Therapeutic communities for substance related disorder (Review)

Smith LA, Gates S, Foxcroft D


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Therapeutic communities for substance related disorder (Review)
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Therapeutic communities for substance related disorder

Lesley A Smith¹, Simon Gates², David Foxcroft¹

¹School of Health and Social Care, Oxford Brookes University, Oxford, UK. ²Warwick Clinical Trials Unit, University of Warwick, Coventry, UK

Contact address: Lesley A Smith, School of Health and Social Care, Oxford Brookes University, Jack Straws Lane, Marston, Oxford, OX3 0FL, UK. lesleysmith@brookes.ac.uk.

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ABSTRACT

Background
Therapeutic communities (TCs) are a popular treatment for the rehabilitation of drug users in the USA and Europe.

Objectives
To determine the effectiveness of TC versus other treatments for substance dependents, and to investigate whether effectiveness is modified by client or treatment characteristics.

Search methods
We searched: Cochrane Central Register of Controlled Trials (The Cochrane Library Issue 2, 2005); MEDLINE, EMBASE, Psycinfo, CINAHL, SIGLE from their inception to March 2004. Reference lists of studies were scanned.

Selection criteria
Randomised controlled trials comparing TC with other treatments, no treatment or another TC.

Data collection and analysis
Two authors independently inspected abstracts, the methodological quality was assessed using Drug and Alcohol CRG checklist. When possible, data were summarised using relative risks and differences in means, otherwise results are presented as reported by authors.

Main results
Seven studies were included. Differences between studies precluded any pooling of data, results are summarised for each trial individually: TC versus community residence: no significant differences for treatment completion; Residential versus day TC: attrition (first two weeks), and abstinence rates at six months significantly lower in the residential treatment group; Standard TC versus enhanced abbreviated TC: number of employed higher in standard TC RR 0.78 (95% CI 0.63, 0.96). Three months versus six months programme within modified TC, and six months versus 12 months programme within standard TC: completion rate higher in the three months programme and retention rate (40 days) significantly greater with the 12 months than 6 months programme.

Two trials evaluated TCs within a prison setting: one reported significantly fewer re incarcerated 12 months after release from prison in the TC group compared with no treatment, RR 0.68 (95% CI 0.57, 0.81). In the other, people treated in prison with TC compared with Mental Health Treatment Programmes showed significantly fewer re incarcerations RR 0.28 (95% CI 0.13, 0.63), criminal activity 0.69 (95% CI 0.52, 0.93) and alcohol and drug offences 0.62 (95% CI 0.43, 0.90) 12 months after release from prison.
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.

PLAIN LANGUAGE SUMMARY

Therapeutic communities for substance related disorder

Therapeutic communities (TCs) are a popular treatment for the rehabilitation of drug users. The results of this review show that 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.

BACKGROUND

Drug and alcohol misuse and dependence has become a substantial world-wide public health problem. Drug misuse and addiction can put the individual at increased risk of a variety of illnesses, for example, there is a danger of infections such as HIV and hepatitis amongst injectors. In the UK from 1985 to 1995 there was marked increase in drug related deaths amongst young people 15 to 19 years (Roberts 1997). Heroin addicts have a mortality risk almost 12 times greater than the general population (Oppenheimer 1994), and mortality from self-poisoning with opiates has increased over nine-fold in the past two decades (Needleman 1997).

Many drug users support their drug taking with significant criminal activity which is costly and damaging to the individual and society as a whole. The high morbidity and mortality associated with drug misuse makes it important that people have contact with treatment services.

Treatment of drug addiction can roughly be divided into two steps: detoxification from addiction and maintenance of abstinence. One of the most serious limits to long-term maintenance of abstinence is relapse after successful detoxification. Harm reduction treatments, for those who are not yet able to achieve a drug free state, may help to reduce the risks associated with the use of street drugs. Relapse from the drug-free state to re-addiction is a substantial problem in the rehabilitation of dependent drug users. Treatment options for people who are addicted to illicit drugs include: a combination of behavioral therapies and medications such as methadone or buprenorphine, detoxification, intensive outpatient treatment and residential treatment. A number of Cochrane systematic reviews of randomised controlled trials reporting the effectiveness of treatments for opiate dependence exist: (Clark 2002, Faggiano 2003, Ferri 2005, Minozzi 2006, Martick 2003a, Martick 2003b). These reviews highlight that methadone maintenance at proper doses is the most effective treatment in retaining patients in treatment and suppressing heroin use but shows weak evidence of effectiveness towards other relevant outcomes such as mortality, criminal activity and quality of life.

Therapeutic communities (TC) for the treatment of drug misuse and addiction were introduced in the 1960s. TCs are drug-free residential settings that use a hierarchical model of care. Treatment stages reflect increased levels of personal and social responsibility. Peer influence is used to help individuals learn to assimilate social norms and develop more effective social skills. The way they differ from other treatment approaches is through the use of ‘the community’ as the key agent of change. The community here meaning both staff and others receiving treatment. Another fundamental principle of TCs is ‘self-help’, meaning that the individuals themselves are the main contributor to the process of change. TCs treat people with a range of substance misuse problems. People referred often have multiple drug addictions, mental health problems, inadequate family and social support and involvement with the criminal justice system.

While TCs are generally considered, particularly in the USA and parts of Europe, to be an effective method of rehabilitating abusers of drugs, the bulk of the research evidence is from poorly controlled studies (De Leon 1995; Etheridge 1995; F-Hermida 2002). In the last decade, a number of randomised controlled trials evaluating the effectiveness of TCs have been conducted. Although there are a number of narrative reviews summarising the therapeu-
tic community literature, they have a number of methodological shortcomings, and to date the evidence from RCTs has not been reviewed systematically.

