

Review of Drug and Alcohol Treatments in Prison and Community Settings

A Systematic Review Conducted on Behalf of
the Prison Health Research Network

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Executive Summary

Rationale

Substance misuse is a major problem in the general population as well as in prisons and the wider Criminal Justice System (CJS). Whilst there is a large body of evidence for community-based drug treatments, there has been far less research in criminal justice settings. We outline the recent in-depth reviews of offender-based drug treatments. Within the field of substance misuse, alcohol is not often considered separately. We have therefore conducted a new systematic review of alcohol treatments in offender populations. In both areas, we have also considered the evidence for community-based treatment interventions and highlighted gaps in relevant prison research.

Section 1: Background

There are several policy documents and strategies for the management and treatment of problematic substance users in offender populations. The National Offender Management Service (NOMS) has a strategy relating to problematic drug users in correctional services (NOMS, 2005). HM Prison Service have in place drug and alcohol strategies (HMPS, 2002; HMPS 2003; HMPS, 2006), as well as a good practice guide for alcohol treatment and interventions (HMPS, 2004). The National Probation Service also has a strategy for working with alcohol misusing offenders (National Probation Service, 2006). Finally, the cross-Government document 'Safe. Sensible. Social' (2007), updating the national alcohol strategy, contains specific recommendations for offender populations.

Section 2: Review of Drug Treatments

This section begins with a summary of three systematic reviews specifically relating to substance misuse in offender settings. These recent and comprehensive reviews have been critically appraised in this section with their conclusions described at some length. Following this, there is a summary of

the evidence for treatments in community settings, with potential gaps for offender-based research highlighted.

2.1 Review of Offender Treatments

Three systematic reviews of substance misuse and dependence in prison and/or offender populations have been published in the last three years. Fazel *et al* (2006) aimed to determine the prevalence of substance abuse/dependence in prisons, and to compare this with the general population. Perry *et al* (2006) aimed to establish the effect of offender treatments on continued drug use and reoffending, in a variety of settings including courts, secure care, and in the community. Finally, Holloway *et al* (2005) examined the effect of criminal justice and drug programmes on drug-related crime.

Fazel et al (2006)

The basis for this review was to explore the relationship between offending behaviours and substance abuse in various criminal and medical settings. Fazel *et al* (2006) suggested that a greater understanding of the extent of substance abuse and dependence in offenders would aid the development of appropriate services and inform treatment interventions. Therefore, a systematic review was conducted to ascertain the prevalence rates of substance abuse/dependence in prisoners and to compare prevalence rates with that of the general population.

Overall, it was concluded that the prevalence estimates of drug/alcohol abuse/dependence for prisoners is higher than in the general population. North American figures revealed that male prisoners had slightly higher (but not significant) rates of alcohol dependency while drug dependency was 2 to 10 times higher than the general population. For female prisoners, differences were more marked: Alcohol dependency was 2 to 10 times higher and drug dependency up to 13 times higher than that of females in the general population. Fazel *et al* (2006) therefore suggested that service provision for female prisoners should be a priority. However, further research into the

prevalence of alcohol abuse/dependence in females outside the US is needed before adequate recommendations can be made for the provision of treatment services.

Perry et al (2006)

The research question in this review explored whether; (i) court based interventions, (ii) secure establishment-based interventions, and (iii) community-based interventions for drug misusing offenders reduce drug use and/or criminal activity?

Therapeutic communities and aftercare seemed to be the most promising of interventions. However, the studies that reported these findings were quasi-experimental and may have included some bias: More robust designs are needed to elucidate these results. Given the methodological weaknesses of the studies, very limited conclusions on treatment success can be drawn from this review. It is apparent, however, that there is no single gold standard treatment intervention. Furthermore, limited conclusions can be drawn as to the cost effectiveness of treatment interventions for drug misusing offenders with only one study including economic evaluations. Therefore, Perry *et al* (2006) suggested a need to conduct better quality research that utilises standardised outcome measures which will enable comparisons to be made across literature.

Holloway et al (2005)

In direct response to the proposals made in the Updated Drug Strategy 2002 (Home Office 2002), Holloway *et al* (2005) systematically reviewed the literature on the effectiveness of (i) criminal justice programmes that aim to directly reduce drug related crime, or (ii) drug treatment programmes that as a consequence may indirectly serve to reduce drug related crime. Four major conclusions can be drawn.

Firstly, most drug interventions seemed to work in reducing drug related crime. Meta-analyses showed all programmes to be effective. Forty-four of the

52 studies in the quantitative narrative review found the programme under study was effective in reducing drug related crime on at least one measure.

Secondly, methadone treatment, heroin treatment, therapeutic communities, psychosocial approaches, drug courts and probation and parole supervision seemed to be more effective than supervision and aftercare, drug testing, and other criminal justice approaches. Holloway *et al* (2005) suggested that some findings are based on a small number of studies with small sample sizes and therefore findings should be treated with caution. It is also important to be aware that some programmes work for some offenders and not others.

Thirdly, it seemed that programme outcome is related to demographic characteristics of the individual. In order for results to be more informative studies would need to be conducted that directly investigate the interaction between the treatment programme and individuals' demographic characteristics. However, the review demonstrated that many programmes were more effective for males than females and that younger people were more responsive to the treatment interventions than older people. The latter finding highlights a possible need for early intervention for drug treatment programmes in order to potentially prevent later recidivism.

The final conclusion that can be drawn from the review relates to programme intensity. The meta-analyses showed that higher intensity programmes were 50% more likely to reduce criminal behaviour than their low intensity equivalents. The quantitative narrative review showed that for 4 out of 11 studies evaluating methadone treatments, those administering higher continuous injected dosages showed greater reductions in offending and, when coupled with maximum supervision and aftercare following the drug treatment programme, reduced crime by 90% as opposed to 57% among the group who received minimum aftercare.

Holloway *et al* (2005) stressed the need for good quality research to be conducted on the effectiveness of treatment programmes for drug-misusing offenders in the UK. Additionally the authors appealed to researchers to

investigate the causal mechanisms via the construction of possible theoretical reasons for the effectiveness of treatment programmes in reducing later criminal activity. Herein lies an opportunity for more qualitative and longitudinal research to follow offenders progress as they are receiving treatment interventions from a user perspective.

Holloway *et al* (2005) suggested that government policy is not prescriptive enough in its promotion of the specific interventions needed in order to tackle drug misuse and subsequently achieve the objectives set out in the Updated Drugs Strategy 2002 (Drugs Strategy Directorate, 2002). They suggested that prioritising the treatment interventions shown to be effective would be fruitful in achieving this objective.

2.2 Review of Community Treatments

This section is based on published Cochrane reviews of community-based drug treatments.

Opioids Abuse and Dependence

Pharmacological Detoxification Interventions

Treatment with buprenorphine has been demonstrated to be successful for opioid detoxification when compared to clonidine. Furthermore, clonidine and lofexidine detoxification did not differ in effectiveness from reducing doses of methadone. Methadone at tapering doses assisted withdrawal symptoms but did not prevent relapse. The use of opioid antagonists (such as naltrexone and naloxone) was shown to be feasible, but the level of success was not clear, and a high level of monitoring was necessary. The use of heavy sedation during withdrawal was not supported due adverse incidents and cost.

Pharmacological Maintenance Interventions

The evidence for pharmacological maintenance interventions showed similar effectiveness of buprenorphine and methadone. Furthermore, methadone was preferable to no treatment, and particularly effective at doses of 60-100

mg/day. Levo-Alpha Acetyl Methadol (LAAM) may be more effective than methadone, but concerns over side effects (whilst not demonstrated in the research) have led to its removal from the market in Europe and the US. There was not enough information to draw conclusions on the efficacy of naltrexone or heroin maintenance.

Psychosocial Interventions

The evidence suggested that psychosocial interventions are effective when combined with pharmacological treatment or maintenance, but not alone. The additional effect seemed to be particularly important in assisting patients to be abstinent in the long term for pharmacological but not maintenance treatment. However, there were difficulties in defining interventions as 'psychosocial', and in the great variety of available interventions of this type: each type of intervention should be evaluated in large-scale trials examining broad outcomes such as improved social functioning, as well as continued drug use and reoffending.

Cocaine Abuse and Dependence

To date, no treatments have demonstrated success in treating cocaine dependence.

Amphetamine and amphetamine type stimulants (ATS) abuse and dependence

No treatments have demonstrated effectiveness in the treatment of those with amphetamine disorders. However, there is limited evidence for reduction in craving symptoms with fluoxetine in the short term, and increased medium-term adherence in treatment with imipramine. These may represent areas for future research. There have been no reviews of psychosocial or other interventions for amphetamine disorders.

Cannabis Abuse and Dependence

There is a dearth of evidence in the treatment of cannabis disorders.

Iatrogenic use of prescribed drugs

The effectiveness of a gradual reduction in benzodiazepine was demonstrated, and the additional use of carbamazepine was suggested.

Polydrug

Psychosocial Interventions

Therapeutic communities have shown some success and are discussed in relation to offenders in Section 2.1.

Section 3: Review of Alcohol Treatments

This section begins with a new systematic review synthesising the research evidence for alcohol treatments in offender populations. Following this, a summary of Cochrane reviews is presented relating to the treatment of alcohol misuse and dependence in the community.

3.1 Review of Offender Treatments

Aims

This systematic review summarised the research literature on the effectiveness of treatment and prevention interventions which aim to reduce alcohol use/abuse and/or criminal behaviours in offender populations.

Method

Nine databases were searched: CINAHL, Embase, Ovid Medline (R), Ovid Medline (R) in process, PsycINFO, Web of Science, ASSIA, Criminal Justice Abstracts and National Criminal Justice Reference Service Abstracts. The terms used were: (i) Alcohol* or Drink* or Drunk* AND (ii) Jail* or Inmate* or Criminal* or Offender* or Incarcerat* or Penitentiari*. The searches were limited to English Language Journals from 1990 onwards. A total of 7003 journal articles were retrieved.

Studies were included if they had either a comparison group or a no-intervention control group, or if they had used an outcome measure of alcohol use and/or recidivism. Twenty-four articles met the inclusion criteria, and were

rated on a scale of methodological quality. Due to the heterogeneity of the studies, meta-analysis was not possible. Therefore a quantitative narrative review was conducted.

The treatment interventions were categorised into five groups: Psycho-Social-Behavioural Interventions, Therapeutic Communities (TC), Victim Impact Panels (VIP), interventions involving Legal Sanctions, and Other interventions.

Results

Four of the 16 studies that included Psycho-Social-Behavioural interventions were effective in reducing both alcohol use/abuse and criminal activity.

Two studies evaluated the effectiveness of TCs, only one of which was found to have had a positive effect on the offenders' alcohol use.

Two studies evaluated the effectiveness of legal sanctions comprising licence suspensions and the fitting of Ignition Interlock devices, and both showed a significant reduction in later alcohol-related driving offences.

Interventions comprising VIPs were shown to be largely ineffective with only 1 of the 4 studies evaluated showing a positive effect upon recidivism. Only 1 of the 4 VIP studies evaluated alcohol outcomes and this showed no differences between the VIP group and the non-VIP group.

The final study evaluating a Vipassana Mindfulness Meditation Intervention was found to be effective in reducing alcohol use but not recidivism.

One study showed that after completing a Psycho-Social-Behavioural programme, participants' alcohol use increased and the treatment was deemed detrimental. Two studies of Psycho-Social-Behavioural approaches reported increased rates of recidivism post-treatment.

There were 6 randomised controlled studies included in this systematic review. Of the two reported reductions in recidivism, one was a Psycho-Social-Behavioural intervention and the second a Legal Sanctions/Ignition Interlock programme. Two reported positive effects on alcohol use; the first was a Psycho-Social-Behavioural intervention and the second a Therapeutic Community Programme

Discussion

There is no consistently conclusive evidence for the effectiveness of a single intervention. Opportunities for research with rigorous methodology exist into: whether different treatment interventions work for different types of offenders, by virtue of the type of offence committed, and; which interventions have a sustainable effect to ensure both cost effectiveness and long term benefits to the individuals and society.

The methodological quality of the included studies was low, in part due to poor study design and/or due to structural obstacles within the CJS. In particular, studies lacked random allocation, no-treatment comparison groups, and participation was often mandatory.

3.2 Review of Community Treatments

Results of four reviews of pharmacological interventions showed success of benzodiazepines for withdrawal, particularly seizures, and also fast and effective results of psychotropic analgesic nitrous oxide as an alternative to benzodiazepine. Trials of anticonvulsant treatment showed too much heterogeneity for success to be determined. The one available review of alcohol dependence showed short-term success of naltrexone as a short-term treatment, and no demonstrated success for nalmefene.

Two reviews of psychosocial interventions showed reductions of alcohol consumption for men undergoing brief interventions, but no demonstrated efficacy of Alcoholics Anonymous or other 12-step programmes.

One review of preventative treatments found many interventions to be ineffective.

Section 4: Discussion

The three existing systematic reviews of offender-based drug treatments and the new review of alcohol treatments presented here all suffer from a dearth of high-quality research in this area, and particularly clinical trials from the UK. Fazel *et al* (2006) concluded that prisoners have higher rates of substance abuse/dependence than found in the community, though the majority of studies on which the finding is based were conducted in the US. An initial research gap is to carry out a similar review amongst other offender populations such as those in contact with courts, police and probation.

Furthermore, no prison-based research has so far been carried out into pharmacological treatment of alcohol withdrawal or dependence. Findings of community-based psycho-social interventions have clear implications for prisons, particularly the effectiveness of Alcoholics Anonymous groups. The efficacy of brief interventions for alcohol use should also be trialled, perhaps for prisoners soon to be released.

Policy documents too have highlighted the lack of evidence for some recommended interventions such as brief psycho-social sessions focusing on advice, information and support. The evidence from community settings shows that psychosocial interventions are effective for opioid dependence only when delivered in combination with pharmacological detoxification treatment.

The pharmacological evidence base for treating offender populations is severely lacking in the England and Wales. The evidence for treating dependence on substances other than opioids shows very limited success to date in community settings, and is non-existent in offender settings. One area where there is an evidence base for offender populations is therapeutic communities. Prison therapeutic communities may be favourable to prison

alone or other treatment programmes, but the studies that have been conducted are lacking in methodological quality.

Holloway *et al's* (2005) review was more promising, showing that most interventions into drug treatments seemed to have a positive impact on reducing drug-related crime. Whilst caveats of research quality should be kept in mind, the review showed that methadone treatment, heroin treatment, therapeutic communities, psychosocial approaches, drug courts and probation/parole supervision seemed to be more effective than supervision and aftercare, drug testing and other criminal justice approaches. There should be a move to prioritise (and invest in) the specific approaches with demonstrable success.

Alcohol misuse has often been assimilated into general 'substance misuse' research. This report aimed to examine treatments for alcohol misuse in greater depth in order to determine which approaches were most effective.

The review of alcohol treatments in offender settings revealed a small number of highly variable studies, in terms of scope and quality. Indeed, only 6 studies reached the highest level of quality which would usually merit including into a Cochrane review. It was not possible to make direct comparisons between studies due to their differences, but a narrative review provided individual results.

Brief psychosocial interventions were shown to be effective in reducing alcohol consumption amongst men in community settings. In offender settings, the results were found to be more mixed. Cognitive Behavioural Therapy (CBT) was shown to be effective in reducing future alcohol use amongst alcohol-dependent domestic abusers in a high quality study from the US. Other positive results were found for driving-while-disqualified offenders undergoing CBT or the Turning Point residential programme (but only long term for the latter), as well as an education course for young offenders in the UK. However, ten other interventions showed no significant improvements on future recidivism or alcohol use. The interventions included in this part of the

review varied greatly, and it would be wrong to discount all psycho-social interventions on the basis of the results shown here. Rather, there is a need for future high-quality research in this area, particularly in the use of CBT in the UK, and evaluations of the services provided to prisoners in England and Wales.

Alcoholics Anonymous and other 12-step programmes in the community were not supported by the available research evidence. The review of offender treatments showed that no studies had examined this area; another topic ripe for future research given the wide availability of Alcoholics Anonymous groups for prisoners in England and Wales (Hansard, 2007).

Some additional treatments were considered in the offender review but not yet subject to Cochrane review. Victim impact panels were found to be successful in only one of four studies. Legal sanctions did show some positive effects, particularly the Ignition Interlock devices which require offenders to provide a breath test before their car can start. There were two studies of therapeutic communities with specific alcohol components, and one of these showed success in future alcohol use. Finally, Vipassana Mindfulness Meditation was effective in reducing alcohol use but not recidivism in a novel study conducted in the US. Possible UK pilot studies of Ignition Interlock and meditation may therefore be indicated.

The results from the community showed the success of benzodiazepine for alcohol withdrawal, and naltrexone for alcohol dependence. To date there has been no research on pharmacological treatments for alcohol misuse in offender settings. Again, policy has been dictated by what works in the community but these results should be replicated (particularly in prisons) to fully understand the effects of such treatments.

There is clearly a need to conduct clinical trials of new and existing alcohol-related interventions in the UK.

In summary, this review has highlighted major gaps in the evidence base for substance misuse treatments for offender populations, and made suggestions for areas where future research could usefully focus.

RATIONALE

Substance misuse is a major problem in the general population as well as in prisons and the wider Criminal Justice System. Treatments for substance use disorders can benefit the individual in the short term, for example by managing withdrawal symptoms during detoxification, in the longer term, by preventing relapse into drug use, and can also benefit the wider community by reducing reoffending. As with all health-related services, treatments should be provided on the basis of demonstrated efficacy. Furthermore, treatments which are successful in one setting may need to be adapted for another (for example when implementing community-based services into the prison environment).

This review aims to examine the efficacy of drug and alcohol treatments in the community and prison environments. This is an area of innovation, with new treatments being developed all the time. Policy and guidance has also had to keep up with the more recent research findings; for example, two new NICE guidelines were published in July 2007. Section 1 of this report, therefore, contains a summary of the most recent policy for the treatment of drug and alcohol misuse and dependence in criminal justice and community settings.

Whilst there is a large body of evidence for community-based drug treatments, there has been far less research in criminal justice settings. Furthermore, there have been several comprehensive systematic reviews of drug treatment interventions in these populations. These are summarised and the findings compared with Cochrane reviews of community treatments. We have also highlighted gaps in criminal justice drug treatment research, as compared with community research and also current treatment guidance. This is presented in Section 2.

In a great deal of research in this field, alcohol problems are subsumed into the larger category of 'substance misuse'. The recent reviews of substance misuse in the prison environment do not report specifically on alcohol misuse.

Therefore, we have conducted a new systematic review of alcohol treatments in offender populations (Section 3). We reviewed the evidence in Cochrane reviews relating to the treatment of alcohol misuse and dependence in the community and concluded by highlighting research gaps in offender research.

Section 1: Review of Current Policy and Guidance

1.1 Prison and Offender

There are several policy documents and strategies for the management and treatment of problematic substance users in offender populations. The National Offender Management Service (NOMS) has a strategy relating to problematic drug users in correctional services (NOMS, 2005). HM Prison Service have in place drug and alcohol strategies (HMPS, 2002; HMPS 2003; HMPS, 2006), as well as a good practice guide for alcohol treatment and interventions (HMPS, 2004). The National Probation Service also has a strategy for working with alcohol misusing offenders (National Probation Service, 2006). Finally, the cross-Government document 'Safe. Sensible. Social' (2007), updating the national alcohol strategy, contains specific recommendations for offender populations.

The HM Prison Service Drug Strategy has as its standard:

“Staff in establishments work to ensure a continuing reduction in the availability of drugs through a range of supply reduction measures, identify prisoners who are drug misusers, provide them with the opportunity for treatment and support to help them avoid drugs and reduce the risk of them committing drug related crimes after their release.” (HMPS, 2002; p1)

Key audit baselines relevant to the treatment of prisoners with drug problems are that each establishment has their own strategy detailing: how those with drug problems are identified; provision of treatment, counselling and support, health promotion and harm minimisation; clinical services provided by health care; multi-agency partnerships to support prisoners on release; protocols between CARATs¹ and health care; and staff training. Furthermore, each establishment is expect to have written policies on detoxification (including which services are available, specific guidelines for opiate, alcohol and

¹ CARAT (Counselling, Assessment, Referral, Advice and Throughcare) Services are provided in every prison establishment in England and Wales, and are a core part of HM Prison Service Drugs Strategy.

benzodiazepine detoxification, assessment, and treatment settings), CARAT services (including making prisoners aware of the service, communication with other departments, assessment, the provision of counselling/groupwork, and the presence of release plans). Finally, the strategy states that rehabilitation programmes and therapeutic communities should be provided for those assessed as requiring them.

The subsequent briefing paper (HMPS, 2003) stated:

“Although every aspect of the Drug Strategy is collectively important, the main focus of the Service’s work currently falls on drug treatment interventions.” (p4)

The paper then described the three main initiatives; CARATs, detoxification, and rehabilitation programmes. CARATs was defined as a low-level intervention with individualised care plans. There was an emphasis on throughcare, such that treatments were provided at all stages of the Criminal Justice System, and that links were established with community treatment providers.

In detoxification, the paper suggested that HM Prison Service favours detoxification over maintenance prescribing, though acknowledging that maintenance is appropriate for those on remand or serving short sentences who have been successfully maintained in the community. An emphasis was placed on harm minimisation for prisoners at risk of lethal overdose on release, to be delivered by CARATs in the form of counselling and education. The strategy did not specify preferred medications for detoxification.

The rehabilitation programmes described in the paper were cognitive-behavioural therapy, 12-step approaches, and therapeutic communities. A list of accredited² offending behaviour programmes relating to substance misuse can be found in Appendix 1. PASRO is a fast-growing CBT-based programme

² Offending Behaviour Programmes are accredited by the Correctional Services Accreditation Panel which advises the Ministry of Justice on the basis of demonstrated efficacy.

which recently received accreditation. At the time of writing (2003), there were estimates that around 30-40% of need was being met and that 7,600 places on rehabilitation programmes were expected to have been provided by 2006. Emerging evidence was also outlined into the beneficial effects of rehabilitation programmes on reoffending rates.

In 2006, Department of Health published a document called 'Clinical Management of Drug Dependence in the Adult Prison Setting' (DH, 2006), which set out how prison-based drug and alcohol services for adults should develop in the next two years. Guidance on services for younger people is not yet published. The document specifies five challenges currently faced by substance misuse services, these being:

- Vulnerability to suicide and self harm in prison and accidental overdose on release
- Illicit drug use in prison
- Providing services which meet national and international good practice
- Providing services in line with those in the community and other criminal justice settings
- Integration of CARAT services to create multi-disciplinary drug teams

The principle of the guidance was withdrawal prescribing, informed by screening and assessment.

For opioid dependence, the guidance stated:

“Opiate-dependent prisoners should be stabilised on licensed opiate substitute medication for a minimum of five days to enable withdrawal symptoms to be adequately controlled” (p14)

Stabilisation can be methadone or buprenorphine, the dose titrated in response to withdrawal symptoms. Following stabilisation three treatment

options are outlined, a decision between options being made based on multi-agency assessment and patient wishes. The three options are:

- Standard opiate detoxification (at least 14 days)
- Extended opiate detoxification (at least 21 days)
- Opiate substitute maintenance (up to 13 weeks, or longer based on clinical need)

It was envisaged that the prescription of methadone or buprenorphine could aid continuity of care from community to prison, and back into the community again, also reducing suicide and self harm.

Existing community maintenance programmes should generally be continued in prison (after stabilisation), though the guidance states that methadone and buprenorphine maintenance are “*at present infrequently provided in English and Welsh prisons*” (p20). Where maintenance was used, referral to community services on discharge should be ensured.

Naltrexone should also be available on request for those prisoners who have undergone opioid detoxification and need assistance to stay drug-free on release.

For alcohol dependence, the guidance states that prisoners should be assessed for alcohol withdrawal at reception into prison, and detoxification, if required, should be with chlordiazepoxide and thiamine from the first night of custody. Treatment should be in line with HM Prison Service guidance (HMPS, 2004).

Where existing documentation or clinical assessment suggested benzodiazepine dependence, withdrawal prescribing should be initiated. Withdrawal should be managed using available evidence (BNF, 2005; DH, 1999).

For stimulant withdrawal, prisoners should be clinically monitored, and related physical and mental disorders should be treated. Prisoners should also be included in a 28-day (minimum) open intervention of psychosocial support (see below).

Information was provided on risk management for treating substance use disorders in prisons, as well as clinical assessment on reception. The guidance outlined that clinical teams, CARAT services and Criminal Justice Integrated Teams (CJIT) should work and use case management together. Further services should be provided under CARAT case management. There should also be joint working with other departments for those with co-occurring substance misuse and mental disorders.

For all extended prescriptions relating to the management of substance misuse, random drug tests should be applied, and all regimens should be supported by evidence, conform to PSO 3550 (HMPS, 2000), DH (1999) guidelines and principles of clinical governance.

All prisoners with problematic drug use should be offered a 28-day (minimum) open intervention of psychosocial support. This intervention aims to complement clinical interventions, take into account previous treatments and support continuity of care in prison and community environments. It is delivered in three phases: Phase 1 is assessment and engagement, including attendance at clinical reviews; Phase 2 examines motivation and delivery; and, Phase 3 involves completion planning. Clinical and CARAT teams both have responsibility for delivering all three phases of the psychosocial intervention.

