was significantly longer than the prematurely discharged patients' average treatment duration of 8.0 weeks (*n* = 68, *sd* = 7.7), (*t* [139] = 7.0, p = .001).

The average CISS total score for patients' taking a planned discharge was 12.3 (*n* = 73, *sd* = 3.5), it was significantly lower than the prematurely discharged patients' average CISS score of 14.5 (*n* = 68, *sd* = 3.1), (*t* [130.8] = 7.0, p < .001).

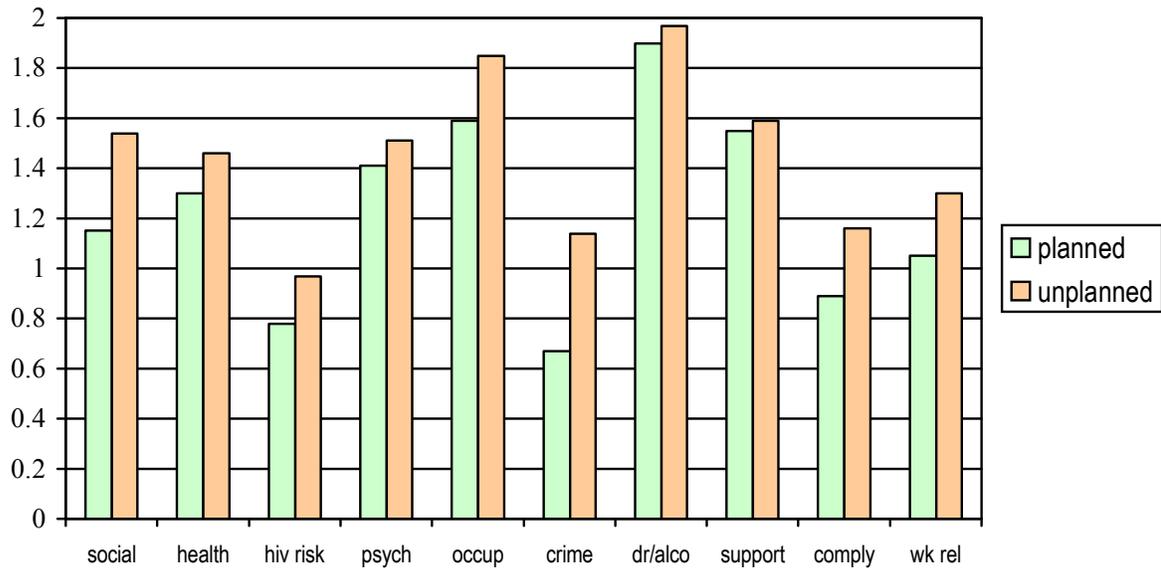Figure 7, Baseline CISS item scores by discharge type

Figure 7 compares the average CISS item scores (0 to 2 scale) as assessed at intake between the 73 planned and the 68 unplanned discharge patients. The taller the bars in the figure, the greater the average degree of problem within the relevant CISS domain. Planned discharge patients tended to have…..

- Fewer social functioning problems (U = 1737, p < .001)
- Fewer occupation problems (U = 2045, p = .01)
- Less criminal involvement (U = 1663, p < .001)
- Fewer compliance problems (U = 2003.5, p = .03).

Patients' age, gender, nationality, and drug use patterns were unrelated to premature discharge.

Attempts were made between 11.11.06 and 12.01.07 to contact all 141 patients. Those who could be contacted were interviewed using the CISS outcome measure. Follow-ups were successfully completed on 107 of the 141 patients (75.9%).

In treatment outcome follow-up studies such as this one it is not unreasonable to assume that the majority of patients not accessible, will have relapsed.

Christo, Spurrell & Alcorn (2000) found a CISS cut-off score of 6 or less can be used to indicate "good outcome" for abstinence based treatment among drug users. This correctly identified 88% of outcomes where drug use was assessed only in month before follow-up, and 84% of outcomes where drug use was assessed over their entire six-month follow-up period.