**OBJECTIVES**

(1) To summarise the evidence for the effectiveness of therapeutic communities compared with other treatment options for reducing drug use for people with substance dependence

(2) To determine if effectiveness is modified by type of substance misused, reason for treatment attendance (voluntary or court order), prior treatment, treatment setting (in or out-patient) or by the duration of stay in a therapeutic community

**METHODS**

Criteria for considering studies for this review

**Types of studies**

Randomised controlled trials with parallel group or cluster design. Studies were eligible for inclusion if they included a comparison of one type of therapeutic community for substance misuse with a different type of therapeutic community, an alternative form of treatment or with placebo or no treatment.

**Types of participants**

People who sought treatment or were ordered by the court to obtain treatment with any substance misuse or dependency problem. These included people with a range of substance abuse problems, multiple drug addictions, co-morbidities e.g. mental health problems, and people with prior substance misuse treatment experience.

**Types of interventions**

We included RCTs evaluating the following interventions:

- **Experimental interventions**: therapeutic community
- **Control intervention**: pharmacological maintenance treatments, detoxification treatments, psychosocial treatments, placebo or no treatment group and another therapeutic community that differed in duration of treatment or programme of care offered

We excluded RCTs evaluating the effects of an adjunctive intervention given to one group of clients within a therapeutic community, that weren’t evaluating the effects of TC directly.

**Types of outcome measures**

1. Illicit drug use measured by self-report or urinalysis during treatment or follow-up
2. Alcohol use measured by self-report or urinalysis during treatment or follow-up
3. Retention in treatment
4. Reasons for withdrawal from treatment
5. Addiction Severity Index (ASI) composite scores during treatment or follow-up
6. Imprisonment
7. Employment
8. Drug use arrests
9. Overdoses
10. Death due to all causes or drug related

Search methods for identification of studies

We searched (1) Cochrane Central Register of Controlled Trials (CENTRAL - The Cochrane Library issue 1, 2005) which includes the Cochrane Drugs and Alcohol Group Register of Trials; (2) MEDLINE (OVID - January 1966 to October 2004); (3) EMBASE (OVID - January 1988 to October 2004); (4) CINAHL (1982 - July 2004); (5) PsycInfo (1985 to October 2004); (6) SIGLE (1980-October 2004). Search strategies were developed for each database, based on the search strategy developed for MEDLINE, but revised accordingly to take into account differences in controlled vocabulary and syntax rules. For more details see Appendix 1; Appendix 2; Appendix 3; Appendix 4; Appendix 5; Appendix 6

The reference lists of all retrieved studies and reviews were checked for relevant studies.

Data collection and analysis

**Study Selection**

All study citations found were collated in a single database. Titles and abstracts were screened by one author (LS) and references potentially relevant to the review were selected and obtained. These included reviews and primary studies. Full reports of citations with inadequate information to definitively determine relevance were also obtained. Two authors (LS & SG) independently evaluated whether studies should be included or excluded according to the eligibility criteria. Disagreements were resolved by a third author (DF).

**Assessment of the methodological quality**

Studies selected for inclusion were appraised for methodological quality using recognised criteria (Juni 2001), and quality assessments are discussed in the results. Quality assessment included: Allocation concealment

1. Adequate allocation concealment; any procedure ensuring adequate concealment of allocation, such as: central randomiza-
tions (e.g., allocation by a central office unaware of subject characteristics), pre-numbered or coded identical bottles or containers which are administered serially to participants, drug prepared by the pharmacy, serially numbered, opaque, sealed envelopes, on-site computer system combined with allocations kept in a locked unreadable; computer file that can be accessed only after the characteristics of an enrolled participant have been entered or other description that contained elements convincing of concealment; (2) B. unclear allocation concealment; when the authors either did not report an allocation concealment approach at all or report an approach that did not fall in the category A or C. (3) C. inadequate allocation concealment; Any procedure not assuring adequate concealment of allocations such as: alternation or reference to case numbers, dates of birth, day of the week. Any procedure that is entirely transparent before allocation, such as an open list of random numbers or other description that contained elements convincing of not concealment.

Blinding of outcome assessment
It was decided a priori that it was unlikely that participants and investigators would be blinded to treatment assignment. However, it was possible that the trial would include a blind outcome assessment, therefore, this was the only blinding criterion that was assessed and rated as:
(1) yes
(2) no
(3) unclear
Completeness of follow-up was evaluated by recording the following aspects:
(1) Method of analysis - Intention to treat or per-protocol
(2) Method of imputation used for missing data
(3) Proportion of participants completing the full follow-up period
Data extraction
Data were extracted from included studies, using a ProForma designed for this review, by two authors (ALS & SG) independently. Disparities were resolved by discussion.
Data extracted included:
Details of participants including demographic information (age, sex, ethnicity), primary drug used, duration of abuse and co-morbidity conditions
Detailed description of therapy in active and control groups, duration, frequency and compliance
Outcome measures and results
Study design
Numbers randomised and analysed for each outcome
Withdrawals and dropouts
Data for intention-to-treat analyses were extracted if presented. If participants had not been analysed in their randomised groups they would be restored to the correct group for the review if sufficient information was reported to allow this. There were no reports of clients analysed in the wrong group.
The corresponding author of each study were contacted by e-mail for missing information about study methods and outcomes that were described inadequately in the published report. To date, two authors have responded and provided additional information.

Data synthesis
Meta-analyses and investigations of heterogeneity were not conducted as there were no two studies similar enough to combine. Treatment effects were expressed as relative risks (RR) for dichotomous outcomes and differences in means (MD) for continuous outcomes, and reported with 95% confidence intervals (95% CI) when sufficient data for their calculation were reported. When this was not possible, summary statistics as presented in the individual study reports are reported in this review.