With regard to alcohol misuse, the first objective of the prison strategy (2006) should be:

“To reduce the harm associated with the misuse of alcohol, including that related to offending, by offering treatment and support to prisoners” (p4)

The strategy stressed screening as a crucial method of identifying prisoners with alcohol problems so that treatment could be provided. Thus, the strategy recommended assessment for alcohol withdrawal at reception, and also use of another tool for identifying alcohol use disorders.

In terms of treatment, the strategy called for the inclusion of detoxification, structured counselling, specialised residential services, and self-help groups, to be provided on the basis of individual need. HM Prison Service pledged to ensure that detoxification was provided for all those at risk of alcohol withdrawal syndrome, and to expand treatment availability as resources permitted. The strategy also called for interventions for those with differential needs, such as those with different cultural attitudes towards alcohol.

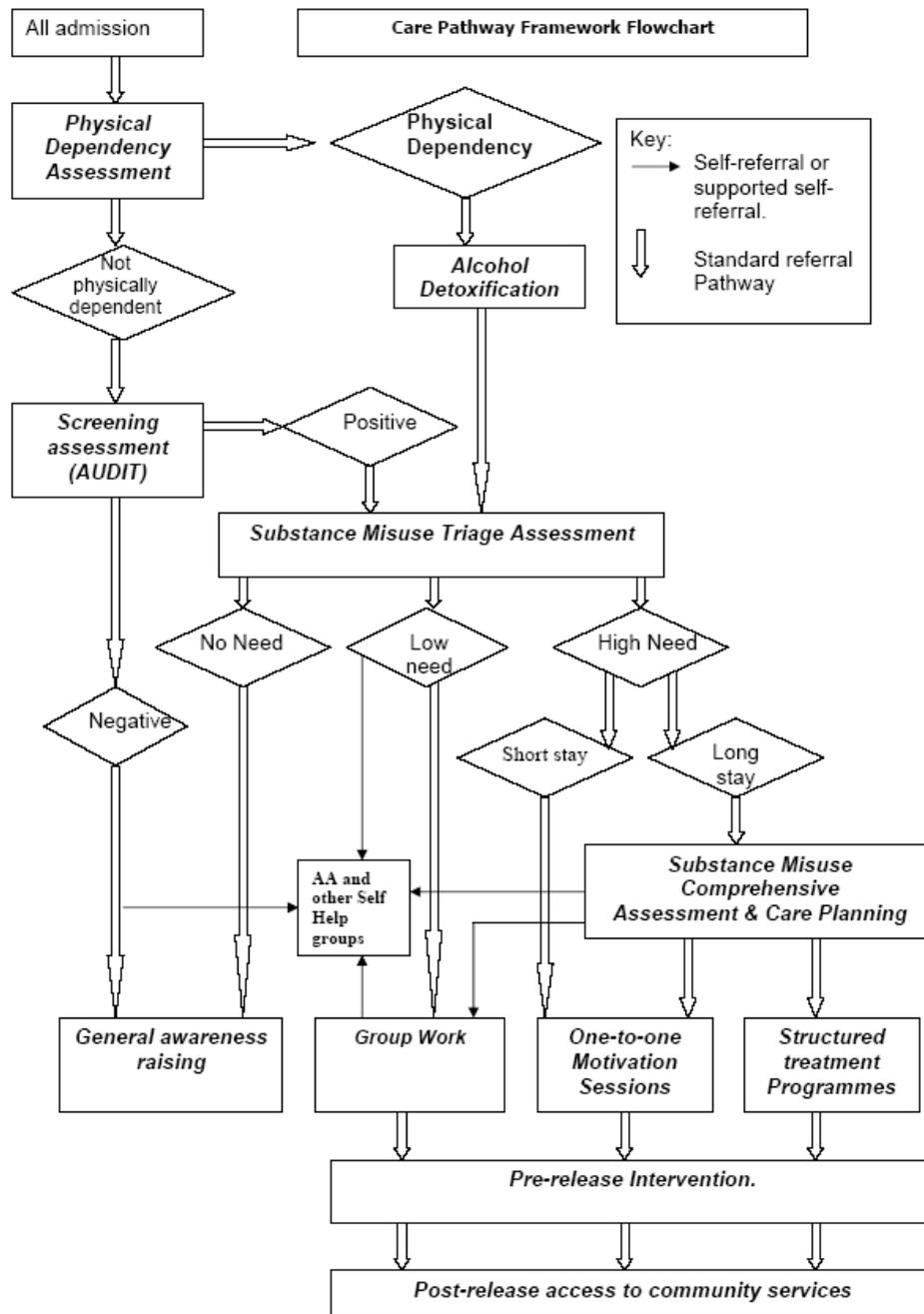
Throughcare was again highlighted, and the strategy recommended that resettlement teams take into account the needs of prisoners with alcohol problems, and consider alcohol treatment in sentence planning.

The previously published Good Practice Guide for alcohol treatment and interventions (HMPS, 2004) demonstrated a very comprehensive discussion of preferred and available treatments, though specifying at the beginning that resources would not allow the full recommendations to be introduced. The guide aimed to assist prison staff in identifying prisoners with alcohol-related problems, providing appropriate, quality treatment, and sharing good practice across the prison estate.

The Good Practice Guide included a flowchart showing the care pathways of prisoners with alcohol problems, including assessments and various treatments. The flowchart is presented in Figure 1.

The NOMS drug strategy (2005) outlined similar priorities, with the addition of Short Duration Programmes intended for those who cannot engage with longer programmes. The strategy stated an aim of introducing a wider range of pharmacological treatment options, including the expansion of maintenance prescribing for those dependent on opiates.

Figure 1: Care Pathways for Prisoners with Alcohol Problems



(HMPS, 2004)

Given the extended remit of NOMS in all areas of the Criminal Justice System, there was greater description of services available to drug-using offenders based in the community. The emphasis was on engagement and contact with services. This included initial sanctions (such as Drug Treatment and Testing Orders and later Drug Rehabilitation Requirements), accredited

offending behaviour programmes (such as ASRO or OSAP, delivered as part of a community sentence or license), and mandatory testing during rehabilitation.

The National Probation Service's strategy (2006) noted the contribution of alcohol misuse to crime and suggested that over a third of offenders under probation supervision had current problems with alcohol use. The strategy aimed to identify alcohol misuse and offending needs at contact with the National Probation Service, to ensure that staff are fully capable of providing evidence-based interventions as well as advice and support to offenders who misuse alcohol, and to ensure consistency across the Service.

Brief interventions with demonstrated success in other settings were recommended, despite the lack of evidence for their efficacy in the probation setting. These were described as the provision of information, brief advice and support over 20-30 minutes by trained staff, aiming to promote behaviour change. Treatment was described in four tiers of provision according to intensity, where probation staff could deliver screening, advice, and information interventions, and refer to more intensive, specialist treatments as appropriate (including motivational work and relapse prevention).

Offending Behaviour Programmes are provided by the National Probation Service, but the alcohol strategy pointed out that some offenders are not eligible for accredited substance misuse programmes on the basis of alcohol misuse alone. The Lower Intensity Alcohol Module has been designed to bridge this gap, and is currently being piloted. The strategy also emphasised the need to address social factors linked to alcohol misuse and reoffending, such as accommodation, education and employment and that these should be considered with any substance misuse treatments.

The update to the National Alcohol Strategy for England (Department of Health *et al*, 2007) outlined that treatments that should be available across the offender pathway. This included the delivery of brief advice sessions for binge-drinkers arrested for alcohol-related offences and Alcohol Treatment

Requirements which can be added to community or suspended sentences orders. These requirements can be for intensive specialist treatment, or information, advice and support depending on the scale of the problem. The document also listed the treatments available to offenders in custody and those in contact with the national Probation Service described above.

1.2 Community

The joint document 'Drug Misuse and Dependence – Guidelines on Clinical Management' (Department of Health *et al*, 1999) provided advice for doctors on the clinical management of substance use disorders. The document is being updated and is, at the time of writing, undergoing consultation. The new guidance is expected to be published late in 2007, and will link closely to new NICE guidelines (see below). Since some of the 1999 guidance will be superseded within a few months of this review, a brief overview will be provided.

At the centre of the 1999 guidance was the statement that:

“Drug misusers have the same entitlement as other patients to the services provided by the National Health Service. It is the responsibility of all doctors to provide care for both general health needs and drug-related problems, whether or not the patient is ready to withdraw from drugs.” (p1)

The guidance emphasised the importance of good assessment in the care of patients with substance use disorders. For opioid withdrawal, methadone was the medication of choice. The guidance also indicated the use of buprenorphine, lofexidine and outlined that clonidine was useful but unlicensed. The guidance stated that dihydrocodeine was unlicensed for drug dependence, despite it being used in some areas.

For maintenance treatment, methadone was recommended (by properly trained teams), and naltrexone was licensed to prevent relapse among those who have undergone opioid detoxification. Buprenorphine was also licensed for the management of drug dependence and its use was suggested as an alternative for those with lower levels of dependence. Levo-alpha-acetylmethadol (LAAM), though not licensed (and now withdrawn), was thought to have potential following further research, and further studies were also recommended into injectable maintenance prescription (non licensed), including methadone and heroin.

For benzodiazepines, withdrawal prescribing was suggested when there was clear evidence of dependence; benzodiazepines were licensed for benzodiazepine withdrawal (and other psychiatric disorder) but not for the management of benzodiazepine dependence.

For the treatment of withdrawal from stimulants, the guidance recommended abstinence-based psychosocial programmes for cocaine use. There was no evidence for the use of complementary therapies. Substitute prescribing was not recommended. It was noted that dexamphetamine sulphate prescription for amphetamine misuse had no proven efficacy and was not licensed for drug dependence. However, anecdotal clinical experience was that it this may be useful, and should be evaluated.

In relapse prevention, naltrexone was recommended. The guidance had no specific recommendations for any relapse prevention interventions, but stated that clinicians should understand the role of naltrexone and psychosocial interventions (including 12-step programmes such as Narcotics Anonymous, rehabilitation and therapeutic communities) in relapse prevention.

The guidelines on clinical management of drug misuse and dependence are in the process of being updated. A draft has been made available for consultation (Independent Expert Working Group, 2007) but, given that the recommendations are not finalised and may change in the final version, it will not be included in this review. It is likely that the update will incorporate new research evidence and the recently-published NICE guidelines (see below).

Two NICE Technology Appraisals were published in early 2007, examining naltrexone, methadone and buprenorphine use for opioid dependence (NICE, 2007a, b). Later in 2007, two NICE guidelines were also published on detoxification treatments for opioid dependence and psychosocial interventions for drug misuse (NICE 2007c,d).

The appraisal of methadone and buprenorphine (NICE, 2007a) recommended these pharmacological treatments for the management of opioid dependence. Decisions regarding which treatment to use should be on a case by case basis, with methadone the preferred option when both were equally suitable. The appraisal recommended daily, supervised administration of the treatment, for at least three months and as part of a programme of supportive care. Supervision should only be relaxed when concordance is assured.

The second technology appraisal (NICE, 2007b) recommended naltrexone for those dependent on opioids who have undergone detoxification and are highly motivated to stay abstinent. Possible adverse effects should be fully explained, and treatment should be provided under supervision as part of a programme of supportive care. Consideration should be made to stop treatment if there is evidence of continued opioid misuse.

NICE (2007c) examined opioid detoxification in settings including community, residential, inpatient and prisons. The guideline stated,

“Pharmacological approaches are the primary treatment option for opioid detoxification, with psychosocial interventions providing an important adjunct” (p4).

Person-centred care was a key component, giving patients the chance to make informed decisions on their treatment, where appropriate. In order for this to be effective, the importance of providing advice, information and support was emphasised, including the risks involved in detoxification, treatment options, loss of tolerance, and the importance of continued support following detoxification.

Medication for detoxification to be offered were specified as methadone or buprenorphine, with lofexidine recommended in certain circumstances (ie where dependence may be mild or uncertain or where patients have made informed and clinically appropriate decisions to detoxify in a short period, or not to use methadone or buprenorphine for detoxification). Clonidine and

dihydrocodeine were not recommended for routine use. Ultra-rapid detoxification (over 24 hours under heavy sedation or anaesthesia) was not supported in any circumstances. Rapid detoxification (1-5 days under moderate sedation) and accelerated detoxification (using opioid antagonists at reduced doses) was not recommended for routine use. The guideline stated that detoxification should be offered in community settings as routine. However, detoxification (as opposed to stabilisation and treatment of withdrawal symptoms) was not recommended for those in police custody or those on short prison sentences/remands.

The guideline on psychosocial interventions (NICE, 2007d), related to “*people who use opioids, stimulants and cannabis in the healthcare and criminal justice systems*”. Once again, person-centred care was emphasised as well as treatment choice. Several forms of psychosocial intervention were covered by the guidelines. Brief interventions (two sessions lasting 10-45 minutes) were recommended for those with limited contact with drug services. Awareness of self-help, based on 12-step programmes (eg Narcotics Anonymous), should be raised, and staff should consider facilitating an initial contact with a group. Contingency management interventions focusing on changing behaviour using incentives for positive behaviours should be offered by drug services, for those at risk of physical health problems due to their drug misuse. Behavioural couples therapy was recommended for stimulant or opioid misusers who are in close contact with a non-drug-misusing partner. Specific interventions were recommended to improve concordance with naltrexone maintenance and to avoid relapse (in the form of contingency management or behavioural couples therapy). Cognitive behavioural therapy and psychodynamic therapy were not recommended for drug misuse, though should be considered for those with co-occurring mental health problems. Furthermore, consideration for inclusion in a therapeutic community was recommended for prisoners with significant drug misuse problems.

Both guidelines stated, “*For people in prison who have drug misuse problems, treatment options should be comparable to those available in the community*”. However, prison-based treatments should take into account the length of

sentence/remand, possibility of unplanned release and risk of self harm, death or post-release overdose.

In 2006, the National Treatment Agency for Substance Misuse in the NHS published a review of the effectiveness of treatment for alcohol problems (NTA, 2006). There was a heavy focus on psychosocial interventions in this review, including brief and extended treatments. Brief interventions were described as effective in a variety of settings, but more research was recommended into their efficacy in the criminal justice system. The review concluded that several lower-intensity treatments had been found to be effective; motivational interviewing, condensed cognitive-behavioural therapy and motivational enhancement therapy, but the data was for specific patient groups in specific settings.

Similarly, evidence from specific trials showed the efficacy of several alcohol-focused specialist treatments: community reinforcement approaches; social behaviour and network therapy; behavioural self-control training; coping and social skills training; cognitive behavioural marital therapy; relapse prevention; and, aftercare. Cue exposure and extended case monitoring showed promise, whilst behaviour contracting and relapse prevention should be incorporated into other approaches. Aversion therapy was not recommended. The review also considered several treatments not focusing specifically on alcohol. It concluded that the involvement of family and friends in treatment was beneficial, that the evidence for social skills training was limited whilst self esteem therapy could be developed. Complementary therapies were thought to assist in building a therapeutic alliance, but no more.

In terms of pharmacological therapies, chlordiazepoxide was found to be the drug of choice, but with diazepam as an acceptable alternative. Disulfiram was found to be effective in relapse prevention, whilst naltrexone and acamprosate had positive effects on craving but should be used in combination with psychosocial interventions.

In addition, several self-help methodologies were scrutinised. Individual self help was felt to be effective in several formats, as were collective mutual-aid approaches such as Alcoholics Anonymous (for those suited to it who attended regularly) and 12-step facilitation. The importance of considering co-occurring mental health problems was also emphasised.

The document discussed prisons as a setting where treatment of alcohol problems was particularly important. However, it also states that, "*The reality is that programmes are not well developed and the evidence base in support of programmes is weak*" (p54).

Section 2: Review of Drug Treatments

This section considers treatments for drug misuse. It begins with a summary of three systematic reviews specifically relating to substance misuse in offender settings. These reviews are recent and comprehensive and have been critically appraised in this section with their conclusions described at some length.

Following this, there is a summary of the evidence for treatments in community settings. The Cochrane Collaboration is a global, independent body which conducts systematic reviews on the effects of health-related-interventions. The reviews are detailed examinations of the evidence base in a given area, summarising and synthesising data from high quality studies conducted all over the world. All Cochrane reviews relating to drug misuse are summarised below. The authors' summary is replicated verbatim, and any offender-based research relating to each review is also described. After each section, a summary of the findings is given, with potential gaps for offender-based research. Where there is completed research in offender populations, references are given for which more details can be found in Appendices 2 to 6.

2.1 Review of Offender Treatments

There have been three systematic reviews of substance misuse and dependence in prison and/or offender populations from the last three years. Fazel *et al* (2006) aimed to determine the prevalence of substance abuse/dependence in prisons, and to compare this with the general population. Perry *et al* (2006) aimed to establish the effect of offender treatments on continued drug use and reoffending, in a variety of settings including courts, secure care, and in the community. Finally, Holloway *et al* (2005) examined the effect of criminal justice and drug programmes on drug-related crime.

Fazel *et al* (2006)

The basis for this review was to explore the relationship between offending behaviours and substance abuse in various criminal and medical settings. Fazel *et al* (2006) suggested that a greater understanding of the extent of substance abuse and dependence in offenders would aid the development of appropriate services and inform treatment interventions. Therefore a systematic review was conducted to ascertain the prevalence rates of substance abuse/dependence in prisoners and to compare prevalence rates with that of the general population.

Study selection

Search terms related to both substance misuse and prisoners. The review included studies using prisoners diagnosed as abusing or dependent on alcohol or drugs within the last year. The inclusion criteria consisted of articles published between January 1966 and January 2004. Databases searched were EMBASE, PsycInfo, Medline, US National Criminal Justice Reference Abstract Database, European Monitoring Centre for Drugs and Drug Addiction and via additional scanning of reference lists. Studies had to have recruited prisoners within 3 months of arriving in prison. Prisoners had to have been diagnosed through clinical examination or clinical interview using a validated and standardised tool. Large cross-sectional studies with a sample in excess of 500 were included for comparative analysis. Exclusion criteria consisted of prisoners having self reported diagnoses, diagnoses based solely on biological markers, non-randomised samples, diagnoses reported after the prisoner was released, or for lack of standardised criteria. Studies were also excluded if results were combined for gender.

Preliminary Results

Thirteen studies met the criteria with a combined total of 7563 participants. 4293 were male (57%) and 3270 were female (43%) with an average age of 30.4 years. 14.5% of the sample were either charged or convicted with a violent offence. 41% were sentenced and 34% were on remand. Four studies combined the results for both sentenced and remand prisoners (mixed

studies). The studies comprised prisoners from various countries; USA 88%, UK 7%, Ireland (280 prisoners) and New Zealand (100 prisoners). Response rates all reported at 75% or above.

Results

Prevalence rates for alcohol abuse/dependence in male prisoners ranged from 17.7 to 30.0% (7 studies) and female prisoners 10.0 to 23.9% (5 studies). Prevalence rates for drug abuse/dependence in male prisoners ranged from 10.0 to 48.0% (8 studies) and female prisoners 30.3 to 60.4% (6 studies).

Heterogeneity between the studies ranged from 84% and 98%, where 75% is considered high (Fazel *et al*, 2006). Therefore, methodological and clinical differences between the chosen studies precluded any meta-analysis. Heterogeneity was further explored across the studies for gender and type of abuse/dependence. It was found that psychiatrist interviewers diagnosed alcohol/drug abuse/dependency less frequently than non psychiatrists. This introduced an element of bias as prevalence rates are apparently dependent upon the type of assessor.

Prevalence estimates were then compared with 6 cross-sectional studies of the general population for a total of 10,292 participants from England and Wales, Canada, New Zealand and USA. Prevalence rates for alcohol abuse/dependent males ranged from 2.0 to 14.9% and females 2.5 to 6.9%. Prevalence rates for drug abuse/dependent males ranged from 3.6 to 47.2% and females 3.7 to 44.1%.

Discussion/Critique

There were significant variations in the prevalence rates between prisoners as to whether they were diagnosed as *abusing* drugs or alcohol or *dependent* on drugs or alcohol. Prevalence rates combined for abuse/dependence were found to be different than for abuse alone although it was not reported whether they were significantly different. This highlights a need to separate the two. This variation was largest for drug misuse in males and indicates a

need for clearer clinical definitions of abuse/dependence within substance misuse research.

There were numerous examples of systematic bias that should be considered when generalising these findings. Interviewer bias was present; psychiatrists reported prisoners as having significantly less alcohol/drug abuse/dependence than other interviewers. This suggests systematic flaws in the diagnostic procedures as the results were dependent upon the person making the diagnosis. The sample populations also differed in status, (remand or sentenced), and country of origin. Therefore, caution should be taken when generalising these findings to populations outside that of the study populations.

Overall, it was concluded that the prevalence estimates of drug/alcohol abuse/dependence in prisoners is higher than in the general population. Using statistics from the USA, male prisoners had only slightly higher (but not significant) rates of alcohol dependency while drug dependency was found to be 2 to 10 times higher than the general population. For female prisoners differences were more marked: Alcohol dependency was 2 to 10 times higher and drug dependency up to 13 times higher than that of females in the general population. Fazel *et al* (2006) suggested service provision for female prisoners should be a priority. No studies reported prevalence rates of alcohol abuse/dependence for females in non-US prison populations. Consequently, further research into the prevalence of alcohol abuse/dependence in females outside the US is needed before adequate recommendations can be made for the provision of treatment services.

Fazel *et al* (2006) suggested that alcohol/drug treatment services should be emphasised for prisoners as substance misuse is a risk factor to suicide and that service provision should focus on but not be exclusive to females.

When generalising these results to UK populations, external validity must be considered. 88% of prisoners included in the systematic review resided in US prisons. The comparisons between prison and general population prevalence

were also conducted on US samples. To avoid making ethnocentric assumptions, a systematic review of *UK* studies and subsequent comparisons with UK general populations may be required before recommendations can be made for UK alcohol and substance abuse/dependence service provision.

Fazel *et al's* (2006) systematic review alerts us to the elevated prevalence rates of alcohol/drug abuse/dependence in prisoners than in the general population. Consequently, the authors recommend screening prisoners upon reception into custody and on release. They further suggest a need for appropriate treatment facilities by specialist addiction services both within prisons and for post-prison aftercare.

Perry *et al* (2006)

The background to this review was the established link between drug use and crime, suggesting a role for the Criminal Justice System to implement policies for service provision (Perry *et al*, 2006). In direct response to the objectives set out in the UK National Drug Strategy (Home Office, 1999; 2004), Perry *et al*'s (2006) comprehensive overview assessed the effectiveness of current interventions for drug misusing offenders in reducing both recidivism and drug use in courts, secure settings and community-based settings.

The review aimed to fill the knowledge gap left by other reviews that: focused solely on offenders; only focused on one setting (community or correction based); focused on one country alone; and failed to consider the impact of interventions on *both* criminal activity and drug misuse. Additionally, cost and cost effectiveness of treatments was reported descriptively to fill the gap left by Holloway *et al* (2005).

The research questions were: Do; (i) court based interventions, (ii) secure establishment-based interventions or (iii) community-based interventions for drug misusing offenders reduce drug use and/or criminal activity?

Search Criteria

Nineteen databases were searched for published or unpublished studies from any country from 1980 to 2006, as well as manual searching of reference lists and through personal communication with experts.

Study criteria

Inclusion criteria selected 24 Randomised Controlled Trials of 8936 offenders either in custody, being processed by courts, in secure settings or in the community. It included research that evaluated any intervention designed to reduce, eliminate or prevent relapse to drug use, assessed by a vast array of primary and secondary outcome measures. Studies were excluded for being pre-1980; not reporting both pre and post programme measures of drug use and criminal behaviour and for not having a control or comparison group.

Following selection, studies were stringently assessed for their methodological quality using a published protocol. Only 4 of the 24 RCTs were deemed to have used adequate methods of randomisation. Only 7 studies reported that participants' drug history was similar across groups at baseline and only 18 of the 24 studies reported similar criminal history between experimental groups at baseline. The extent to which assessors were adequately blinded to treatment allocation was considered; 4 studies were classed as having high concealment with 14 classed as having moderate concealment and 5 with low concealment. 7 of the studies reported loss to follow up. All excluded studies were appended along with full reasoning for the exclusion.

Results

Of the 24 RCTs 15 of the studies were found to be sufficiently homogenous and were included in meta-analyses. See Appendix 2 for the effectiveness of treatment interventions evaluated in Perry *et al* (2006).

Court based Interventions (7 studies)

(Britt et al, 1992; Cosden et al, 2003; Deschenes & Greenwood, 1994; Gottfredson & Exum, 2002)

Monitoring Interventions (4 studies)

(Britt et al, 1992)

Four studies from this one publication comparing court based monitoring interventions were meta-analysed. Pre-trial release with drugs testing and sanctions was compared with routine pre-trial release. The outcome measure was arrest at 3 months and 7-9 months follow up. Results showed significantly less criminal activity in the routine pre-trial release group. The 4 studies did not report on drug use as an outcome measure.

Sentencing interventions (3 studies)

(Cosden et al, 2003; Deschenes & Greenwood, 1994; Gottfredson & Exum, 2002)

Three studies evaluated court-based sentencing interventions. None of the studies were homogenous enough to combine in a meta-analysis and so were

reported individually. One study evaluated a mental health drug court combined with ACT (assertive community treatment) case management compared with treatment as usual (not specified). No significant differences between the groups on drug use at 12 month follow up were detected. The second study evaluated a drug court programme (however it was not stated what intervention the programme was compared with) with re-arrest, re-conviction and drug charge as the outcomes measures at 12 and 24 month follow up. For the re-arrest outcome measure results favoured the drug court programme at both 12 and 24 month follow up. With subsequent drug charges as the outcome measure the intervention group was effective at 24 but not 12 month follow up. No significant differences in re-conviction rates were detected at both 12 and 24 month follow up.