The patients could thus be categorised under the following outcomes:

84 had a follow-up CISS score of 6 or less	59.6 %	Good outcome 60 %
23 had a follow-up CISS score of 7 or more	16.3 %	Poor outcome 40 %
34 could not be contacted	24.1 %	.

Patients' gender, nationality, drug use pattern, age, and CISS total score at treatment entry were unrelated to outcome.

Treatment duration and outcome

The average treatment duration (m = 16.2 weeks sd = 10.9) of the 84 good outcome patients was significantly longer than the average treatment duration (m = 9.9 weeks sd = 9.8) of the 57 poor outcome patients (U = 1577, p < .001).

Extended care and outcome

- 81 patients went into extended care and 69.1% had a good outcome
- 60 patients had no extended care and 46.7% had a good outcome

Patients entering extended care were significantly more likely to have a good outcome (χ^2 [1] = 7.2, p = .007)

Discharge status and outcome

- 73 patients completed treatment and 78.1% had a good outcome
- 68 patients left prematurely and 39.7% had a good outcome

Patients completing treatment were significantly more likely to have a good outcome. This finding is highly statistically significant (χ^2 [1] = 21.5, p < .00001). Future patients who might be quitting treatment early should be made aware of this statistic.

CISS scores at treatment entry and subsequent outcome

Among the 81 patients entering extended care, the average CISS score for patients with a good outcome was 12.8 (n = 56, sd = 3.0), it was significantly lower than the poor outcome patients' average CISS score of 14.2 (n = 25, sd = 2.7), (t [79] = 2.1, p < .05).

There was no significant relationship between CISS total scores at treatment entry and subsequent outcome among the 60 patients who did not go into extended care.

Predictors of unplanned discharge and poor outcome

- Patients entering extended care were significantly more likely to have a good outcome.
- Patients completing treatment were significantly more likely to have a good outcome.
- Patients in treatment for longer were significantly more likely to have a good outcome.

Patients' age, gender, nationality, and drug use patterns were unrelated to premature discharge. Patients' gender, nationality, drug use pattern, age, and CISS total score at treatment entry were unrelated to outcome.

However, Dutch patients were a little more likely to enter extended care. Also, patients with higher levels of dysfunction at intake tended to either drop out of primary or go on to extended care. The higher baseline levels of dysfunction recorded among those entering extended care would indicate that referrals to extended care were generally well judged. In comparison to those entering extended care, drop outs from primary were more likely to have greater social functioning problems, greater criminal involvement, and greater compliance problems. Completers of treatment generally tended to have fewer social functioning problems, fewer occupation problems, less criminal involvement, and fewer compliance problems. Baseline problems of social functioning, compliance and criminality are consistent predictors of both subsequent treatment dropout and poor outcome. Higher levels of general dysfunction are also weakly predictive although this trend is countered by the correct use of extended care. The statistical trends indicated above are more or less as might be expected, but that is not to say that patients with social functioning, compliance and criminality problems do not benefit from treatment. They simply benefit a little less than average, as would be expected of this population regardless of treatment approach.

Findings regarding 107 patients followed-up

Attempts were made between 11.11.06 and 12.01.07 to contact all 141 patients. Those who could be contacted were interviewed using the CISS outcome measure. Follow-ups were successfully completed on 107 of the 141 patients (75.9%).