RESULTS

Description of studies
See: Characteristics of included studies; Characteristics of excluded studies.
We identified 31 studies as potentially eligible for the review. Excluded studies
Twenty-one studies were excluded after further consideration and are listed in Characteristics of included studies. Reasons for exclusion were:
inadequate randomisation or non-random assignment to treatment groups (6 studies)
evaluated treatment strategies within a TC and did not evaluate the effects of the TC directly (6 studies)
subsidary analyses of an included study investigating predictors of response, not analyses by randomised groups (8 studies)
targeted behaviour other than drug use - motivation and life skills (1 study)
Included studies
We included ten reports of seven RCTs in the review. The types of intervention and comparisons are listed below and detailed in Characteristics of included studies.
Wexler 1999 reported on an evaluation of the Amity prison TC for male inmates that volunteered for substance abuse treatment. Volunteers with at least nine to fourteen months until parole, were selected at random, as beds became available, to enter the prison TC. The waiting list control group consisted of sample in-mates with less than nine months left to serve. Also, about 10% of the control group consisted of in-mates that were ineligible to join the study sample due to technical reasons e.g. less than nine months left to serve. Treatment within the TC followed a three phase process: orientation lasting two to three months; treatment lasting five to six months; and re-entry lasting one to three months. Inmates randomly assigned to the prison TC were invited to join a community-based TC for up to a year following their release from prison. The control group were released directly into the community.
In the study described by Sacks 2004a, male inmates with a co-morbid serious mental illness and substance misuse were randomly assigned to a modified therapeutic community (MTC) or Mental Health Treatment Programmes (MH). Treatment in the MTC was attendance of formal activities five days a week for four to five hours a day, the rest of the time was spent on prison work. A cognitive-behavioural programme with a foundation of TC principles was followed. The aim was to change attitudes and lifestyles in relation to, substance abuse, mental illness and criminal behaviour and thinking. Treatment in the MH was based on intensified psychiatric services including medication, individual therapy, and counseling and specialised group sessions. On release from prison, MTC inmates could enter an MTC after-care programme. Condelli 2000 reported on a study conducted on The New Jersey Substance Abuse Treatment Campus, USA. The campus provides services needed by underserved populations, the aim is to reduce costs by centralising services, sharing facilities and therefore serving large numbers of clients. Substance abusers were randomised to therapeutic community (long term 6-12 months) or chemical dependency (short term 28 days) programmes on the campus. Chemical dependency programmes followed 12-step with greater emphasis on discharge planning and aftercare arrangements. The therapeutic communities followed a traditional regimen, modified for women in the women only programmes and for Hispanics in the Spanish speaking programmes. Each client was eligible for treatment in a sub-set of programmes, and as a minimum was eligible for at least two programmes, one short term and one long term. Other programme features affecting eligibility were language spoken (English or Spanish) and whether the programme was for women only or co-gender.

Guydish 1998 conducted a study where clients entering a TC-oriented drug treatment programme were randomly assigned to day or residential conditions. The TC was based on the family model. The structure of treatment started with an orientation phase in the first month, followed by a treatment phase lasting three to six months where the emphasis was on treatment of drug abuse and associated social and psychological problems. The re-entry phase, lasting three to six months, was focused on supporting the client in making independent employment and living arrangements. During the final phase, clients were no longer resident but participated in group and individual therapy on an outpatient schedule. The day treatment programme operated from a.m. to p.m., Monday to Friday, with reduced hours on weekends. Clients were required to attend seven days a week in the first month and five days per week thereafter. Whilst drug use while in treatment resulted in expulsion from the residential programme, a temporary relapse was tolerated for clients in the day programme. Following randomisation to treatment groups, there was a two week waiting period before entering the research protocol.

McCusker 1997a reported on two RCTs conducted concurrently in New England, USA. One compared a short planned duration of treatment (six months) with a longer planned duration of treatment (12 months) within a traditional therapeutic community, and the other compared a short planned duration of treatment (three months) with a longer planned duration of treatment (six months) within a modified therapeutic community incorporating a relapse prevention and health education programme.

In the study described by Nemes 1999, drug abusing clients were assigned to one of two 12 month therapeutic community programmes which differed in their lengths of inpatient and outpatient treatment. The standard programme offered 10 months inpatient treatment followed by two months outpatient services, and the abbreviated programme offered six months inpatient treatment followed by six months outpatient services. The study was conducted in Washington DC.

Nuttbrok 1998 evaluated homeless, mentally ill chemical abusers assigned to a therapeutic community or a community residence (CR). Both treatment settings were enhanced to provide treatment for mental illness and substance abuse, whilst keeping the different treatment philosophies of the two settings intact. The TC was of the traditional type, the CRs were characterised as low demand environments where relapses are tolerated and therefore may be considered as less strict than the TC.

Risk of bias in included studies

- Randomisation and allocation concealment

All included studies were stated as randomised, few gave further details about how the randomisation schedule was generated or if allocation to treatment groups was concealed. There were concerns about the adequacy of the randomisation procedures in several studies. Condelli 2000 used a computer-generated randomisation schedule stratified by native language, gender and pregnancy, but at times some assignments may have been non-random due to limited bed availability. Guydish 1998 used a systematic method to allocate participants to treatment groups by the use of odd/even numbers sealed in envelopes. The use of odd/even numbers means that it is unlikely that the assignments were concealed. The randomisation method was not described by Nuttbrok 1998, however, the treatment facilities had the final say over acceptance of assigned clients post-randomisation. Wezler 1999 selected people at random from a pool of eligible inmates, and assigned them to prison TC as beds became available. Non-randomly selected inmates joined a no treatment control group when the had less than nine months remaining from parole. About 10% of the control group were inmates with less than nine months to parole at the study beginning, therefore were ineligible for TC assignment. McCusker 1997a in the relapse prevention trial state that they used block sizes of 21 to assign clients to groups or an elapse of 30 days. At the TC site the same procedure was used initially, then a biased coin toss was used due to imbalance and limited bed availability. Authors stated that the assignment schedule was concealed from trial investigators.
Effects of interventions

As there was only one study in each of the analyses we conducted, heterogeneity was not applicable; a fixed effect model was, therefore, used. We have also summarised the results for data not suitable for analysis and present these in the text.

