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Sleep in opiate addicts during rapid lofexidine- assisted withdrawal from methadone

Background: Sleep problems are common in drug withdrawal, and when withdrawing from methadone they can be severe and prolonged. Sleep problems may also contribute to relapse. Lofexidine is an α_2 -adrenergic agonist drug used to counteract the symptoms of noradrenergic overactivity during methadone withdrawal. **Method:** 34 patients admitted to BSDU for rapid detoxification from methadone had their sleep recorded on the second night of admission, before detox was begun. 22 of these went on to have a further sleep recording during the period of maximum withdrawal symptomatology after methadone was tailed off, 15 of these having concomitant lofexidine treatment. A small number of these patients had further sleep recordings 6-17 days later. Sleep recordings were performed on the ward, using ambulatory monitoring (Medilog) equipment, with patients sleeping when they chose. Recordings were scored by eye using R&K criteria. **Results:** At baseline most patients slept well, with large amounts of SWS and also of REM. 5 patients had sleep onset REM and a further 8 had REM latencies below 50 min 9 (measured from stage 2 onset). Lofexidine significantly prolonged REM latency ($p < 0.01$) and sleep continuity in general was worse than at baseline. **Conclusions:** As expected, lofexidine suppressed REM sleep but it is difficult to assess its effects on sleep continuity as this would necessarily have deteriorated during withdrawal and there are only a few patients who went through withdrawal with no medication. REM sleep was increased at baseline. This was probably a REM rebound effect and may have been due to withdrawal of other agents after 2 nights in the ward. 29 of the 34 patients admitted to using 'on-top' heroin, either IV or smoked, before admission, so withdrawal from this could be the cause of the increased REM sleep. However REM decreases have usually been described after heroin withdrawal. The other explanation is that these patients were using other agents eg benzodiazepines.

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Objective measurement of tolerance in methadone dependant individuals using the hydromorphone challenge

Aims: Substitute methadone prescribing is one of the main modes of treatment for opiate dependence. It is not yet understood why some patients appear to require larger doses to help them move away from use of heroin than others. The aim of this study was to examine the relationship between methadone dose (as measured by both daily dose and blood levels of the methadone's active R-enantiomer) and opiate receptor function. **Design:** After baseline measures, addicts received 3 subcutaneous injections 1½ hours apart, consisting of saline, 5mg and 10mg of hydromorphone followed by measures of opiate response. These doses of hydromorphone have been shown to produce measurable objective responses in the majority of opiate addicts, with the responses lasting at most 90 minutes in all. The response measures included saccadic eye movements (SEMs), respiratory rate, cardiovascular measures, and pupillometry recorded every 15-30 minutes, as well as self report measures. **Participants:** 8 subjects on substitute methadone prescriptions (30-90mg of methadone daily) were recruited. **Findings:** SEM changes showed, for the 10mg dose of hydromorphone, significant changes in the three main measures (peak velocity, peak acceleration and peak deceleration) when correlated with both oral dose of methadone and the (R)-enantiomer levels measured. For the lower dose of 5mg, although there seemed to be a small trend, it was not significant. R-enantiomer blood levels correlated significantly with oral methadone dose. This and further results will be presented. **Conclusions:** We have shown, in these preliminary results, that this is a valid method for measuring tolerance in opiate dependent individuals. R-enantiomer blood levels correlate significantly with oral methadone dose and objective measures of tolerance (SEM changes) correlate significantly with oral dose and blood levels. Thus, for perhaps the first time, we have both objective measures of methadone levels (R-enantiomer blood levels) and objective measures of an individual's opiate tolerance (SEM changes). This should help in refining our understanding of why this treatment intervention is more or less successful in the individual patients we meet in the clinic.

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Introduction. Cognitive impairment, in the form of impaired visuo-spatial, psychomotor and problem solving skills, abstraction and semantic memory, is well recognised in alcoholism. Alcohol dependence is also associated with a number of non-specific EEG abnormalities. We investigated EEG abnormalities in alcoholic patients and controls to see if they correlated with cognitive impairment. We hypothesised that alcoholics would have more EEG abnormalities than controls and these would be reflected in an impairment of their cognitive functions. **Method:** Healthy male alcohol dependent (abstinent <6 weeks) and control subjects were recruited as part of a PET neuroimaging study which required EEG screening (see Lingford-Hughes et al). Other exclusion criteria were a history of significant physical and psychiatric problems and substance misuse other than alcohol. Standard EEGs were done using 8 channels, 21 electrodes and a number of montages. EEGs were rated independently by 2 investigators. A battery of neuropsychological tests was performed around the time of the scan, some of which had been shown to be sensitive to cognitive changes in alcohol dependence. Tests included were NART, Vocabulary, Arithmetic, Digit Symbol Substitution Tests, Block Design, Picture Arrangement (from WAIS-R), Halstead-Reitan Trail A and B, Rey-Osterreith Figure, one subtest of the Weschler Memory Scale and FAS verbal fluency. **Results:** Of the 20 alcoholics, 7 had abnormal EEGs and of the 17 healthy volunteers, 9 had abnormal EEGs. The EEGs were then graded, based on degree of generalised or localised abnormalities. Neuropsychological tests were rated according to standard scales corrected for age. Test results were compared between alcoholics and controls and between normal and abnormal EEGs using multivariate analysis of variance (MANOVA). The two neuropsychological tests which reflected EEG abnormalities in alcoholics ($p < 0.05$) were Trail B and Digit Symbol Substitution Test. **Conclusion:** In this study, we found that EEG abnormalities correlated with frontal lobe dysfunction. This can be present in alcoholics despite normal scores on IQ tests and mini mental state examination (MMSE). Trail B, in addition to other abilities measured by Trail A, indicates an ability to shift between alternatives. This is a function of the executive functioning abilities of the frontal lobe. This study demonstrates that an easily administered test like the trail B can be used at the bedside along with MMSE for routine cognitive assessment in alcoholics. The importance of using EEGs alone to rule out cognitive dysfunction in clinically healthy alcoholics is questionable.

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A survey of the use of plasma methadone levels as an aid to dose determination in two Dublin Drug Treatment Clinics.