In conclusion, whilst some studies show no significant differences others suggest that drug courts may help reduce recidivism.

Secure Establishment- Based Interventions (3 studies)

(Dolan et al, 2003; Nielsen et al, 1996; Sacks et al, 2004; Wexler et al, 1999)

Therapeutic Community Interventions (4 studies)

(Nielsen et al, 1996; Sacks et al, 2004; Wexler et al, 1999)

Three publications produced one study that utilised the same sample but assessed them across multiple follow up periods (not specified). The effectiveness of a prison based 'AMITY' therapeutic community (Amity is the name of the foundation) followed by community based residential aftercare was found to be more effective than a no treatment control group (not specified) on criminal activity.

Another study assessed the effectiveness of a CREST (name of programme) work release transitional therapeutic community, found to be a more effective treatment in comparison with routine work release in reducing or preventing recidivism (any arrest and charge for an offence) at both 6 and 18 month follow up. Further analysis found no significant differences when considering the female participants only.

One meta-analysis combined two studies that evaluated the effectiveness of a therapeutic community and aftercare in comparison with a mental health programme and waiting list control. Results showed significant reductions in recidivism in the treatment intervention groups.

Pharmacological Interventions (1 study)

(Dolan et al, 2003)

Random allocation of drug using offenders to prison-based methadone maintenance treatment and comparing with a waiting list control found significant differences favouring the intervention, but only at 3 month follow-up.

Community-Based Interventions (13 studies)

(Cornish et al, 1997; Haapanen & Britton, 2002; Hanlon et al, 1999; Henggeler et al, 1999; Martin & Scarpitti, 1993; Petersilia et al, 1992; Rossman et al, 1999)

Monitoring Interventions (8 studies)

(Haapanen & Britton, 2002; Petersilia et al, 1992)

Monitoring interventions were evaluated in 8 studies 7 of which were taken from one publication. A meta-analysis of 4 studies using separate samples compared intensive supervision and surveillance interventions with routine parole/probation. The outcome measures were recidivism, arrest and drug arrest after 1 year. Results showed routine parole/probation as an intervention was most likely to reduce recidivism, arrest and drug use. However, there was one exception; when the outcome measure was taken as conviction/incarceration after 1 year, results showed the intense supervision and surveillance reduced conviction/incarceration.

Another 3 studies were meta-analysed, again utilising separate samples. Intensive supervision and surveillance was compared with intensive supervision. Results suggested the intervention of intensive supervision without increased surveillance was favoured on all the outcome measures of

recidivism, arrest, drug arrest, conviction and incarceration after 1 year follow up.

Pharmacological Interventions (1 study)

(Cornish et al, 1997)

One study compared the effectiveness of a naltrexone program with routine parole compared with routine parole alone. Results suggested that those given both the naltrexone treatment program and routine parole were less likely to recidivate.

Aftercare Interventions (1 study)

(Rossman et al, 1999)

One study randomly assigned drug using offenders to either a community based after care programme or to routine parole/probation. Results were inconclusive and relied heavily on self-report data. When taking marijuana use as the outcome, the aftercare programme was seen as more effective. However, when drug dealing was taken as the outcome measure routine parole was deemed more effective.

Case Management Interventions (1 study)

(Martin & Scarpitti, 1993)

When assertive community outreach was compared with routine parole/probation no significant differences were found on drug use or criminal activity.

Cognitive Skills training Interventions (2 studies)

(Hanlon et al, 1999; Henggeler et al, 1999)

One study compared multi-systemic therapy in the home and community compared with community services as usual. No significant differences were found for the interventions with respect to drug use or criminal activity.

One study compared a social support programme with drug testing and routine parole and found no differences and then compared the social support programme with routine parole and also found no differences.

Discussion

The research question explored whether; (i) court based interventions, (ii) secure establishment-based interventions and (iii) community-based interventions for drug misusing offenders reduce drug use and/or criminal activity?

Therapeutic communities and aftercare seemed to be the most promising of interventions. However, disappointingly, the studies that reported these findings were quasi-experimental and may have included some bias. More robust designs are needed to elucidate these results.

The review highlights several methodological weaknesses that limit the conclusions that can be drawn from these studies. For the studies that evaluated court based and community based interventions, some loss to follow up was seen, original baseline differences were highlighted and some had inadequate allocation concealment and a lack of randomisation of participants to intervention groups. For many studies, age, gender and ethnicity of participants was unreported. It is therefore questionable as to whether the study samples represent enough of a cross section of the population to allow generalisations to be made. From the studies that did report such demographic variables, females, juveniles and young offenders were under represented with a heavy focus upon adult males.

Very limited conclusions can be drawn from this systematic review in terms of treatment success. It is apparent that there is no single gold standard treatment intervention. Methodological weaknesses and incompatibility of the studies preclude meta-analysis. This may indicate that different treatment interventions are effective in different settings, at different times both within and between different client groups. Consequently, limited conclusions can be drawn as to the cost effectiveness of treatment interventions for drug misusing offenders with only one study including economic evaluations. Therefore, Perry *et al* (2006) suggested a need to conduct better quality research that utilises standardised outcome measures which will enable comparisons to be made across literature.

Holloway *et al* (2005)

In direct response to the proposals made in the Updated Drug Strategy 2002 (Home Office, 2002), Holloway *et al* (2005) systematically reviewed the literature on the effectiveness of (i) criminal justice programmes that aim to directly reduce drug related crime or (ii) drug treatment programmes that as a consequence may indirectly serve to reduce drug related crime.

Search Criteria

A comprehensive search of 5 databases was undertaken; Criminal Justice Abstracts, BIDS, C2-Spectr, Home Office – Research Development and Statistics website, and Psychological Abstracts. The review consisted of 55 studies (see Reference Section for a list of included studies). An additional search of Medline and The National Criminal Justice Reference Service databases highlighted 14 more relevant studies, however due to time constraints were not included in the review.

The review included published and unpublished reports, written in the English language from 1980 to March 2004.

Study Criteria

Inclusion criteria consisted of studies of treatment interventions where criminal behaviour was measured before and after the treatment intervention with experimental and comparable control groups (level 3 and above of the scientific methods scale (SMS), Sherman *et al*, 1997). The 3 criminal justice programmes aiming to reduce drug related crime included in the review consisted of; Arrest Referral Schemes, Drug Treatment and Testing Orders, and Drug Abstinence Orders and Requirements. In addition, 3 treatment programmes were included that aimed to reduce drug use and indirectly drug related crime, consisting of; methadone maintenance programmes, detoxification programmes, and self-help programmes.

Of the 55 studies, 45 were conducted in the USA, 7 in the UK, 1 in Switzerland, 1 in Sweden and 1 in Australia. Holloway *et al* (2005) intended

to include only those studies with methodological rigour however, due to the number of potentially flawed studies having been conducted in this area, studies with low methodological rigour were included and critiqued in the review. Studies were criticised for; relying on self-report data, only recording a post treatment measure, and for non randomisation of participants into treatment groups. Consequently, not all included studies met the criteria for the scientific methods scale (SMS; Sherman *et al*, 1997).

Results

The results were reported in two sections; a quantitative narrative review and meta-analysis. The quantitative narrative review summarised numerical results from the studies as well as providing a descriptive summary of conclusions. It was suggested that this approach, in collaboration with rigorous meta-analyses enabled a greater number of treatment interventions to be evaluated. (see Appendices 3 to 5 for tables detailing the effectiveness of treatment interventions taken from the quantitative narrative review.)

Quantitative Narrative Review

In the quantitative narrative review relevant studies were categorised according to the type of control group used. These comprised three groups; treatment versus a non-treatment comparison group, treatment versus an alternative treatment group, and finally, a high intensity version of a treatment programme versus a low intensity version of a treatment programme. Holloway *et al* (2005) deemed a treatment effective if 50% or more of the studies indicated that the treatment intervention worked, and therefore less than 50% was ineffective.

Fifty five percent of all findings reported suggested that methadone treatment was more effective in reducing criminal behaviour when compared with; no treatment, another treatment, or a low intensity version of a treatment. The effectiveness of heroin treatment when compared with no treatment, another treatment or a low intensity version (i.e. all treatment comparisons) was indicated in 83% of findings, drug courts were more successful than all other treatment interventions in 80% of findings. Therapeutic communities were

successful in 68% of findings, probation and parole in 63% of findings. Psycho-social and behavioural Interventions were better than other treatment groups in 56% of findings; however, supervision and aftercare was only better than other treatment groups in 40% of findings and finally, drug testing/DTTOs were only deemed successful in 23% of findings. Subsequently, only two treatment interventions were deemed ineffective; Drug testing/DTTOs and supervision and aftercare. A comprehensive description of what supervision and aftercare actually involved is not clear from Holloway *et al*'s (2005) review.

Most studies reported multiple findings. Interestingly, Holloway *et al* (2005) found drug treatment interventions more successful in reducing criminal activity than criminal justice programmes when analysis was conducted on the multiple findings from each study as opposed to the overall findings from each study. Of the treatment interventions, heroin treatments were deemed successful in 5 out of 6 findings, methadone treatment in 10 out of 13, therapeutic communities in 14 out of 16 and psycho-social programmes in 6 out of 7. Of the Criminal Justice Programmes drug testing was only successful in 4 out of 13 findings and other criminal justice programmes in a mere 2 out of 9 findings.

Holloway *et al* (2005) stated that certain programmes could be more successful in reducing criminal behaviour among different sample populations. Therefore, to investigate this further they analysed groups of studies according to demographic characteristics. Studies were grouped into 4 categories;

1. Studies providing results for two or more sub-groups

Nine out of 55 studies presented results on the differential effect of the intervention on different demographic sub-groups.

Gender

Three studies evaluated methadone treatment and found it was more effective

for males with a 55% reduction in offending, as opposed to a 26% reduction in offending for females.

Ethnicity

One study looked at ethnic group differences and found the therapeutic community intervention was more effective among non-white subjects with a 55% reduction in offending, as opposed to 19% reduction in offending in white subjects.

Dosage/Programme Intensity

The 3 studies that looked at the effect of different dosages of methadone in a methadone treatment programme concluded that higher dosages resulted in greater reductions in offending. 4 studies investigating the intensity of different treatments concluded higher intensity programmes were more effective in reducing crime than less intensive programmes.

2. Studies providing results for a single sub-group

Gender

Seven studies reported gender differences and concluded that males tended to show greater reductions in offending after treatment than females. However, this comparison was conducted with only 1 study on females which had a very small sample size (41) compared with the total sample size (738) of the 6 studies on males.

Age

Three studies based on young offenders reported higher success rates than those based on adults.

3. Studies that included regression analysis interaction terms for sub-groups

The third group of comparisons consisted of studies that used multiple regression analyses which reported on an interaction in terms of the characteristics of the sample population.

Gender

Once again, in a study of a social justice programme, it was concluded that the programme was more effective for males than females providing further support for the differential effectiveness of treatments by gender.

Age

No differences in offending behaviour were found for young versus older people or by virtue of their ethnic grouping.

4. Studies that included authors comments on sub-groups

In the last section of the quantitative narrative review Holloway *et al* (2005) looked at authors' general conclusions.

Gender

Nine studies commented on the differential effect of gender upon recidivism. Four studies stated that males have more favourable change in criminal behaviour, whilst one suggested that females did. Four studies stated there were no differential effects of gender upon success rate of a treatment programme as measured by recidivism.

Age

Six studies commented on age. One study stated the programme was more effective in reducing criminal behaviour in young offenders than adults with five studies reporting no differences with respect to age.

Ethnicity

Six studies commented on ethnic grouping. One found that non-white subjects showed a greater reduction in offending behaviours whilst five studies reported no differences.

The results from the authors' comments on sub-group differences are somewhat inconsistent. Some state that males, those of a younger age, and non-white subjects have more promising outcomes with many studies stating there are no differences. Results are not wholly conclusive. It may be that

different treatment programmes work for different populations in different circumstances.

A high level of agreement was found for studies comparing different levels of treatment intensity. Twelve out of 13 studies investigating programme intensity in relation to length, strength, and completion of the programme concluded high intensity programmes resulted in greater crime reduction than less intensive programmes with the other study reporting the same outcome regardless of programme intensity. However, the effect size for the difference in success between high and low intensity programmes was not reported, nor was their cost effectiveness.

Finally, results of the quantitative narrative review suggested that most of the studied interventions seemed to work, but there were variations within and between sub-groups. The review included a large number of studies and even multiple findings from the same study. However, it did not take into account sample size. Studies with small sample sizes were given equal weight to those with large sample sizes and therefore no account of statistical power was taken. Consequently, Holloway *et al* (2005) utilise methodological triangulation; the utilisation of multiple methods, ie a series of meta-analyses were conducted in order to evaluate more strongly the effectiveness of treatment interventions for drug using offenders.

Meta-Analysis

In order to conduct comparable analyses of studies odds ratios (OR) were used to establish the size of the effect of treatment interventions on offending behaviours. The research question for this part of the review was; how well do the drug treatments for offenders work? With the chance value of the OR at 1, interventions were deemed effective if the OR exceeded 1 and deemed to be detrimental if less than 1.

The meta-analyses were conducted using a fixed effect model. Holloway *et al* (2005) suggested that using a fixed effect model, studies with a large effect size can skew the average effect size. Hence a random effects model would

ensure larger studies have a more equal weighted influence on the mean. As the fixed effect model was utilised, the possibility of disproportionate effects need to be considered.

Two groups of meta-analyses were conducted: (i) post-test studies ie studies measuring outcomes of post treatment only, with random allocations to experimental and control conditions. The outcome measure was the number of persons committing criminal offences after the intervention (experimental designs); (ii) pre-post studies, ie studies that assessed offending behaviour before and after drug treatment interventions with controls. The outcome measure was the number of offenders and non-offenders (quasi-experimental designs).

Meta-analysis of post-test only studies

Sixteen studies were included in this meta-analysis (see Appendix 4 for results of the meta analyses of the post-test only studies). Five of the studies evaluated therapeutic communities and drug courts, and found the treatment reduced recidivism. Eleven studies found no significant effect of the treatment interventions; methadone maintenance, probation and aftercare following a criminal justice measure, drug testing, supervision and aftercare following treatment, and one study of therapeutic communities. No treatment interventions negatively influenced offending behaviours.

Meta-analysis of pre-post test studies

Twelve studies were included in this meta-analysis. (see Appendix 5 for the results of the pre-post test studies). Six studies evaluated methadone treatment, heroin treatment, therapeutic community, probation, and aftercare following a criminal justice measure. Supervision and aftercare demonstrated significant positive effects on recidivism. One study of methadone treatment found a significant effect on increasing recidivism. Five studies showed no significant effect of the treatment on later recidivism, three of which were methadone interventions.

In total 28 studies were included in the meta-analyses. The weighted mean effect size was 1.41. This suggests, the odds of a reduction in criminal behaviour was 41% higher among those receiving the intervention of interest rather than the comparison intervention.

Holloway *et al* (2005) suggested that the most important findings of the review were those that evaluated the different types of individual treatment programmes. For the treatment versus no treatment group, therapeutic communities were the most effective followed by methadone treatment. The most effective Criminal Justice Programmes based on treatment versus no treatment comparisons were probation or parole supervision and drug courts. Drug testing programmes were shown as not effective. For the treatment versus alternative treatment comparisons, heroin treatment was shown to be the most effective (however, this is based on a single study) followed by therapeutic communities.

Demographic breakdowns for treatment effectiveness were also conducted. Interventions seemed to be effective in reducing drug-related crime in males but not females. However, only one study of females was used in the comparison. Therapeutic communities seemed to be more effective for males than females and for juveniles than adults.

Limitations of the meta analysis

The methodological quality of the studies included in the meta-analysis will inevitably impact upon the conclusions that can be drawn from its findings. As previously stated, studies that did not meet level 3 in the SMS scale (Sherman *et al*, 1997) were included in this review. Ideally, it would be better to include studies that meet level 5 of the SMS scale, that is; the “*random assignment of programme and control conditions to units*” (Sherman *et al*, 1997). However, Holloway *et al* (2005) found few studies that meet this criteria. Consequently, some included studies were quasi-experimental, some only took a post treatment outcome measure, and some did not randomly assign participants to groups. In addition, Holloway *et al* (2005) acknowledged the caveat with utilising a fixed effect model of meta-analysis as opposed to the gold standard

of the random effects model; here, studies with a large effect size could have skewed the average effect size.

In conclusion, the meta-analysis highlighted which treatment programmes were most effective in their reduction of drug related crime. Holloway *et al* (2005), using fixed effect odds ratio, reported that all effective programmes were more than twice as likely to reduce criminal behaviour as the comparison interventions, as were methadone programmes and drug courts. Therapeutic communities were two and a half times more likely than their comparison interventions to reduce criminal behaviour. Finally, probation and parole supervision was almost four times more likely than its comparison intervention in reducing criminal activity.

Final Conclusions

Holloway *et al* (2005) set out to systematically review the literature on the effectiveness of criminal justice and drug treatment programmes in reducing drug related crime. Four major conclusions can be drawn.

Firstly, most drug interventions seemed to work in reducing drug related crime. Meta-analysis showed all programmes to be effective. 44 of the 52 studies in the quantitative narrative review found the programme was effective in reducing drug related crime on at least one measure. Hence, all treatments under study seem to work most of the time (Holloway *et al*, 2005).

Secondly, methadone treatment, heroin treatment, therapeutic communities, psychosocial approaches, drug courts and probation and parole supervision seemed to be more effective than supervision and aftercare, drug testing, and other criminal justice approaches. Holloway *et al* (2005) suggest that some findings are based on a small number of studies with small sample sizes, and therefore findings should be treated with caution. It is also important to be aware that some programmes work for some offenders and not others.

Thirdly, it seemed that programme outcome was related to demographic characteristics of the individual. In order for results to be more informative,

studies would need to be conducted that directly investigate the interaction between the treatment programme and individuals' demographic characteristics.

However, both the quantitative narrative review and meta-analysis highlighted programmes as more effective for males than females, and that younger people were more responsive to the treatment interventions than older people. The latter finding highlights a possible need for early intervention for drug treatment programmes in order to potentially prevent later recidivism.

The final conclusion that can be drawn from the review relates to programme intensity. The meta-analyses showed that higher intensity programmes were 50% more likely to reduce criminal behaviour than their low intensity equivalents. The quantitative narrative review showed that for 4 out of 11 studies evaluating methadone treatments, those administering higher continuous injected dosages showed greater reductions in offending and, when coupled with maximum supervision and aftercare following the drug treatment programme, reduced crime by 90% as opposed to 57% among the group who received minimum aftercare.

Implications for government policy

Holloway *et al* (2005) reported that government policy is not prescriptive enough in its promotion of the specific interventions needed in order to tackle drug misuse and subsequently achieve the objectives set out in the Updated Drugs Strategy (Drugs Strategy Directorate, 2002). They suggest that prioritising the treatment interventions shown to be effective would be fruitful in achieving this objective.

Implications for Research

Holloway *et al* (2005) stressed the need for good quality research to be conducted on the effectiveness of treatment programmes for drug-misusing offenders in the UK. Only seven of the studies included in the review were conducted in the UK as many were excluded due to methodological weaknesses. Therefore 45 of the 55 eligible studies were conducted in the

USA, which inevitably limits the ability to generalise findings to UK offender populations. In order for systematic reviews to provide stronger conclusive evidence of the effectiveness of treatment interventions, better quality research is essential. The authors made recommendations for a research culture that works to agreed standards of evaluation design (Holloway *et al* 2005) to facilitate greater consistency across studies in order for meta-analyses and systematic reviews to be able to provide more conclusive findings.

Additionally Holloway *et al* (2005) appealed to researchers to investigate the causal mechanisms via the constructing of the possible theoretical reasons for the effectiveness of treatment programmes in reducing later criminal activity. Herein lies an opportunity for more qualitative and longitudinal research to follow offenders' progress as they are receiving treatment interventions from a user perspective.

2.2 Review of Community Treatments

The Cochrane Library holds a series of systematic reviews on drug treatments. Below is a summary of the key findings from each review:

Opioid Abuse and Dependence

Pharmacological Detoxification Interventions (5 reviews)

Title: Buprenorphine for the management of opioid withdrawal

Objectives: The review assessed the effectiveness of the use of buprenorphine to manage opioid withdrawal and any adverse effects and treatment completion.

Studies: 18 studies were included 14 of which were RCTs, involving a total of 1356 participants. Buprenorphine effectiveness was compared with clonidine and methadone.

Authors' Conclusions: "Relative to clonidine, buprenorphine was more effective in ameliorating the symptoms of withdrawal, patients treated with buprenorphine stayed in treatment for longer, particularly in an outpatient setting, and were more likely to complete withdrawal treatment. There was no significant difference in the incidence of adverse effects, but drop-out due to adverse effects may be more likely with clonidine. Severity of withdrawal was similar for withdrawal managed with buprenorphine and withdrawal managed with methadone, but withdrawal symptoms may resolve more quickly with buprenorphine. There is trend towards completion of withdrawal treatment being more likely with buprenorphine relative to methadone"

Equivalent Offender-Based Research: None

Reference: Gowing L, Ali R, White J (2006) Buprenorphine for the management of opioid withdrawal (review). *Cochrane Database of Systematic Reviews* 2006, 2, CD002025.

Title: Alpha2 adrenergic agonists for the management of opioid withdrawal

Objectives: The review assessed the effectiveness of interventions using alpha2 adrenergic agonists; clonidine and lofexidine, to manage opioid withdrawal.

Studies: 22 studies involving 1709 participants were included in the review, 18 of which were RCTs.

Authors' Conclusions: "No significant difference in efficacy was detected for treatment regimes based on the alpha2 adrenergic agonists clonidine and lofexidine, and those based on reducing doses of methadone over a period of around 10 days, for the management of withdrawal from heroin or methadone".

Equivalent Offender-Based Research: None

Reference: Gowing L, Farrell M, Ali R, White J (2004) Alpha2 adrenergic agonists for the management of opioid withdrawal. *Cochrane Database of Systematic Reviews* 4, CD002024.

Title: Opioid antagonists under heavy sedation or anaesthesia for opioid withdrawal

Objectives: The review assessed the effectiveness of opioid antagonists to induce opioid withdrawal with heavy sedation or anaesthesia.

Studies: 6 studies, 5 of which were RCTs, involving 834 participants were included in the review.

Authors' Conclusions: "Heavy sedation compared to light sedation does not confer additional benefits in terms of less severe withdrawal or increased rates of commencement on naltrexone maintenance treatment. Given that the adverse effects are potentially life-threatening, the value of antagonist-induced withdrawal under heavy sedation or anaesthesia is not supported. The high cost of anaesthesia-based approaches, both in monetary terms and use of scarce intensive care resources, suggest this form of treatment should not be pursued".

Equivalent Offender-Based Research: None

Reference: Gowing L, Ali R, White J. (2006) Opioid antagonists under heavy sedation or anaesthesia for opioid withdrawal. *Cochrane Database of Systematic Reviews* 2006, 2, CD002022.

Title: Opioid antagonists with minimal sedation for opioid withdrawal

Objectives: This review aimed to evaluate the efficacy of opioid antagonists in combination with minimal sedation for withdrawal intensity, adverse effects and treatment completion.

Studies: 9 studies were included (775 participants), including 5 RCTs, 3 non-randomised studies and 1 with consecutive allocation, where opioid antagonists with minimal sedation were compared with other opioid antagonist treatments or other approaches.

Authors' Conclusions: "The use of opioid antagonists combined with alpha2 adrenergic agonists is a feasible approach to the management of opioid withdrawal. However, it is unclear whether this approach reduces the duration of withdrawal or facilitates transfer to naltrexone treatment to a greater extent than withdrawal managed primarily with an adrenergic agonist. A high level of monitoring and support is desirable for several hours following administration of opioid antagonists because of the possibility of vomiting, diarrhoea and delirium. Further research is required to confirm the relative effectiveness of antagonist-induced regimes, as well as variables influencing the severity of withdrawal, adverse effects, the most effective antagonist-based treatment regime, and approaches that might increase retention in subsequent naltrexone maintenance treatment."

Equivalent Offender-Based Research: None

Reference: Gowing L, Ali R, White J (2006) Opioid antagonists with minimal sedation for opioid withdrawal. *Cochrane Database of Systematic Reviews*. 2006, 1, CD002021.

Title: Methadone at tapered doses for the management of opioid withdrawal

Objectives: This study aimed to evaluate the efficacy of tapered methadone for detoxification completion and relapse.

Studies: 16 RCTs (1187 participants), where methadone at tapered doses was compared with placebo and other detoxification treatments.

Authors' Conclusions: "Data from literature are hardly comparable; programs vary widely with regard to duration, design and treatment objectives, impairing the application of meta-analysis. The studies included in this review confirm that slow tapering with temporary substitution of long acting opioids,

accompanied by medical supervision and ancillary medications can reduce withdrawal severity. Nevertheless the majority of patients relapsed to heroin use.”

Equivalent Offender-Based Research: None

Reference: Amato L, Davoli M, Minozzi S, Ali R & Ferri M (2005) Methadone at tapered doses for the management of opioid withdrawal. *Cochrane Database of Systematic Reviews 2005*, 3, CD003409.

Summary

Treatment with buprenorphine has been demonstrated to be successful for opioid detoxification when compared to clonidine. Furthermore, clonidine and lofexidine detoxification did not differ in effectiveness from reducing doses of methadone. Methadone at tapering doses assisted withdrawal symptoms but did not prevent relapse. The use of opioid antagonists (such as naltrexone and naloxone) was shown to be feasible, but the level of success was not clear, and a high level of monitoring was necessary. The use of heavy sedation during withdrawal was not supported due adverse incidents and cost.