- **Therapeutic community versus community residence**
  (Nuttbrok 1998)

Drug use - urinalysis

Clients assigned to TC were significantly less likely to have a positive urine screen than those assigned to CR, RR 0.14 (0.05, 0.38). However, the analysis is only based on a sub-sample of clients that were tested to detect or verify substance use.

Treatment completion

More than half of the randomised clients did not start treatment in their assigned programme. Of the 373 clients assigned to the TC, 84 (23%) were rejected by the facility and 120 (32%) failed to show up for treatment. Of those randomised to the community residences (CR), 73 (23%) were rejected by the facilities, and 127 (40%) failed to show up for treatment. Retaining all randomised clients in the analyses, there was no difference between the number completing two months of treatment in the TC or the CR groups, RR 1.00 (95% CI 0.81 to 1.24). While more clients completed six and twelve months treatment in CRs compared with TC treatment, the differences were not significant, RR 0.92 (95% CI 0.69 to 1.25) and 0.82 (95% CI 0.56 to 1.22), respectively.

- **Therapeutic community versus chemical dependency programme**
  (Condelli 2000)

Treatment completion

Condelli 2000 reported results for randomised comparisons between short term (chemical dependency) and long term (therapeutic community) programmes by gender for the outcome, combined treatment refusal and attrition at 25 days for the modified ITT population. Time to event methods were used with people remaining in treatment censored at 26 days, and hazard ratios with 95% confidence intervals (95% CI) reported. Treatment refusal/attrition was significantly greater for men and women randomised to co-gender TCs compared with men and women randomised to co-gender chemical dependency programmes: HR 2.18 (95% CI: 1.64 to 2.90) and 1.88 (95% CI: 1.09 to 3.27) respectively. For women randomised to women only programmes, there was significantly more refusal/attrition in the TC programmes compared with chemical dependency programmes, HR 1.54 (1.09 to 2.18).

- **Residential treatment versus day treatment**
  (Guydish 1998)

Treatment completion

Attrition during the first two week waiting period prior to treatment proper was significantly lower in the residential treatment group than the day treatment group, RR 0.78 (0.65, 0.93). However, at six, twelve and eighteen months there was little difference in the number of clients completing treatment in either group, RR 1.09 (95% CI 0.74 to 1.63), 0.60 (95% CI 0.27 to 1.34).
and 0.20 (95% CI 0.01 to 4.11), respectively. The authors of the study reported the results of a survival analysis using Kaplan Meier methods. The time to drop out was not significantly different between the two groups (log-rank chi\textsuperscript{2} = 0.007, p = 0.94).

**Addiction Severity Index (ASI)**

ASI composite scores at six months, for clients completing the two week waiting period, were little difference between residential and day treatment clients, difference in means (MD) being: 0.03 (-0.04, 0.10) for employment; -0.02 (-0.06, 0.02) for legal; 0.05 (0.01, 0.09) for alcohol and 0.00 (-0.03, 0.03) for drug.

**Withdrawal severity**

Symptom Check List (SCL-90-R) global symptom severity scores were also similar between groups at six months, MD -0.07 (-0.24, 0.10).

**Abstinent at follow-up**

Significantly more clients were abstinent at six months in residential treatment compared with day treatment, RR 1.52 (95% CI 1.10 to 2.10); by twelve and eighteen months while more clients remained abstinent in residential treatment, differences were no longer significant, RR 1.16 (95% CI 0.82 to 1.63) and 1.10 (95% CI 0.80 to 1.53), respectively.

- **Standard TC treatment versus enhanced abbreviated TC treatment** (Nemes 1999)

**Treatment completion**

More clients completed 12 months treatment in the enhanced abbreviated TC group compared with standard treatment, though the difference was not significant, RR 1.15 (95% CI 0.89 to 1.50).

**Employment**

Significantly more clients were currently employed following standard treatment than abbreviated treatment RR 0.78 (95% CI 0.63 to 0.96).

**Drug use - urinalysis**

For the evaluation of drug use based on urinalysis, the authors based their analyses on 142 standard TC clients and 159 enhanced abbreviated TC clients that agreed to a urinalysis, which excluded clients in prison, those interviewed only via phone, and one who refused to provide a urine specimen. We restored the number analysed to the number randomised for each group, and imputed positive drug use for missing data, and calculated the RR of producing a positive urine screen for each category of drug used. The RRs were: 1.09 (95% CI 0.83 to 1.43) for opiates; 1.05 (95% CI 0.87 to 1.27) for cocaine/crack; 0.88 (95% CI 0.66 to 1.16) for marijuana; and 0.88 (95% CI 0.66 to 1.66) for alcohol.

**Criminal activity**

All clients were followed up to evaluate criminal activity by reviewing criminal records. The RR of being in prison, on probation or pre-trial release was little different between groups, RR 0.97 (95% CI 0.80 to 1.16).