Background: The use of plasma methadone estimations in assisting dosage adjustment during methadone maintenance treatment for opioid dependence has received attention during the last number of years. There is now good evidence that such estimations may be of benefit (1) In Dublin the facility for such tests has become more widely available. Plasma methadone levels have come to be more commonly used within the addiction service. Here we report on the pattern of use of these tests in two settings: the first a busy south inner city clinic with a high number of HIV positive patients. The second location is a clinic in a socially deprived suburb of the city. Both clinics have patients who are comorbid for other psychiatric disorders. **Population:** All persons who attended these clinics in the period July 2000 to July 2001 and who had plasma methadone estimation performed on at least one occasion. **Methods:** Review of the record of investigations maintained by each clinic and subsequent review of case notes held by the service on all patients who were recorded as having had a plasma methadone assay during the study period. **Statistics:** Statistical analysis is with SPSS version 10. **Preliminary:** In this time period 56 persons had a plasma methadone estimation on at least one occasion. The indications for testing were most commonly patient's self report of not being "held" on a given methadone dose, the clinician regarding the patient as not being "held", and the possibility of a drug-drug interaction. Interactions were most commonly reported with anti-retroviral medications, and also with anti-convulsant medications. The majority of assays were associated with a subsequent methadone dose adjustment. The assays were also found to be of benefit in documenting treatment adherence. **Significance:** The use of plasma methadone levels as an aid to dose determination is feasible in a busy clinic setting.

The use of such tests may facilitate patients in accepting stabilisation on an adequate higher dose of methadone. They provide information which assists in rational dose adjustment when pharmacokinetic interactions are observed. They are also of value in documenting treatment adherence and potentially in the containment of diversion of prescribed medication. Reference:(1)Wolff K, Strang J. Therapeutic drug monitoring for methadone: scanning the horizon. *Eur Addict Res* 1999 Mar; 5 (1):36-42.

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Oxysterols in skeletal muscle of ethanol-fed rats

Background: Alcoholic myopathy is one of the most prevalent skeletal muscle disorders, characterized by loss of muscle bulk, weakness and difficulties in gait affecting approx two thirds of alcoholics. It was our hypothesis that, as a consequence of increased oxidative stress, oxysterols are increased in skeletal muscles chronically exposed to ethanol. **Methods:** We fed male Wistar rats (0.1 kg initial body weight) a nutritionally complete liquid diet containing ethanol as 35% of total calories: controls were pair-fed identical amounts of the same diet in which ethanol was replaced by isocaloric glucose. After one and a half months, soleus (Type I fibre-predominant) and plantaris (Type II fibre-predominant) skeletal muscles were dissected out. We assayed 7 α - and 7 β -hydroxycholesterol (7 α -OH and 7 β -OH), and 3 β -hydroxycholest-5-en-7-one (also termed 7-ketocholesterol; 7-keto). **Results:** using LC-MS we confirmed the presence of 7 α -OH, 7 β -OH and 7-keto in skeletal muscle of rats. We also showed that in response to chronic alcohol feeding, there were increases in soleus 7 α -OH, 7 β -OH and 7-keto. In the plantaris, mean oxysterols also increased though 7 α -OH and 7-keto did not achieve significance.

Table 1 Oxysterols in skeletal muscles of ethanol-fed rats

P	Control	Ethanol	%Change	
Soleus				
7 α -OH	24.74 \pm 1.19	33.97 \pm 1.07	+37	0.0005
7 β -OH	29.07 \pm 1.36	39.80 \pm 1.35	+37	0.0005
7-keto	80.13 \pm 3.37	108.31 \pm 4.05	+35	0.0007
Plantaris				
7 α -OH	29.33 \pm 3.18	36.32 \pm 5.555	+24	0.3068
7 β -OH	14.98 \pm 2.16	21.41 \pm 1.55	+43	0.0418
7-keto	37.28 \pm 4.45	53.46 \pm 6.74	+43	0.0802

Legend to Table: Oxysterols were measured in control rats and ethanol-fed rats by HPLC-UV. Data are mean \pm SEM. 7-keto, 3 β -hydroxycholest-5-en-7-one; 7 α -OH, 7 α -hydroxycholesterol-5-en-3 β -ol; 7 β -OH, 7 β -hydroxycholesterol-5-en-3 β -ol. **Conclusion:** This is the first report of 7 α -OH, 7 β -OH and 7-keto oxysterols in skeletal muscle of rats and their elevation in chronic experimental alcoholism, together with increases in cholesterol hydroperoxides, represent evidence of increased oxidative stress.

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Supplemental alpha-tocopherol decreases hepatic protein adducts in alcohol dosed rats.

Background: Covalent modification of hepatic proteins by adduct formation is believed to be an important pathogenic response to ethanol-feeding and to contribute to the development and severity of alcoholic liver dysfunction by inactivating affected proteins, forming neoantigens or rendering affected proteins susceptible to altered proteolysis. However, the factors that govern protein adduct formation are complex, being formed from either the first immediate product of ethanol oxidation, acetaldehyde (*i.e.*, unreduced and reduced acetaldehyde-protein adducts), products of lipid peroxidation (*i.e.*, malondialdehyde-protein adducts), hybrid molecules (*i.e.*, malondialdehyde-acetaldehyde-protein adducts) or free radicals themselves (*i.e.*, alpha-hydroxyethyl radical-protein adducts). We hypothesised that hepatic protein adducts formed during ethanol-feeding, are: (I) further increased with the superimposition of alcohol-withdrawal followed by acute ethanol dosage, (II) reduced by supplemental alpha-tocopherol. **Methods:** We analysed liver from rats fed nutritionally-complete liquid diets containing ethanol as 35% of total calories for 4 weeks; control rats were fed the same diet in which ethanol was replaced by isocaloric glucose. After 4 weeks some alcohol-fed rats had their ethanol withdrawn for 24 hours and then dosed with an acute bolus of ethanol (75 mmol/kg body weight) prior to killing 2.5 hours later (*i.e.*, *ethanol-withdrawal and re-dosage*) or injected with saline (0.15 mol/l NaCl) for appropriate controls. Alpha-tocopherol supplementation was carried out on a daily basis at a dose of 30 mg/kg body weight whereas un-supplemented rats were treated with the vehicle alone. Hepatic protein adducts were analysed by ELISA and plasma analytes by routine diagnostics. **Results:** At the end of 4 weeks, alcohol feeding increased hepatic unreduced-acetaldehyde-, reduced-acetaldehyde-, malondialdehyde-, malondialdehyde-acetaldehyde- and alpha-hydroxyethyl radical-protein adducts (P between <0.01 and <0.001) though plasma aspartate aminotransferase activities, a marker of hepatic damage, was unchanged (NS, P>0.05). None of these adduct level were significantly increased by *ethanol-withdrawal and re-dosage*. In contrast *ethanol-withdrawal and re-dosage* increased the activities of plasma aspartate aminotransferase activities. However, for either chronic ethanol feeding or *ethanol-withdrawal and re-dosage*, alpha-tocopherol supplementation reduced the formation of all adducts analysed without any ameliorative effect of plasma aspartate aminotransferase Activities. **Conclusions:** This is the first report of the beneficial effects of alpha-tocopherol supplementation on adduct formation. Alpha-tocopherol not only reduces protein adducts pertaining to lipid peroxidation but also those relating to alcohol-metabolism. This implicates an effect of alpha-tocopherol on alcohol- or acetaldehyde-metabolising enzymes or alterations in the formation and/or degradation of the adducted proteins within the liver.

