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Engaging Primary Health Care Professionals to deliver effective help to families affected by addiction problems: experiences from an ongoing randomised controlled trial

Objective: The material presented is from an ongoing study that compares the effectiveness of two levels of an intervention, delivered by Primary Health Care Professionals (PHCPs), to family members of problem drinkers and drug-users. This paper reports preliminary findings on a specific aspect of the study, namely the experiences of PHCPs in identifying and trying to deliver the intervention to family members. **Design:** Following an extensive feasibility study, General Practitioners (n=73), Practice Nurses (n=43) and Health Visitors (n=82) from two regions were recruited as part of a randomised controlled trial and trained to deliver either a 'minimal' (based on self-help) or 'intensive' (involving professional input) level of a five-step intervention to patients affected by the drinking or drug-use of a relative within the family. **Setting:** General practices and health centres in the West Midlands, Avon, Wiltshire and Somerset areas. **Preliminary Findings:** The randomised controlled trial is ongoing and, based on an analysis of qualitative interviews and process data, our preliminary findings suggest that it is possible for PHCPs to deliver effective help to families affected by alcohol and drug problems. The response of professionals is very positive and indicates that briefer forms of structured and focused help are easier to deliver. However, organisational constraints and difficulties in identifying patients were barriers to PHCPs delivering an intervention to patients needing support in relation to an alcohol or drug problem in the family. Findings also demonstrated that perceived confidence and ability were good predictors of whether a PHCP would go on to identify and work with a patient. **Conclusions:** Both levels of help can be delivered in primary care to help families affected by alcohol and drug problems. The experiences of PHCPs suggest that certain conditions need to be in place if interventions are to be implemented and widely available in a primary care setting. Prime examples of such conditions are strategies that involve the development of wider dissemination, remuneration and training of professionals. In common with other areas of addiction work in primary care, organisational constraints and difficulties in identifying patients manifested as barriers to providing an intervention to families.

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The efficacy of a brief motivational interview in reducing risk among young people: data from a multi-site cluster randomised trial

Aims: This study tests whether interventions efficacious in adult populations could be successfully adapted for young people. **Design:** This cluster randomised trial allocated young people in the natural groups in which they were recruited, randomising them either to receive a brief motivational interview or to act as education-as-usual controls. **Setting & Participants:** Ten further education colleges across inner London provided 200 illegal drug users (age range 16-20) who were recruited by trained peers. **Intervention:** The intervention was adapted from the literature on motivational interviewing in the form of a one-hour single-session conversation. **Measurements:** Changes in tobacco, alcohol, cannabis and other drug use, and related psychological and interactional risk factors between the time of recruitment and the follow-up interview (at 3 months). **Findings:** Multiple significant benefits were observed which are attributable to intervention. There were reductions in the use of all the three drugs used by the majority of the sample as well as reductions in various risk indicators. For both alcohol and cannabis the effect was greater among heavier users of those drugs and among heavier cigarette smokers. In the case of cannabis use, this effect was also greater among those who are more vulnerable according to a number of indicators. **Conclusions:** This study provides the first evidence of benefit to be derived among young people in receipt of a brief motivational interview. The targeting of multiple drug use in young people has been supported.

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Managing opiate misusers in primary care: results from the 2001 national survey of G.P.s in England and Wales

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Interest of Physicians in Preventive Work in Relation with Their Attitudes to Alcohol and Alcoholism, and Own Drinking Patterns. A Comparison between Aarhus/Denmark and Mainz/Germany

Aims. To investigate and compare the attitudes of Danish and German physicians to alcohol, alcoholism and prevention, and to examine the relationship between their personal interest in preventive work, attitude and drinking patterns. **Design, setting, participants.** In January/February 2000, identical anonymous questionnaires with closed-ended questions on attitudes towards alcohol, alcoholism, prevention, and drinking patterns were mailed to physicians working in primary and secondary health care in Aarhus/Denmark and Mainz/Germany, e.g. general practitioners and hospital physicians (internists, surgeons and psychiatrists). The identified sample was n=572, and the response rate=66%; obtained sample n=374. **Results.** Physicians in Aarhus more than in Mainz attributed a positive effect to alcohol. As opposed to Aarhus (74%), significantly more physicians in Mainz (92%) called alcoholism a disease, but independent of nationality, approximately 50% of the physicians also agreed that "alcoholism is a self-induced disease". The minority of the physicians in Aarhus (35%) and the majority of them in Mainz (60%) reported interest in preventive work. As opposed to hospital physicians, general practitioners were more likely to intervene in Aarhus (odds ratio: 5.46; p=0.000) and in Mainz (odds ratio: 2.31; p=0.085). Engagement in prevention was also found to be dependant on drinking patterns: "recent-drinkers" (drinking at least once a week) in contrast to "infrequent drinkers" were less likely interested in preventive work, although significant differences were found in the case of physicians in Mainz (odds ratio: 0.236; p=0.04), and especially among hospital physicians in Mainz (odds ratio: 0.182; p=0.03). **Conclusion.** These findings provide an empirical baseline for future comparative research on the relationship between the physicians' own alcohol consumption and their interest in prevention, which is of critical importance for the design of effective culturally-relevant prevention interventions.