- **Modified therapeutic community planned duration three months versus planned duration six months** (McCusker 1995, McCusker 1997a)

**Treatment completion**

Significantly more clients completed treatment in the three month programme compared with the six month programme, RR 1.83 (95% CI 1.45 to 2.31), however, the 40 day retention rate was no different RR 1.00 (95% CI 0.77 to 1.31).

**Time to first drug use (days from admission)**

The authors reported that the time from admission to first drug use (excluding alcohol) was significantly longer in the six month planned duration group compared with the three month group, HR 0.74 (95% CI 0.58 to 0.93), however, clients lost to follow-up who were drug free until their last assessment were censored. In a more conservative analysis that assumed losses to follow-up were due to drug use, benefit was still in favour of the six month duration group, but the difference was no longer significant, HR 0.81 (95% CI 0.65 to 1.01). The median time to first drug use was 132 days for short duration and 217 days for long duration, log rank p-value = 0.0051.

**Time to first drug use (days from treatment exit)**

The median time to first drug use from exit was 60 days and 101 days for short and long duration groups, respectively. The log rank p-value was 0.05.

**Addiction Severity Index (ASI)**

ASI scores were reported for the most recent free-living 30-day period within the previous 90-days. Differences in mean ASI composite scores were lower, indicating greater improvement, for drug, alcohol, legal and employment domains in the six month group compared with the three month group. Differences in means were; drug: (n=341; -7 (-30, 13)); alcohol: (n=341; -10 (-40, 14)); legal: (n=353; -13 (-68, 43)) and employment: (n=348; -23 (-87, 42)).

- **Traditional therapeutic community planned duration six months versus planned duration 12 months** (McCusker 1995, McCusker 1997a)

**Treatment completion**

More clients completed treatment in the six month programme compared with the twelve month programme, RR 1.59 (95% CI 0.97 to 2.63) though the difference was not significant. However, the 40 day retention rate was significantly greater with the six month programme compared with the twelve month programme, RR 0.82 (0.70, 0.96).

**Time to first drug use (days from admission)**

The time from admission to first drug use (excluding alcohol) was longer in the 12 month planned duration group compared with the six month group, though the difference was not significant. HRs were 0.86 (0.61, 1.23) treating losses as drug free, and 0.91 (0.66, 1.27) for analyses treating losses as drug users, respectively.

**Addiction Severity Index (ASI)**

Reported differences in mean ASI composite scores were lower, though not significantly, indicating greater improvement, for legal and employment domains, and higher in the drug and alcohol domains in the twelve month group compared with the six month group. Differences in means were: drug (n=153; 32 (-7,
The effectiveness of these interventions after treatment completion is of interest. Drug use using a subjective outcome measure, ASI, was evaluated in some studies. A more reliable method of measuring drug use would be an objective measure such as urinalysis, however, this raises logistical problems and may contribute to missing data. Another problem with outcomes that were evaluated using symptom scores was the analysis of data only on treatment completers, and it was not clear how missing data were handled. It wasn't clear how many people were analysed in treatment groups for some measures, and in others only people remaining in the trial were analysed.

Generally, reporting of the included studies was poor and failed to meet the standards recommended in the CONSORT statement (www.consortstatement.org). Few studies reported how important aspects of study design were conducted, such as concealment of treatment allocation and handling of missing data, making it difficult to assess the risk of bias.

Authors' Conclusions

Implications for practice

The use of therapeutic communities for treatment of drug misuse and dependency is not based on sound evidence of effectiveness.
The evidence is not of high quality and is therefore not conclusive. The cost-effectiveness is unknown.

Implications for research

Further trials are justified as there is insufficient evidence to establish whether TCs are more effective at reducing drug use and health and social outcomes associated with drug use in comparison with an alternative treatment. In particular comparison with methadone maintenance programmes. Future trials should be designed with the aim to minimise attrition at the early stages of trial, following randomisation and before treatment starts. A large pragmatic study would be helpful, evaluating objective outcomes that can be followed up for everyone randomised to minimise missing data. The use of time to event outcomes to retain all participants in the analyses at follow-up should be considered. A pragmatic study that retains everyone in the analysis would help to answer clinically relevant questions such as: if someone is assigned to a TC, what proportion are for example, drug free or crime free not just during treatment but also after discharge. Given the cost of a specialist treatment such as TC, evaluating cost-effectiveness is essential. Many hypotheses have been generated from the observational research in this area that warrants further exploration using more rigorous methodology. Future trial reports should be fully reported according to CONSORT guidelines.

Acknowledgements

We would like to thank Matthew Koch who kindly provided further data on request on behalf of Ward Condelli; also Dr. Eric Wish who kindly supplied a more comprehensive report of their study (Nemes 1999).

References to studies included in this review

Condelli 2000 [published data only]*

Guydish 1998 [published data only]

McCusker 1995 [published data only]*

McCusker 1997a [published data only]*

Nemes 1999 [published data only]*

Nuttbrok 1998 [published data only]*

Sacks 2004a [published data only]*

Wexler 1999 [published data only]*

References to studies excluded from this review

Bale 1973 [published data only]*

Bale 1980 [published data only]*
Bale 1984 [published data only]

Beider 1991 [published data only]

Czuchry 2000 [published data only]

Czuchry 2003 [published data only]

De Leon 2000a [published data only]

De Leon 2000b [published data only]

Fals-Stewart 1992 [published data only]

Hughes 1995 [published data only]

McCusker 1996 [published data only]

McCusker 1997b [published data only]

Messina 1999 [published data only]

Messina 2000 [published data only]

Messina 2001 [published data only]

Messina 2002 [published data only]

Morral 2004 [published data only]

Newborn 1999 [published data only]

Nuttbrook 1997b [published data only]
Nuttbrook LH, Ng-Mak DS, Rahav M, Rivera JJ. Pre- and post-admission attrition of homeless, mentally ill chemical abusers referred to residential treatment programs. Addiction 1997;92(10):1305–16.