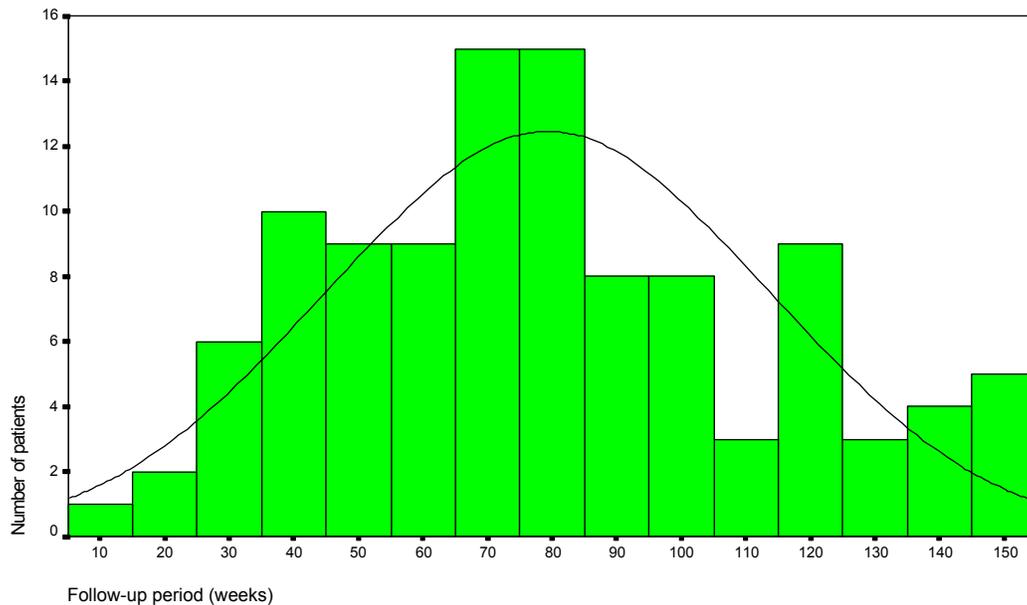Figure 8, follow-up periods

Follow-up period (weeks)

Figure 8 indicates the number of patients falling within each follow-up period. Standard follow-up times were hard to implement due to the long sampling period required to capture all the patients' treatment entry dates.

- Intake interviews took place between 16.01.2004 and 07.08.2006
- Follow-up interviews took place between 11.11.2006 and 12.01.2007
- The average follow-up period was 79.4 weeks (n = 107, sd = 34.2, $range$ = 14.7 to 150.7)