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How information received from referrers influences prioritisation for treatment by a specialist drug service

The Bristol Specialist Drug Service serves a population of 800,000 and covers a mainly urban area. Therefore demand on the Service exceeds the capacity to take new patients on for treatment and referrals are categorised, according to need, from the information received from the Referrer, in priority categories. Once the initial assessment has been carried out each patient is then re-categorised on the basis of that assessment. It was our hypothesis that there was a disparity between the categorisation at the point of referral and the eventual categorisation for treatment once assessment had been completed. The priority categories currently used within this Service are as follows: Category 1: pregnant drug misusers or those suffering from HIV infection
Category 2: drug misusers with significant concomitant mental or physical illness and those with sole care of under school age children
Category 3: injecting drug misusers without significant comorbidity as above
Category 4: other drug misusers. Therefore a review of all referrals was conducted over a 3 month period to examine the following: What treatment intervention was being requested by the Referrer, main drug of misuse, level of drug consumption, mode of drug consumption. Whether significant comorbidity with physical or psychiatric illness was recorded in the referral, whether the referred patient was the carer of a young child or pregnant and whether their HIV status was identified. Additionally whether the Referrer considered the referral urgent or not was separately reviewed. The same referrals were then examined post assessment to test whether the categorisation allocated at the point of referral had accurately identified the urgency, the level of need and any existing risk factors e.g. comorbidity, high risk drug misuse or care of a young child. The results of this audit are presented and discussed.

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Development of a tool to measure therapist adherence to addiction treatment protocols

Research to examine the effectiveness of psychosocial interventions in the addiction field increasingly incorporates a number of techniques to minimise therapist variability in the delivery of treatment. These tools include therapist training, supervision and the provision of standardised treatment manuals or protocols. It is likely that adopting these tools will improve the delivery of therapy: variability in therapist skills and delivery of the treatment as prescribed in the treatment manual is hopefully reduced. Therapist training, supervision and manualisation of treatment strategies may reduce therapist variability and increase the extent to which therapists deliver the treatment that it is intended they deliver, but cannot guarantee it. To examine the extent to which therapists adhere to treatment protocols it is necessary to observe the delivery of that treatment and measure the extent to which it corresponds to a treatment manual or a specified therapeutic approach. This paper describes the development of a new scale to measure objectively the delivery of structured, manualised treatments in the addiction field.

The scale covers two aspects of the delivery of treatment; the extent to which therapists implement specific aspects of a therapeutic approach (the frequency of treatment delivery) and how well they do so (the quality of treatment delivery). The scale includes detailed description of the specific strategies and styles of treatments and examples to aid the researcher to identify them in practice. The scale has been developed to test therapist adherence and quality for two treatments delivered as part of the United Kingdom Alcohol Treatment Trial (UKATT), namely Motivational Enhancement Therapy (MET) and Social Behaviour and Network Therapy (SBNT).

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A scoping exercise to predict the role of a pharmacist within a specialist drugs service

Aim: To systematically examine the potential for the post of a pharmacist to be included within Bristol Specialist Drugs Service (BSDS). **Design:** A scoping exercise conducted by a pharmacist experienced in working in the addictions field on a day-a-week basis over a 6 month period. **Setting:** All practice bases and the administration base of BSDS, local health service administration offices and a collective meeting of local community pharmacists. **Participants:** Staff and service users of BSDS, health policy and practice administrators, community pharmacists. **Measurements:** Qualitative pharmaceutical assessment of observed practice within BSDS. Qualitative gathering of opinions on the potential role of a specialist pharmacist within BSDS and across the Avon Health Authority area. **Findings:** Potential benefits to employing a pharmacist within BSDS were identified. The potential role of the pharmacist was split into two functions. The first was bringing pharmaceutical expertise to the multidisciplinary BSDS team. This includes the provision of drug information and prescribing advice to staff, providing drug information to clients, providing education and training to staff and outside organisations, the development of Standard Operating Procedures for the dispensing process and further aspects of risk management, liaising with community pharmacists, managing clinical trials and undertaking research. The second function identified was co-ordination of and support for services provided by community pharmacist e.g. supervised consumption and needle exchange. This includes development towards evenly distributed services especially in rural areas, development of a mentoring system for new service providers, development of protocols to standardise service delivery including that provided by locums, monitoring service delivery, trouble-shooting, education and training for pharmacy staff, including assistants, support for clinical audit and managing payment schemes. Potential methods of funding such a post were also identified. **Conclusions:** This systematic approach to examine the potential role for a pharmacist within BSDS has resulted in the development of a framework on which this new role can be based.