Nuttbrook 1999 [published data only]

Sacks 2004b [published data only]

Additional references
Clark 2002

De Leon 1995

**Etheridge 1995**

**F-Hermida 2002**

**Faggiano 2003**

**Ferri 2005**

**Higgins 2005**

**Juni 2001**

**Mattick 2003a**

**Mattick 2003b**

**Minozzi 2006**

**Needleman 1997**

**Oppenheimer 1994**

**Roberts 1997**

* Indicates the major publication for the study
## Characteristics of included studies  
*Condelli 2000*

| Methods | Randomisation: Parallel groups, computer generated, stratified by English/Spanish speaker, gender, pregnancy, some assignments may have been non-random due to bed availability  
Blinding: No blinding measures taken  
Completeness of follow-up: Of 2,221 randomised, 1,573 (71%) turned up or accepted for admission and included in the analysis. Time to event methods used, clients remaining in treatment more than 25 days censored  
Follow-up: 25 days |
| Participants | Adult substance misusers referred to New Jersey Campus, not solely alcohol users, with no court case pending, no serious medical or psychiatric illness, not on major tranquillisers, not treated on campus in previous 6 months.  
Age: 54% no more than 30 years  
Ethnicity: 50% black, 27% Hispanic, 22% Caucasian  
Primary drug: cocaine/crack 52%, heroin 35%, alcohol 9% |
| Interventions | Therapeutic communities:  
6-10 months co-gender programme (n=433),  
12 month women only programme (n=144),  
3 month co-gender Spanish speakers programme (n=199),  
9 month Spanish speakers programme (n=199),  
Chemical dependency:  
28 day co-gender programme (322),  
28 day women only programme (n=276) |
| Outcomes | Combined treatment refusal and attrition defined as the number of clients refusing treatment when informed of their assignment and those dropped within the first 25 days |
| Notes | If only a single programme had a bed available, client assigned to that programme |

### Risk of bias

<table>
<thead>
<tr>
<th>Item</th>
<th>Authors' judgement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allocation concealment?</td>
<td>No</td>
<td>C - Inadequate</td>
</tr>
</tbody>
</table>
### Guydish 1998

**Methods**
- Randomisation: Parallel groups, systematic randomisation using odd/even number assignment by sealed envelopes, stratified by sex
- Blinding: Clients and research staff not blinded
- Completeness of follow-up: N=534 randomised, N=26 excluded due to protocol violations, but group assignment not given, attrition in first 2 weeks treatment 49% overall and excluded from all analyses, analyses based on clients completing at least 2 weeks treatment
- Follow-up: 6, 12 and 18 months

**Participants**
- Does not state inclusion criteria, but excluded court mandated to treatment, homeless or based on clinical judgement.
- Age: mean 33 years
- Sex: 30% female
- Ethnicity: 58% Black, 24% Caucasian, 15% Hispanic
- Primary drug: Cocaine 68%, heroin 14%, alcohol 10%

**Interventions**
- Residential therapeutic community, N=253
- Non-residential therapeutic community treatment (7 days a week for first month and 5 days a week thereafter 8 am to 8 pm, N=255
- Walden House TC based on family model

**Outcomes**
- ASI composite scores employment, legal, alcohol and drug, Symptom Checklist-90-R global severity, relapse, attrition

**Notes**
- Greenwood 2001 6, 12 and 18 month abstinence outcomes, Guydish 1999 12 and 18 month completion data

### Risk of bias

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<thead>
<tr>
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<td>Allocation concealment?</td>
<td>No</td>
<td>C - Inadequate</td>
</tr>
</tbody>
</table>

### McCusker 1995

**Methods**
- Randomisation: Parallel groups, block size 21, then due to concerns about imbalance and bed availability a biased coin toss was used for assignment
- Blinding: Outcome assessment by third party distinct from clinical staff
- Completeness of follow-up: primary analyses by intention-to-treat
- Follow-up: 87.5% at 18 months

**Participants**
- New England drug abusers without a court specified order
- Age: 51% <25 years
- Sex: 75% male
- Ethnicity: 81% Caucasian, 19% Black or Hispanic
- Heroin and cocaine use by 11%

**Interventions**
- Traditional therapeutic community programme planned duration 6 months (n=97) versus planned duration 12 months (n=87)
### Outcomes
Drug-free time; ASI composite scores: drug, alcohol, legal and employment, treatment completion

### Notes
Two trials conducted concurrently. Several subsidiary analyses published for the two trials. McCusker 1995 reports treatment completion

#### Risk of bias

<table>
<thead>
<tr>
<th>Item</th>
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</thead>
<tbody>
<tr>
<td>Allocation concealment?</td>
<td>Unclear</td>
<td>B - Unclear</td>
</tr>
</tbody>
</table>

### McCusker 1997a

#### Methods
Randomisation: Parallel groups, block size 21
Blinding: Outcome assessment by third party distinct from clinical staff
Completeness of follow-up: Primary analyses by intention-to-treat
Follow-up: 85.1% completed 18 month follow-up

#### Participants
New England drug abusers without a court specified order for treatment duration
Age: 23% <25 years
Sex: 68.5% male
Ethnicity: 73% Caucasian, 27% Black or Hispanic
Heroin and cocaine use by 24%

#### Interventions
Modified therapeutic community incorporating relapse prevention and health education programme
planned duration 3 months (n=223) versus planned duration 6 months (n=221)

#### Outcomes
Drug-free time; ASI composite scores: drug, alcohol, legal and employment, treatment completion

#### Notes
Two trials conducted concurrently. Several subsidiary analyses published for the two trials, McCusker 1995 reports treatment completion