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Clinical Outcomes for patients treated in the Bristol area, under Trident, (Probation Orders with the condition of treatment), and Drug Treatment and Testing Orders over the past three years

The aims including patients subject to conditions of treatment, as determined by the Courts, was to engage those patients most likely to offend and therefore more difficult to engage in consistent community drug treatments. It was, however, not clear whether, firstly, such interventions would be successful in engaging this client group, and secondly whether this was a separate client group or a group of patients previously unknown to Bristol Specialist Drugs Service. Further more it was not clear whether the clinical outcomes desired by the treatment agency could be achieved in this population. Over the past three years, i.e., 1998 – 2001, 50 patients have been treated under Trident, a pilot scheme, which subjected the individual to a Probation Order with a condition of treatment but did not determine treatment length or treatment components. However, it did determine the place of residence, i.e., the patient had to be resident in a probation hostel for the duration of the treatment intervention. These probation hostels are in inner city areas with ready access to Class A drugs and with, initially, very low skills levels in managing drug misusers amongst the hostel staff. However, the Trident pilot was replaced by Drug Treatment and Testing Orders in 2000 and since then has treated 31 Patients. These patients are not required to be resident in a probation hostel and therefore are in a variety of community settings but in the main have been recruited from a population again living in the inner city. The Drug Treatment and Testing Order, as determined by the Court, now has a Specific National Standard, requiring fifteen hours therapeutic intervention per week, but during the first year of its operation in the Bristol area, this standard had not been implemented. Therefore, apart from the difference in place of residence, these Orders did not differ greatly from the previously existing Probation Orders. It was particularly of interest to the authors to retrospectively examine this three year activity and critically ascertain whether these orders were recruiting a different population from those already referred to drug services or not. Secondly, whilst the Probation Orders and Drug Treatment Testing Orders have a place within the Criminal Justice System to achieve a reduction in a acquisitive crime, it is the view of the authors that the responsibility of the treatment agencies is to examine clinical outcomes for this population. Therefore, the authors retrospectively looked at the following areas; retention in treatment, completion of treatment, positive or negative change in physical and mental health, changes in housing, employment and social integration as well as any change in criminal activity. This group

were compared to the profile of those treated by the Bristol Specialist Drugs Service across the same period of time in terms of age, gender, race, experience of previous treatment, age at first drug use, drugs used and mode of consumption to test whether or not they were a separate population. Lastly, where known, it was possible for the authors to estimate whether these patients, if previously not treated for drug problems, requested access on relapse, to Drugs Services when free of a Drug Treatment and Testing Order or a Probation Order. These results, of the initial experience, are presented and discussed.

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Psychiatric morbidity among female drug users in Glasgow, Scotland

Aims: This study aimed to examine the prevalence of psychiatric morbidity among female drug users attending three distinct services in Glasgow. **Setting and Participants:** A total of 271 women were interviewed, 100 from Base 75, a drop-in centre for female sex workers, 100 from the Glasgow Drug Crisis Centre, a 24-hour open access service including a residential unit and needle exchange; and 71 from the Glasgow Drug Problem Service at the start of treatment with methadone, of whom 47 (62%) were re-interviewed eight weeks later. **Measurements:** Neurotic symptoms were measured and ICD-10 diagnoses calculated using the Revised Clinical Interview Schedule (CIS-R). Reported experience of emotional, physical or sexual abuse was recorded. **Findings:** The most common disorders were depressive episode (133/271: 49.1%), obsessive-compulsive disorder (101/271: 37.3%), generalised anxiety disorder (89/271: 32.8%), and phobias (56/271: 20.7%). 72% (196/271) of women reported a level of symptoms likely to need treatment. 70% of women reported they had ever been emotionally abused (188/270), 64% had been physically abused (172/270) and 50% had been sexually abused (134/269). The mean CIS-R scores for women who had ever suffered sexual, physical or emotional abuse were significantly higher than for women who had not (sexual: 29.63 compared to 21.75; physical: 28.56 compared to 20.68; emotional: 28.42 compared to 19.38, $p < 0.001$). Among women re-interviewed after treatment with methadone, the mean total CIS-R score fell from 20.9 to 18.1. However, the proportion of these women reporting moderate to high severity symptoms (i.e. scored 2 or more on each section) increased for worry (63.6% to 65.9%), anxiety (38.6% to 43.2%), phobias (29.5% to 40.9%), panic (18.2% to 29.5%) and obsessions (45.5% to 61.4%). **Conclusions:** Psychiatric morbidity is substantially higher among female drug users than women in the general population. Lifetime trauma is a significant issue for female drug users. Although eight weeks was sufficient time for stabilisation on methadone to see reductions in drug use, it may not have been enough for significant improvement in neurotic symptoms. Drug misuse service planners should recognise the high rates of lifetime abuse and psychiatric problems among this client group and the need for drug workers to be appropriately trained to deal with these problems effectively.