Changes in patient dysfunction at follow-up

Figure 9, reductions of patient dysfunction

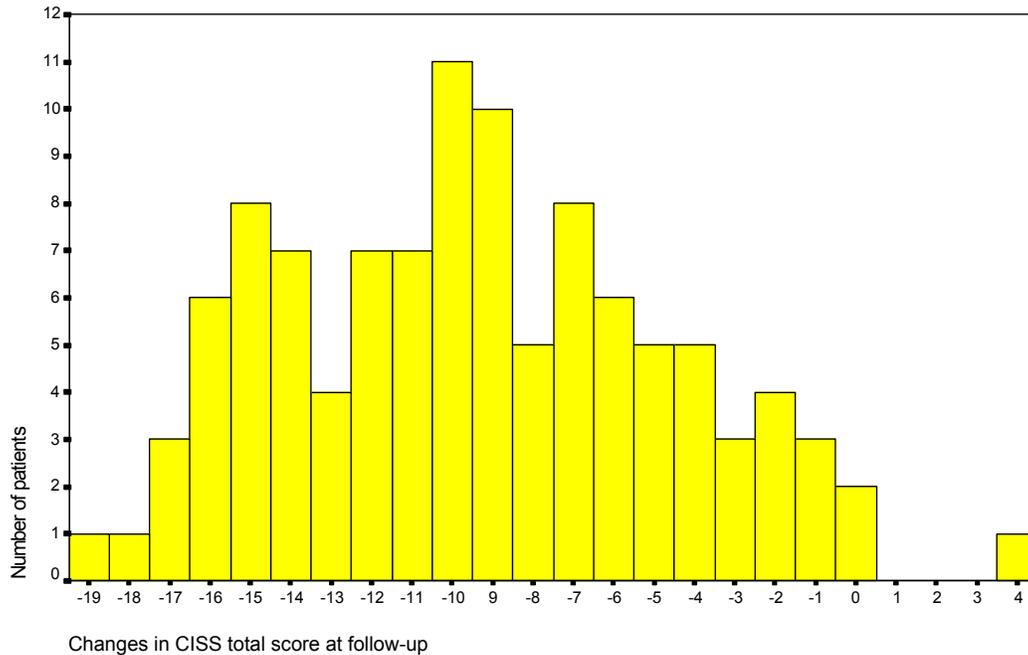Changes in CISS total score at follow-up

Figure 9 illustrates the reductions in CISS total scores achieved by the 107 patients who were followed-up. The inter-rater reliability of the CISS (Christo et al., 2000) would indicate that a score fluctuation of plus or minus one point is attributable to variations of CISS interpretation between raters. As such, only changes of 2 or more points are recognised as 'genuine' and on that basis:

- 94.4% of patients improved
- 4.7% of patients remained the same
- 0.9% of patients got worse

Fifty-five patients achieved reductions of 10 CISS points or more. Changes of this magnitude are not uncommon among those who achieve total abstinence but would likely be perceived by the patients and their significant others as nothing short of miraculous.
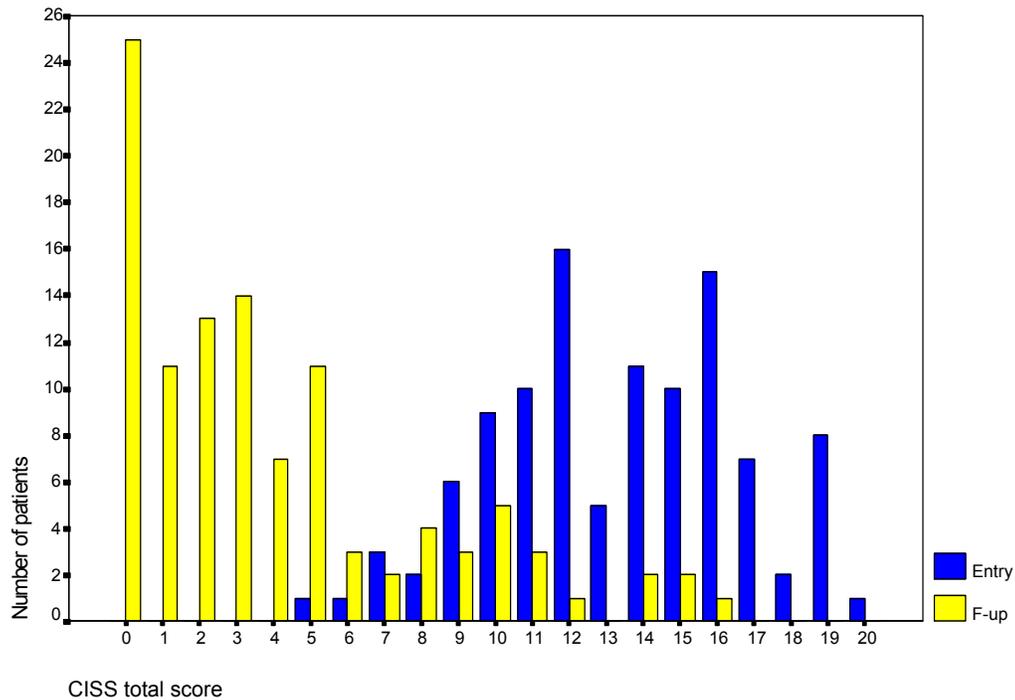
Figure 10, the process of change

Figure 10 displays how CISS total scores are distributed among the 107 followed-up patients. Dark bars indicate the score distributions at treatment entry and the light bars indicate score distributions at follow-up.

The average intake CISS total score of the 107 patients was 13.4 (*sd* = 3.3, *range* 5 - 20)
The average follow-up CISS total score of the 107 patients was 3.9 (*sd* = 4.0, *range* 0 - 16)
A paired sample t-test indicates this reduction to be highly significant (*t* [106] = 20.5, *p* < .001)

The correlation between intake and follow-up scores is not significant (*r* [106] = .18, *p* = .07). This indicates that all patients can potentially achieve abstinence after this treatment intervention, regardless of their initial levels of dysfunction.