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Audit of methadone protocol scheme in community pharmacies in the SWAHB, Ireland

Aim: This study was designed to measure current methadone dispensing activity in community pharmacies in the South Western Area Health Board (SWAHB) region in Ireland and to provide feedback from community pharmacists on the methadone protocol scheme. **Design, setting and participants:** A postal survey was carried out of 64 pharmacies participating in the Methadone Protocol scheme in the SWAHB region. Pharmacists were asked to complete a questionnaire providing information on methadone dispensing procedures. **Findings:** The data presented in the report is based on responses received from 33 pharmacies representing a total of 831 clients. The majority of pharmacies (20) have less than 20 patients attending as part of the Methadone Protocol Scheme. 16 (48.5%) pharmacies participating in the scheme have a designated area for methadone dispensing. Most pharmacies (93.9%) dispense methadone on a daily basis and do not impose a specific time for pick-up. In general, most patients are receiving methadone on a weekly basis. 18 (54.5%) of the respondent pharmacies have been obliged to request the transfer of a methadone client. The principal reason has been due to disruptive behaviour by the client (13 cases). 54.5% of pharmacies reported that their involvement with the methadone protocol scheme did not have any negative impact on other customers or businesses in the area. **Conclusions:** The methadone protocol scheme appears to be operating successfully in community pharmacies in the SWAHB region. A large number of pharmacists are keen to be more involved with their clients. They would like to obtain a referral letter from the GP (83.9%) and attend clinical meetings at local satellite clinics (48.4%).

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Brain opioid receptor changes in early abstinence from methadone

Objectives: The aim of this study was to investigate the changes in brain opioid receptors resulting from chronic methadone treatment. Specifically, we aimed to demonstrate the relationship between previous oral methadone dose, and brain receptors. We hypothesised that chronic exposure to methadone would increase free opioid receptors compared to controls and that this would be measurable in early abstinence using PET brain scans. **Methods:** 6 controls (4m 2f, 28-44 age) and 6 in-patients in early abstinence from methadone (4m 2f, 25-45 age) were recruited. All underwent a PET scan on a brain dedicated scanner. All subjects were opioid free as confirmed by urine drug screening. The in-patients were all scanned on the 10th day of a 2 week admission for opiate detoxification. A Volume of Distribution (VD) image of the opioid receptor tracer was produced and a mean global VD was calculated. **Results:** These preliminary results show the mean global VD for the abstinent group (22.0 ± 1.3) was higher than in the control group (21.1 ± 2.99). These early results are trends only, and not yet significant with the numbers of subjects recruited so far. Unexpectedly there does not appear to be any relationship between previous methadone levels prior to detoxification and global VD. **Conclusions:** This preliminary data suggests that opioid receptor density is increased in early opiate abstinence, but that the relationship between previous oral methadone dose and its effects in the brain is more complex than previously expected. Further analysis of individual brain regions of interest should elucidate this further.

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Personality characteristics of opiate dependant individuals and controls recruited for a PET study of opioid receptor binding

Aims: The use of 'controls' is important in research, and obviously their demographic details and psychopathology can influence comparative studies with a patient population. We were interested to investigate whether the control volunteers in an ongoing PET study were 'normal' with regard to standards for personality traits. The aim of the PET study was to examine the level of brain opiate receptors following completing of a lofexidine assisted

methadone detoxification. We also investigated the relationship between personality variables and the level of opiate receptors. **Methods:** We recruited 8 patients undergoing opiate detoxification and 6 controls with no history of substance abuse. All subjects were screened to exclude physical and other concurrent psychiatric illness. Questionnaires were administered providing information about personality and symptoms. Personality traits were assessed using the EPQ-R and EPQ-IVE. All subjects underwent a brain PET scan to measure opiate receptor availability. **Results:** There were marked differences between the opiate dependant and control groups on the personality inventories. Using Eysenck's impulsivity (IVE) questionnaire, the opiate dependant patients showed high scores on the impulsivity dimension (14.6) compared to control subjects (4.6, $p < 0.001$), ventursomeness and criminality dimension scores were also higher in the patient group. In addition, the patients differed significantly from the population normal ranges on the impulsivity dimension (mean population impulsivity score 7.48 $p < 0.005$ vs patients, $p < 0.06$ vs controls). The opiate dependant patients scored significantly higher than controls on Eysenck's personality dimension of 'psychoticism' (P) ($p < 0.05$), and higher on the extraversion-introversion (E) and 'neuroticism/emotionality' (N) dimensions. Furthermore the control group was different from population norms showing low P scores and higher scores on empathy traits as well as the differences on the impulsivity dimension. None of the personality variables in either patients or controls correlated with opiate receptor binding measures on PET scanning. **Conclusions:** Unsurprisingly differences in personality traits were found between opiate dependant individuals and controls, but no relationship to opiate receptor levels was seen. Notably, the control population also differed from population norms. Furthermore the control volunteers for this study differed in their personality traits than those recruited for previous anxiety studies in our unit (Bailey & Nutt, 2001 *J.Psychopharm* 15:A63). This adds to the debate about who can act as a 'control' and what is "normal".

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Prescribing and use of acamprosate within a specialist alcohol service

Introduction. The purpose of the study was to examine prescribing patterns of acamprosate within a specialist alcohol service and to examine outcomes. It was intended that the study would help to identify which factors determined whether acamprosate was prescribed or not and to what extent this selected group of patients benefited from treatment with this drug. **Methods.** The study was conducted on all patients prescribed acamprosate in the course of the year 2000. The data was collected from the available patient's notes (4 unfortunately were not available). All patients met ICD 10 criteria for alcohol dependence syndrome and had been allocated a keyworker and offered access to group work up to 5 days per week. **Results.** The total number of referrals for 2000 was 665, from which approximately one third join the group programme. In the majority of cases, it was hard to discern why acamprosate in particular was prescribed and why at that time. The male preponderance in referrals was not reflected in prescriptions of acamprosate, with 62% (13) of the total 21 prescriptions for females. Thus only 3.15% of patients referred to the unit were prescribed acamprosate. From the notes that were available (17/21), in 47% (8/17) of patients, acamprosate was started immediately after detoxification, in 41% (7/17) were prescribed within about one month. Of the remaining two (11.7%) patients, one was started on acamprosate while undergoing detoxification and the other was already dry for sometime when referred and started on acamprosate. Acamprosate was prescribed for a year for only one patient and another one remains on the drug after 1 year. In the remaining patients, the drug was discontinued either because of lack of perceived effectiveness or the patient felt that it was no longer necessary or had returned to drinking which in turn led to their discharge from the unit. In those that were discharged, the prescription was not transferred to their GPs. 11.7% (2) of the patients were lost to follow up during the study. Of the remaining 15, 70.5% (12) relapsed within the first 3 months, 11.7% (2) reported abstinence for between 6 months and a year. One (5.8%) patient was abstinent for 16 months in total. **Conclusions.** In this specialist alcohol service, it appears that acamprosate is prescribed for relatively few patients, despite the complexity and severity of patients treated within the service. There are several factors which may contribute to this finding, such as the daily group programme offered resulting in less dependency on pharmacotherapy. Of note however is the proportionally higher number of women prescribed acamprosate. It was not clear why. Most prescriptions were started soon after detoxification as recommended, though few received acamprosate for 1 year. The high level of relapse likely reflects the severity of patients treated. From this survey we have begun an audit of prescribing and to develop protocols regarding the prescription and monitoring of acamprosate within this service.