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A grounded theory study of problem gambling

Introduction: Problems with gambling are reported to affect approximately 0.6 to 0.8% of the adult population in Britain (Sproston et al 2000). Treatment availability for problem gambling is limited, and there is limited evidence to date regarding effective treatment. **Aims:** To develop a grounded theory of problem gambling from the experiences of treatment seeking individuals meeting diagnostic criteria for pathological gambling. **Design:** Grounded theory method. A total of 14 treatment seeking men who met diagnostic criteria for pathological gambling were involved in the study. The constant comparative method and theoretical sampling were utilised to develop a grounded theory of problem gambling. The sample were drawn from an NHS gambling treatment service in Sheffield, and two voluntary sector treatment services based in south east England. **Findings:** The main categories developed within the study related to the costs of gambling, control of gambling, and gambling as emotion management. The core category was identified as gambling as emotion management. Gambling was reported to be the main means by which the sample generated pleasurable arousal, or managed negative emotional states. **Conclusions:** The narrow range of emotion management strategies reported by the sample, with gambling being the strategy most commonly utilised provides some indications regarding developing treatment further for problem gamblers. The grounded theory as developed is open to further testing.

Fitzgerald, N.* & Stewart, D.

Aims. To examine current practice in the planning, development and delivery of school-based drug education in the Northeast of Scotland. **Design.** A qualitative study using semi-structured interviews was carried out. Schools were selected using theoretical sampling for maximum variation. Each interview was transcribed in full, annotated, analysed and validated using established procedures in grounded theory and qualitative methodology. **Setting and Participants.** Nine secondary schools were selected and a total of thirteen participants interviewed. **Measurements.** The interviews focused on: 1. Policy, planning and development of drug education; 2. Messages, teaching method and delivery of lessons; 3. Feedback, evaluation and monitoring; and 4. Innovative practices. **Findings.** None of the schools had a written policy on drug education, and programmes, priorities and lessons constantly evolved on an ad-hoc basis. Participants were not sure if/how pupils used drugs, and found it difficult to match provision to pupils' needs. Messages, teaching method and delivery varied enormously and scare-tactics were still widely employed and valued. Evaluation and monitoring were largely considered unnecessary bureaucracy. Despite this, there were signs of innovation including peer-led teaching and pupil consultation. **Conclusions.** Current practice in school-based drug education is well below what is considered best practice. If such education is considered essential and appropriate then it needs to be organised in a way that acknowledges this. The philosophy, theory and aims of drug education programmes must be made explicit and delivery must then be monitored and evaluated accordingly. This would require fundamental changes to current approaches both locally and nationally.

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Testing the dopamine hypothesis in opiate dependence

Introduction: Release of dopamine in the 'reward' pathway of the brain is thought to be critical in mediating pleasurable effects of a drug and to drive further use. Opiates have been shown to release dopamine in this pathway in rodents. We can measure changes in dopamine levels in the living human brain using positron emission tomography (PET) and ¹¹C-Raclopride to image the number of available dopamine (D2) receptors. The aim of this study was to test the hypothesis that opiates cause dopamine release in heroin users and that this release was associated with 'pleasure'. **Subjects:** 8 methadone maintained opiate dependent subjects were recruited. Subjects had no history of dependent use of other drugs (except nicotine) or neurological disease and no concurrent major medical or psychiatric illness. **Methods:** Each subject had 2 brain PET scans of dopamine levels. The first 4 subjects received half their usual methadone dose on the morning of the scans. The remaining 4 subjects received no methadone until after the scan. In a double-blind random order subjects received either a high-dose opiate (10mg hydromorphone SC, equivalent to 35mg diamorphine) or placebo 15 minutes prior to each scan. The subjects were told they could receive hydromorphone on no, one or both occasions. The PET images were analysed to look for changes in brain dopamine levels between the 2 scans. During the scans subjects completed visual analogue scales (VAS) to measure the subjective drug effects and had measurements of saccadic eye movements (SEM) recorded to assess objective effects. **Results:** No changes were observed in dopamine levels in the brain between the drug and placebo conditions. The VAS showed small non-significant increases in "rush", "high", "gouched" & "sleepy" as well as decreases in "crave" and "urge" for heroin. Contrary to expectations there was a smaller reduction in "withdrawal" following hydromorphone than following placebo injection. The SEM showed a small reduction in peak velocity and a decreased ability to complete the task following hydromorphone. **Conclusions:** No difference in dopamine levels were seen in response to this substantial opiate dose in methadone maintained subjects. Despite this dose of hydromorphone producing pronounced effects in an out-patient setting, the expected subjective and objective effects were less in this scanning study. Due to this we are unable to conclude whether in opiate addicts, dopamine release is key to mediating pleasurable effects of opiates. Experiments are in progress to further address this issue.