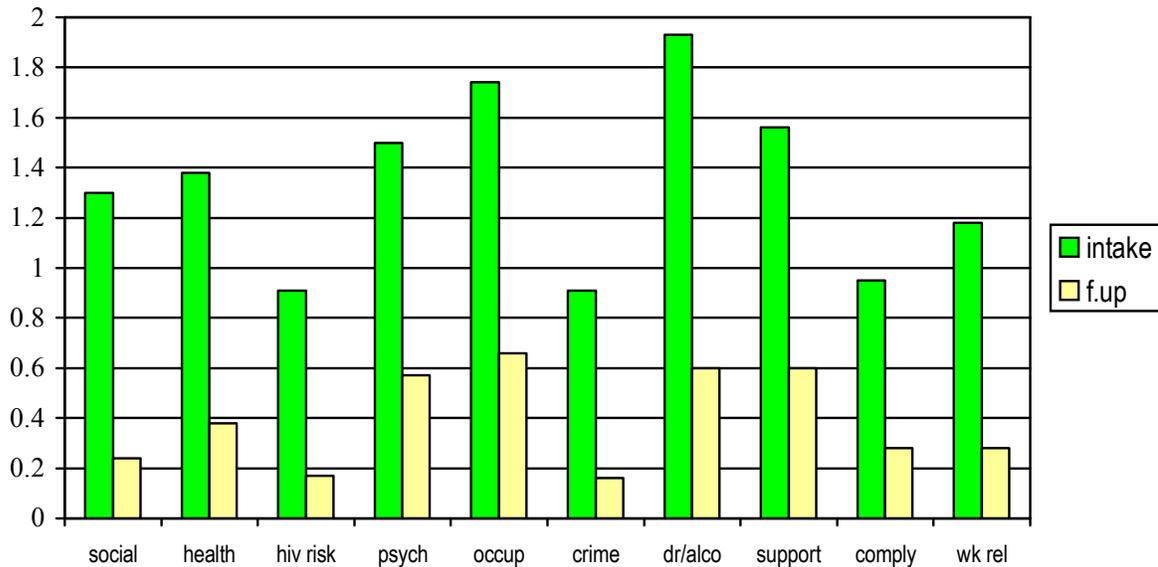Figure 11, Changes in individual CISS item scores

Figure 11 compares the average CISS item scores (0 to 2 scale) as assessed at intake and then again at follow-up. The taller the bars in the figure, the greater the average degree of problem within the relevant CISS domain. As can also be seen in figure 2, the greatest problems at intake were with drug or alcohol use, lack of occupation, lack of support, psychological problems, and health problems.

Ten Wilcoxon Signed Ranks statistical tests indicated that the reductions in all of the 10 CISS outcome domains were highly significant. Thus indicating that reductions in drug / alcohol use were generally accompanied by improvements in all other aspects of the patients' lives.

Detailed outcomes and what they mean for the patients

The CISS form is a rough indicator of professional impression of recent drug / alcohol related problems in the past month. Specific situations / behaviours are listed only as guiding examples and may not reflect the exact situations / behaviours of the patient. The CISS wording has been left intact in the following tables to give an idea of the actual type of dysfunction an item score of 0, 1, or 2 might indicate within each domain. The tables below illustrate the percentage of patients rated as having none, moderate or severe problems within each CISS domain at intake and then again at follow-up.

Social functioning	e.g.	Intake	Follow-up
No problem	client has a stable place to live and supportive friends or relatives who are drug / alcohol free	14.0%	80.4%
Moderate problem	client's living situation may not be stable, or they may associate with drug users / heavy drinkers	42.1%	15.0%
Severe problem	living situation not stable, and they either claim to have no friends or their friends are drug users / heavy drinkers	43.9%	4.7%