No trials of pharmacological detoxification for opioid dependence have been conducted in the prison environment to date. The success of buprenorphine should be evaluated in prisons as it has been shown to be the most successful in the community. One UK trial is currently underway (Wright et al, 2007) comparing buprenorphine and dihydrocodeine in a number of settings, including some prisons. Differences between community and prison findings will have implications for the potential for future offender-based drug trials.

Pharmacological maintenance interventions

Title: Buprenorphine maintenance versus placebo or methadone maintenance for opioid dependence

Objectives: This study aimed to evaluate the efficacy of buprenorphine maintenance on patient retention and illicit drug use.

Studies: There were 13 RCTs (range 51-736 participants; total number not stated), where buprenorphine maintenance was compared with methadone maintenance and placebo.

Authors' Conclusions: "Buprenorphine is an effective intervention for use in the maintenance treatment of heroin dependence, but it is not more effective than methadone at adequate dosages."

Equivalent Offender-Based Research: None

Reference: Mattick RP, Kimber J, Breen C & Davoli M (2003) Buprenorphine maintenance versus placebo or methadone maintenance for opioid dependence. *Cochrane Database of Systematic Reviews 2003, 2*, CD002207

Title: Heroin maintenance for chronic heroin dependents

Objectives: This study aimed to evaluate the efficacy and acceptability of heroin maintenance on patient retention, illicit drug use, and improvements to health and social functioning.

Studies: 4 RCTs (577 participants) where heroin maintenance was compared with methadone maintenance and other pharmacological treatment for heroin dependence.

Authors' Conclusions: "No definitive conclusions about the overall effectiveness of heroin prescription was possible. Results favouring heroin treatment come from studies conducted in countries where easily accessible Methadone Maintenance Treatment at effective dosages is available. In those studies heroin prescription was given to patients who had failed previous methadone treatments." (The present review contains information about ongoing trials which results will be integrated when available).

Equivalent Offender-Based Research: None

Reference: Ferri M, Davoli M & Perucci CA (2005) Heroin maintenance for chronic heroin dependents. *Cochrane Database of Systematic Reviews 2005, 2*, CD003410

Title: LAAM maintenance vs methadone maintenance for heroin dependence

Objectives: This study aimed to evaluate the efficacy and acceptability of levomethadyl acetate hydrochloride (LAAM) maintenance for treating heroin dependence.

Studies: There were 18 studies (total number of participants not stated) of which 15 were RCTs and 3 were controlled prospective studies, where LAAM maintenance was compared with methadone maintenance.

Authors' Conclusions: "LAAM appears more effective than methadone at reducing heroin use. More LAAM patients than methadone ceased their allocated medication during the studies, but many transferred to methadone and so the significance of this is unclear. There was no difference in safety observed, although there was not enough evidence to comment on uncommon adverse events."

Equivalent Offender-Based Research: None

Reference: Clark N, Lintzeris N, Gijsbers A, Whelan G, Dunlop A, Ritter A & Ling W (2002) LAAM maintenance vs methadone maintenance for heroin dependence *Cochrane Database of Systematic Reviews 2002*, 2, CD002210

Title: Maintenance treatments for opiate dependent pregnant women (protocol stage)

Objectives: This study aims to evaluate the efficacy of maintenance treatments and/or psychosocial interventions on use of illicit substances, patient retention and neonatal health.

Equivalent Offender-Based Research: None

Reference: Minozzi S, Amato L & Vecchi S (2007) Maintenance treatments for opiate dependent pregnant women (Protocol). *Cochrane Database of Systematic Reviews 2007*, 1, CD006318

Title: Methadone maintenance at different dosages for opioid dependence

Objectives: This study aimed to evaluate the efficacy of methadone maintenance treatment at different dosages on health and social outcomes as well as functioning.

Studies: 21 studies were included (5994 participants), including 11 RCTs and 10 controlled prospective studies, where methadone maintenance was compared for different dosages.

Authors' Conclusions: "Methadone dosages ranging from 60 to 100 mg/day are more effective than lower dosages in retaining patients and in reducing use of heroin and cocaine during treatment. To find the optimal dose is a clinical ability, but clinician must consider these conclusions in treatment strategies."

Equivalent Offender-Based Research: None

Reference: Faggiano F, Vigna-Taglianti F, Versino E, Lemma P (2003) Methadone maintenance at different dosages for opioid dependence. *Cochrane Database of Systematic Reviews 2003*, 3, CD002208

Title: Methadone maintenance therapy versus no opioid replacement therapy for opioid dependence

Objectives: This study aimed to evaluate the efficacy of methadone maintenance therapy for opioid dependence.

Studies: 6 RCTs were included (954 participants), where methadone was compared with placebo maintenance therapy or non-pharmacological therapies.

Authors' Conclusions: "Methadone is an effective maintenance therapy intervention for the treatment of heroin dependence as it retains patients in treatment and decreases heroin use better than treatments that do not utilise opioid replacement therapy. It does not show a statistically significant superior effect on reducing criminal activity."

Equivalent Offender-Based Research: Methadone maintenance has been compared with waiting-list control in one Australian trial to date (Dolan *et al*, 2003). It has also been compared with 7-day detoxification in the US (Magura *et al*, 1993). The impact of legal coercion has been examined in relation to methadone maintenance by Anglin *et al* (1989) and Brecht *et al* (1993). See Appendices 2 to 6 for more details of the study populations and success of these studies.

Reference: Mattick RP, Breen C, Kimber J, Davoli M (2003) Methadone maintenance therapy versus no opioid replacement therapy for opioid dependence. *Cochrane Database of Systematic Reviews 2003*, 2, CD002209

Title: Oral naltrexone maintenance treatment for opioid dependence

Objectives: This study aimed to evaluate the efficacy of naltrexone for relapse prevention following opioid detoxification.

Studies: 10 RCTs were included (696 participants) where naltrexone was compared with placebo or other treatments aiming to achieve opioid abstinence.

Authors' Conclusions: "Unfortunately the studies did not provide an objective evaluation of naltrexone treatment in the field of opioid dependence. The conclusions are also limited due to the heterogeneity of the trials both in the interventions and in the assessment of outcomes."

Equivalent Offender-Based Research: Cornish *et al* (1997) assessed the efficacy of a naltrexone program for those paroled. See Appendix 2 for more details of this study.

Reference: Minozzi S, Amato L, Vecchi S, Davoli M, Kirchmayer U, Verster A (2006) Oral naltrexone maintenance treatment for opioid dependence. *Cochrane Database of Systematic Reviews 2006, 1*, CD001333

Title: Substitution treatment of injecting opioid users for prevention of HIV infection

Objectives: This study aimed to evaluate the effect of oral substitution treatments on HIV infection rates and high risk behaviour.

Studies: 28 studies were included (7900 participants), including 2 RCTs, 3 cohort studies, 2 case-control studies, and 20 descriptive studies, examining oral substitution treatments.

Authors' Conclusions: "Oral substitution treatment for injecting opioid users reduces drug-related behaviours with a high risk of HIV transmission, but has little effect on sex-related risk behaviours. The lack of data from randomised controlled studies limits the strength of the evidence presented in this review, but findings concur with previous systematic reviews."

Equivalent Offender-Based Research: None

Reference: Gowing L, Farrell M, Bornemann R & Ali R (2004) Substitution treatment of injecting opioid users for prevention of HIV infection. *Cochrane Database of Systematic Reviews 2004, 4*, CD004145

Title: Sustained-Release Naltrexone for Opioid Dependence (protocol stage)

Objectives: This study aims to evaluate the efficacy of sustained-release naltrexone compared with placebo or alternative treatments.

Equivalent Offender-Based Research: None

Reference: Lobmaier P, Kornor H, Kunoe N & Bjørndal A (2006) Sustained-Release Naltrexone For Opioid Dependence (Protocol). *Cochrane Database of Systematic Reviews 2006*, 3 CD006140

Summary

The evidence for pharmacological maintenance interventions showed similar effectiveness of buprenorphine and methadone. Furthermore, methadone was preferable to no treatment, and particularly effective at doses of 60-100 mg/day. LAAM may be more effective than methadone, but concerns over side effects (whilst not demonstrated in the research) have led to its removal from the market in Europe and the US. There was not enough information to draw conclusions on the efficacy of naltrexone or heroin maintenance.

The Department of Health (2006) stated that buprenorphine and methadone were infrequently provided for opioid maintenance in the England and Wales prison system, but does not state whether this should be increased. However, the policy does specify that prisoners with maintenance prescriptions from the community should continue to receive these, following stabilisation. Additional considerations of the prison environment are relevant to the implementation of the research evidence here, such as the short length of time many prisoners are in custody, and the availability of drug through-care back into the community.

There has been one trial of methadone maintenance in a prison setting to date, and that from Australia (Dolan *et al*, 2003). Thus, there remains an evidence gap for UK trials of pharmacological maintenance treatment in the prison environment, particularly for a prison-based comparison of buprenorphine and methadone maintenance.

Psychosocial Interventions

Title: Psychosocial and pharmacological treatments versus pharmacological treatments for opioid detoxification

Objectives: This study aimed to evaluate the efficacy of psychosocial intervention in combination with pharmacological treatment for patient

retention, illicit drug use as well as health and social status. The included psychosocial interventions comprised two behavioural treatments (Contingency Management, Community Reinforcement), one form of structured counselling (Psychotherapeutic Counselling), and one Family Therapy.

Studies: 8 RCTs were included (423 participants), where combined psychosocial and pharmacological treatment was compared with pharmacological treatment alone.

Authors' Conclusions: "Psychosocial treatments offered in addition to pharmacological detoxification treatments are effective in terms of completion of treatment, results at follow-up and compliance. Although a treatment, like detoxification, that exclusively attenuates the severity of opiate withdrawal symptoms can be at best partially effective for a chronic relapsing disorder like opiate dependence, this type of treatment is an essential step prior to longer-term drug-free treatment and it is desirable to develop adjunct psychosocial approaches that might make detoxification more effective. Limitations to this review are imposed by the heterogeneity of the assessment of outcomes. Because of lack of detailed information no meta analysis could be performed to analyse the results related to several outcomes."

Equivalent Offender-Based Research: None

Reference: Amato L, Minozzi S, Davoli M, Vecchi S, Ferri M & Mayet S (2004) Psychosocial and pharmacological treatments versus pharmacological treatments for opioid detoxification. *Cochrane Database of Systematic Reviews 2004*, 4 CD005031

Title: Psychosocial treatments combined with agonist maintenance treatments versus agonist maintenance treatments alone for treatment of opioid dependence

Objectives: This study aimed to evaluate the effectiveness of psychosocial intervention in combination with agonist maintenance therapy for patient retention and illicit drug use, as well as health and social status.

Studies: 12 RCTs were included (981 participants) where combined psychosocial intervention and agonist maintenance were compared with agonist treatment alone.

Authors' Conclusions: "The present evidence suggests that adding any psychosocial support to Standard MMT significantly improves the non-use of heroin abstinence. Retention in treatment and results at follow-up are also improved, although this finding did not achieve statistical significance. Insufficient evidence is available on other possible relevant outcomes such as Psychiatric symptoms/psychological distress, Quality of life. Limitations to this review are imposed by the heterogeneity of the trials both in the interventions and the assessment of outcomes. Duration of the studies was also too short to analyse other relevant outcomes such as mortality. In order to study the possible added value of any psychosocial treatment over an already effective treatment such as standard MMT, only big multi site studies could be considered which define experimental interventions and outcomes in the most standardized way as possible."

Equivalent Offender-Based Research: None

Reference: Amato L, Minozzi S, Davoli M, Vecchi S, Ferri M & Mayet S (2004) Psychosocial combined with agonist maintenance treatments versus agonist maintenance treatments alone for treatment of opioid dependence. *Cochrane Database of Systematic Reviews 2004*, 4 CD004147

Title: Psychosocial treatment for opiate abuse and dependence

Objectives: This study aimed to evaluate the efficacy of psychosocial treatments alone for the treatment of opiate use disorders.

Studies: 5 RCTs (389 participants) were included, where psychosocial interventions alone were compared with pharmacological treatment, placebo or no intervention.

Authors' Conclusions: "The available evidence has low numbers and is heterogeneous. At present psychosocial treatments alone are not adequately proved treatment modalities or superior to any other type of treatment. It is important to develop a better evidence base for psychosocial interventions to assist in future rationale planning of opioid use drug treatment services."

Equivalent Offender-Based Research: None specific, but see Polydrug Use below

Reference: Mayet S, Farrell M, Ferri M, Amato L, Davoli, M (2004) Psychosocial treatment for opiate abuse and dependence. *Cochrane Database of Systematic Reviews 2004*, 4 CD004330

Summary

The evidence suggested that psychosocial interventions were effective when combined with pharmacological treatment or maintenance, but not alone. The additional effect seemed to be particularly important in assisting patients to be abstinent in the long term for pharmacological but not maintenance treatment. However, there are difficulties in defining interventions as 'psychosocial', and in the great variety of available interventions of this type: each type of intervention should be evaluated in large-scale trials examining broad outcomes such as improved social functioning, as well as continued drug use and reoffending. This is an area with relevance to the prison environment, where drug services aim to assist prisoners in staying drug free on discharge back into the community.

Other Interventions

Title: Acupuncture for opioid dependence (protocol stage)

Objectives: This study aims to evaluate the efficacy and safety of using acupuncture to treat opioid dependence, compared with placebo, 'sham acupuncture', or conventional pharmacological interventions.

Equivalent Offender-Based Research: None

Reference: Ying L, Jia ZM & Rong LF (2004) Acupuncture for opioid dependence (Protocol). *Cochrane Database of Systematic Reviews 2002*, 4 CD003661

Title: Traditional chinese medicine for opioid withdrawal syndrome (protocol stage)

Objectives: This study aims to evaluate the efficacy and safety of traditional Chinese medicine for the treatment of opioid withdrawal syndrome, compared with placebo or conventional pharmacological treatments.

Equivalent Offender-Based Research: None

Reference: Li B, Jia WN, Li F & Wu T (2006) Traditional chinese medicine for opioid withdrawal syndrome (Protocol). *Cochrane Database of Systematic Reviews 2006*, 2 CD006038

Title: Inpatient versus other settings for detoxification for opioid dependence

Objectives: This study aimed to evaluate the efficacy of inpatient opioid detoxification programmes for patient retention, withdrawal symptoms, adverse effects, continued engagement and relapse.

Studies: 1 RCT was included (90 participants), where inpatient opioid detoxification was compared with other time-limited detoxification programmes.

Authors' Conclusions: "This review demonstrates that there is no good available research to guide the clinician about the outcomes or cost-effectiveness of inpatient or outpatient approaches to opioid detoxification"

Equivalent Offender-Based Research: None

Reference: Day E, Ison J &, Strang J (2005) Inpatient versus other settings for detoxification for opioid dependence. *Cochrane Database of Systematic Reviews 2005*, 2 CD004580

Summary

There is not enough evidence to comment on these interventions at this time. However, the review on settings for detoxification may be relevant for the prison setting where some establishments have residential units specifically for detoxification.

Cocaine Abuse and Dependence

Pharmacological Interventions

Title: Antidepressants for cocaine dependence

Objectives: This study aimed to evaluate the efficacy and acceptability of antidepressant medication on illicit drug use and patient retention.

Studies: 18 RCTs were included (1177 participants), where antidepressant medication was compared with placebo, active placebo or other treatments.

Authors' Conclusions: "There is no current evidence supporting the clinical use of antidepressants in the treatment of cocaine dependence. Given the high rate of dropouts in this population, clinicians may consider adding psychotherapeutic supportive measures aiming to keep patients in treatment."

Equivalent Offender-Based Research: None

Reference: Lima MS, Reisser Lima AAP, Soares BGO, Farrell M (2003) Antidepressants for cocaine dependence. *Cochrane Database of Systematic Reviews* 2003, 2 CD002950

Title: Antipsychotic medications for cocaine dependence

Objectives: This study aimed to evaluate the efficacy and acceptability of antipsychotic medication on illicit drug use, patient retention and craving symptoms.

Studies: 7 studies were included (293 participants), including 6 RCTs and 1 randomised crossover trial, where antipsychotic medication was compared with other antipsychotics or placebo.

Authors' Conclusions: "Although caution is needed when assessing results from a limited number of small clinical trials there is no current evidence, at the present, supporting the clinical use of antipsychotic medications in the treatment of cocaine dependence. Furthermore, most of the included studies did not report useful results on important outcomes such as side effects, use of cocaine during the treatment and craving. Aiming to answer the urgent demand of clinicians, patients, families, and the community as a whole for an adequate treatment for cocaine dependence, larger randomised investigations should be designed investigating relevant outcomes and reporting data to allow comparison of results between studies. Moreover some efforts should be done also to investigate the efficacy of other type medications, like anticonvulsant, currently used in clinical practice."

Equivalent Offender-Based Research: None

Reference: Amato L, Minozzi S, Pani PP & Davoli M (2007) Antipsychotic medications for cocaine dependence. *Cochrane Database of Systematic Reviews* 2007, 1 CD006306

Title: Carbamazepine for cocaine dependence

Objectives: This study aimed to evaluate the efficacy of carbamazepine on continued cocaine use, patient retention and adverse incidents.

Studies: 5 RCTs were included (455 participants), where carbamazepine was compared with other pharmacological treatment or placebo.

Authors' Conclusions: "There is no current evidence supporting the clinical use of Carbamazepine in the treatment of cocaine dependence. Larger randomised investigation must be considered taking into account that these time-consuming efforts should be reserved for medications showing more relevant and promising evidence."

Equivalent Offender-Based Research: None

Reference: Amato L, Minozzi S, Pani PP & Davoli M (2002) Carbamazepine for cocaine dependence. *Cochrane Database of Systematic Reviews 2002*, 2 CD002023

Title: Dopamine agonists for cocaine dependence

Objectives: This study aimed to evaluate the efficacy of dopamine agonist therapy on continued cocaine use and patient retention.

Studies: 17 RCTs were included (1224 participants), where dopamine agonists were compared with other treatments or placebo.

Authors' Conclusions: "Current evidence does not support the clinical use of dopamine agonists in the treatment of cocaine dependence. Given the high rate of dropouts in this population, clinicians may consider adding other supportive measures aiming to keep patients in treatment."

Equivalent Offender-Based Research: None

Reference: Soares BGO, Lima MS, Lima Reisser A & Farrell M (2003) Dopamine agonists for cocaine dependence. *Cochrane Database of Systematic Reviews 2003*, 2 CD003352

Psychosocial Interventions

Title: Psychosocial interventions for cocaine and psychostimulant amphetamines related disorders

Objectives: This study aimed to evaluate the efficacy of psychosocial interventions on illicit substance use and patient retention.

Studies: 27 RCTs were included (3663 participants), where psychosocial interventions were compared with other behavioural or psychosocial treatment.

Authors' Conclusions: "Overall this review reports little significant behavioural changes with reductions in rates of drug consumption following an intervention. Moreover, with the evidence currently available, there are no data supporting a single treatment approach that is able to comprise the multidimensional facets of addiction patterns and to significantly yield better outcomes to resolve the chronic, relapsing nature of addiction, with all its correlates and consequences."

Equivalent Offender-Based Research: None

Reference: Knapp WP, Soares BGO, Farrel M, Lima MS (2001) Psychosocial interventions for cocaine and psychostimulant amphetamines related disorders. *Cochrane Database of Systematic Reviews 2001*, 3 CD003023

Other Interventions

Title: Auricular acupuncture for cocaine dependence

Objectives: This study aimed to evaluate the efficacy of auricular acupuncture on continued cocaine use, cravings and patient retention.

Studies: 7 RCTs were included (1433 participants), where auricular acupuncture was compared with sham acupuncture, other treatment, or no treatment.

Authors' Conclusions: "There is currently no evidence that auricular acupuncture is effective for the treatment of cocaine dependence. The evidence is not of high quality and is inconclusive. Further randomised trials of auricular acupuncture may be justified."

Equivalent Offender-Based Research: None

Reference: Gates S, Smith LA & Foxcroft DR (2006) Auricular acupuncture for cocaine dependence. *Cochrane Database of Systematic Reviews 2006*, 1 CD005192

Summary

To date, no treatments have demonstrated success in cocaine dependence. Department of Health (2007) make no recommendations on the

pharmacological treatment of cocaine disorders in prison, but that a 28-day open psychosocial support intervention should be provided (as well as the treatment of physical and mental disorders related to withdrawal). There is scope for research to determine the effectiveness of this psychosocial intervention for prisoners dependent on cocaine.

Amphetamine and amphetamine type stimulants (ATS) abuse and dependence

Pharmacological Interventions

Title: Treatment for amphetamine dependence and abuse

Objectives: This study aimed to evaluate the costs, benefits and risks of a range of treatments for amphetamine dependence and abuse.

Studies: 4 RCTs (number of participants not stated) were included, where pharmacological treatments were compared with other pharmacological treatments or placebo.

Authors' Conclusions: "Fluoxetine, amlodipine, imipramine and desipramine have very limited benefits for amphetamine dependence and abuse. Fluoxetine may decrease craving in short-term treatment. Imipramine may increase duration of adherence to treatment in medium-term treatment. Apart from these, no other benefits can be found. This limited evidence suggests that no treatment has been demonstrated to be effective for the treatment of amphetamine dependence and abuse. Although there is a large number of people with amphetamine dependence and abuse worldwide, very few controlled trials in this issue have been conducted. As the previous treatment trials show no promising result, other treatments, both biological and psychosocial, should be further investigated. However, the results of neurotoxic studies of amphetamines are also crucial for the study designs appropriate for further treatment studies for amphetamine dependence and abuse."

Equivalent Offender-Based Research: None

Reference: Srisurapanont M, Jarusuraisin N & Kittirattanapaiboon P (2001) Treatment for amphetamine dependence and abuse. *Cochrane Database of Systematic Reviews 2001*, 4 CD003022

Title: Treatment for amphetamine psychosis

Objectives: This study aimed to evaluate the costs, benefits and risks of a range of treatments for amphetamine psychosis.

Studies: No RCTs were found.

Authors' Conclusions: "The evidence about the treatment for amphetamine psychosis is very limited. To our knowledge, no controlled trials of treatment for amphetamine psychosis have been carried out. The results of two studies in amphetamine users show that agitation and some psychotic symptoms may be abated within an hour after antipsychotic injection. Whether this limited evidence can be applied for amphetamine psychotic patients is not yet known. The risks and benefits of giving an antipsychotic injection should be further investigated in amphetamine psychotic patients. Medications that have been used for the treatment of acute exacerbation of schizophrenia should be studied in amphetamine psychotic patients. The medications that may be of interest are conventional antipsychotics, newer antipsychotics and benzodiazepines. However, naturalistic studies of amphetamine psychotic symptoms and course are also crucial for the development of study designs appropriate for further treatment studies of amphetamine psychosis."

Equivalent Offender-Based Research: None

Reference: Srisurapanont M, Jarusuraisin N & Kittirattanapaiboon P (2001) Treatment for amphetamine psychosis. *Cochrane Database of Systematic Reviews 2001*, 4 CD003026

Title: Treatment for amphetamine withdrawal

Objectives: This study aimed to evaluate the costs, benefits and risks on patient retention, global state and withdrawal symptoms.

Studies: 2 RCTs were included (73 participants), where pharmacological treatments were compared with placebo.

Authors' Conclusions: "No available treatment has been demonstrated to be effective in the treatment of amphetamine withdrawal. Amineptine has limited benefits, but it has been withdrawn from the market due to a number of reports of amineptine abuse. For further studies should be considered medications with the propensities to increase dopamine, norepinephrine and/or serotonin activities of the brain. Naturalistic studies of amphetamine

withdrawal symptoms and course are also crucial for the development of study designs appropriate for further treatment studies of amphetamine withdrawal.”

Equivalent Offender-Based Research: None

Reference: Srisurapanont M, Jarusuraisin N & Kittirattanapaiboon P (2001) Treatment for amphetamine withdrawal. *Cochrane Database of Systematic Reviews 2001*, 4 CD003021

Summary

No treatments have demonstrated effectiveness in the treatment of those with amphetamine disorders; however, there was limited evidence for reduction in craving symptoms with fluoxetine in the short term, and increased medium-term adherence in treatment with imipramine. These may represent areas for future research. There have been no reviews of psychosocial or other interventions for amphetamine disorders.

As with cocaine, Department of Health (2006) recommends a 28-day open psychosocial support intervention for stimulant-using prisoners, and this is an area where research could usefully be conducted.

Cannabis Abuse and Dependence

Psychosocial Interventions

Title: Psychotherapeutic interventions for cannabis abuse and/or dependence in outpatient settings

Objectives: This study aimed to evaluate the efficacy of any psychosocial intervention on cannabis abuse or dependence.

Studies: 6 RCTs (1297 participants) were included, where psychosocial interventions were compared with other psychotherapeutic intervention or delayed-treatment control group

Authors' Conclusions: “The included studies were too heterogenous and could not allow to draw up a clear conclusion. The studies comparing different therapeutic modalities raise important questions about the duration, intensity and type of treatment. The generalizability of findings is also unknown

because the studies have been conducted in a limited number of localities with fairly homogenous samples of treatment seekers. However, the low abstinence rate indicated that cannabis dependence is not easily treated by psychotherapies in outpatient settings.”