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A survey of alcohol detoxifications undertaken in a Specialist Alcohol Service and general psychiatric wards in the Bristol area

Introduction. The aim of this survey was to assess how many alcohol detoxifications were undertaken in psychiatric wards (general adult, old age, forensic and drug beds) covering the same area as the Bristol Area Specialist Alcohol Service in the absence of dedicated inpatients beds for the Alcohol service. We wanted to know how many of these patients were referred to either ourselves or another specialist drug/alcohol service and outcome at one month. Data from the first 40 patients is described. **Methods.** The survey was conducted over a three-month period, starting May 2001. It involved only looking at the notes for information. Notes were examined if the patient had undergone an alcohol detoxification. **Results.** Information was not always easily obtained from the notes. Of the 40 patients, 15 were women. 15 alcohol detoxifications were conducted in psychiatric wards, of which 8 were female patients. Alcohol detoxification often was not the primary reason for admission. None of these patients had been referred by ourselves. The majority of patients (26) were between the age of 30 and 50, though 4 were over 60 years old. Where recorded, a diagnosis of dependency had been reached in the majority at least 10 years previously. About half (19) were consuming 10-20 units daily with the most of the remainder consuming between 20-30 units daily (11). Although 6 patients had not undergone detoxification previously, the majority had 1 previous detox (12) and 6 had been detoxified on more than 4 occasions. The most common abused illicit drug was cannabis. The majority of patients had concurrent physical (gastric), social (relationship) or forensic (drink driving) problems attributable to their alcohol abuse. All patients received chlordiazepoxide, most in a reducing regimen, but 25% did not receive any vitamins. About half the patients had received previous treatment at time of detox from another specialist drug/alcohol service, including non-statutory agencies. Where data was available, treatment from a specialist drug/alcohol service was suggested to most of the patients on psychiatric wards. **Conclusions.** The relative numbers of male : female patients undergoing alcohol detoxification reflected referral patterns, however a greater proportion of women underwent an inpatient detoxification. Generally, alcohol dependence had been present for many years and detoxification had been attempted previously. The regimen used was appropriate apart from some not receiving vitamins. This is in contrast to some previous published surveys. Half the patients had had no previous specialist treatment and notably not every patient on the psychiatric ward was referred for more specialist help. Understanding underlying reasons for this are important to inform development of our service to more effectively engage patients in specialist treatment.

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The extent of gambling among offenders on probation

Introduction: Problem gambling has been reported to be highly prevalent amongst convicted criminals within the United States. No published study has investigated the extent of gambling problems amongst convicted criminals in Britain. **Aims:** To investigate the extent of regular gambling amongst offenders in the community. To estimate the extent of gambling problems amongst that population. **Design:** A two-stage survey design was undertaken. The sample were all newly convicted offenders placed on probation within South Yorkshire over a 4 month period (n=803). Probationers were initially questioned regarding gambling over the previous 12 months. Individuals who reported gambling regularly were then assessed regarding problem gambling, mental health problems and substance use. The measures of problem gambling were the same as those utilised within a recent national survey (Spratson et al 2000). **Findings:** Those who responded were representative of the probation population on demographic and offence characteristics. On the measures of problem gambling 4.2 % of the sample met the criteria. This was six times greater than that estimated for the general population within the national survey. There was a large degree of co-morbidity with mental health and substance misuse problems amongst the problem gamblers. **Conclusions:** The

findings of this study should be considered preliminary, due to methodological weaknesses. However, it appears that criminals on probation represent an at-risk group for developing problems with gambling. There is a need for clinicians within the health and probation services to be able to identify and assist individuals with gambling problems.

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The impact of drug misuse on health in the South West

Aims: This South West Public Health Observatory funded research project aims to: 1) Produce information on the scale and trends of the impact drug misuse has had on health in the South West Region, over the previous 5 years, in age, gender and other demographic factors in the population of problem drug users in the South West Region. 2) To report on drug-related health issues, including deaths and infectious diseases. **Background:** The White Paper "Tackling Drugs to Build a Better Britain" acknowledges the serious public health problem of drug misuse and sets out a strategy to tackle drugs (The Stationary Office, "Tackling Drugs to Build a Better Britain" White Paper, 1988). The European Monitoring Centre for Drugs and Drug Addiction (Annual Report on the Drugs Problem in the European Union, EMCDDA, 2000) estimates as many as 266,000 problem drug users in the UK, with over 95% between the ages of 15 and 44 years. In England in the six months to September 2000, there were 33,100 users reporting to drug misuse agencies in England, a 4% increase on the previous six months (Statistics from the Regional Drug Misuse Databases, Government Statistical Service, June 2001). Significant health risks are linked with drug use, with increasing numbers of drugs-related deaths and a rising spread of infectious diseases. Such health risks affect the whole community, across the age range. This South West Public Health Observatory funded research is currently ongoing and a draft report will be prepared for October 2001. **Design:** The project has gathered data on drug misuse over a 5 year period from 1996, from a spectrum of sources and drug agencies, including the National Drug Treatment Monitoring System South West Region, Office of National Statistics, local Drug Action Team reports, Home Office, Hospital Episodes Statistics, Public Health Laboratory, St George's Medical School study on deaths, and local surveys and other local information including arrest referral data. The effects of drug misuse on health in the South West Region will be analysed using a 'Life-Span' approach, ranging from effects in utero to older age. **Setting:** South West Region, England UK. **Findings and Conclusions:** Data from the large variety of data sources are currently being analysed. This paper will present preliminary findings from the review of the impact of drug misuse on health over the 5 year period in terms of age, gender, ethnic origin, pregnancy, locality within the South West. The paper will examine individual drug behaviour profiles where appropriate for individuals registered on the National Drug Treatment Monitoring System South West during the 5 year period, including age of first illicit drug use, drug of choice and crime.