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Introduction: Functional neuroimaging has been applied to the study of the neural processes involved in craving for drugs like cocaine and opiates, but less so for alcohol. In this study we used PET and H₂¹⁵O to acquire images of regional cerebral blood flow (rCBF) during exposure to alcohol cues in abstinent alcohol dependent and control subjects. From our previous opiate craving PET study (Daglish et al) we hypothesised that the left anterior cingulate (AC) region would be activated in response to alcohol related stimuli and the left orbito-frontal cortex (OFC) would correlate with craving measures in an alcohol dependent group, but not in a control group. **Methods:** 6 abstinent (>6 weeks) alcohol dependent subjects (male, aged 26-47) and 6 control subjects (male, aged 32-52) were recruited (all healthy, no concurrent illness). Each subject underwent a 12 run H₂¹⁵O scan on a brain dedicated ECAT HR++ PET scanner. Prior to each scan the subject was exposed to a visual stimulus of either a preferred alcoholic drink (e.g. bottle of whisky) or a visually matched control stimulus (e.g. bottle of Lucozade®); 6 times per stimulus in random order. Visual analogue scales (VAS) were recorded before and after each scan for indices of alcohol craving. Images were analysed using SPM99 (Wellcome Dept. of Cognitive Neurology). During the scanning session physiological data was collected using a Finapres®, which non-invasively measures pulse and blood pressure continuously from a finger probe. Where we had clear *a priori* hypotheses from our previous opiate craving study we conducted further analyses limiting the search volume, and hence the level of correction for multiple comparisons, to a 10mm radius sphere. **Results:** There was no significant change in VAS craving scores in alcohol dependent subjects in response to the alcohol stimuli, despite the success of this paradigm outside the scanner environment and higher mean craving scores in the alcohol dependent group. There were no significant differences in the physiological responses either between scan conditions or groups. There were no significant changes either in response to the stimuli or correlations with the alcohol craving scores in the whole brain rCBF analyses. In the small volume analyses the left AC region showed a variable but significant activation ($p=0.04$, $t=3.21$, at -18, 48, 28 mm Talairach co-ordinates) in response to the alcohol stimuli for the alcohol dependent subjects although there was no significant differences between the two groups when directly compared. The left OFC region showed no significant changes. **Conclusions:** This study demonstrates the difficulty of robustly inducing alcohol craving in the scanner environment despite using validated stimuli. The modest activation of the left AC region supports our previous hypothesis that exposure to salient stimuli involves this region. However the lack of a significant difference to the control group questions whether this response is specific to dependent individuals.

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Assessing the function of the GABA-benzodiazepine receptor in alcohol dependence using PET and EEG.

Introduction. Neuroimaging studies have shown that alcohol dependence is associated with reduced levels of the GABA-benzodiazepine receptor (GABA-BDZR), but little is known about their function. We have developed the paradigm of Malizia et al., (Neuropharm. 1996;35,1483-9), to measure the pharmacokinetics and pharmacodynamics of the GABA-BDZR in alcohol dependence using positron emission tomography (PET) and EEG. **Methods.** 12 abstinent alcohol dependent (ALD) and 12 controls (NALD) have been studied. [¹¹C]flumazenil PET was used to label the GABA-BDZR in vivo. A benzodiazepine agonist, midazolam (50 µg/kg) was infused over 5 minutes, 30 minutes after the start of the scan to displace the [¹¹C]flumazenil. From this we can measure the number of GABA-BDZR occupied by midazolam. During the scan, we measured their EEG β -power that is sensitive to the effects of midazolam (peak effect/baseline). Time activity curves of [¹¹C]flumazenil uptake in regions of interest (ROI: medial frontal, R/L orbitofrontal, R/L frontal and occipital cortices, cerebellum) were generated. Models were developed to derive the amount of GABA-BDZR occupied by midazolam. The relationship between occupancy and effects of midazolam on the EEG were explored. **Results.** A trend towards a reduction in level of GABA-BDZR was seen throughout the brain in ALD. No significant difference in the level of midazolam occupancy, as measured by the displacement index (ALD :

1.525 ± 0.53; NALD: 1.68 ± 0.34) or change in EEG β -power (ALD : 2.7 ± 0.85, NALD : 2.7 ± 1.14) was apparent between the 2 groups. There was no difference between the ALD and NALD groups in the relationship between occupancy and changes in EEG β -power. There were however subtle differences in response to midazolam with the some ALD showing greater latency in their response and were effected for longer.