Equivalent Offender-Based Research: None

Reference: Denis C, Lavie E, Fatséas M, Auriacombe M (2006) Psychotherapeutic interventions for cannabis abuse and/or dependence in outpatient settings. *Cochrane Database of Systematic Reviews 2006*, 3 CD005336

Summary

There is a dearth of evidence in the treatment of cannabis disorders. Furthermore, the Department of Health (2006) does not refer to cannabis at all.

Iatrogenic use of prescribed drugs

Pharmacological Interventions

Title: Pharmacological interventions for benzodiazepine mono-dependence management in outpatient settings

Objectives: This study aimed to evaluate the efficacy of a range of pharmacological treatments for benzodiazepine mono-dependence.

Studies: 8 RCTs were included (458 participants), where any pharmacological treatment was compared with other treatments

Authors' Conclusions: “All included studies showed that gradual taper was preferable to abrupt discontinuation. The results of this systematic review point to the potential value of carbamazepine as an effective intervention for benzodiazepine gradual taper discontinuation. But, larger controlled studies are needed to confirm carbamazepine's potential benefit, to assess adverse effects and to identify when its clinical use might be most indicated. Other treatment approaches to benzodiazepine discontinuation management should be explored (antidepressants, benzodiazepine receptors modulator).”

Equivalent Offender-Based Research: None

Reference: Denis C, Fatséas M, Lavie E, Auriacombe M (2006) Pharmacological interventions for benzodiazepine mono-dependence management in outpatient settings. *Cochrane Database of Systematic Reviews 2006*, 3 CD005194

Summary

The effectiveness of a gradual reduction in benzodiazepine was demonstrated, and the additional use of carbamazepine suggested.

Department of Health (2006) recommend withdrawal prescribing for prisoners with benzodiazepine dependence, based on comprehensive assessment. One area of research interest may be the additional prescription of carbamazepine for prison-based benzodiazepine detoxification.

Polydrug

Psychosocial Interventions

Title: Therapeutic communities for substance related disorder

Objectives: This study aimed to evaluate the efficacy of therapeutic communities.

Studies: 7 RCTs were included (number of participants not stated), where therapeutic community was compared with other types of therapeutic community, other treatment or no treatment

Authors' Conclusions: "There is little evidence that TCs offer significant benefits in comparison with other residential treatment, or that one type of TC is better than another. Prison TC may be better than prison on its own or Mental Health Treatment Programmes to prevent re-offending post-release for in-mates. However, methodological limitations of the studies may have introduced bias and firm conclusions cannot be drawn due to limitations of the existing evidence."

Equivalent Offender-Based Research: Two of the included studies were from prison-based research in the US (Sacks *et al*, 2004; Wexler *et al*, 1999). In addition, Farrell (2000) evaluated a US therapeutic community for women Nielson *et al* (1996) a therapeutic community for released female prisoners,

Knight *et al* (1997) compared prison-based therapeutic communities with those on parole, whilst Gordon *et al* (2000) included a group of young offenders released from juvenile institutions. Dynia & Sung (2000) conducted a trial of drug treatment alternatives to prison based on therapeutic community methods. Finally, Inciardi *et al* (1997) compared various combinations of prison therapeutic communities and work release programmes. See Appendices 2 to 6 for more details of the study populations and success of these studies.

Reference: Smith LA, Gates S, Foxcroft D (2006) Therapeutic communities for substance related disorder. *Cochrane Database of Systematic Reviews 2006, 1* CD005338

Title: Case management for substance use disorders (protocol stage)

Objectives: This study aims to evaluate the efficacy of case management on illicit substance use, quality of life and treatment pathways compared with other treatments.

Equivalent Offender-Based Research: None

Reference: Hesse M, Broekaert E, Fridell M, Rapp RC & Vanderplasschen W (2006) Case management for substance use disorders (Protocol). *Cochrane Database of Systematic Reviews 2006, 4* CD006265

Title: Psychosocial interventions for pregnant women in outpatient illicit drug treatment programs (protocol stage)

Objectives: This study aims to evaluate the efficacy of psychosocial interventions on illicit drug use and birth outcomes, compared with other psychosocial intervention, pharmacological intervention, placebo or no treatment.

Equivalent Offender-Based Research: None

Reference: Terplan M & Grimes D (2006) Psychosocial interventions for pregnant women in outpatient illicit drug treatment programs (Protocol). *Cochrane Database of Systematic Reviews 2006, 2* CD006037

Preventative Interventions

Title: Interventions for prevention of drug use by young people delivered in non-school settings

Objectives: This study aimed to evaluate the efficacy of drug interventions delivered outside school to young people aged under 25.

Studies: 17 studies were included (253 clusters and 1230 individual participants), including 9 cluster randomised studies and 8 individually randomised studies, where interventions in non-school settings were compared with other intervention or no intervention.

Authors' Conclusions: "There is a lack of evidence of effectiveness of the included interventions. Motivational interviewing and some family interventions may have some benefit. Cost-effectiveness has not yet been addressed in any studies, and further research is needed to determine whether any of these interventions can be recommended."

Equivalent Offender-Based Research: Henggeler *et al* (1991) evaluated the use of multisystemic therapy amongst serious juvenile offenders in the US. See Appendices 2 and 3 for more details of this study.

Reference: Gates S, McCambridge J, Smith LA & Foxcroft DR (2006) Interventions for prevention of drug use by young people delivered in non-school settings. *Cochrane Database of Systematic Reviews 2006*, 1 CD005030

Title: School-based prevention for illicit drugs' use

Objectives: This study aimed to evaluate the efficacy of school-based interventions on illicit drug use, knowledge and skills.

Studies: 32 studies were included (46539 participants), including 29 RCTs and 3 controlled prospective studies, where school-based programmes were compared with other school-based programmes or normal curricular activity.

Authors' Conclusions: Skills based programs appear to be effective in deterring early-stage drug use. The replication of results with well designed, long term randomised trials, and the evaluation of single components of intervention (peer, parents, booster sessions) are the priorities for research. All new studies should control for cluster effect.

Equivalent Offender-Based Research: Not applicable

Reference: Faggiano F, Vigna-Taglianti FD, Versino E, Zambon A, Borraccino A & Lemma P (2005) School-based prevention for illicit drugs' use. *Cochrane Database of Systematic Reviews 2005*, 2 CD003020

Summary

Therapeutic communities and further interventions for drug-using offenders is discussed in detail in Section 1.2. However, it is clear that this is the area with the most prison-based research for substance misuse treatments. The review of school-based interventions is not immediately relevant, though successful programmes from this and the review of interventions in non-school settings could perhaps be adapted for the prison environment.

Other drug

Title: Treatment for Methaqualone dependence in adults

Objectives: This study aimed to evaluate the efficacy of pharmacological or behavioural treatment for methaqualone dependence or abuse.

Studies: No studies were included.

Authors' Conclusions: "To date, no randomized controlled trials appear to have been conducted. Consequently, the effectiveness of inpatient versus outpatient treatment, psychosocial treatment versus no treatment, and pharmacological treatments versus placebo for methaqualone abuse or dependence has yet to be established."

Equivalent Offender-Based Research: None

Reference: McCarthy G, Myers B & Siegfried N (2005) Treatment for Methaqualone dependence in adults. *Cochrane Database of Systematic Reviews 2005*, 2 CD004146

Summary

This sedative is a major public health problem in Africa and India, but not for UK prisons.

Section 3: Review of Alcohol Treatments

This section begins with a new systematic review. The review synthesises the research evidence for alcohol treatments in offender populations. Following this, a summary of Cochrane reviews is presented relating to the treatment of alcohol misuse and dependence in the community.

3.1 Review of Offender Treatments

Aims

This systematic review summarises the research literature on the effectiveness of treatment and prevention interventions which aim to reduce alcohol use/abuse and/or criminal behaviours in offender populations.

Method

Search sources

Nine databases were searched between April 10th and 14th 2007 as they were identified as having a comprehensive range of criminological, psychological and social science journals and are as follows: CINAHL, Embase, Ovid Medline (R), Ovid Medline (R) in process, PsycINFO, Web of Science, ASSIA (Applied Social Science Index and Abstracts), Criminal Justice Abstracts and National Criminal Justice Reference Service Abstracts.

Search terms

A combination of truncated search terms that related to both alcohol and offending were used to search the databases. They are as follows: (i) Alcohol* or Drink* or Drunk* AND (ii) Jail* or Inmate* or Criminal* or Offender* or Incarcerat* or Penitentiari*. Search terms were slightly adapted for each search engine in order to exploit the databases most effectively.

Search restrictions

The searches were limited to English Language Journals from 1990 onwards.

Inclusion/Exclusion Criteria

A total of 7003 journal articles were retrieved and the titles and abstracts were imported into a bibliographic database where duplicate entries were removed. Book reviews, discussion or opinion papers were excluded as well as any studies that did not empirically evaluate an intervention for alcohol use/abuse in offender populations. Studies were excluded if they did not have either a comparison group or a no-intervention control group or for dual reporting of both alcohol and drug statistics. Studies were only included if they had used an outcome measure of alcohol use and/or recidivism. Studies were also excluded for dual diagnosis of substance misuse and mental illness and those using drug courts as an intervention. Twenty eight journal articles met the inclusion criteria and were retrieved either directly from the internet or from The British Library. Of the 28 studies retrieved, 4 further studies were excluded: one was primarily focussed on acculturation factors and treatment outcomes; one combined the results of experimental and control groups and two used changes in attitudes to offending and alcohol use to assess the effectiveness of a treatment intervention. Studies excluded at the latter stages are listed in Appendix 8 together with the reasons for exclusion.

Assessment of Methodological Quality

In order to evaluate the effectiveness of interventions, a degree of scientific certainty was required. Therefore this review employed a 'methodological rigour' rating scale: the Scientific Methods Scale (SMS, Sherman *et al* 1997; Sherman *et al*, 2002). Studies were classified by their methodological quality on a scale of 1 to 5; 5 being the 'gold standard' RCT. The core criteria for each SMS level are shown in Table 1.1 below.

Due to a lack of methodological rigour in some of the identified studies, it was decided that only studies of level 2 or above on the SMS scale would be included in the review.

Table 1.1: Description of SMS Levels

SMS Level	Description
1	Correlation between a crime prevention programme and a measure of crime or crime risk factors.
2	Temporal sequence between the programme and the crime or risk outcome clearly observed, or a comparison group present without demonstrated comparability to the treatment group.
3	A comparison between two or more units of analysis, one with and one without the programme.
4	Comparison between multiple units with and without the programme, controlling for other factors, or a non-equivalent comparison group has only minor differences evident.
5	Random assignment and analysis of comparable units to programme and comparison groups.

Analysis

Due to the heterogeneity of the studies, meta-analysis was not possible. Therefore a quantitative narrative review was conducted.

The review evaluated 28 studies, 4 of which were later excluded. The treatment interventions were categorised into five groups: Psycho-Social-Behavioural Interventions, Therapeutic Communities (TC), Victim Impact Panels (VIP), interventions involving Legal Sanctions and Other interventions. Table 1.2 below shows the type and number of treatment interventions in each category including the 4 studies which were later excluded.

Table 1.2: Types of Treatment Interventions reviewed

Type of Intervention	Number of Studies
Psycho-Social-Behavioural	12
Psycho-Social-Behavioural with Legal Sanctions	1
Psycho-Social-Behavioural with Legal Sanctions and Victim Impact Panel (VIP)	1
Psycho-Social-Behavioural with Therapeutic Community (TC)	1
Psycho-Social-Behavioural with VIP	1
Therapeutic Communities	2
Victim Impact Panels	6
Legal Sanctions	3
Other (Vipassana Meditation)	1
Total Studies	28

Results

A diverse array of treatment programmes and criminal justice interventions was evaluated in this review. Appendix 6 details the study and programme characteristics, demographics and results of the included studies. Of the 24 included studies, 19 were conducted in the USA, 2 in the UK, 1 in Germany, 1 in New Zealand and 1 in Canada. Seven studies reached level 5 of the SMS, 6 were at level 4, 10 at level 3 and 1 at level 2. Sample sizes ranged from 18 to 148,632 participants. Four studies focused on young offenders, 10 on adult offenders, 8 were conducted on a mixed age range and for 2 studies the age group was not reported. Seventeen of the 24 studies were conducted with Driving While Intoxicated (DWI) offenders, 5 studies on participants with mixed offences, 1 study focused on physically violent offenders and 1 study did not report offence type.

Narrative Review

Below is a narrative review of the 24 included studies;

Psycho-Social-Behavioural Interventions (16 studies)

Psycho-Social-Behavioural (12 studies)

Study ID: 1

Nickel WR (1990) A Five Year Follow-up of Treatment for DWI Recidivists in the Federal Republic of Germany. *Alcohol, Drugs and Driving* 6(3-4), 119-132

SMS Level: 4

Nickel (1990) conducted a non-randomised study with a total sample of 2888 offenders sentenced for driving while intoxicated (DWI). Three experimental groups (a behavioural intervention (IFT), an individual psychological intervention (IRAK) and a group dynamic intervention (LEER)) were compared with a no-treatment control group. Reconviction rates did not differ significantly between the four groups after 36 and 60 month follow-up periods. The study did not evaluate treatment effectiveness with alcohol measures as outcomes.

Study ID: 6

Donovan DM, Salzberg PM, Chaney EF, Queisser HR & Marlatt GA (1990) Prevention Skills for Alcohol-Involved Drivers. *Alcohol, Drugs and Driving* 6 (3-4),169-188

SMS Level: 5

Donovan *et al* (1990) conducted a randomised study of 557 sentenced driving while intoxicated (DWI) offenders. The study evaluated the effectiveness of a prevention skills programme for alcohol involved drivers (PS-AID), compared with a minimal contact comparison group (ACI; Alcohol Control Interview) and a no treatment control group. The PS-AID intervention consisted of behavioural and drinking self-management skills and alcohol related coping skills. The study reported on the effectiveness of the intervention in relation to both alcohol consumption and subsequent driving offences. The PS-AID group reported significantly higher levels of alcohol consumption than both the ACI and control group after 1 and 6 months. At the 12 month follow up, the

PS-AID group consumed less alcohol than the ACI group but more than the control group. Similarly, for number of heavy drinking occasions per month, the PS-AID group again reported higher levels of heavy drinking than the ACI and control group at 1 and 6 month follow up but at 12 month follow up the ACI and PS-AID groups drinking levels began to converge. Therefore, the PS-AID intervention had a negative effect upon alcohol consumption during the follow up periods. However, results show that within each group, occasions of drinking per month decreased over the follow up periods. For example, before treatment the PS-AID group had over 12 drinking occasions per month which reduced to less than 4 after 12 months post treatment. Donovan *et al* (1990) reported that there was a significant fall out in the number of subjects over the follow up period which could have affected the results. Results for recidivism highlighted that the PS-AID group received less post-treatment alcohol-related convictions than both the ACI and control groups over the 2-3 year (mean 2.63 years) follow up period although the differences between the three groups were not statistically significant.

The findings suggested the PS-AID intervention was not effective in reducing alcohol consumption or alcohol related driving offences. However, baseline differences between the groups could have affected the outcomes; groups differed significantly on gender ratio, education, socioeconomic status, driving attitudes, numbers of prior accidents and in the amount of alcohol consumed prior to first offence.

Study ID: 7

Langworthy RH & Latessa EJ (1996) Treatment of Chronic Drunk Drivers: A Four Year Follow-Up of the Turning Point Project. *Journal of Criminal Justice* 24(3), 273-281

SMS Level: 3

Langworthy and Latessa (1996) conducted a non-randomised study with 724 subjects evaluating the effectiveness of the Turning Point Programme; a residential education and treatment programme for chronic drunk drivers when compared with a no treatment control group. Results showed no significant differences in success rates at four-year follow up, between the

treatment and control group as measured by the percentage of the sample who had charges for any offence, or specifically charges for any alcohol related offence including driving under the influence (DUI). There were initial baseline differences; groups differed on gender, age, number or prior DUI offences and time incarcerated which could have affected the results. The Turning Point treatment programme was found to be ineffective at reducing later alcohol-related offences after four-year follow up.

Study ID: 18

Pratt TC, Holsinger AM & Latessa EJ (2000) Treating the Chronic DUI Offender 'Turning Point' Ten Years Later. *Journal of Criminal Justice* 28, 271-281

SMS Level: 3

In order to evaluate whether the Turning Point Programme had any long term effects on recidivism, the sample (minus 1) was followed up ten years later. The Turning Point Programme's participants had significantly higher rates of success, that is; they committed fewer new offences and fewer driving under the influence (DUI) offences than those who did not receive the Turning Point Intervention. No significant differences between the groups were detected when the outcome measure was alcohol related offences. Only higher rates of success for the Turning Point Group were found in participants that had been convicted of 3 or more DUI offences, those that had served 30 or more days in prison for prior offences and both of the latter. The same baseline differences as in the 4 year follow up study may still have affected these findings.

However, it seemed the Turning Point Programme was more effective in the long-term at reducing alcohol related driving behaviours with treatment effect of 11% after 4 year follow up and 14% after 10 years follow up. Subsequently, this highlights the need to conduct research at different follow up periods in order to compare the effectiveness of treatment interventions over time.

Study ID: 8

McMurrin M & Boyle M (1990) Evaluation of a self-help Manual for Young Offenders who Drink: A Pilot Study. *British Journal of Clinical Psychology* 29, 117-119

SMS Level: 3

McMurrin and Boyle (1990) evaluated the effectiveness of two self-help programmes: a group intervention whereby a self-help manual was presented in a group setting and a minimal intervention group where a manual was given to be read alone. These were compared with a no intervention control group. The sample consisted of 41 young male offenders who drink and had been convicted of criminal offences. The participants were matched on age and self-reported alcohol consumption. Results showed the same number of people re-convicted in the minimal intervention group as the no intervention control group at 15 months following discharge from the programme. More people were re-convicted at follow-up from the group intervention than the no intervention control group but this difference was not significant. The conclusion was that the treatment programmes were ineffective at reducing later criminal activity.

Study ID: 12

Baldwin S, Heather N, Lawson A, Robertson I, Mooney J, & Braggins F (1991) Comparison of Effectiveness: Behavioural and talk-based Alcohol Education Courses for Court-referred Young Offenders. *Behavioural Psychotherapy* 19, 157-172

SMS Level: 2

Baldwin *et al* (1991) compared the effectiveness of a behavioural and a 'talk based' Alcohol Education Course (AEC) for young male offenders. A no treatment control group was unacceptable to the Magistrates' Court as the offenders were on probation; as a result, pre and post intervention measures were taken and compared. The sample consisted of 18 young offenders randomly allocated to each group. The talk based intervention had a negative impact upon number of alcohol units consumed per session after a follow-up period of 6-12 months (mean 8.6 months). For the behavioural based intervention, the number of alcohol units consumed per drinking session and

self-reported conviction rates significantly reduced after the follow up period of 9.5-21 months (mean 13.2 months). However, the behavioural based AEC would need to be compared to a no intervention group in experimental and comparable conditions for the intervention to be deemed effective. Between groups comparisons found no significant differences in alcohol consumption or recidivism between the interventions.

Study ID: 19

Bakker LW Hudson SM & Ward T (2000) Reducing Recidivism in Driving While Disqualified: A Treatment Evaluation. *Criminal Justice and Behaviour* 27(5), 531-560

SMS Level: 3

Two hundred and eighty eight male Driving While Drunk (DWD) offenders were directed either by the courts or probation officers to either a Cognitive Behavioural Therapy (CBT) treatment group or a no-treatment comparison group. The treatment intervention aimed to provide a number of CBT interventions such as anger management, stress management and communication skills, with the aim of reducing offending behaviours. Results showed that 28% of the treatment group and 75% of the comparison group had a DWD re-conviction. However, caution must be taken when interpreting these data as the follow up periods for the two groups differed as a result of different sampling techniques. Consequently, a survival analysis was conducted to address this problem which found that the treatment group took significantly longer to commit another DWD offence, but there were no significant differences in: time to DUI offence or time to any conviction. It was concluded that the CBT programme was effective in changing post-treatment driving behaviours as seen by a reduction in offending for the CBT group.

Study ID: 20

Easton CJ, Mandel DL, Hunkele KA, Nich C, Rounsaville MD & Carroll M (2007) A Cognitive Behavioural Therapy for Alcohol-Dependent Domestic Violence Offenders: An Integrated Substance Abuse-Domestic Violence Treatment Approach (SADV) *The American Journal on Addictions* 16, 24-31

SMA Level: 5

Easton *et al* (2007) conducted a randomised clinical trial (RCT) of 78 alcohol dependent males who had been arrested for physical violence offences to either a Substance Abuse Domestic Violence (SADV) Treatment Programme which included a manualised CBT approach or a treatment as usual Twelve Step Facilitation (TSF) approach. Programme effectiveness was evaluated at immediate post treatment and at 6 month follow up. Immediately post treatment, significant differences between groups were found; percentage mean days of abstinence from alcohol were significantly more in the SADV group than in the TSF group. No differences were found in breathalyser analysis. Greater reductions in amount of violent episodes were also detected for the SADV group than the TSF group at immediate follow up. At 6 month follow up, no significant differences were detected for either alcohol or violence outcomes. Results suggest the SADV treatment intervention effect seemed to be effective in the short term but its effect declined over time.

Study ID: 21

Dembo R, Wothke W, Livingston S & Schmeidler J (2002) The Impact of a Family Empowerment Intervention on Juvenile Offender Heavy Drinking: A Latent Growth Model Analysis. *Substance Use and Misuse* 37(11), 1359-1390

SMS Level: 5

Dembo *et al* (2002) evaluated the effectiveness of a Family Empowerment Intervention (FEI) in 278 heavy drinking young offenders. The intervention consisted of personal in-home visits from field consultants, with the aim of improving family communications and responsibility compared with an Extended Services Intervention (ESI) whereby families only received telephone contact. Subjects were randomly assigned to one of the two groups and followed up at 1, 2 and 3 years. No significant differences were found between the groups for the outcome measure: frequency of getting drunk. Although the authors acknowledged the experimental intervention group (FEI) was no more effective than the ESI group, they stated that the reported frequency of getting drunk on alcohol declined more over time for the FEI completers than the non-completers which they suggested provided support

for the impact of the FEI intervention. There was significant loss to follow up in the 2nd year (n=170) and 3rd year (n=91) assessments which could have affected these results.

Study ID: 22

Sadler DD, Perrine MW & Peck RC (1991) The Long Term Traffic Safety Impact of a Pilot Alcohol Abuse Treatment as an Alternative to Licence Suspensions. *Accident Analysis and Prevention* 23(4), 203-224

SMS Level: 4

Sadler *et al* (1991) conducted a large scale study of 7820 repeat driving while intoxicated (DWI) offenders. They compared the effectiveness of an alcohol abuse treatment programme which consisted of education and rehabilitation as an alternative to licence suspensions. Three groups were compared: an experimental group that received the alcohol treatment programme instead of licence suspensions; a control group from the same four counties who received the usual licence suspension and a third comparison group sampled from four different counties who received the usual licence action. Participants were followed up after 1, 2, 3 and 4 years time periods. Results showed the alcohol treatment group had significantly higher rates (70%) of non-alcohol-related accidents and convictions, higher rates (30%) of total accidents but a lower rate (9%) of alcohol-related convictions. No differences between the groups were found for alcohol related accidents. The results as a whole highlighted that replacing licence suspension for an alcohol treatment programme was detrimental to general traffic safety (70% higher rates) but was successful in reducing alcohol-related-convictions, albeit by a small percentage (9%). Once again baseline differences in demographics, prior driving history, prior conviction rates and a lack of random allocation of subjects to groups limited the ability to generalise from these findings.

Excluded Psycho-Social-Behavioural Studies (2 studies)

Two studies were excluded from the systematic review. Firstly, the study conducted by Langworthy & Latessa (1993) was the initial Turning Point study, of which the four and ten year follow up studies are reported above (Studies 7 and 18). This was excluded due to the heterogeneity of the

treatment and comparison groups. This led to analysis of statistical control of the total pooled sample rather than the univariate comparison of the experimental and control group. The research question was therefore: 'Was the likelihood of failure for someone who received the Turning Point treatment less, with other differences controlled, than the likelihood for someone who did not receive the treatment?' (Langworthy & Latessa, 1993 p 271). Results of a logistic regression analysis suggested the Turning Point subjects were less likely to be charged with any new offence than the comparison group. With the outcome measure (any new alcohol related offence) Turning Point subjects did better but only when the alpha level was relaxed to 0.1.

Secondly, research conducted by Gil, Wagner & Tubman (2004) was excluded as it did not compare the effectiveness of treatment interventions. Its main focus of enquiry was to examine the impact of cultural factors on substance abuse within Hispanic and African-American adolescents in the USA. However, the results of this research indicate that cultural factors influenced treatment outcomes. This suggests that any evaluation of the effectiveness of alcohol treatment interventions must consider the heterogeneity of the population it is providing for and acknowledge that some treatments will work for some populations but not others.