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Hepatitis C (HCV) infection among drug users: a qualitative survey of experience

Approximately three-quarters of Irish drug users are infected with hepatitis C (HCV). It is likely that the infection will be responsible for significant morbidity and mortality, at significant cost, both actual and opportunity, to society. This study aims to describe existing knowledge among opiate drug users concerning HCV infection, their experience of the disease, related investigations and treatment. **Setting:** A general practice in Dublin's inner city. **Participants:** Sixteen consecutive patients who were known by the GP to have used heroin. **Measurements:** The participants took part in semi-structured interviews, relating to illicit drug use, knowledge of HCV, experience of HCV, related investigations and treatment. The interviews contained closed and open-ended questions. Answers to the latter were transcribed and qualitatively analysed using grounded theory methods. **Findings:** All participants were on methadone maintenance treatment at the time of the interview, nine were male and twelve were known to be HCV positive. The median age of participants was 29 years (range 25-45), median age of first drug use was 15.5 years, of first smoking heroin was 17.5 years and of first injecting heroin was 18 years. Level of knowledge about

HCV and its associated problems was high, with principal sources of information being fellow drug users, friends and drug treatment centres. Nine identified needle sharing as a potential source of infection, although two admitted to continuing such activity. When asked to recall the episode at which they were diagnosed as being HCV positive, most reported considerable anxiety at the time, although for many, concerns about testing HIV-positive were greater. Seven reported having further investigations for HCV, with five having had a liver biopsy; experience of investigations was generally favourable. Knowledge about treatment options was poor and none had ever received treatment. **Conclusion:** This study describes the experience of drug users attending one general practice with regard to HCV. Although level of knowledge concerning the virus itself is high, knowledge about treatment options is poor.

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Needs assessment for young people's services: drug and alcohol misuse

Aims: To provide an understanding of the local needs of young people for drug and alcohol services in a shire county in the Southeast of England; To map existing drug and alcohol misuse services; To highlight significant gaps in service provision; To make recommendations for future service development. **Design:** Stage I of the study consisted of background profiling of the target population through analysis of published documents. This included analysis of demographic data and routine activity data held by local agencies. Stage II of the study consisted of survey of the views of young people and service providers regarding drug and alcohol misuse services. Tape-recorded, semi-structured interviews lasting approximately 60 minutes were used to collect data from service providers. A combination of tape-recorded, semi-structured interviews and focus groups was used to collect data from young people. Content analysis of all transcripts from interviews was undertaken and general themes identified. The combination of quantitative and qualitative approaches enabled a comprehensive picture of the local needs of young people for drug and alcohol services to be determined. **Setting:** The research was conducted in a shire county in the Southeast of England with a population of approximately 181, 310 young people aged 0-19 years of age. The county is rural in nature and relatively affluent. **Participants:** Seventeen key providers of drug and alcohol services working in health, education, social services and voluntary agencies were recruited to the study. Thirty-seven young people aged 14-18, in receipt of Tier 1-4 services, were also recruited to the study. **Findings:** The reliability of published information is questionable. It was difficult to establish the existing coverage of drug and alcohol education. The quality of such education was variable. There was evidence that the needs of young people having difficulty with formal education and young people from ethnic minority groups were not being met. There were specific issues concerning young homeless people and young people involved with prostitution. There was lack of awareness of drug and alcohol services by young people. There were few Tier 3 and Tier 4 services for young people.

Law F., Wilson S., Myles J. & Nutt D.

Audit of benzodiazepines (BDZ) and other sedative-anxiolytic-hypnotics on an acute general psychiatric ward of a district general hospital (see attached sheet)

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The Belfast youth development study: a new longitudinal study of drug use developmental pathways

The Belfast Youth Development study (BYDS) is a new major longitudinal research initiative funded by the Research and Development Office Department of Health, Social Services and Public Safety (Northern Ireland). Following a cohort of young people over time (n=3,900), the study explores the natural course, onset and desistance of adolescent substance use. The study has two main aims. The first is to map out the “substance use careers” of young people, and in particular the developmental pathways that lead to increasingly problematic form of substance use and abuse. The second aim is to unpick the various environmentally mediated processes that shape these careers and pathways. This will involve the testing of causal processes that increase or decrease young peoples’ vulnerability to substance use and substance use problems. Such analysis should provide insights into why some young people become involved in substance use while others do not. Also, for those that do become involved, why for some young people substance use marks a transient rebellious phase which they soon grow out of, but for others their substance use develops into a more serious social and health problem. BYDS is also interested in young people who never used substances and those that never progress beyond experimental or recreational substance use. Here, what is of interest is the process of resilience. This poster will provide an overview of the BYDS aims and objectives, design and data collection. Preliminary results from the first sweep will also be included.

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Vietnamese-Australian heroin users, ambulatory withdrawal and 24 month follow-up

Aims: In a group of Vietnamese-Australian heroin users, to explore (a) the effectiveness and acceptability of buprenorphine, a μ opiate receptor partial agonist, as a treatment for heroin withdrawal (b) long term (12 and 24 month) outcomes including retention in post withdrawal [opiate agonist or antagonist] pharmacological treatment.
Design: The research design is an open label descriptive study piloting the use of pharmacotherapies for withdrawal and post-withdrawal treatment. One-week outpatient withdrawal program comprising pharmacotherapy (buprenorphine) was followed by twelve months self-selected agonist (buprenorphine or methadone) or antagonist (naltrexone) treatment. **Setting:** Specialist alcohol and drug outpatient clinic in Melbourne, Australia.
Participants: Twenty dependent heroin users seeking treatment recruited via street outreach. **Measurements:** Outcome data provided for withdrawal phase twelve month follow up, twenty-four month follow up including heroin use, retention in treatment, re-admission to treatment and incarceration. Quantitative and qualitative data collection methods were employed. **Findings:** Buprenorphine was an effective and acceptable medication for outpatient heroin withdrawal for participants; post withdrawal treatment retention was low (25% at twelve months); opiate agonist treatment was preferred during the post withdrawal period; high access to heroin was a significant factor complicating treatment. **Conclusions:** While buprenorphine withdrawal and maintenance treatment shows promise as an effective medication for Vietnamese-Australian heroin users, access to heroin remains a significant barrier to retention in maintenance treatment.