Conclusions. This study suggests that GABA-BDZR function, as assessed by change in EEG β -power induced by a benzodiazepine agonist, midazolam, is not reduced in alcohol dependence despite reduced receptor levels. The presence of subtle differences seen between the groups suggests there may be altered function, but in relation to effects on EEG β -power, there is sufficient capacity remaining in the system to result in a 'normal' response.

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he development of new benzodiazepines (BDZ) and other sedative-anxiolytic-hypnotics guidelines suitable for use by general adult psychiatrists and substance misuse specialists

Background: The National Service Framework for Mental Health indicates that conformation of BDZ prescribing to clinical guidelines will be used to assess performance at a national level (Standards 2 & 3, DOH 1999, pp. 39). A critical issue will be the nature of any BDZ guidelines against which such performance will be judged. More than 20 different BDZ guidelines exist, but most are written for the primary care context, and are of little value to psychiatrists. However the brief guidelines produced by the Royal College of Psychiatrists (CR 59, 1997, 10 pages) and the lengthy report from the WHO (1996, 49 pages) are exceptions. These reports are interesting in that they appear to accept the major criteria of the primary care guidelines (e.g. use of BDZ and hypnotics should not exceed 4 weeks), but then justify such an extensive list of exceptions that the initial criteria seem to be completely undermined. This implies that current guidelines are inadequate and suggests that there is a need to develop new clinically useful principles in order to guide psychiatrists and addiction specialists in the use of BDZ. Such a view is further supported by a review of the evidence for the current 4 week time limit which reveals a very limited evidence base. With this in mind an audit of current use on a general psychiatric ward was performed to identify problems with current guidelines, and following this an attempt to write practical and more evidence based guidelines suitable for psychiatrists was made. **Methods:** Prescriptions of BDZ and other sedative-anxiolytic-hypnotics (SAH) were audited for the first 6 months of 1999 on the only acute general psychiatric ward of a District General Hospital in the South West of England. Only the first admission during the period were included. Patients from outside the catchment area of the hospital, and those admitted for a planned alcohol or drug detoxification were excluded. Non-BDZ SAH were also included in the audit because of the evidence that a reduction in BDZ use may be associated with an increase in other SAH use. **Results and new proposed guidelines:** Very poor performance against audit criteria taken from the primary care context was found (see Law et al., 2001, this meeting). The principles in existing guidelines were then built upon in order to extend them to the psychiatric context as described below: **a)** Length of use divided into 6 risk categories: contraindicated, ≤ 1 wk, > 1 wk & ≤ 4 wks, > 4 wks & ≤ 4 mths, > 4 mths, and indefinite; **b)** Treatment for > 4 weeks is permitted for primary anxiety/insomnia resistant to other treatments, and the treatment of anxiety/insomnia of mild or moderate severity where comorbidity exists; **c)** 16 Different categories of use influencing the types & numbers of BDZ/hypnotics prescribed were identified (4 Functions: Hypnotic, anxiolytic, emergency sedation, and alcohol detox; 4 Modes of administration: Oral use, parenteral use, regular use, PRN use; 8 Types of drugs: BDZ, safer non-BDZ hypnotic (e.g. zopiclone), much less safe non-BDZ hypnotic (e.g. chloral, triclofos, chlormethiazole, barbiturates, meprobamate), buspirone, beta-blockers, antihistamines, antidepressants, and major tranquillisers); **d)** Based on the 6 risk categories identified (table 1), tentative suggestions for use in those with a history of harmful use or dependence to BDZ or other SAH, and in those with a history of use without a clearly defined clinical indication were also made. **Conclusions:** Current BDZ guidelines are of little practical value to psychiatrists and substance misuse specialists, and fail to provide guiding principles for the use of BDZ in this context, as indicated by the audit findings. Rates of BDZ and other SAH use seemed disappointingly high and evidence for inappropriate use was elicited (Law et al., 2001, this meeting). New guidelines written following the audit appear to go some way towards overcome these problems (table 1), but need further evaluation in clinical practice.

Table 1: Classification of risk categories for BDZ and other SAH use where there is a definite clinical indication. Patients without and with comorbidity on drugs, and those without a clear clinical indication are

covered by column 3, 4 and 5 respectively.