Psycho-Social-Behavioural with legal Sanctions (2 studies)

Study ID: 11

DeYoung (1997) An Evaluation of the effectiveness of alcohol treatment, driver licence actions and jail terms in reducing drunk driving recidivism in California. *Addiction* 92(8), 989-997

SMS Level: 4

This large scale study on 148,632 subjects compared the effectiveness of an alcohol education and counselling treatment intervention for drivers convicted of driving under the influence (DUI) offences when compared with various criminal justice sanctions, driver licence actions and jail terms. Separate analyses were conducted for first offenders and for second offenders and the interventions differed for the different offences. For first time offenders, with the follow up period within 18 months of treatment completion, the most

effective programme was the Alcohol Education Programme with Licence Restriction as measured by the lowest DUI re-arrest rates. The programme, administered over 3 months consisted of 10 hours counselling and 10 hours education. The two sanctions that led to the highest DUI re-arrest rates and therefore deemed to be least effective sanctions were Jail terms and Jail terms with Licence Suspensions. For the second offender analyses, with the follow up period set at the time to next reconviction (mean 1095 days) results showed the lowest DUI re-arrest rates for subjects who had completed the SB38 (18 month alcohol education and counselling programme) and had Licences Restricted. The highest re-arrest rates were found with the suspension of a licence alone.

Study ID: 28

Marques PR, Voas RB, Tippetts AS & Beirness DJ (1999) Behavioural Monitoring of DUI Offenders with the Alcohol Ignition Interlock Recorder. *Addiction* 94(12), 1861-1870

SMS Level: 3

Marques *et al* (1999) evaluated the effectiveness of providing additional alcohol educational support, counselling and motivational enhancement therapy with Ignition Interlock devices compared to Ignition Interlock devices alone for a group of 1309 first-time and multiple driving-under-the-influence (DUI) offenders. Ignition Interlock devices were fitted to convicted DUI offenders' vehicles where a low alcohol or alcohol free breath sample must be provided before the vehicle's engine can be started. Results showed that the experimental group who received Psycho-Social-Behavioural support together with the fitting of Ignition Interlock devices had significantly less blood alcohol concentrations (BAC) than the Ignition Interlock alone group. However a major limitation of this study was that the experimental groups were from different Canadian cities and although the authors suggest that the demographic profiles of these two cities were similar with respect to population and ethnicity, other differences biasing the results could have been present.

Psycho-Social-Behavioural with Legal Sanctions and Victim Impact Panel (VIP) (1 study)

Study ID: 14

Lapham SC, Kapitula LR, C'de Baca J & McMillan P. (2005) Impaired-Driving Recidivism Among Repeat Offenders Following an Intensive Court-Based Intervention. *Accident Analysis and Prevention*. 38, 162-169

SMS Level: 4

Lapham *et al* (2005) compared the effectiveness of a Driving Under the Influence Intensive Supervision Programme (DUI DISP) designed to produce behaviour changes compared to a non treatment control group. Programme participants were subject to electronic monitoring and breath testing, and were required to attend Alcoholics Anonymous and a Victim Impact Panel. Victim Impact Panels consisted of a group of people whose lives have been permanently altered by an injury or death of a loved one due to a drink driver. 957 participants were followed up at 1, 2, 3, 4 and 5 years. Results found that compared with the control group, those receiving the Intensive Supervision Programme had 48% fewer DUI re-arrests, 54% fewer DWR/DWS re-arrests and 39% fewer re-arrests for any other offence. Results were highly significant and led to the conclusion that a combination of Psycho-Social-Behavioural, AA and VIP treatment is highly effective in reducing later alcohol related crime.

Psycho-Social-Behavioural with TC (1 study)

Study ID: 16

Voas RB & Tippets AS (1990) Evaluation of Treatment and Monitoring Programmes for Drunken Drivers. *Journal of Traffic Medicine* 18, 15-26

SMS Level: 4

Voas and Tippets (1990) evaluated the effectiveness of three treatment programmes when compared to a no treatment control group for 5538 sentenced DWI offenders after 1 and 2 year follow up periods. The treatment programmes consisted of a Residential Facility Programme, including inpatient therapy and diagnostic treatments, a Community (outpatient) Monitoring Programme, and both the Facility Programme followed by the Monitoring Programme. Highly significant results were found, showing that

control group participants committed 4 times more offences during the two year follow up period than participants assigned to one of the three treatment groups. However, no differences were detected between the three treatment groups themselves. Results were consistent when first offenders with no prior convictions and multiple offenders with one or more prior convictions were analysed separately. A limitation of this research is that baseline differences were present; compared with the treatment groups, participants in the control group were significantly younger and contained more females than that of the three treatment groups.

Psycho-Social-Behavioural with VIP (1 study)

Study ID: 17

Wheeler DR, Rogers EM, Tonigan JS & Woodall WG (2004) Effectiveness of Customized Victim Impact Panels on first-time DWI Offender Inmates. *Accident Analysis and Prevention* 36, 29-35

SMS Level: 5

Wheeler *et al* (2004) randomly assigned 99 sentenced and incarcerated DWI offenders to either a DWI Victim Impact Panel (also comprising alcohol screening, counselling, alcohol education, anger and stress management) or a no VIP panel control group. There were no baseline differences and no loss to follow up. Participants were assessed within 2 years post-intervention. Alcohol results showed that participation in the VIP group did not alter later drinking behaviours; differences between the treatment and control group were not significant. No differences between the groups were found for recidivism outcomes. This suggests VIP participation is not effective an intervention in reducing alcohol related recidivism.

Therapeutic Communities (2 studies)

Therapeutic Communities

Study ID: 2

Jainchill N, Hawke J, De Leon G & Yagelka J (2000) Adolescents in Therapeutic Communities: One Year Post Treatment Outcomes. *Journal of Psychoactive Drugs* 32(1), 81-94

SMS Level: 3

This research evaluated the effectiveness of Therapeutic Communities (TC) in reducing substance abuse (including alcohol) and criminal activity in 485 young offenders. The study compared the pre and post treatment status of the total pooled sample and evaluated the effect of the TC with respect to completers and non-completers of the TC programme. Results showed significant reductions in alcohol use to intoxication regardless of whether the participants fully completed the TC programme. Significant reductions were found for any criminal activity and for re-arrest rates within the TC completers and non-completers. Although the authors suggest the results highlight important evidence for the effectiveness of Therapeutic Communities, the lack of any direct comparisons with a control group prevent any conclusions being drawn as to the effectiveness of the TC.

Study ID: 4

Farrell A (2000) Women, Crime and Drugs: Testing the Effect of Therapeutic Communities. *Women and Criminal Justice* 11(1), 21-48

SMS Level: 5

Farrell (2000) randomly allocated 36 female participants to either a prison-based therapeutic community (CREST) or a work release control group. No baseline differences were detected between the two groups and there was no loss to follow up. The effectiveness of the TC was assessed after 18 months on both measures of alcohol use and recidivism. Results showed that participants in the CREST TC programme were significantly more likely to remain abstinent than those in the control group. However, the CREST TC programme was not effective at reducing recidivism as there were no significant differences between the two groups. Although this is a high quality study the findings can only be generalised to females.

Victim Impact Panels (6 studies)

Victim Impact Panels

Study ID: 9

Polaksek M, Rogers EM, Woodall WG, Delaney H, Wheeler D & Rao N (2001) MADD Victim Impact Panels and Stages-of-Change in Drunk-Driving Prevention. *Journal of Studies on Alcohol* 62, 344-350

SMS Level: 5

This research focussed on the effectiveness of a Driving While Intoxicated (DWI) school with Victim Impact Panel participation in comparison with a non-VIP DWI school control group. The outcome measure was movement of offenders through the stages-of-change to not drinking whilst driving. The stages-of-change (SOC) model (Prochaska 1994; Prochaska *et al*, 1992; Prochaska & DiClemente 1985) proposed five stages: *pre-contemplation* whereby a person does not intend to change his or her behaviour through to *contemplation*, *preparing* to change, taking *action* towards changing and *maintaining* the changes. 788 participants were randomly assigned to the two groups and followed up at 1 and 2 year intervals. Results showed no significant differences between the groups in either moving them through the stages-of-change to not drinking whilst driving or on later re-arrest rates at 1 and 2 year follow up. This suggests that there was no additional affect of VIP panel attendance compared to the usual DWI school.

Study ID: 10

Fors SW & Rojek DG (1997) The Effect of Victim Impact Panels on DUI/DWI Re-arrest Rates: A Twelve Month Follow-Up. *Journal of Studies on Alcohol* 60, 514-520

SMS Level: 3

This research evaluated the effectiveness of VIP participation versus non-participation. 835 DWI offenders were followed up at 0-6 months, 7-12 months and 0-12 month time periods. Results showed a significant reduction in re-arrest rates at 7-12 and 0-12 month follow-up periods. Although the control group re-arrest rates were higher at 0-6 month follow-up the groups did not significantly differ. This suggests that recidivism is reduced with VIP

participation in the longer term but does not seem to have an immediate effect.

Study ID: 24

Shinar D & Compton RP (1995) Victim Impact Panels: Their Impact on DWI Recidivism. *Alcohol, Drugs and Driving* 11(1), 73-87

SMS Level: 3

Shinar and Compton (1995) compared the effect on later recidivism of participating in a VIP. The results are reported separately for Oregon and Orange County.

Oregon

1350 driving offenders in Oregon were assigned to a VIP and 1350 matched drivers were not assigned to a VIP. Further comparisons were made with 295 drivers who were ordered to but did not attend the VIP (no-shows) and their 295 matched control participants. Participants were followed up within 2 years. The VIP participants had significantly less recidivism than the non-VIP group. However, the VIP 'no-shows' also had significantly lower recidivism than their matched controls, making the odds of recidivism of the VIP and no-shows almost identical. They did find that the VIP reduced recidivism in the 36+ year olds by 39%.

Orange County

742 driving offenders in Oregon were assigned to a VIP and 742 matched drivers were not assigned to a VIP. Further comparisons were made with 388 drivers who were ordered to but did not attend the VIP (no-shows) and their 388 matched control participants. Participants were followed up within 2 years. Results showed no significant differences in recidivism between the VIP and non VIP nor the no-show/control groups, suggesting that attending a Victim Impact Panel is no more effective in reducing recidivism than not attending a Victim Impact Panel.

Excluded Victim Impact Panel Studies (2 studies)

Two Victim Impact studies (study IDs 15 and 25) were excluded from this review as they primarily focussed on attitudinal changes following VIP participation and will be reported in the discussion section.

Legal Sanctions (2 studies)

Ignition Interlock devices

Study ID: 26

Beck KH, Rauch WJ Baker EA & Williams AF (1999) Effects of Ignition Interlock Licence Restrictions on Drivers with Multiple Alcohol Offences: A Randomised Trial in Maryland. *American Journal of Public Health* 89(11), 1696-1700

SMS Level: 5

Beck *et al* (1999) evaluated the effectiveness of fitting the cars of DWI offenders with Ignition Interlock devices with the aim of reducing later alcohol-related violations in comparison to a no device control group. The study was a randomised controlled trial with no baseline differences and no loss to follow up. Alcohol/traffic violations were assessed within the first year of the device being fitted, after 2 years of being fitted when the restrictions were removed and for the whole 2 year period. Within the first year having the Ignition Interlock device fitted, violations were reduced by 64%. After 2 years, there were no statistically significant differences between the groups, although violations were less for the Interlock group. For the whole 2 year period, fitting of the Interlock device was successful in reducing violations by 36% when compared to the control group.

Study ID: 27

Morse BJ & Elliott DS (1992) Effects of Ignition Interlock Devices on DUI Recidivism: Findings from a Longitudinal Study in Hamilton County, Ohio. *Crime and Delinquency* 38(2), 131-157

SMS Level: 3

This study compared the effect of a Licence Suspension and Ignition Interlock group with Licence Suspension alone for a group of 546 convicted DUI offenders. Results showed that Ignition Interlock devices installed in the vehicles of DUI offenders significantly reduced the incidence of DUI arrest compared to Licence Suspension alone. The Interlock group had a 65% decrease in the likelihood of a repeat DUI offence and a 91% decrease in the likelihood of a driving under suspension (DUS) or driving without a licence (NDL) offence. Methodological weaknesses aside, Ignition Interlock seems a promising deterrent for repeat offending.

Other (1 study)

Vipassana Mindfulness Meditation

Study ID: 3

Bowen S, Witkiewitz K, Dillworth TM, Chawla N, Simpson TL, Ostafin, BD, Larimer ME, Blume AW, Parks G & Marlatt GA (2006) Mindfulness Meditation and Substance Use in an Incarcerated Population. *Psychology of Addictive Behaviours* 20(3), 343-347

SMS Level: 4

Bowen *et al* (2006) evaluated the effectiveness of Vipassana Meditation (VM), a Buddhist mindfulness-based practice. VM teaches people objective, detached self-observation without reaction with the intention of providing alternatives to mindless, compulsive or impulsive behaviours (Marlatt, 2002 cited in Bowen *et al*, 2006). This intervention was compared with a substance use treatment as usual control group comprising: chemical dependency treatment, substance use education, acupuncture, case management and vocational programs. The sample comprised of 78 incarcerated offenders. The VM group showed significantly lower levels of alcohol use after the 3 month follow up period yet no difference between the groups were detected with respect to recidivism. Additionally, the VM participants showed a decrease in alcohol related problems and psychiatric symptoms. The authors concluded that Vipassana Meditation as a treatment for alcohol related problems was effective, but not in reducing later criminal activity.

Summary Conclusions by Treatment Type

Which interventions help to decrease alcohol use/abuse and/or recidivism?

Alcohol and Recidivism

Four of the 16 studies that included Psycho-Social-Behavioural interventions (Study IDs 18, 12, 19 and 20) were effective in reducing both alcohol use/abuse and criminal activity. When Psycho-Social-Behavioural Interventions were combined with another intervention or a legal sanction, the results were less clear. Of the 2 studies that combined Legal Sanctions with Psycho-Social-Behavioural interventions, one was effective on alcohol outcomes but did not study recidivism outcomes (Study ID 28) the other was effective for recidivism but did not study alcohol outcomes. Another 2 studies evaluating Psycho-Social-Behavioural interventions, one combined with legal sanctions and a VIP (Study ID 14) and the other with a TC (Study ID 16) were found to be effective at decreasing recidivism but only the former was effective in alcohol use/misuse reduction.

Two studies (Study IDs 2 and 4) evaluated the effectiveness of Therapeutic Communities, only one was found to have had a positive effect on the offenders' alcohol use (Study ID 4).

Two studies evaluating the effectiveness of legal sanctions comprising licence suspensions and the fitting of Ignition Interlock devices both showed that the legal sanctions contributed to a significant reduction in later alcohol-related driving offences (Study IDs 26 and 27).

Interventions comprising Victim Impact Panels (Study IDs 9, 10, 23 and 24) were shown to be largely ineffective, with only one studies evaluated showing a positive effect upon recidivism (Study ID 10). Only 1 of the 4 Victim Impact Panel studies evaluated alcohol outcomes and this showed no differences between the VIP group and the non-VIP group (Study ID 9).

The final study (Study ID 3) evaluating a Vipassana Mindfulness Meditation Intervention was found to be effective in reducing alcohol use but not recidivism.

One study showed that after completing a Psycho-Social-Behavioural programme (Study ID 6) participants' alcohol use increased and the treatment was deemed detrimental. Two studies of Psycho-Social-Behavioural approaches (Study IDs 8 and 22) reported increased rates of recidivism post-treatment.

Summary Conclusions by Study Quality

Randomised Controlled Trials (RCTs) are the most rigorous way of determining whether a target intervention has caused an effect upon offending behaviours and/or alcohol use. As a result of random allocation of subjects to intervention groups, considerable attention should be given to the evaluation of a treatment intervention by RCT. There were 6 randomised controlled studies included in this systematic review that reach level 5, the highest level of methodological rigour on the Scientific Methods Scale (Sherman *et al*, 1997; 2002) (Study IDs 4,6,9,17,20 and 26). The results of the interventions that appear to be effective in reducing alcohol use/abuse and/or recidivism are reported below.

Recidivism

Only 2 of these Randomised Controlled Studies reported that the intervention reduced recidivism. The first was a Psycho-Social-Behavioural intervention (Study ID 20) and the second a Legal Sanctions/Ignition Interlock programme (Study ID 26). The other 4 studies (Study IDs 4,6,9 and 17) reported no differences in recidivism between treatment intervention and control/comparison groups.

Alcohol Use/Abuse

Of the 6 randomised controlled studies evaluating post-treatment alcohol use, 2 reported positive effects. The first was a Psycho-Social-Behavioural intervention (Study ID 20) and the second a Therapeutic Community

Programme (Study ID 4). Two studies evaluating a Psycho-Social-Behavioural+VIP intervention (Study ID 17) and one evaluating a VIP (Study ID 9) showed no differences when compared with no treatment control groups. One study on the effect of legal sanctions did not evaluate alcohol outcomes (Study ID 26).

One study found increased alcohol use post-Psycho-Social-Behavioural Intervention (Study ID 6).

Discussion

When collectively evaluating the effectiveness of the interventions included in this review, very limited conclusions can be drawn. There is no consistently conclusive evidence for the effectiveness of a single intervention.

The studies reviewed are disparate and focus on different sample populations, with different characteristics, follow up periods, outcome measures, design and statistical methods used. The majority of the sample populations were adult males (see Appendix 7 for the gender ratio in each study) with only one study comprising solely of females. Although prevalence rates for alcohol abuse/dependence in prisoners are higher for males than females (Fazel *et al*, 2006), it is necessary to be aware of the possible differential effectiveness of interventions for males and females, as well as for different age groups and to develop treatment programmes that reflect these differing needs. One of the excluded studies (Study ID 13) focussed on the impact that cultural factors within Hispanic and African-American may have on treatment effectiveness. It was concluded that, although it is possible to develop interventions that can be implemented in multi-cultural settings, it is important to acknowledge that treatments may be differentially effective.

Additionally, there are opportunities for research into whether different treatment interventions work for different types of offenders, by virtue of the type of offence committed. In this review 17 of the 24 included studies evaluated interventions for Driving Whilst Intoxicated (DWI) offenders;

participants from 7 studies had mixed offences and one study focused on physical violence offenders. Different sanctions are administered for alcohol-related-driving offenders and it may be useful to evaluate the effectiveness of treatment interventions by characteristics of the individual and by offence type.

A range of follow up periods were utilised in the reviewed studies. One intervention was shown to be effective at reducing alcohol use and recidivism in the short term (Study ID 20) but the effect of treatment became insignificant after a longer period of time. Three studies showed the opposite. In the two Turning Point studies (Study IDs 7 and 18), there was no reduction in alcohol related offences at the four year follow up point but a significant reduction in alcohol use at the 10 year follow up. Another study (Study ID 10) showed no reduction in recidivism immediately post-intervention but a significant reduction at the 7-12 month follow-up periods. Therefore, the effectiveness of interventions may be dependent on both the outcome measure and the length of follow up. Further research is needed into the effectiveness of treatment interventions with respect to which interventions have a sustainable effect to ensure both cost effectiveness and long term benefits to the individuals and society.

The methodological quality of the included studies was poor and limits the ability to draw conclusions as to which interventions work to reduce alcohol use/abuse and/or criminal activity. The lack of methodological rigour was in part due to poor study design and/or due to structural obstacles within the Criminal Justice System. Random allocation of participants to treatment interventions is the 'gold standard' but it was not always possible with this client group. In some cases the Criminal Justice System would not allow a no sanction/intervention after an offence is committed. Subsequently, a high percentage of studies do not contain a no-treatment/sanction control group whereby the demographic characteristics and patterns of alcohol use and criminal behaviours are comparable with that of the intervention group. This non-equivalence limits the ability to make causal inferences: that the reduction in alcohol use/abuse and/or criminal activity is a consequence of the treatment

intervention and not due to other alternative explanations. In an attempt to alleviate this problem, researchers have included comparison groups that receive an alternative intervention/sanction but not the target intervention. However, this introduces significant baseline differences between the groups with respect to demographics, alcohol use and offending behaviours. Thirteen of the 24 studies had such baseline differences. Once again this limits the conclusions that can be drawn as to the effectiveness of the treatment intervention. Better study design and the matching of participant characteristics may help to overcome these weaknesses. Until improvements are made in research design which evaluate the efficacy of treatment interventions and which establish causal relationships, conclusions remain difficult.

Another potential difficulty is the mandatory or voluntary nature of participation in treatment programmes. The effectiveness of treatment interventions may be affected by whether the participant enters the treatment programme/intervention of his/her own free will or is mandated or 'coerced' into it by virtue of a deferred or reduction in sentence. Both instances have caveats. Those mandated to treatment may not be motivated to change their alcohol related offending behaviours and those engaging in the programme of their own free will may be highly motivated to change their behaviour. Consequently, biases occur which will inevitably affect treatment outcomes. There is also the differential effect of being mandated to treatment within a prison environment as opposed to being mandated in the community: what works in a prison setting may not necessarily work in the community and vice versa.

Two excluded studies evaluated the effectiveness of VIPs but used offenders' attitudes (Study IDs 15 and 25) and intentions (Study ID 15) towards drinking and driving as the outcome measure. These two studies suggested that understanding the offending-behaviours and highlighting the skills that are needed in order to break the offending cycle can be achieved through understanding people's attitudes and intentions. The studies showed evidence of attitudinal shifts and behavioural intentions post-VIP. However,

further research is needed to ascertain whether these attitude shifts are sustainable and transfer into a reduction in alcohol-related driving offences. These two studies highlighted a need to understand the causal pathways between alcohol use/abuse and offending behaviours. Establishing causal links will enable the design of improved treatment intervention programmes that show sustained effectiveness in both reducing alcohol use/abuse and recidivism in diverse settings, with diverse offender populations.

3.2 Review of Community Treatments

Pharmacological Interventions

Withdrawal

Title: Psychotropic analgesic nitrous oxide for alcoholic withdrawal states

Objectives: This study examined the effectiveness of psychotropic analgesic nitrous oxide (PAN) as an alternative to benzodiazepine for alcohol withdrawal.

Studies: 5 RCTs were included, where PAN was compared to oxygen and/or benzodiazepine on symptoms of withdrawal.

Authors' Conclusions: "Results indicate that PAN may be an effective treatment of the mild to moderate alcoholic withdrawal state. The rapidity of the therapeutic effect of PAN therapy coupled with the minimal sedative requirements, may enable patients to enter the psychological treatment phase more quickly than those on sedative regimens, accelerating the patients recovery. Our review does not provide strong evidence due to the small sample sizes of the included trials. Neither does the review indicate any causes for concern that PAN is more harmful than the benzodiazepines. Clinicians wishing to use PAN may initially wish to do so within trial settings. Further high quality trials should be done to confirm these findings and to investigate whether the PAN therapy has fewer adverse effects than other treatments for the alcohol withdrawal states. Studies to investigate the possible cost-effectiveness of PAN by reducing costly hospital admissions and decreasing post administration supervision also need to be performed."

Reference: Gillman MA, Lichtigfeld FJ & Young TN (2007) Psychotropic analgesic nitrous oxide for alcoholic withdrawal states. *Cochrane Database of Systematic Reviews 2007*, 2, CD005190

Title: Anticonvulsants for alcohol withdrawal

Objectives: This review aimed to examine the efficacy and safety of treating alcohol withdrawal with anticonvulsants.

Studies: 48 RCTs were included, where anticonvulsants were compared with placebo, other pharmacological treatment or another anticonvulsant on effectiveness, safety and risk-benefit.

Authors' Conclusions: "It is not possible to draw definite conclusions about the effectiveness and safety of anticonvulsants in alcohol withdrawal, because of the heterogeneity of the trials both in interventions and the assessment of outcomes. The extremely small mortality rate in all these studies is reassuring, but data on other safety outcomes are sparse and fragmented."

Reference: Polycarpou A, Papanikolaou P, Ioannidis JPA & Contopoulos-Ioannidis DG (2005) Anticonvulsants for alcohol withdrawal. *Cochrane Database of Systematic Reviews 2005, 3*, CD005064

Title: Benzodiazepines for alcohol withdrawal

Objectives: This study aimed to examine the efficacy and safety of treating alcohol withdrawal with benzodiazepines

Studies: 57 RCTs were included, where benzodiazepines were compared with placebo, other pharmacological treatment or other benzodiazepine on effectiveness and safety.

Authors' Conclusions: "Benzodiazepines are effective against alcohol withdrawal symptoms, in particular seizures, when compared to placebo. It is not possible to draw definite conclusions about the relative effectiveness and safety of benzodiazepines against other drugs in alcohol withdrawal, because of the large heterogeneity of the trials both in interventions and assessment of outcomes but the available data do not show prominent differences between benzodiazepines and other drugs in success rates."

Reference: Ntais C, Pakos E, Kyzas P & Ioannidis JPA (2005) Benzodiazepines for alcohol withdrawal. *Cochrane Database of Systematic Reviews 2005, 3*, CD005063

Title: Gamma-hydroxybutyrate (GHB) for prevention and treatment of alcohol withdrawal (protocol stage)

Objectives: This study aims to evaluate the efficacy and safety of GHB compared with placebo and other pharmacological treatments on alcohol withdrawal

Reference: Leone MA, Avanzi GC, Iacono AL, Vigna-Taglianti F & Faggiano F (2006) Gamma-hydroxybutyrate (GHB) for prevention and treatment of alcohol withdrawal (Protocol). *Cochrane Database of Systematic Reviews* 2006, 4, CD006266

Dependence

Title: Opioid antagonists for alcohol dependence

Objectives: Since opioid antagonists have been shown to reduce alcohol consumption in animals, this study aimed to determine their effectiveness in attenuating or preventing relapse in alcohol dependence.

Studies: 29 RCTs were included, where naltrexone and nalmeferene were compared with other opioid antagonists, with or without other biological or pharmacological treatment with the outcome as alcohol relapse.

Authors' Conclusions: "The review findings support that short-term treatment of NTX [naltrexone] should be accepted as a short-term treatment for alcoholism. Some major limitations of the available evidence include short study duration, small sample sizes and lack of data on psychosocial benefits. Strategies to improve adherence to NTX treatment, eg, PSTs [psychosocial treatment] and management of adverse effects, should be concomitantly given. Due to too little evidence, NMF [nalmeferene] should have no role for the treatment of alcohol dependence."