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Presence of a stressor prior to drinking magnifies the psychostimulant effects of alcohol

Aims: This study examined the magnification of the psychostimulant effects of alcohol by administering an aversive, stressful stimulus prior to alcohol consumption. **Design:** It was of interest to determine whether cross-sensitization of the behavioral activation response occurs with the combined administration of stress and a moderate dose of alcohol. **Participants:** To test this hypothesis, 16 male participants between the ages of 21 and 25, were randomly assigned to either receive a shock or no shock prior to alcohol consumption, and their baseline heart rates were assessed pre- and post-alcohol consumption. **Intervention:** Shocks were administered in a set of three successive trials, following the first heart rate measure and preceding alcohol administration. **Measurements:** The two groups were compared on alcohol-induced changes in heart rate and subjective measures that have been shown to be reliable and valid methods of measuring sensitivity to the psychostimulant effects of alcohol and characteristic of individuals with a genetic predisposition to alcoholism. **Findings:** Analysis of variance revealed that participants in the shock condition evidenced significantly greater increases on measures of alcohol-induced psychostimulation than did those who did not receive the shock prior to drinking. **Conclusions:** These findings suggest that stress prior to drinking may sensitize an individual to the psychostimulant effects of alcohol and that reinforcement from stress-induced drinking may not only involve negative reinforcement (i.e., tension reduction), but sensitized positive reinforcement.

Christo G. & Morris C.

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Drug addicts' anxiety and traumatic events

This study sought to document the prevalence of 12 categories of traumatic events among a UK sample of individuals in substance abuse treatments; also to examine the relationship between such events, anxiety, and active drug use. A cross sectional design compared treated ex-addicts and prescribed active addicts, with respective 'norm' comparisons. The average event category prevalence among both addict groups was generally twice that of their respective 'norm' comparisons. When using a different reporting method among the actively addicted group, the average event category prevalence increased by over a third. However, only a third of all events had a high impact as demonstrated by intrusiveness. These events were related to higher anxiety among active addicts. Overall event prevalence was not related to anxiety, neither were events that happened during childhood despite a third of the active addicts reporting childhood sexual molestation. Anxiety levels among the active addicts and the recently abstinent ex-addicts were equally higher than anxiety levels of non-addicts. Reporting methods may seriously influence the outcome of event prevalence studies and only a minority of traumatic events are related to intrusiveness and anxiety. Regardless of the cause of their high anxiety, actively addicted individuals may believe that drugs have an anxiolytic effect. However, this research indicates that active addictive drug use gives no long term anxiety reduction relative to abstinence.

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Validation of a simple outcome evaluation tool

The Christo Inventory for Substance-misuse Services (CISS) was developed as 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 0 to 20 unidimensional scale consists of 10 items reflecting clients' problems with social functioning, general health, sexual / injecting risk behaviour, psychological functioning, occupation, criminal involvement, drug / alcohol use, ongoing support, compliance, and working relationships. Comparison scores indicating low, average or high problem severity were produced by 243 drug users attending a harm minimisation out patient service and 102 alcohol users at an outpatient alcohol service. Means and cut-off scores for abstinence oriented treatments were derived from a six-month follow-up of 90 treated drug users. Sub sets of the harm minimisation sample were used to derive item alpha, test-retest and inter-rater reliability coefficients of .74, .82 and .82 respectively. The inter-rater coefficient increased to .91 when retests were conducted the same day. Among the abstinence oriented treatment sample the CISS produced correlations ranging from .43 to .99 with the Opiate Treatment Index and measures of trait anxiety, unpleasant life events, poor quality of life and low self-esteem. The simplicity, flexibility and brevity of the CISS make it a useful tool allowing comparison of clients within and between many different service settings.

Mackin, C.,

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The present form of the alcohol education / treatment group was established in October 1999. Historically it has functioned in one form or another for a great many years, but it was never evaluated for effectiveness or outcomes. The group lasts for 3 days and is based upon the Social Learning Theory (Dobson et al, 1981) and Model of Change (Prochaska and Di Clemente, 1986). Currently the philosophy is: To provide information needed for the group participants to enable them to make a firm decision as to how to proceed towards their chosen drinking goal. To provide a foundation of skills to build upon to achieve and maintain that chosen goal. The overall aim is: To increase individuals' motivation to change their drinking behaviour. (This involves a personal decision-making process on their part). Topics covered in the group include explanations of what alcohol is, safe drinking levels, physical and psychological dependence, social, heavy and problematic drinking, physical effects of alcohol, how an individuals drinking affects others and how they cope. Decisional balance sheets are introduced, as is the concept of barriers to change. There are sessions on problem solving, support networks, abstinence, controlled drinking and relapse prevention. Initial measurements include the Leeds Dependency Questionnaire (LDQ) (Raistrick et al., 1983), Stage of Change, Readiness and Treatment Eagerness Scale (SOCRATES) (Miller, W.R., 1993) Inventory of Drinking Situations (IDS) (Annis et al., 1987) Alcohol Knowledge Questionnaire (AKQ) (Green P., 1998) The LDQ, SOCRATES, and AKQ are repeated at the end of the group to demonstrate whether learning and change has occurred. The IDS is utilised for further 1 : 1 work. An anonymous evaluation sheet is given to group members, asking them to rate the content, presentation and relevance of each group session on a scale of 0 – 10 (0 being extremely poor, 10 being excellent). **Results:** There is an increase in knowledge of the effects of alcohol (AKQ scores rise from an average of 70% to 85%). A decrease in psychological dependence occurs (LDQ scores decrease from an average of 10 to 6 out of a maximum of 30). This has been shown to be statistically significant and further analysis of the nature of this change is currently being undertaken. An overall rating score of 8.42 from a possible 10 has been obtained from group members' evaluation sheets. It is to be noted that the group members attend on a purely voluntary basis and are entitled to drop out if they do not like the format or find it too difficult to deal / cope with. Out of 154 individuals who have been referred to and accepted for the group, 87% have attended all sessions of the group. All services and all ranks are able to attend the group, which runs once a month. References: Annis, H. M., Graham, J.M. & Davis, C. S. (1987). *The Inventory of Drinking Situations. Users Guide.* (Toronto, Addiction Research Foundation). Dobson, C.B., Hardy, M., Heyes, S., Humphreys, A., & Humphreys, P. (1981).