Length of Clinically Indicated Treatment	Risk of Withdrawal Reactions	Treatment of insomnia or anxiety in patients without a history of comorbidity on drugs, or use without a clear clinical indication	Treatment of insomnia or anxiety in patients with a history of comorbidity on drugs	Treatment of insomnia or anxiety in patients with a history of BDZ or SAH use in the absence of a clear clinical indication
Contra-indicated	N/A	See BNF	Current harmful use or dependence on SAH or alcohol (unless to Tx dependence or prevent life threatening complications)	Current evidence of dependency traits or difficulty stopping, drug liking or drug seeking of BDZ/hypnotics/alc ohol (in the absence of rebound or withdrawal or recurrence of primary disorder) (unless to Tx dependence or prevent life threatening complications)
£ 1 week	Very low	Brief self-limiting conditions e.g. jetlag, prophylaxis for dental or flying phobia	Previous harmful use or dependence on SAH or alcohol	Past evidence of dependency traits or difficulty stopping, drug liking or drug seeking of BDZ/hypnotics/alc ohol (in the absence of rebound or withdrawal or recurrence of primary disorder)
1 week to £ 4 weeks	Low	Conditions requiring short-term treatment (not Tx resistant) e.g. short-term insomnia, initial stages of Tx while waiting for another Tx to act	Previous or current harmful use or dependence on other types of drugs (non-SAH or alcohol) including opiates	Possible but no clear past evidence of dependency traits or difficulty stopping, drug liking or drug seeking of BDZ/hypnotics/alc ohol (in the absence of rebound or withdrawal or recurrence of primary disorder) e.g. history of use for > 4 weeks
> 4 weeks to £ 4 months	Moderate	Tx resistant patients with conditions requiring medium term Tx (in whom willing to accept a	Possible but no clear evidence of a history of harmful use or dependence on any type of drug	Possible but no clear evidence of dependency traits or difficulty stopping, drug liking or drug

		moderate risk of withdrawal reactions) e.g. anxiety disorders, secondary to physical health problems		seeking of other types of drugs (i.e. not BDZ/hypnotics/alcohol (in the absence of rebound or withdrawal or recurrence of primary disorder)
> 4 months	High	Tx resistant patients with conditions requiring longer term but not indefinite Tx (in whom willing to accept a high risk of withdrawal reactions) e.g. GAD, panic disorder, chronic insomnia if evidence for continuing efficacy	No suspicion of a history of current or previous harmful use or dependence on drugs (see previous column)	No suspicion of dependency traits or difficulty stopping, drug liking or drug seeking of any drugs (in the absence of rebound or withdrawal or recurrence of primary disorder)
Indefinite	Very high	Tx resistant patients with conditions for which indefinite Tx is indicated e.g. Tx resistant persistent severe anxiety or insomnia	Persistent debilitating or intolerance of BDZ withdrawal symptoms, or inability to stay off alcohol/illicit BDZ despite considerable harm	N/A (see categories to left)

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Validation of a four-factor model of personality risk for substance abuse and examination of a brief instrument for assessing personality risk.

Four personality risk factors (introversion/hopelessness, anxiety sensitivity, sensation seeking and impulsivity) for substance abuse were previously identified as being related to different patterns of substance dependence and differential response to interventions that target specific personality risk factors (Conrod, et al., 2000a;b). The current series of studies further explore the validity of a four-factor model of substance abuse vulnerability and test the psychometric properties of a 28-item scale intended to measure personality risk for substance abuse in these four areas. In study 1 we derived four subscales composed of 6-8 items that correlate with heuristically relevant personality constructs. Studies 2 – 4 examine the reliability and validity of the subscales through a series of factor, test-retest and internal consistency analyses using both undergraduate and clinical samples. In study 3 we demonstrate that the factor structure of the SURPS is optimal and more parsimonious than alternative measurement models of personality risk. Finally, convergent and discriminant relationships were found between the SURPS subscales and reinforcement-specific patterns of and reasons for drug use, as well as, specific forms of non-addictive psychopathology. We concluded from this series of studies that these four personality factors are differentially associated with vulnerability to specific substance abuse syndromes and that the SURPS is an efficient method for assessing personality risk for these different syndromes. The results of this series of studies have implications for client treatment matching based on these four personality dimensions.

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Influence of hepatitis C status on alcohol consumption in opiate users in treatment

Aims. To estimate the prevalence of (a) hazardous and/or harmful drinking, (b) alcohol consumption, (c) perceived hepatitis C status (HCV) in opiate users in treatment and (d) assess the influence of perceived HCV status on consumption and attitudes to risk. **Design.** Cross-sectional survey. **Setting.** A methadone maintenance clinic and a drug treatment centre within a British substance misuse service in London. **Participants.** A random sample of 93 opiate users in treatment. **Measurements.** Hazardous and/or harmful drinking was assessed using the Alcohol Use Disorders Identification Test (AUDIT). Alcohol consumption was assessed using several indicators. Data on clinical and demographic characteristics, perceived HCV status, change in consumption and attitudes to alcohol consumption were also collected. **Findings.** A third of the sample were identified as AUDIT cases, 17% drank more than one unit/day and 15% were drinking above the weekly, recommended units for safe drinking (21 for men, 14 for women). Perceived HCV positive status was estimated at 70%. HCV status influenced consumption with fewer HCV positive, than HCV negative, clients drinking any alcohol in the previous year. Also more HCV positive clients, than HCV negative clients, reduced their consumption after the HCV test result. HCV status had some influence on attitudes to drinking for HCV positive people, although most were aware that abstinence was important for those with HCV positive status. **Conclusion.** Perceived HCV positive status has some influence on alcohol consumption. Despite these findings, training on harm reduction advice on alcohol consumption, particularly in HCV positive clients, should be extended. More intense interventions, within drug treatment services, may be required for those drinkers for whom advice is insufficient.