Reference: Srisurapanont M & Jarusuraisin N (2005) Opioid antagonists for alcohol dependence. *Cochrane Database of Systematic Reviews* 2005, 1, CD001867

Title: Disulfiram for alcohol dependence (protocol stage)

Objectives: This study aims to evaluate the efficacy and acceptability of disulfiram compared with placebo or other pharmacological interventions on alcohol dependence

Reference: Fox GC, Loughlin P & Cook CCH (2003) Disulfiram for alcohol dependence (Protocol). *Cochrane Database of Systematic Reviews* 2003, 3, CD004331

Title: Acamprosate for alcohol dependence (protocol stage)

Objectives: This study aims to evaluate the efficacy and acceptability of Acamprosate compared with placebo or other pharmacological interventions on alcohol dependence.

Reference: Fox GC, Cook CCH, Loughlin P & Mangal R (2003) Acamprosate for alcohol dependence (Protocol). *Cochrane Database of Systematic Reviews 2003*, 3, CD004332

Title: Selective serotonin inhibitors for the treatment of alcohol use disorders (protocol stage)

Objectives: This study aims to evaluate the efficacy of Selective serotonin inhibitors (SSRI) compared with placebo or psychosocial treatments for treating alcohol problems

Reference: Shand F, Sannibale C & Ferguson J (2005) Selective serotonin inhibitors for the treatment of alcohol use disorders (Protocol). *Cochrane Database of Systematic Reviews 2005*, 3, CD005337

Summary

There were four reviews of pharmacological treatments for alcohol withdrawal, with results available from three. Results showed success of benzodiazepines for withdrawal, particularly seizures, and also fast and effective results of psychotropic analgesic nitrous oxide as an alternative to benzodiazepine. Trials of anticonvulsant treatment showed too much heterogeneity for success to be determined.

There were four reviews examining pharmacological treatments for alcohol dependence, though results were only available for one. This review showed short-term success of naltrexone as a short-term treatment, and no demonstrated success for nalmefene (both opioid antagonists; see Srisurapanont & Jarasuraisin (2005) above).

No prison-based research has so far been carried out into pharmacological treatment of alcohol withdrawal or dependence. It would be useful to attempt a replication of the positive findings from community-based treatments as the

effects may be different within the prison environment. The length of time prisoners remain in custody is unpredictable as they may be released or transferred to another establishment at very short notice. Prescription of certain drugs may also be problematic in the prison regime, due for example to the need for close monitoring or possible drug trafficking. Prison-based trials of pharmacological treatments indicated by reviews at the protocol stage would also be useful.

Psychosocial Interventions

Title: Alcoholics Anonymous and other 12-step programmes for alcohol dependence

Objectives: This study aimed to evaluate the efficacy of Alcoholics Anonymous (AA) or 12-step facilitation (TSF) compared with other psychosocial interventions in alcohol intake, abstinence, quality of life, and alcohol-related accidents and health problems.

Studies: 8 RCTs (3417 participants) were included, where voluntary or coerced AA or TSF was compared with no treatment, other psychosocial intervention or other 12-step variants amongst alcohol dependent participants

Authors' Conclusions: "No experimental studies unequivocally demonstrated the effectiveness of AA or TSF approaches for reducing alcohol dependence or problems. One large study focused on the prognostic factors associated with interventions that were assumed to be successful rather than on the effectiveness of interventions themselves, so more efficacy studies are needed."

Reference: Ferri M, Amato L & Davoli M (2006) Alcoholics Anonymous and other 12-step programmes for alcohol dependence. *Cochrane Database of Systematic Reviews 2006*, 3, CD005032

Title: Effectiveness of brief alcohol interventions in primary care populations

Objectives: This study aimed to evaluate the efficacy of a brief intervention in reducing consumption of alcohol in general practice or primary care.

Studies: 21 RCTs (7286 participants), where brief interventions of 1 to 4 sessions involving patient engagement, information and/or advice was

compared with assessment only or treatment as usual on alcohol consumption and alcohol-related problems.

Authors' Conclusions: "Brief interventions consistently produced reductions in alcohol consumption. When data were available by gender, the effect was present in men at one year of follow up, but unproven in women. Longer duration of counselling probably had little additional effect. The lack of differences in outcomes between efficacy and effectiveness trials suggests that the current literature had clear relevance to routine primary care. Future trials should focus on women and on delineating the most effective components of interventions."

Reference: Kaner EFS, Beyer F, Dickinson HO, Pienaar E, Campbell F, Schlesinger C, Heather N, Saunders J & Burnand B (2007) Effectiveness of brief alcohol interventions in primary care populations. *Cochrane Database of Systematic Reviews 2007, 2*, CD004148

Title: Psychosocial interventions for alcohol use disorders (protocol stage)

Objectives: This study aims to evaluate the efficacy and acceptability of psychosocial interventions compared with other psychosocial interventions, placebo, pharmacological treatment or no intervention on the treatment of alcohol use disorders.

Reference: Lima MS, Soares BGO & Farrel M (2001) Psychosocial interventions for alcohol use disorders (Protocol). *Cochrane Database of Systematic Reviews 2001, 2*, CD003027

Title: Brief interventions for heavy alcohol users admitted to general hospital wards (protocol stage)

Objectives: This study aims to evaluate the efficacy of brief interventions compared with extended psychological intervention, assessment only, no intervention, treatment as usual on alcohol consumption, quality of life and functioning, hospital readmissions, or alcohol-related injuries.

Reference: McQueen J, Allan L, Mains D & Coupar F (2005) Brief interventions for heavy alcohol users admitted to general hospital wards (Protocol). *Cochrane Database of Systematic Reviews 2005, 2*, CD005191

Summary

There were four reviews of psychosocial interventions, two of which had available data. The results showed reductions of alcohol consumption for men undergoing brief interventions, but no demonstrated efficacy of Alcoholics Anonymous or other 12-step programmes.

These findings have clear implications for prisons. Alcoholics Anonymous groups are present in 60% of prisons (Hansard, 2007) and research into their effectiveness should be undertaken as a priority. The absence of positive findings may be due to a lack of high-quality research in this area, and rigorously controlled studies may show beneficial effects. The efficacy of brief interventions for alcohol use should also be trialled, perhaps for prisoners soon to be released.

Preventative Interventions

Title: Primary prevention for alcohol misuse in young people

Objectives: This study aimed to evaluate the efficacy of psychosocial and educational interventions aimed at the prevention of alcohol misuse in people aged 25 or younger.

Studies: 56 studies, including 41 RCTs, 14 with 'before and after', non-randomised control group designs, and 1 interrupted time series design (total number of participants not stated). Studies were included which involved educational or psychosocial primary prevention interventions and their effects on alcohol use and alcohol-related crime and risky behaviour.

Authors' Conclusions:

- “1. Research into important outcome variables needs to be undertaken.
2. The methodology of evaluations needs to be improved.
3. The Strengthening Families Programme needs to be evaluated on a larger scale and in different settings.
4. Culturally-focused interventions require further development and rigorous evaluation.

5. An international register of alcohol and drug misuse prevention interventions should be established and criteria agreed for rating prevention intervention in terms of safety, efficacy and effectiveness.”

Reference: Foxcroft DR, Ireland D, Lowe G & Breen R (2002) Primary prevention for alcohol misuse in young people. *Cochrane Database of Systematic Reviews 2002*, 3, CD003024

Summary

This one review may be relevant to alcohol treatment services for young offenders and juveniles. Although the review found many interventions to be ineffective, others such as the Strengthening Families Programme could be adapted for the prison environment and trialled.

Section 4: Conclusions

This review has shown a very wide scope for further research into substance misuse in offender populations. The three existing systematic reviews and the new review of alcohol treatments presented here all suffer from a dearth of high-quality research in this area, and particularly clinical trials from the UK. Fazel *et al* (2006) concluded that prisoners have higher rates of substance abuse/dependence than found in the community, though the majority of literature on which the finding is based was conducted in the US. An initial research gap is to carry out a similar review amongst other offender populations such as those in contact with courts, police and probation.

Policy documents too have highlighted the lack of evidence for some recommended interventions such as brief psycho-social sessions focusing on advice, information and support. Instead, they are based upon demonstrated efficacy in community settings. Whilst this indicates that these interventions may be useful, there is a need to assess their effects specifically amongst offender populations. The elevated rates of substance dependence among prisoners make a comprehensive review of treatments provided for this population essential. It should also be noted that research need not always evaluate existing programmes, but can adapt or create new initiatives which can be piloted and tested in offender settings.

Furthermore, the evidence from community settings shows that psychosocial interventions are effective for opioid dependence only when delivered in combination with pharmacological detoxification treatment. The interaction between approaches is of particular importance to prison populations where the aim is to keep prisoners drug-free on release. The 28-day psychosocial intervention recommended for prisoners with problematic drug misuse does not have a strong evidence base behind it and should be evaluated as a priority.

The pharmacological evidence base for treating offender populations is severely lacking in the England and Wales. The policy around methadone maintenance seems based heavily on one study from Australia, and there is scope for the findings to be replicated and extended in this country. The ongoing research by the University of Leeds will be a first when two pharmacological treatments are compared in community and prison settings (Wright *et al*, 2007). The prison policy has already moved on to disregard one of the treatments under study (dihydrocodeine) but the results will nevertheless be enlightening. This study also demonstrates that it is possible to conduct drug trials in prisons, and could be a model for future projects.

The evidence for treating dependence on substances other than opioids shows very limited success to date in community settings, and is non-existent in offender settings. The results of the Cochrane reviews suggest some areas where exploration may be useful, and there is no reason why these cannot be carried out with offender populations.

One area where there is an evidence base for offender populations is therapeutic communities. The Cochrane review concludes that prison therapeutic communities may be favourable to prison alone or other treatment programmes, but that the studies that have been conducted are lacking in methodological quality. This is backed up by Perry *et al* (2006) who criticised the design and bias in the vast majority of offender-based research conducted to date.

Holloway *et al*'s (2005) review was more promising, showing that most interventions into drug treatments seemed to have a positive impact on reducing drug-related crime. Whilst caveats of research quality should be kept in mind, the review showed that methadone treatment, heroin treatment, therapeutic communities, psychosocial approaches, drug courts and probation/parole supervision seemed to be more effective than supervision and aftercare, drug testing and other criminal justice approaches. The impact of demographic factors was noted, illustrating variations in efficacy for different populations (and again highlighting the importance of conducting

offender-specific research rather than importing findings from the community). Finally, higher-intensity programmes were more likely to result in reduction of criminal behaviour than low intensity equivalents. As Holloway *et al* (2005) suggest, there should be a move to prioritise (and invest in) the specific approaches with demonstrable success.

Alcohol misuse has often been assimilated into general 'substance misuse' research. This report aimed to examine treatments for alcohol misuse in greater depth in order to determine which approaches were most effective. The results from the community showed the success of benzodiazepine for alcohol withdrawal, and naltrexone for alcohol dependence. To date there has been no research on pharmacological treatments for alcohol misuse in offender settings. Again, policy has been dictated by what works in the community but these results should be replicated (particularly in prisons) to fully understand the effects of such treatments.

The review of alcohol treatments in offender settings revealed a small number of highly variable studies, in terms of scope and quality. Indeed, only 6 studies reached the highest level of quality which would usually merit inclusion into a Cochrane review. It was not possible to make direct comparisons between studies due to their differences, but a narrative review provided the individual results.

Brief psychosocial interventions were shown to be effective in reducing alcohol consumption amongst men in community settings. In offender settings, the results were found to be more mixed. Cognitive Behavioural Therapy (CBT) was shown to be effective in reducing future alcohol use amongst alcohol-dependent domestic abusers in a high quality study from the US. Other positive results were found for driving-whilst-disqualified offenders undergoing CBT or the Turning Point residential programme (but only long term for the latter), as well as an education course for young offenders in the UK. However, ten other interventions showed no significant improvements on future recidivism or alcohol use. The interventions included in this part of the review varied greatly, and it would be wrong to discount all psycho-social

interventions on the basis of the results shown here. Rather, there is a need for future high-quality research in this area, particularly in the use of CBT in the UK, and evaluations of the services provided to prisoners in England and Wales.

Alcoholics Anonymous and other 12-step programmes in the community were not supported by the available research evidence. The review of offender treatments showed that no studies had examined this area; another topic ripe for future research given the wide availability of Alcoholics Anonymous groups for prisoners in England and Wales (Hansard, 2007).

Some additional treatments were considered in the offender review but not yet subject to Cochrane review. Victim impact panels were found to be successful in only one of four studies. Legal sanctions did show some positive effects, particularly the Ignition Interlock devices which require offenders to provide a breath test before their car can start. There were two studies of therapeutic communities with specific alcohol components, and one of these showed success in future alcohol use. Finally, Vipassana Mindfulness Meditation was effective in reducing alcohol use but not recidivism in a novel study conducted in the US. Possible UK pilot studies of Ignition Interlock and meditation may therefore be indicated.

When only the highest-quality studies were included, positive results with regard to recidivism were found for one CBT study and one Ignition Interlock study. With regards to future alcohol use, the same CBT study and one therapeutic community study had positive effects. There is clearly a need to conduct clinical trials of new and existing alcohol-related interventions in the UK.

In summary, this review has highlighted major gaps in the evidence base for substance misuse treatments for offender populations, and made suggestions for areas where future research could usefully focus.

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**Appendix 1: Accredited Offending Behaviour Programmes
Relating to Substance Misuse**

Programme	Accredited for use in prison	Accredited for use in the community
Action for Drugs	November 2003	-
Addressing Substance Related Offending (ASRO)	-	2004
Drink Impaired Drivers	-	For males, March 2001 Provisionally accredited for females, March 2004
FOCUS	May 2003	-
Ley Prison Programme	March 2003	-
North West Area Therapeutic Community	May 2003	-
Offender Substance Abuse Programme	-	Provisional, 2004
Prevalence and Risk associated with Illicit Substance Misuse in Prison (PRISM)	-	2004
Prison-Addressing Substance Related Offending	December 2002	-
Prisoners Addressing Substance Related Offending (P-ASRO) for Women	Provisional, November 2005	-
RAPt Substance Abuse Treatment Programme	September 2000; Revised manuals accredited, December 2005	-
Short Duration Programme	December 2005	December 2005
Substance Treatment and Offending Programme (STOP)	November 2003	-
The Prisons Partnership 12-Step Programme (Lancaster Castle)	September 2002	-

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Appendix 2: Effectiveness of treatments included in the 24 RCTs in Perry et al (2006) by type of intervention.

Court-Based Interventions- Monitoring Interventions

Author	Country	Total N	Intervention	Results	Treatment effective on drug use?	Treatment effective on criminal activity?
Britt 1992 a	USA	619	Pre-trial release with drug testing and sanctions –v- Routine pre-trial release		N/A	No
Britt 1992 b	USA	264	Pre-trial release with drug testing and sanctions –v- Routine pre-trial release		N/A	No
Britt 1992 c	USA	234	Pre-trial release with drug testing and sanctions –v- Routine pre-trial release	Meta analysis of Britt c&d. Results favoured the comparison group: OR 1.33 (95% CI, 1.04-1.70) p=0.02	N/A	Comparison group favoured
Britt 1992 d	USA	890	Pre-trial release with drug testing and sanctions –v- Routine pre-trial release		N/A	Comparison group favoured

Key: Treatments are reported as being effective in the above tables if the treatment intervention when compared with the comparison intervention reduced drug use and/or criminal activity for at least one outcome measure or at one follow up period.

N/A= The study did not use this as an outcome measure.

N/D= No differences.

TC= Therapeutic Community

Court-Based Interventions- Sentencing Interventions

Author	Country	Total N	Intervention	Results	Treatment effective on drug use?	Treatment effective on criminal activity?
Cosden 2003	USA	235	Mental health drug court with ACT case management –v- Treatment as usual	No differences in drug use.	N/D	N/A
Deschenes 1994	USA	639	Drug court –v- Routine probation and/or parole	No differences in criminal activity.	N/A	N/D
Gottfredson 2002	USA	235	Drug court –v- Routine probation and/or parole	Results favoured the drug court with arrest as outcome measure OR 0.53 (95% CI, 0.31-0.91) at 12mths. OR 0.45 (CI 95%, 0.24-0.84) at 24mths. With drug charge as outcome measure no differences at 12mths, but results favoured the drug court at 24 mths OR 0.57 (CI 95%, 0.34-0.97).	N/A	Yes

Key: Treatments are reported as being effective in the above tables if the treatment intervention when compared with the comparison intervention reduced drug use and/or criminal activity for at least one outcome measure or at one follow up period.

N/A= The study did not use this as an outcome measure.

N/D= No differences.

TC= Therapeutic Community

Secure Establishment Based Interventions – Therapeutic Communities

Author	Country	Total N	Intervention	Results	Treatment effective on drug use?	Treatment effective on criminal activity?
Nielsen 1996	USA	689	CREST work release transitional TC –v- Routine work release	With drug use as the outcome measure the Crest work release programme was favoured at 6 mths (OR 0.12, 95%CI, 0.08, 0.18) and 18mths (OR 0.28 95% CI 0.17-0.47). with recidivism for any offence as the outcome measure results favoured the Crest work release at both 6mths (OR 0.32 CI95% 0.20-.050) and 18mth follow up periods (OR 0.36 95% CI 0.23-0.58	Yes	Yes
Sacks 2004	USA	236	Personal reflections TC followed by community-based aftercare –v- Prison-based mental health programme	Meta Analysis of Sacks and Wexler studies of TC –v- mental health programme and –v- a waiting list control with incarceration as outcome measure results favoured the treatment OR 0.37 (95% CI 0.16-0.87) p=0.02	N/A	Yes
Wexler 1999	USA	715	Prison-based AMITY TC with community based aftercare –v- no treatment control		N/A	Yes

Key: Treatments are reported as being effective in the above tables if the treatment intervention when compared with the comparison intervention reduced drug use and/or criminal activity for at least one outcome measure or at one follow up period.

N/A= The study did not use this as an outcome measure.

N/D= No differences.

TC= Therapeutic Community

Secure Establishment Based Interventions – Pharmacological Interventions

Author	Country	Total N	Intervention	Results	Treatment effective on drug use?	Treatment effective on criminal activity?
Dolan 2003	Australian	382	Prison-based methadone maintenance –v- waiting list control	Treatment group favoured with drug use (hair analysis) as outcome measure at 2 mths; OR 0.67 (CI 95% 0.36-1.25), 3 mths; OR 0.46 (CI 95% 0.25-0.82) and 4mths; OR 0.66 (CI 95% 0.37-1.21).	Yes	N/A

Key: Treatments are reported as being effective in the above tables if the treatment intervention when compared with the comparison intervention reduced drug use and/or criminal activity for at least one outcome measure or at one follow up period.

N/A= The study did not use this as an outcome measure.

N/D= No differences.

TC= Therapeutic Community

Community Based Interventions – Monitoring Interventions

Author	Country	Total N	Intervention	Results	Treatment effective on drug use?	Treatment effective on criminal activity?
Petersilia 1992 a	USA	173	Intensive supervision and surveillance –v- Routine parole	Petersilia a,b,c,d were combined in a series of meta analyses. Results favoured the control group after one year for recidivism; OR 1.98 (CI 95%, 1.01-3.87, p=.5), Arrest; OR 1.49 (CI 95%, 0.88-2.51, p=.1), and drug arrest; OR 1.10 (CI 95%, 0.50-2.39, p=.8). Results favoured the treatment group for conviction at one year; OR 0.93 (CI 95% 0.55-1.58, p=.8) and incarceration at one year; OR 0.88 (CI 95% 0.50-1.54, p=.6)	N/A	Yes - However, predominantly favoured control on various outcome measures
Petersilia 1992 b	USA	115	Intensive supervision and surveillance –v- Routine parole		N/A	
Petersilia 1992 c	USA	58	Intensive supervision and surveillance –v- Routine parole		N/A	
Petersilia 1992 d	USA	53	Intensive supervision and surveillance –v- Routine parole		N/A	
Petersilia 1992 e	USA	50	Intensive supervision and surveillance –v- Intensive supervision	Petersilia e,f,g were combined in meta analysis with all results favouring the control group	N/A	No
Petersilia 1992 f	USA	50	Intensive supervision and surveillance –v- Intensive supervision		N/A	No
Petersilia 1992 g	USA	50	Intensive supervision and surveillance –v- Intensive supervision		N/A	No
Haapanen 2002	USA	1958	Parole and varying frequencies of drug testing –v- Routine parole	No sig effect sizes at 24 m follow up. At 42 mths the only sig OR was found to favour the comparison group with the outcome measure drug testing OR 1.46 (CI 95%, 1.05-2.02)	N/A	No significant effect sizes. No treatment effect

Key: Treatments are reported as being effective in the above tables if the treatment intervention when compared with the comparison intervention reduced drug use and/or criminal activity for at least one outcome measure or at one follow up period.

N/A= The study did not use this as an outcome measure.

N/D= No differences.

TC= Therapeutic Community

Community Based Interventions – Pharmacological Interventions

Author	Country	Total N	Intervention	Results	Treatment effective on drug use?	Treatment effective on criminal activity?
Cornish 1997	USA	51	Naltrexone program and routine parole –v- Routine parole	Results favoured the intervention group using incarceration as outcome measure (OR 1.35 CI 95% 0.56-3.23)	N/A	Yes

Community Based Interventions – Aftercare Interventions

Author	Country	Total N	Intervention	Results	Treatment effective on drug use?	Treatment effective on criminal activity?
Rossmann 1999	USA	398	Community based opportunity to succeed aftercare program –v- Routine parole/probation.	Results were largely inconclusive favouring the intervention group when marijuana was used as the outcome measure (OR, 0.49, CI 95% 0.25-0.96) yet favouring the comparison group when drug dealing was used as the outcome measure (OR 2.31 CI 95% 1.4-3.79)	Yes	N/A

Key: Treatments are reported as being effective in the above tables if the treatment intervention when compared with the comparison intervention reduced drug use and/or criminal activity for at least one outcome measure or at one follow up period.

N/A= The study did not use this as an outcome measure.

N/D= No differences.

TC= Therapeutic Community

Community Based Interventions – Case management Interventions

Author	Country	Total N	Intervention	Results	Treatment effective on drug use?	Treatment effective on criminal activity?
Martin 1993	USA	365	ACT case management –v- Routine parole	No significant results	No	No

Community Based Interventions – Cognitive Skills Training Interventions

Author	Country	Total N	Intervention	Results	Treatment effective on drug use?	Treatment effective on criminal activity?
Hanlon 1999	USA	536	Social support program –v- Drug testing and routine parole. Routine parole alone.	No significant results	N/A	No
Henggeler 1999	USA	118	Multi-systemic cognitive skills therapy –v- community service as usual	No significant results	No	No

Key: Treatments are reported as being effective in the above tables if the treatment intervention when compared with the comparison intervention reduced drug use and/or criminal activity for at least one outcome measure or at one follow up period.

N/A= The study did not use this as an outcome measure.

N/D= No differences.

TC= Therapeutic Community

Appendix 3: Effectiveness of treatments included in the studies reported in Holloway et al (2005) by type of intervention.

Methadone Treatment

Author	Total N	Country	Intervention	Treatment effective in reducing criminal activity?*
Bale et al 1980	283	USA	Methadone –v- no treatment	Yes
Bell 1997	193	Australia	High dose methadone –v- low dose methadone	Yes
Gossop et al 2003	418	UK	Methadone –v- residential care	Yes
Gunne and Gronbladh 1981	34	Sweden	Methadone –v- no treatment	Yes
Hubbard et al 1997	3496	USA	Outpatient methadone –v- long-term residential	Yes
Hutchinson et al 2000	107	UK	Continuous methadone –v- interrupted methadone	Yes
Kosten and Rounsaville 1987	123	USA	Methadone maintenance –v- detoxification	No
Magura et al 1993	249	USA	Methadone –v- 7-day heroin detox	Yes
McGlothlin and Anglin 1981	207	USA	High dose methadone –v- low-dose methadone	Yes
Simpson and Sells 1982	1047	USA	Methadone maintenance –v- intake only	Yes
Strang et al 2000	33	UK	Injected methadone –v- oral methadone	Yes

Table adapted from Holloway et al (2005) pages 15-19 and 22-27

Key: Treatments are reported as being effective in the above tables if the treatment intervention when compared with the comparison intervention reduced drug use and/or criminal activity for at least one outcome measure or at one follow up period.

N/A= The study did not use this as an outcome measure.

N/D= No differences.