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Validation of an instrument to measure nicotine dependence: the LDQsmoke

Background: Comparisons between the addiction forming potential of different psychoactive substances is a matter of interest for both policy makers and treatment providers. One of the population level markers of the addictiveness of a drug is the proportion of people who develop dependent use as a proportion of all users of that substance. At the individual level, the relative dependence forming potential of a substance can be measured by the administration of an instrument which has the ability to measure dependence across substances. **Aim of the study:** The Leeds Dependence Questionnaire (LDQ) is a ten item self-completion instrument, based upon the psychological understanding of dependence and operating independently of specific drug effects, withdrawal symptoms and the social conditions of use. The aim of the study was the adaptation and validation of the LDQ as a simple and easy to use method of measuring nicotine dependence. **Method:** The LDQ items were adapted to smoking tobacco with the minimum required changes to specific words. The instrument was piloted, approved and administered to 200 current smokers. Analyses of concurrent, discriminant and content validity, internal consistency and factor structure of the scale were conducted. **Results:** The LDQsmoke was shown to be a valid scale for the measurement of nicotine dependence. **Conclusion:** The LDQsmoke is suitable for routine clinical use and for comparisons of degrees of dependence across substances.

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The development of a questionnaire of craving and urges for Amphetamine

Background: Craving is considered characteristic of virtually all drugs of abuse and has been suggested as a prominent feature of drug perpetuation and precipitation of relapse following a period of abstinence. Despite its popularity and widespread use, there is a lack of consensus as to how craving should best be defined or measured. The main purpose of the present study was to examine the constructs underlying urges and craving for amphetamine. **Participants:** 176 subjects completed the questionnaire with approximately one third of the sample being collected from the local drug agency's "drop-in centre". The remainder were collected from small towns in the Welsh valleys. **Method:** All subjects completed the Desires for speed questionnaire (DSQ), the Leeds Dependence Questionnaire (LDQ) and a demographic and drug experience questionnaire. **Results:** Principal components analysis of the DSQ revealed four factors which accounted for 62% of the variance. All four factors showed high inter-factor correlations and high positive correlations with dependence scores on the Leeds Dependence Questionnaire (LDQ). Separate analyses were conducted on those subjects using Amphetamine as their main drug. Dependence for this group (N=41) correlated highly with all four factors and showed a positive correlation with usual daily dose of amphetamine. Usual daily dose was also correlated with the expectation of reinforcement and strong intentions and desires for amphetamine. **Conclusions:** This study indicates that urges and craving for amphetamine are best represented by a four-dimensional model. Since identical factor structures were identified for alcohol in previous studies using a variation of the questionnaire, the results suggest two important implications; firstly, the questionnaire has practical relevance in that it can be used for drugs other than amphetamine and, secondly, the dimensions of craving may be general (i.e. not amphetamine specific).

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The introduction of buprenorphine treatment into Australia: treatment systems, training programs and national clinical guidelines

This paper will provide an overview of recent developments regarding the introduction of buprenorphine treatment for opioid dependence in Australia. Methadone treatment in Australia was well established by the mid-1990's, with services being delivered in a range of specialist and primary care treatment settings. Research with buprenorphine commenced in Australia in 1996 and since then there have been several large scale randomised controlled trials examining the role of buprenorphine for both maintenance and withdrawal. This research has also informed the development of clinical guidelines regarding the use of buprenorphine that are suited to treatment delivered by general practitioners and community pharmacies; and training programs for service providers. The general aim has been to integrate buprenorphine into the treatment systems already in place for the delivery of methadone services in Australia. This paper will review key developments in this process.

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The outcomes of a home detoxification psychosocial intervention treatment trial.

Home detoxification is a recognised method of treating problem drinkers within their home environment and, therefore, eliminating many of the problems associated with a hospital admission. The aims of this research are: firstly to determine whether a relatively brief psychological intervention can add to the effectiveness of such a service; and secondly, to explore the processes of change that facilitate the success of an alcohol treatment intervention.

Ninety-one participants being randomly assigned to either the psychological intervention or treatment as usual (control). The study was implemented in Cardiff, North Wales and Birmingham.

Nurses were trained to administer the brief psychological intervention that involved motivational interviewing, coping skills and social support. A manual was developed in order to standardise the training and implementation.

Baseline and outcome assessments included measures of alcohol consumption, days abstinent, alcohol-related problems, severity of dependence, desire to drink, drinking situations, social support and satisfaction, health care utilisation, self-esteem, perception of health as well as demographic data.

Outcomes measured at the 3-month and 12-month follow-up indicate that the psychological intervention resulted in significant positive changes in alcohol consumption, abstinent days, social satisfaction, self-esteem and alcohol-related problems. Further, a cost analysis confirmed that the psychological intervention resulted in wide ranging health service benefits and was a ninth of the cost of inpatient treatment.

Participants were also categorised in terms of gender role orientation and their pre-treatment levels of existing social support and their expectations of this support. The overall aim of this arm of the research was to explore the relationships between these interpersonal and intra-personal factors, and the impact that these have on individual change in the post-treatment period.

The research findings also confirm that the processes of change in alcohol treatment are dependent on the interaction of a number of complex factors. These include the availability and quality of social networks, and the individual characteristics that enhance the development and utilisation of such networks, in particular, gender role orientation.

It was concluded that home detoxification is safe and effective for all drinkers, including those who are severely dependent. A further conclusion was that psychological masculinity and femininity may be more salient to contemporary society than gender differences. Recommendations included that this psychological intervention be

integrated into normal practice.