General health	e.g.	Intake	Follow-up
No problem	client has reported no significant health problems	13.1%	67.3%
Moderate problem	teeth/sleep problems, occasional stomach pain, collapsed vein, asymptomatic hep B / C / HIV	35.5%	27.1%
Severe problem	extreme weight loss, jaundice, abscesses / infections, coughing up blood, fever, overdoses, blackouts, seizures, significant memory loss, neurological damage, HIV symptoms	51.4%	5.6%

Sexual or injecting risk behaviour	e.g.	Intake	Follow-up
No problem	client claims not to inject, or have unsafe sex (except in monogamous relationship with longstanding partner, spouse)	36.4%	85.0%
Moderate problem	may admit to occasional "unsafe" sexual encounters, or suspected to be injecting but denies sharing injecting equipment	36.4%	13.1%
Severe problem	client may admit to regular "unsafe" sexual encounters, or has recently been injecting and sharing injecting equipment	27.1%	1.9%

Psychological	e.g.	Intake	Follow-up
No problem	client appears well adjusted and relatively satisfied with the way their life is going	1.9%	49.5%
Moderate problem	client may have low self-esteem, general anxiety, poor sleep, may be unhappy or dissatisfied with their lot	45.8%	43.9%
Severe problem	client has a neurotic disorder e.g., panic attacks, phobias, OCD, bulimia, recently attempted or seriously considered suicide, self-harm, overdose or may be clinically depressed. Or client may have psychotic disorders, paranoia (e.g., everybody is plotting against them), deluded beliefs or hallucinations (e.g. hearing voices)	52.3%	6.5%

Occupation	e.g.	Intake	Follow-up
No problem	client is in full time occupation e.g., homemaker, parent, employed, or student	7.5%	48.6%
Moderate problem	client has some part time parenting, occupation or voluntary work	11.2%	36.4%
Severe problem	client is largely unoccupied with any socially acceptable pastime	81.3%	15.0%

Criminal involvement	e.g.	Intake	Follow-up
No problem	no criminal involvement (apart from possible possession of illicit drugs for personal use)	35.5%	85.0%
Moderate problem	client suspected of irregular criminal involvement, perhaps petty fraud, petty theft, drunk driving, small scale dealing	38.3%	14.0%
Severe problem	suspected of regular criminal involvement, or breaking and entering, car theft, robbery, violence, assault	26.2%	0.9%

Drug / alcohol use	e.g.	Intake	Follow-up
No problem	no recent drug / alcohol use	0.9%	60.7%
Moderate problem	client suspected of periodic drug / alcohol use, or else may be socially using drugs that are not considered a problem, or may be on prescribed drugs but not supplementing from other sources	4.7%	18.7%
Severe problem	client suspected of bingeing or regular drug / alcohol use	94.4%	20.6%

Ongoing support	e.g.	Intake	Follow-up
No problem	regular attendance of AA / NA, drug free drop in centre, day centre, counselling, or treatment aftercare	3.7%	57.0%
Moderate problem	patchy attendance i.e., less than once a week contact with at least one of the above	36.4%	26.2%
Severe problem	client not known to be using any type of structured support	59.8%	16.8%

Compliance	e.g.	Intake	Follow-up
No problem	attends all appointments and meetings on time, follows suggestions, or complies with treatment requirements	31.8%	76.6%
Moderate problem	not very reliable, or may have been reported as having an "attitude" problem or other difficulty with staff	41.1%	18.7%
Severe problem	chaotic, may have left treatment against staff advice or been ejected for non-compliance e.g. drug use, attitude problem	27.1%	4.7%

Working Relationship	e.g.	Intake	Follow-up
No problem	relatively easy going e.g., interviews easily, not time consuming or stressful to work with	18.7%	75.7%
Moderate problem	moderately challenging e.g., a bit demanding or time consuming, but not excessively so	44.9%	20.6%
Severe problem	quite challenging e.g., very demanding, hard work, time consuming, emotionally draining or stressful to see	36.4%	3.7%

'Success' rates at key milestones

For all 141 Patients 92% successfully completed detoxification

The following 'Success' rates are conservatively based on the assumption that the 34 patients not followed-up all showed no improvement or otherwise had poor outcomes.