#### Risk of bias

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<tbody>
<tr>
<td>Allocation concealment?</td>
<td>Unclear</td>
<td>B - Unclear</td>
</tr>
</tbody>
</table>
### Nemes 1999

| **Methods** | Randomisation: Parallel groups, randomisation stratified by sex, using random number tables and block sizes of eight  
Blinding: No information reported, assumed open  
Completeness of follow-up: 93% of clients followed-up  
Follow-up: 12 months |
|-------------|----------------------------------------------------------------------------------------------------------------------------------|
| **Participants** | Adults with drug and alcohol addiction seeking treatment at drug addiction services or with a court order to obtain treatment  
Clients in early 20’s, primarily black, about half with antisocial personality disorder, crack most commonly used drug |
| **Interventions** | Standard Inpatient Therapeutic community (10 months inpatient treatment followed by 2 months outpatient services) (n=194)  
Enhanced abbreviated Inpatient therapeutic community programme (6 months inpatient treatment followed by 6 months outpatient services). Enhanced by more clinical staff per client, and services designed to be more readily available (n=218) |
| **Outcomes** | Drug-use determined by urinalysis, recidivism (criminal record review), employment status, attrition |

**Notes**

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<thead>
<tr>
<th><strong>Risk of bias</strong></th>
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</thead>
<tbody>
<tr>
<td>Allocation concealment?</td>
<td>Unclear</td>
<td>B - Unclear</td>
<td></td>
</tr>
</tbody>
</table>

### Nuttbrok 1998

| **Methods** | Parallel treatment groups in equal ratio unless beds unavailable then assigned 0.75 TC to 0.25 CR. Treatment facilities had final say about acceptance of referred clients.  
Blinding: No information on blinding, presumed to be open  
Completeness of follow-up: Only 42% followed up at 12 months, study completers analysed |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| **Participants** | Homeless men aged at least 21 years, with major mental illness according to DSM-III-R criteria and history of substance misuse  
Mean age: 31  
Ethnicity: 57.9% Black, 21.3% Hispanic  
42% at least 5 previous psychiatric hospitalisations  
Primary drug: 43.9% crack, 21.2% alcohol, 13.2% cocaine, 87.6% multiple substance use, 48.8% non-affective psychotic disorder, 22.3% depressive disorder |
| **Interventions** | Argus therapeutic community, NY, USA  
Therapeutic community modified to accommodate mental disorders also (TC) (n=373)  
All treatment was provided in-house therefore residents were insulated from outside world, projected duration of treatment 18 months  
Two community residences modified to accommodate substance misuse disorders also (CR) (n=321)  
Residents commuted to day programmes therefore were in daily contact with the outside world, projected duration of treatment 18 months |
### Nutbrok 1998 (Continued)

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Attrition at 2, 6 and 12 months, drug use determined by urinalysis</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Notes</th>
<th></th>
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</table>

<table>
<thead>
<tr>
<th>Risk of bias</th>
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<tbody>
<tr>
<td>Item</td>
<td>Authors’ judgement</td>
</tr>
<tr>
<td>Allocation concealment?</td>
<td>Unclear</td>
</tr>
</tbody>
</table>

### Sacks 2004a

<table>
<thead>
<tr>
<th>Methods</th>
<th>Randomisation: Parallel groups, unequal group sizes due to different flow rates and capacities, no information on methods of randomisation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Blinding: Not stated</td>
</tr>
<tr>
<td></td>
<td>Completeness of follow-up: N=236 randomised, 51 excluded from all analyses as crossed over from one treatment group to another (50 from TC). Follow-up on 75% of remaining sample overall</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Participants</th>
<th>Male inmates with co-occurring serious mental illness and chemical abuse (MICA), 12-18 months remaining before parole, men a danger to themselves or others excluded</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean age: 34.3 years</td>
</tr>
<tr>
<td></td>
<td>Ethnicity: 30% Black, 49% Caucasian, 16.5% Hispanic</td>
</tr>
<tr>
<td></td>
<td>Axis diagnoses: Axis I or II disorder 96%, mental illness 78%, serious mental illness 63%, ASP 37%, substance abuse 90%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Interventions</th>
<th>Modified therapeutic community in prison</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Typical inmate attends formal activities 5 days a week, 4-5 hours a day, then fulfils prison work requirements</td>
</tr>
<tr>
<td></td>
<td>Cognitive behavioral curriculum within a foundation of TC principles. The programme includes psychoeducational classes, CBT, medication and therapeutic interventions planned duration 12 months (N=142)</td>
</tr>
<tr>
<td></td>
<td>Mental Health Programme provides intensive psychiatric services consisting of medication, weekly individual therapy and counselling and specialized groups, (N=94)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Reincarceration, criminal activity (new crimes), alcohol or drug offence at 12 months post-prison release</th>
</tr>
</thead>
</table>

| Notes | The authors also conduct several additional analyses based on clients who attended an aftercare programme post-prison release which are not considered here as clients weren’t randomised to this treatment but volunteered |

<table>
<thead>
<tr>
<th>Risk of bias</th>
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</thead>
<tbody>
<tr>
<td>Item</td>
<td>Authors’ judgement</td>
</tr>
<tr>
<td>Allocation concealment?</td>
<td>Unclear</td>
</tr>
</tbody>
</table>
**Wexler 1999**