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This is the dawning of the age of antagonists: How naltrexone implants change post-detox management in opiate dependence

From the first days of naltrexone treatment in the early 1970s, it was realised that its effectiveness was undermined by poor compliance. The obvious response was to develop a long-acting depot preparation but for some reason, promising clinical research in the 1970s and early 80s instituted by NIDA was not followed up by them. Belatedly, several long-acting naltrexone injections or implants providing blockade for between one and

six months or more are now available or undergoing clinical trials. This paper will present an overview of clinical experience in the several countries where naltrexone implants are an established treatment option, including data from Sheffield where over 600 naltrexone implants have been funded by the local health authority. Worldwide, at least 5000 patients have been implanted. The use of long-acting naltrexone requires a completely new style of post-withdrawal management with major implications for addiction physicians as well as for counsellors and psychologists, who have often been hostile to naltrexone and other medical treatments. The style and implications are examined from pharmacological, psychosocial and educational viewpoints. The implications will be even wider if the antagonists to other drug classes, now being developed, turn out to be anywhere near as effective and as devoid of serious side effects as naltrexone. Naltrexone should not be seen as a threat to methadone maintenance programmes, since there will remain a place for both types of treatment.

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A randomised controlled trial of buprenorphine maintenance treatment in primary care treatment settings

Aims: To examine the effectiveness of buprenorphine compared to methadone maintenance treatment delivered in primary care treatment settings in Australia. **Design:** An open-label randomised controlled parallel group trial with subjects randomised to Control (methadone) or Experimental (buprenorphine or methadone) conditions. Separate randomisation schedule for heroin users entering treatment and for patients already enrolled in methadone maintenance treatment. **Setting:** Recruitment, induction and treatment conducted in 24 primary care settings with general practitioners and community pharmacists with previous experience in delivering methadone treatment. Sites located across metropolitan Melbourne and regional Victoria, Australia. **Participants:** 162 patients recruited > 18 years in age; not pregnant; informed consent. Interventions. Open-label trial with flexible dosing under naturalistic conditions with optional attendance in psychosocial services. Methadone treatment within conventional guidelines; buprenorphine treatment within trial clinical guidelines (32 mg maximum daily dose, supervised dispensing, 2 and 3 day dosing optional). Main outcome measures: Retention in treatment; measures of heroin and other drug use; serious adverse events. **Results:** 6 month follow-up data is reported here, with between group comparisons on an intention to treat basis.

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National Confidential Enquiry into Methadone Related Deaths (NCEMRD) Scotland

Aim: To feedback findings and recommendations to clinicians working with drug-users. **Design:** The Registrar General for Scotland and Forensic Medicine departments notified deaths. Completed questionnaires received from the deceased's General Practitioner were reviewed by two assessors. **Setting:** Scotland. **Participants:** All methadone-related deaths. **Measurements:** Demographic data on deaths. GP data including initial assessment, prescribing, monitoring, co-morbidity and clinical-care issues. Comments on cases by assessors. **Findings:** Methadone-related deaths in Scotland continue to decline. **Main findings include:** Two deaths were associated with practices out-with the Drug Misuse and Dependence - Guidelines on Clinical Management (HMSO 1999). There were no deaths in individuals under 18 years of age. There was one death in a recreational drug user. Of the 55% on a prescription, 60% were on supervised consumption at the time of their death. In 65% of cases a co-morbid psychiatric condition, usually depression was diagnosed, and in two cases this ended in successful suicide. **Conclusions:** Health education has successfully targeted naive and recreational drug users. This position must be maintained for each new generation. To ensure good practice supportive on-going training and updates are also necessary for prescribers. The cost-benefit of supervised consumption should be defined. The extension of supervision should also address the patient's autonomy within the community to take methadone in a private place. Integrated specialist services including psychiatric support are required.

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Methadone overdose: clinical considerations and the scientific evidence