- Being totally abstinent from all drugs or alcohol at follow-up   46%
- Achieving low problem severity at follow-up (CISS < 7, see appendix)   60%
- Showing any reduction in measured levels of dysfunction   74%

For 73 Patients who completed all their treatment

The following 'Success' rates are conservatively based on the assumption that the 10 patients not followed-up all showed no improvement or otherwise had poor outcomes.

- Being totally abstinent from all drugs or alcohol at follow-up   66%
- Achieving low problem severity at follow-up (CISS < 7, see appendix)   78%
- Showing any reduction in measured levels of dysfunction   84%

Discussion

Castle Craig Hospital appears to be providing a service for very dysfunctional cocaine dependent people with complications from lack of support, poor health, psychological problems and lack of occupation. However, good outcomes are achieved despite these high levels of dysfunction at intake. Their patients are generally more dysfunctional than those attending outpatient drug or alcohol services and it is unlikely that many of them would have been able to engage with an outpatient treatment intervention. Although the goal of Castle Craig's treatment is abstinence, it should be noted that those who fail to achieve that goal still report reduced levels of dysfunction at follow-up. Thus, even the treatment 'failures' appeared to have benefited from their experience in treatment, possibly by gaining a period of respite during which to recover from the consequences of their excessive drinking or drug use.

Castle Craig Hospital continues to demonstrate their ability to produce high quality research within the limitations of a busy service setting. The notion of evidence led practice is frequently discussed, but it could be argued that experienced practitioners already make best use of their resources. Thus, the purpose of such research could only be to illustrate that the experts know what they are doing (e.g., practice led

evidence). This view may well be partially justified, as many of the findings in this study are obvious to those who are familiar with the field. However, some findings here are obvious only with the benefit of hindsight and others may yet inform better practice and commissioning.

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Appendix, CISS comparison scores

Comparisons for interpreting CISS total score (sum of item scores)

Abstinence based treatment outcomes: Six-month outcomes for 90 treated drug users from abstinence based treatment centres

In the month before follow-up:
Good outcome: 48 were abstinent
and average CISS score was 2.9 (sd = 1.9)
Poor outcome: 42 had used drugs
and average CISS score was 10.6 (sd = 4.3)

Over entire six month period:
Good outcome: 33 remained abstinent*
and average CISS score was 2.9 (sd = 2.0)
Good outcome: 22 had a lapse*
and average CISS score was 4.5 (sd = 2.9)
Poor outcome: 35 had a relapse*
and average CISS score was 11.2 (sd = 4.5)

* Lapse status was assessed using an eight-level scaling of lapse / relapse outcomes (as defined by Walton et al., 1994). Drug use over the entire six-month follow-up period was assessed using the principle of Timeline Follow Back (Sobell et al., 1988), as adapted for drug use by Walton et al. (1994).

N.B. a CISS cut-off score of 6 or less can be used to indicate "good outcome" for abstinence based treatment. This correctly identified 88% of outcomes where drug use was assessed only in month before follow-up, and 84% of outcomes where drug use was assessed over the entire six-month follow-up period.

Harm minimisation prescribing based service score distribution:

Average CISS score among 243 clients at a London community drug service = 9.1 (sd = 3.4)
16% obtained CISS scores in range 0 to 5   =   low problem severity
67% obtained CISS scores in range 6 to 12   =   average problem severity
17% obtained CISS scores in range 13 to 20 =   high problem severity

Outpatient alcohol service score distribution:

Average CISS score among 102 clients at a London community alcohol service = 8.1 (sd = 3.4)
15% obtained CISS scores in range 0 to 4   =   low problem severity
70% obtained CISS scores in range 5 to 11   =   average problem severity
15% obtained CISS scores in range 12 to 20 =   high problem severity

Alcohol users generally score one CISS point less than drug users. Alcohol users are less likely to score on problems of social functioning, HIV risk behaviour and criminal involvement, but they are more likely to score on psychological problems.

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