TC= Therapeutic Community

Heroin Treatment

Author	Total N	Country	Intervention	Treatment effective in reducing criminal activity?
McCusker and Davies 1996	66	UK	Heroin prescribed –v- methadone prescribed	Yes
Metrebian et al 2001	58	UK	Injectable heroin –v- injectable methadone	Yes
Perneger et al 1998	51	Switzerland	Heroin maintenance –v- conventional treatment	Yes

Table adapted from Holloway *et al* (2005) pages 15-19 and 22-27

Therapeutic Communities

Author	Total N	Country	Intervention	Treatment effective in reducing criminal activity?
Daley et al 2000	258	USA	Residential outpatient –v detoxification	Yes
Dynia and Sung 2000	399	USA	Community TC –v- standard CJ disposal	Yes
Farrell 2000	79	USA	CREST TC –v- work release	No
French and Zarkin 1992	1585	USA	Residential –v- outpatient drug free	Yes
Gordon et al 2000	480	USA	Residential TC centre –v- traditional institutions	Yes
Hser et al 2001	749	USA	Residential TC treatment –v- short term inpatient	Yes
Hubbard et al 1989	2731	USA	Residential –v- outpatient drug free	Yes
Inciardi et al 1997	226	USA	Key-Crest TC –v- work release	Yes
Nemes et al 1999	412	USA	Standard TC -v- abbreviated TC	Yes
Simpson et al 1997	544	USA	Long-term residential –v- outpatient drug free	Yes
Wexler et al 1999	715	USA	Prison TC/aftercare –v- normal prison	Yes

Table adapted from Holloway *et al* (2005) pages 15-19 and 22-27

Key: Treatments are reported as being effective in the above tables if the treatment intervention when compared with the comparison intervention reduced drug use and/or criminal activity for at least one outcome measure or at one follow up period.

N/A= The study did not use this as an outcome measure.

N/D= No differences.

TC= Therapeutic Community

Psychological, Social and Behavioural Approaches

Author	Total N	Country	Intervention	Treatment effective in reducing criminal activity?
Azrin et al 1994	82	USA	Behavioural treatment –v- supportive treatment	Yes
Coviello et al 2001	94	USA	12 hours a week day hospital programme –v- 6 hours a week outpatient	Yes
Henggeler 1991	200	USA	Multi-systemic therapy –v- individual counselling	Yes
McLellan 1993	41	USA	Psychosocial services –v- no psychosocial services	Yes
Woody 1987	59	USA	Supportive expressive psychotherapy –v drug counselling	Yes

Table adapted from Holloway *et al* (2005) pages 15-19 and 22-27

Supervision and Aftercare

Author	Total N	Country	Intervention	Treatment effective in reducing criminal activity?
Brown et al 2001	145	USA	Drug free/aftercare –v- drug free no aftercare	No
Ghodse et al 2002	49	UK	Detox and maximum aftercare –v- detox and minimum aftercare	Yes

Table adapted from Holloway *et al* (2005) pages 15-19 and 22-27

Key: Treatments are reported as being effective in the above tables if the treatment intervention when compared with the comparison intervention reduced drug use and/or criminal activity for at least one outcome measure or at one follow up period.

N/A= The study did not use this as an outcome measure.

N/D= No differences.

TC= Therapeutic Community

Other Treatment

Author	Total N	Country	Intervention	Treatment effective in reducing criminal activity?
Hoffman and Miller 1992	5567	USA	Abstinence based inpatients –v- abstinence based outpatients	No
Hughey and Klemke 1996	360	USA	Inmate recovery programme –v- no inmate recovery programme	No
Latessa and Moon 1992	227	USA	Acupuncture Group –v- no acupuncture	Yes
Lam et al 1995	294	USA	Shelter based –v- treatment as usual	Yes

Table adapted from Holloway *et al* (2005) pages 15-19 and 22-27

Drug Testing and DTTOs

Author	Total N	Country	Intervention	Treatment effective in reducing criminal activity?
Britt et al 1992	Not given	USA	Drug testing –v- no drug testing	Yes
Haapanen and Britton 2002	595	USA	Drug testing –v- no drug testing	Yes
Hough et al 2003	254	UK	DTTOs –v- 1A (6) schemes	Yes
Jones and Goldkamp 1993	Not given	USA	Drug testing –v- no drug testing	Yes
McBride and Inciardi 1993	1986	USA	Drug testing –v- treatment as usual	No
Turner et al 1999	506	USA	Drug testing –v- drug court	No

Table adapted from Holloway *et al* (2005) pages 15-19 and 22-27

Key: Treatments are reported as being effective in the above tables if the treatment intervention when compared with the comparison intervention reduced drug use and/or criminal activity for at least one outcome measure or at one follow up period.

N/A= The study did not use this as an outcome measure.

N/D= No differences.

TC= Therapeutic Community

Drug Courts

Author	Total N	Country	Intervention	Treatment effective in reducing criminal activity?
Gottfredson et al 2003	235	USA	Drug court –v- treatment as usual	Yes
Spohn et al 2001	711	USA	Drug court –v- treatment as usual	Yes

Table adapted from Holloway *et al* (2005) pages 15-19 and 22-27

Probation and Parole

Author	Total N	Country	Intervention	Treatment effective in reducing criminal activity?
Deschenes et al 1995 a and b	300	USA	Intensive community supervision –v- prison, intensive supervised release and routine supervised release	Yes
Farabee et al 2001	1167	USA	CJ supervision –v- no CJ supervision	Yes
Martin and Scarpitti 1993	263	USA	Parole treatment –v- standard parole	Yes
Turner et al 1992	569	USA	Intensive supervision –v- routine supervision	No

Table adapted from Holloway *et al* (2005) pages 15-19 and 22-27

Key: Treatments are reported as being effective in the above tables if the treatment intervention when compared with the comparison intervention reduced drug use and/or criminal activity for at least one outcome measure or at one follow up period.

N/A= The study did not use this as an outcome measure.

N/D= No differences.

TC= Therapeutic Community

Other Criminal Justice Programmes

Author	Total N	Country	Intervention	Treatment effective in reducing criminal activity?
Anglin et al 1989	195	USA	Methadone with high coercion –v- methadone with low coercion	Yes
Brecht et al 1993	499	USA	High coercion –v low coercion	No
Zhang 2001	200	USA	Drug treatment boot camp –v- regular boot camp	No

Table adapted from Holloway *et al* (2005) pages 15-19 and 22-27

Key: Treatments are reported as being effective in the above tables if the treatment intervention when compared with the comparison intervention reduced drug use and/or criminal activity for at least one outcome measure or at one follow up period.

N/A= The study did not use this as an outcome measure.

N/D= No differences.

TC= Therapeutic Community

Appendix 4: Results of meta-analysis of post-test only studies included in Holloway et al 2005

Author	Total N	Intervention	Outcome Measure	Results
Bale et al 1980	283	Methadone –v- no treatment	No. arrested	NS
Britt et al 1992	Not given	Drug testing –v- no drug testing	No. arrested	NS
Latessa and Moon 1992	227	Acupuncture group –v- no acupuncture group	No. arrested	NS
Martin and Scarpitti 1993	263	Parole treatment –v- standard parole	No. imprisoned	NS
McBride and Inciardi 1993	1986	Drug testing –v- treatment as usual	No. arrested	NS
Deschenes et al 1995	300	Intensive community supervision –v- prison, intensive supervised release and routine supervised release	No. arrested	NS
Deschenes et al 1995	300	Intensive community supervision –v- prison, intensive supervised release and routine supervised release	No. arrested	NS
Inciardi et al 1997	226	Key crest TC –v- work release	No. arrested	OR 3.86, CI 1.79-8.29, Z 3.45 P=0.0006.
Nemes et al 1999	412	Standard TC –v-abbreviated TC	No. arrested	OR 1.73, CI 1.07-2.79, Z 2.23 P=0.0257.
Turner et al 1999	506	Drug testing –v- drug court	No. arrested	NS
Wexler et al 1999	715	Prison TC/aftercare –v- normal prison	No. Imprisoned	OR 10.97, CI 5.14-23.44, Z 6.18 P=0.0000.
Farrell 2000	79	Crest TC –v- work release	No. recidivist	NS
Gordon et al 2000	480	Residential TC centre –v- traditional institutions	No. recidivist	OR 1.70, CI 1.17-2.48, Z 2.78 P=0.0054.
Brown et al 2001	145	Drug free/aftercare –v- drug free no aftercare	No. offending	NS
Haapanen and Britton 2002	595	Drug testing –v- no drug testing	No. arrested	NS
Gottfredson et al 2003	235	Drug court –v- treatment as usual	No. arrested	OR 2.21, CI 1.19-4.12, Z 2.51, P=0.0121.

Table adapted from Holloway et al (2005) page 46

Key: TC= Therapeutic Community, CJ= Criminal justice, NS= Not significant. OR= Odds ratio, CI= Confidence interval, Z= A measure of the significance of the OR, P= Probability level.

Appendix 5: Results of meta-analysis of pre-post test only studies with controls included in Holloway et al 2005

Author	Total N	Intervention	Outcome Measure	Results
Simpson and Sells 1982	1047	Methadone maintenance –v- intake only	No. arrested	OR 2.02, CI 1.09-3.75, Z 2.23, P=0.0257.
Hoffman and Miller 1992	5567	Abstinence based inpatients –v- abstinence based outpatients	No. one arrested	NS
Magura et al 1993	249	Methadone –v- 7-day heroin detox	No. illegal income	NS
Hubbard et al 1997	3496	Outpatient methadone –v- long-term residential	No. offending	OR 0.69, CI 0.50-0.97, Z -2.17, P=0.0278
Simpson et al 1997	544	Long-term residential –v outpatient drug free	No. arrested	NS
Perneger et al 1998	51	Heroin maintenance –v- conventional treatment	No. charged	OR 27.02, CI 1.64-445.98, Z 2.30, P=0.0214.
Dynia and Sung 2000	399	Community TC –v- standard CJ disposal	No. arrested	OR 2.16, CI 1.10-4.23, Z 2.25, P=0.0143.
Hutchinson et al 2000	107	Continuous methadone –v- interrupted methadone	No. drug dealing	NS
Strang et al 2000	33	Injected methadone –v- oral methadone	No. offending	NS
Farabee et al 2001	1167	CJ supervision –v- no CJ supervision	No. arrested	OR 3.74, CI 2.41-5.80, Z 5.87, P=0.0000.
Hser et al 2001	749	Residential TC treatment –v- short term inpatient	No. arrested	OR 3.77, CI 2.53-5.62, Z 6.51, P=0.0000.
Ghodse et al 2002	49	Detox and maximum aftercare –v- detox and minimum aftercare	No. offending	OR 13.13, CI 1.59-108.32, Z 2.39, P=0.0168.

Table adapted from Holloway et al (2005) page 47

Key: TC= Therapeutic Community, CJ= Criminal justice, NS= Not significant. OR= Odds ratio, CI= Confidence interval, Z= A measure of the significance of the OR, P= Probability level.

Appendix 6: Results of treatment effectiveness of included studies categorised by type of treatment

Psycho-Social-Behavioural Interventions

Study ID	Author	Country	SMS Level	Total N	Age category	Offence	Type of Study	Follow-up length	Baseline Differences	Alcohol Outcome	Recidivism Outcome
1	Nickel (1990)	3	4	2888	Mixed	DWI	T1,T2,T3,T0	36 and 60 mths	D	N/R	N/D
6	Donovan et al (1990)	1	5	557	Adult	DWI	T1,T2,T0	1,6,12 mths and 2-3 years (mean 2.63)	D, A	Neg	N/D
7	Langworthy and Latessa (1996)	1	3	724	Mixed	DWI	T1,T0	4 years	D,R	N/R	N/D
18	Pratt et al (2000)	1	3	723	Mixed	DWI	T1, T0	10 years	D,R	Pos	Pos
8	McMurran and Boyle (1990)	2	3	41	Young Offenders	Unknown	T1,T2	15 mths	No	N/R	N/D+Neg
12	Baldwin et al (1991)	2	2	18	Young Offenders	Mixed	PP, T1, T2	6-12 mths	No	Pos	Pos
19	Bakker et al (2000)	5	3	288	Adult	DWI	T1, T0	990 Days	No	Pos	Pos
20	Easton et al (2007)	1	5	78	Adult	PHY	T1, T0	12 week+6mths	D,A	Pos	Pos
21	Dembo et al (2002)	1	5	278	Young Offenders	Mixed	T1, T2	1,2,3 years	N/K	N/D	N/R
22	Sadler et al (1991)	1	4	7820	Adults	DWI	T1,T2,T0	1,2,3 and 4 years	D, R	N/D	Neg

Key: Type of Study: T1= Treatment 1, T2=Treatment 2, T3=Treatment 3, T0= No intervention control group, PP=Pre and Post-Intervention.

Baseline Differences: D=Demographics, A=Alcohol, R=Recidivism, N/K=Not Known.

Alcohol/Recidivism Outcomes: N/R=None Reported, N/D=No Differences, Neg=Negative Outcome, Pos=Positive Outcome.

Country: 1=USA, 2=UK, 3=FRG, 4=Australia, 5=New Zealand, 6=Canada.

Offence: DWI=Driving Whilst Intoxicated, PHY=Physical Violence.

Psycho-Social-Behavioural Interventions with Legal Sanctions

Study ID	Author	Country	SMS Level	Total N	Age category	Offence	Type of Study	Follow-up length	Baseline Differences	Alcohol Outcome	Recidivism Outcome
11	DeYoung (1997)	1	4	148632	N/K	DWI	1 st Offender Analysis T1,T2,T3,T4,T5,T6 2 nd Offender Analysis T1,T2,T3	Within 18 months for the 1 st Offender Analysis and time to reconviction (mean 1095 days) for 2 nd Offender Analysis	N/K	N/A	Pos
28	Marques et al (1999)	6	3	1309	Adult	DWI	T1,T0	Unclear	D	Pos	N/A

Psycho-Social-Behavioural Interventions with Legal Sanctions and Victim Impact Panels (VIP)

Study ID	Author	Country	SMS Level	Total N	Age category	Offence	Type of Study	Follow-up length	Baseline Differences	Alcohol Outcome	Recidivism Outcome
14	Lapham et al (2006)	1	4	957	Adult	DWI	T1, T0	1,2,3,4 and 5 years	No	Pos	Pos

Key: Type of Study: T1= Treatment 1, T2=Treatment 2, T3=Treatment 3, T0= No intervention control group, PP=Pre and Post-Intervention.

Baseline Differences: D=Demographics, A=Alcohol, R=Recidivism, N/K=Not Known.

Alcohol/Recidivism Outcomes: N/R=None Reported, N/D=No Differences, Neg=Negative Outcome, Pos=Positive Outcome.

Country: 1=USA, 2=UK, 3=FRG, 4=Australia, 5=New Zealand, 6=Canada.

Offence: DWI=Driving Whilst Intoxicated, PHY=Physical Violence.

Psycho-Social-Behavioural Interventions with Therapeutic Communities

Study ID	Author	Country	SMS Level	Total N	Age category	Offence	Type of Study	Follow-up length	Baseline Differences	Alcohol Outcome	Recidivism Outcome
16	Voas and Tippetts (1990)	1	4	5538	Mixed	DWI	T1,T2,T3,T0	1 and 2 years	D	N/R	Pos

Psycho-Social-Behavioural Interventions with Victim Impact Panels (VIP)

Study ID	Author	Country	SMS Level	Total N	Age category	Offence	Type of Study	Follow-up length	Baseline Differences	Alcohol Outcome	Recidivism Outcome
17	Wheeler et al (2004)	1	5	99	Adult	DWI	T1,T0	2 years	No	N/D	N/D

Therapeutic Community Interventions

Study ID	Author	Country	SMS Level	Total N	Age category	Offence	Type of Study	Follow-up length	Baseline Differences	Alcohol Outcome	Recidivism Outcome
2	Jainchill et al (2000)	1	3	485	Young Offenders	Mixed	PP, T1	Within 18 months	D,A,R	N/A	N/A
4	Farrell (2000)	1	5	36	N/K	Mixed	T1,T0	18 months	No	Pos	N/D

Key: Type of Study: T1= Treatment 1, T2=Treatment 2, T3=Treatment 3, T0= No intervention control group, PP=Pre and Post-Intervention.
 Baseline Differences: D=Demographics, A=Alcohol, R=Recidivism, N/K=Not Known.
 Alcohol/Recidivism Outcomes: N/R=None Reported, N/D=No Differences, Neg=Negative Outcome, Pos=Positive Outcome.
 Country: 1=USA, 2=UK, 3=FRG, 4=Australia, 5=New Zealand, 6=Canada.
 Offence: DWI=Driving Whilst Intoxicated, PHY=Physical Violence.

Victim Impact Panels

Study ID	Author	Country	SMS Level	Total N	Age category	Offence	Type of Study	Follow-up length	Baseline Differences	Alcohol Outcome	Recidivism Outcome
9	Polaksek et al (2001)	1	5	788	Mixed	DWI	T1,T0	1 year and 2 years	D	N/D	N/D
10	Fors and Rojek 1997	1	3	835	Mixed	DWI	T1,T0	0-6 mths, 7-12mths, 0-12mths	No	N/A	Pos
23	Shinar and Compton (1995)	1	3	3290	Mixed	DWI	T1-v-T0 T2-v-T0	Up to 2 years	D	N/A	N/D
24	Shinar and Compton (1995)	1	3	2260	Mixed	DWI	T1-v-T0 T2-v-T0	Up to 2 years	D	N/A	N/D

Legal Sanctions

Study ID	Author	Country	SMS Level	Total N	Age category	Offence	Type of Study	Follow-up length	Baseline Differences	Alcohol Outcome	Recidivism Outcome
26	Beck et al (1999)	1	5	1387	Adult	DWI	T1,T0	0-1 year, after 2 years and 0-2 years	No	N/A	Pos
27	Morse and Elliott (1992)	1	3	546	Adult	DWI	T1,T0	6,12,18,24 and 30 months	D,R	N/A	Pos

Key: Type of Study: T1= Treatment 1, T2=Treatment 2, T3=Treatment 3, T0= No intervention control group, PP=Pre and Post-Intervention.

Baseline Differences: D=Demographics, A=Alcohol, R=Recidivism, N/K=Not Known.

Alcohol/Recidivism Outcomes: N/R=None Reported, N/D=No Differences, Neg=Negative Outcome, Pos=Positive Outcome.

Country: 1=USA, 2=UK, 3=FRG, 4=Australia, 5=New Zealand, 6=Canada.

Offence: DWI=Driving Whilst Intoxicated, PHY=Physical Violence.

Vipassana Mindfulness Meditation

Study ID	Author	Country	SMS Level	Total N	Age category	Offence	Type of Study	Follow-up length	Baseline Differences	Alcohol Outcome	Recidivism Outcome
3	Bowen et al (2006)	1	4	78	Adult	Mixed	T1,T0	3 months	No	Pos	N/D

Key: Type of Study: T1= Treatment 1, T2=Treatment 2, T3=Treatment 3, T0= No intervention control group, PP=Pre and Post-Intervention.
 Baseline Differences: D=Demographics, A=Alcohol, R=Recidivism, N/K=Not Known.
 Alcohol/Recidivism Outcomes: N/R=None Reported, N/D=No Differences, Neg=Negative Outcome, Pos=Positive Outcome.
 Country: 1=USA, 2=UK, 3=FRG, 4=Australia, 5=New Zealand, 6=Canada.
 Offence: DWI=Driving Whilst Intoxicated, PHY=Physical Violence.

Appendix 7: Gender of participants in the included studies.

Study ID	Gender of participants
1	Mixed, no details provided
2	Mixed, 71% male
3	Mixed, no details provided
4	100% female
6	Mixed, more than 75% male in all groups
7	Mixed, no details provided
8	100% male
9	Mixed, 75% male in experimental and control groups
10	100% male
11	No details provided
12	100% male
14	Mixed, 89.1% male in experimental group, 88.3% in control group
16	Mixed, 92% male
17	Mixed, 67.9% male in experimental group, 65.1% male in control group
18	Mixed, no details provided
19	100% male
20	100% male
21	Mixed, 56% male
22	No details provided
23	Mixed, 80% male
24	Mixed, 85.7% male
26	Mixed, 88.7% male in experimental group, 91% in control group
27	Mixed, 87.9% male in experimental and control group
28	Mixed, no details provided

Appendix 8: References of excluded studies from the alcohol review with reasons for exclusion.

Excluded for being narrative reviews/discussion pieces

Blau TH, Super JT & Wells CB (1995) Psychological principles promote behavioural change in boot camp. *Police Chief* 62, 37-48

Duke K (2005) Déjà vu? Opportunities and obstacles in developing alcohol policy in English prisons. *Drugs, Education, Prevention and Policy* 12(5), 417-430

Gagnon AD (1991) Reducing driving under the influence recidivism in Massachusetts. *Alcoholism Treatment Quarterly* 7(4),101-111

Greer C, Lawson A, Baldwin S & Cochrane S (1990) Alcohol abuse and the young offender: Alcohol education as an alternative to custodial sentencing. *Journal of Offender Counselling* 15, 131-145

Parsons M, Wnek I, Hubbert KM (1993) A unique intervention program for repeat impaired driving offenders. *Journal of Alcohol and Drug Education* 39, 34-55

Excluded for dual reporting of drug and alcohol statistics

Anderson JF, Carson G & Dyson L (1995) Drug use history and shock incarceration outcome. *Journal of Contemporary Criminal Justice* 11(3), 196-200

Berkowitz G, Brindis C, Clayson Z & Peterson S (1996) Options for recovery: promoting success among women mandated to treatment. *Journal of Psychoactive Drugs* 28(1), 31-38

Courtright KE, Berg BL & Mutchnick RJ (2000) Rehabilitation in the new machine? Exploring drug and alcohol use and variables related to success among DUI offenders under electronic monitoring – some preliminary outcome results. *International Journal of Offender Therapy and Comparative Criminology* 44 (3), 293-311

Daley M, Love CT, Shepard DS, Peterson CB, White KL & Hall FB (2004) Cost effectiveness of Connecticut's in-prison substance abuse treatment. *Journal of Offender Rehabilitation* 39(3), 69-92

Davis TM, Baer JS, Saxon AJ & Kivlahan DR (2002) Brief motivational feedback improves post-incarceration treatment contact among veterans with substance use disorders. *Drug and Alcohol Dependence* 69, 197-203

De Leon G, Melnick G, Thomas G, Kressel D and Wexler HK (2000) Motivation for Treatment in a prison-based therapeutic community. *American Journal of Drug and Alcohol Abuse* 26(1), 33-46

Hughey R & Klemke LW (1996) Evaluation of a jail-based substance abuse treatment program. *Federal Probation* 60(4), 40-45

Kurlychek M & Kempinen C (2006) Beyond Bootcamp: The impact of aftercare on offender re-entry. *Criminology and Public Policy* 5(2), 363-388

Langan NP & Pelissier BMM (2001) The effect of drug treatment on inmate misconduct in federal prisons. *Journal of Offender Rehabilitation* 34(2), 21-30

Nielsen AL, Scarpitti FR & Inciardi JA (1996) Integrating the therapeutic community and work release for drug-involved offender: The CREST program. *Journal of Substance Abuse Treatment* 13(4), 349-358

Patrick S & Marsh R (2005) Juvenile Diversion: Results of a 3 year experimental study. *Criminal Justice Policy Review* 16(1), 59-73

Peters RH, Kearns WD, Murrin MR, Dolente AS & May RL (1993) Examining the effectiveness of in-jail substance abuse treatment. *Journal of Offender Rehabilitation* 19(3/4), 1-39

Turley A, Thornton T, Johnson C & Azzolino S (2004) Jail drug and alcohol treatment program reduces recidivism in non-violent offenders: a longitudinal study of Monroe County, New York's jail treatment drug and alcohol program. *International Journal of Offender Therapy and Comparative Criminology* 48(6), 721-728

Excluded for not having a control or comparison group

Daniel C & Dodd C (1990) Covert sensitisation treatment in the elimination of alcohol-related crime in incarcerated young offenders: a study of two cases. *Journal of Offender Rehabilitation* 16(1/2), 123-137

Gossage JP, Barton L, Foster L, Etsitty L, Lonetree C, Leonard C & May PA (2003) Sweat lodge ceremonies for jail-based treatment. *Journal of Psychoactive Drugs* 35(1), 33-42

Green GS & Phillips ZH (1990) An examination of an intensive probation for alcohol offenders: five-year follow up. *International Journal of Offender Therapy and Comparative Criminology* 34, 31-42

McMurrin M & Cusens B (2003) Controlling alcohol-related violence: a treatment programme. *Criminal Behaviour and Mental Health* 13, 59-76

Messina N, Burdon W, Hagopian G & Prendergast M (2006) Predictors of prison-based treatment outcomes: A comparison of men and women participants. *The American Journal of Drug and Alcohol Abuse* 32, 7-28

Excluded for not evaluating the effectiveness of a treatment intervention

Applegate BK, Langworthy RH & Latessa EJ (1997) Factors associated with success in treating chronic drunk drivers: the turning point program. *Journal of Offender Rehabilitation* 24(3/4), 19-34

Baird FX & Frankel AJ (2001) The efficacy of coerced treatment for Offenders: An evaluation of two residential forensic drug and alcohol treatment programs. *Journal of Offender Rehabilitation* 34(1), 61-80

Baldwin S, Macmillan J & Ball J (1993) Alcohol Education Courses for Offenders: Ten years after. *Alcohol and Alcoholism* 28(3), 353-358

Ball SA, Jaffe AJ, Crouse-Artus MS, Rounsaville BJ & O'Malley SS (2000) Multi-dimensional subtypes and treatment outcome in first-time DWI offenders. *Addictive Behaviours* 25(2), 167-181

Bagley C (1996) A grassroots approach to reducing recidivism. *Corrections Today* 58(5), 96

Brown BS, O'Grady K, Battjes RJ & Farrell EV (2004) Factors associated with treatment outcomes in an aftercare population. *The American Journal on Addictions* 13, 447-460

Stohr MK, Hemmens C, Shapiro B, Chambers B & Kelley L (2002) Comparing inmate perceptions of two residential substance abuse treatment programs. *International Journal of Offender Therapy and Comparative Criminology*. 46(6), 699-714

Yu J (2000) Punishment and alcohol problems: recidivism among drinking-driving offenders. *Journal of Criminal Justice* 28, 261-270