Methadone poisoning is a growing phenomenon in Britain and other countries due to the increase in prescription and availability of this compound. Little is known of the circumstances surrounding methadone death due to some extent to the difficulty of defining drug-related death and also the difficulty of collecting clinical and biographical data in a predominantly illegal and marginal milieu. To this end manifestations of its toxicity often go unrecognised. Further investigations are needed to elucidate the mechanism and spectrum of methadone toxicity. Death from methadone is eminently preventable more so because of the long term nature of the clinical sequelae. Consequently steps should be taken to disseminate the salient facts to those who come into contact with the drug. **Methadone Toxicity:** Toxicity generally presents with the classic triad of CNS depression (reduced level of consciousness from drowsiness or a stuporous state to coma), respiratory depression and pinpoint (myopic), sluggishly reactive pupils. The main toxic effect is respiratory depression with pulmonary edema (Fraser, 1971; Garriott, 1973) that develops 12-14 h after ingestion especially in naive or weakly tolerant individuals (Kreek 1978; Drummer et al, 1992). For epidemiology analyses, a standardised definition of the term 'methadone overdose' is essential. In practice, however, different criteria are used (Janssen et al, 1989; Kaa, 1992). It does not help that fatal overdose is a multifaceted phenomenon. Overdose may arise from intolerance, side effects (extension of main drug action) and additional action, secondary effects, idiosyncrasy and hypersensitivity, pharmacokinetic or pharmacodynamic drug reactions (Faisinger et al 1993). There are currently no published investigations that look specifically into the circumstances of drug related deaths in MMT. The oft-reported scenario is that the decedent came home "high" and drowsy, went to bed and was found dead the next morning (Greene et al 1973, 1974; Norheim, 1973; Garriott et al, 1973; Scot et al, 1999). It may be significant that the majority of methadone deaths occur at nighttime when sleep may augment the toxicity of the drug. There is anecdotal evidence that deaths from methadone overdose have occurred shortly after eating food (stimulating the gut) leading to increased absorption of methadone during sleep (Hendra et al, 1996). Many methadone overdoses, both fatal and non-fatal, occur in the home surroundings (Alha & Ohela, 1955; Garriott et al, 1973), probably in the early evening hours (Manfredini et al, 1994) and in the presence of other people (Janssen et al, 1989; McGregor et al, 1998) with higher risk in unmarried compared to married couples (Davoli et al, 1993). Other places where opiate overdose occur include hospitals, toilets, public places, hotel rooms (Janssen et al, 1989) and schools (Litovitz et al, 1993).

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Maternal methadone dose and neonatal abstinence syndrome; results from a Dublin survey

Background: There is good evidence that pregnant drug dependent women stabilised on Methadone Maintenance Treatment do better in terms of maternal and foetal outcomes than women who are not in treatment (1). The issue of Neonatal Abstinence Syndrome and the association with methadone dose during pregnancy has been the subject of investigation, but there is no consensus in the literature (2). We have collected data on the outcomes of a large group of women (N =111 women) who attended a Drug Liaison Midwife service in Dublin and decided to investigate the possibility of an association between methadone dose at delivery and the development of withdrawals in this group. **Results:** 42 of the 92 infants received a diagnosis of NAS. 20 of these infants were treated medically. Among women with non zero methadone dosages at delivery dosage was significantly higher for those whose infants had withdrawals (Mann-Whitney U test; U = 498.5, p<0.001). Hierarchical logistic regression was used to assess the risk of withdrawals associated with methadone dosage at delivery when adjustment was made for gestational age, mother drinking alcohol, mother testing positive for opioids in the month pre-delivery and mother testing positive for benzodiazepines in the month pre-delivery. When adjustments for these factors was made, the likelihood of withdrawals was still significantly increased with increased methadone dosage at delivery. Hierarchical logistic regression was used to assess the risk of withdrawals associated with each of the above factors separately. It was found that, having adjusted for the gestational age of the infant, the likelihood of withdrawals was significantly increased by the presence of a positive test for benzodiazepines and the level of methadone dosage but not by the woman's current drinking of alcohol or the presence of a positive test for opioids. **Conclusions:** In this sample there was good evidence of an increased likelihood of withdrawals with increasing methadone dosage. Benzodiazepine use in the month pre-delivery also increased the likelihood of withdrawals. A larger prospective study would allow further clarification of the relative importance of these risk factors.

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Regional cerebral blood flow changes elicited by craving memories in abstinent opiate-dependent individuals.

Aim: The concept of craving is widely used in the context of addiction and dependence. However, a rigorous scientific definition of the concept has remained illusive and the subject of much debate. The aim of this study was to investigate the brain circuitry of craving for heroin. **Method:** 12 (11 male, 1 female) abstinent opiate dependent subjects were recruited. Previously recorded autobiographical scripts of an episode of craving were used to induce craving for heroin and of a neutral episode for a control condition. Positron Emission Tomography (PET) scanning was then used to measure regional cerebral blood flow changes while the subjects were listening to these scripts. Each script was repeated a total of 6 times with the order of presentation randomised. Statistical parametric mapping was used to analyse the brain images. Visual analogue scales of craving for heroin were measured after each of the 12 scans. Pulse and blood pressure were measured continuously throughout the scans. **Results:** 67% of subjects showed evidence of craving in the scanner environment. Subjective measures of craving for heroin increased significantly in response to the stimuli. Physiological changes were much less pronounced. Brain activity was increased in the left medial pre-frontal and left anterior cingulate cortices and decreased in the occipital cortex, in response to the drug-related stimulus. Activity in the left orbito-frontal cortex showed a positive association with heroin craving. **Conclusions:** This suggests that different brain regions may be involved in the initial response to drug-related stimuli and the craving that they cause.