<table>
<thead>
<tr>
<th><strong>Methods</strong></th>
<th>Randomisation: Parallel groups, stratified by ethnicity, members picked at random from a pool of inmates and assigned to TC as beds became available, inmates with less than 9 months left to serve became control group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Blinding: Not stated</td>
</tr>
<tr>
<td></td>
<td>Completeness of follow-up: All randomised participants followed-up for 12 month post-release endpoint. 24 month outcomes only obtained for a subgroup at risk for 24 months at the time of outcome assessment</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Participants</strong></th>
<th>Male inmates who volunteered for substance abuse treatment, 9-14 months left before parole, excluded inmates that had committed arson or sex crimes to minors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean age: 30.9 years</td>
</tr>
<tr>
<td></td>
<td>Ethnicity: 22.4% Black, 37.8% Caucasian, 30.1% Hispanic</td>
</tr>
<tr>
<td></td>
<td>Lifetime arrests: mean 26.7</td>
</tr>
<tr>
<td></td>
<td>Psychiatric diagnoses: antisocial personality 51.5%, phobias 17.2%, posttraumatic stress 14.5%, depression 10.1%, dysthymia 6.9%</td>
</tr>
<tr>
<td></td>
<td>Lifetime arrests: mean 26.7</td>
</tr>
<tr>
<td></td>
<td>Psychiatric diagnoses: antisocial personality 51.5%, phobias 17.2%, posttraumatic stress 14.5%, depression 10.1%, dysthymia 6.9%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Interventions</strong></th>
<th>Prison TC (n=425)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No treatment (n=290)</td>
</tr>
</tbody>
</table>

| **Outcomes** | Reincarceration defined as parole violation or new arrests not temporary returns of <30 days at 12 months post-release by criminal record review |

| **Notes** | About 10% of control group were inmates who met all eligibility criteria, but had less than nine months until parole. Prison TC clients were invited to enter a community TC on release from prison. No treatment group released directly into the community. Other outcomes reported for sub-groups of patients not considered in this review as are non-randomised comparisons |

### Risk of bias

<table>
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<tbody>
<tr>
<td>Allocation concealment?</td>
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</tr>
</tbody>
</table>

ASI=Addiction Severity Index

**Characteristics of excluded studies [ordered by study ID]**

<table>
<thead>
<tr>
<th>Study</th>
<th>Reason for exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bale 1973</td>
<td>Methadone versus therapeutic communities</td>
</tr>
<tr>
<td></td>
<td>Reason for exclusion: Inadequate randomisation procedures</td>
</tr>
<tr>
<td>Study</td>
<td>Design</td>
</tr>
<tr>
<td>-----------------</td>
<td>--------</td>
</tr>
</tbody>
</table>
| Bale 1980       |        | Methadone versus therapeutic communities
|                 |        | Reason for exclusion: Randomisation procedures compromised as some groups closed to new participants at times and main analysis makes non-randomised comparisons |
| Bale 1984       |        | Methadone versus therapeutic communities
|                 |        | Reason for exclusion: Inadequate randomisation procedures                           |
| Beidler 1991    | RCT    | Reason for exclusion: evaluating different treatment strategies within a modified therapeutic community, did not evaluate the effects of the TC directly, measured effects of treating addicts together with alcoholics and treating them separately |
| Czuchry 2000    | RCT    | Reason for exclusion: evaluating a treatment readiness training programme versus the standard approach within a therapeutic community in a criminal justice setting, did not evaluate the effects of the TC directly. Treatment readiness programme designed to improve motivation and skills needed for treatment progress |
| Czuchry 2003    | RCT    | Reason for exclusion: evaluating the effects of a cognitive skills training within a modified therapeutic community in a criminal justice setting, did not evaluate the effects of the TC directly |
| De Leon 2000a   |        | Two modified therapeutic community groups versus treatment as usual for mentally ill chemical abusers.
|                 |        | Reason for exclusion: Sequential assignment to treatment groups, non-random assignment to treatment groups |
| De Leon 2000b   |        | Subsidiary analyses of Wexler 1999 RCT.
|                 |        | Reason for exclusion: Investigates factors affecting retention and outcomes in a prison based therapeutic community. Results for the sample as a whole, not for the randomised groups individually |
| Fals-Stewart 1992| RCT   | Reason for exclusion: evaluating treatment aimed at obsessive compulsive disorder co-morbid with substance misuse within a TC, did not evaluate the effects of the TC directly |
| Hughes 1995     | RCT    | Reason for exclusion: evaluating a child-live in programme versus no child live-in programme within a therapeutic community for cocaine abusing women, did not evaluate the effects of the TC directly |
| McCusker 1996   |        | Sub-group analyses of McCusker study
|                 |        | Reason for exclusion: Reports on a stratified analyses of actual length of stay rather than planned length of stay and outcome within randomised groups |
| McCusker 1997b  |        | Sub-group analyses of McCusker 1997a study
|                 |        | Reason for exclusion: Reports on a stratified analysis of actual length of stay rather than planned length of stay and outcome within randomised groups |
| Messina 1999    |        | Subsidiary analyses of Nemes 1999 study
|                 |        | Reason for exclusion: Reports on a logistic regression analysis of participants with and without antisocial personality disorder and treatment outcome, not analysed in randomised groups |
(Continued)

<table>
<thead>
<tr>
<th>Study</th>
<th>Reason for exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Messina 2000</td>
<td>Subsidiary analyses of Nemes 1999 study</td>
</tr>
<tr>
<td></td>
<td>Reason for exclusion: Comparing outcomes in men and women, not analysed in randomised groups</td>
</tr>
<tr>
<td>Messina 2001</td>
<td>Subsidiary analyses of Nemes 1999 study</td>
</tr>
<tr>
<td></td>
<td>Reason for exclusion: Reports on a logistic regression analysis of participants that stayed in treatment more than 60 days and treatment outcome, not analysed in randomised groups</td>
</tr>
<tr>
<td>Messina 2002</td>
<td>Subsidiary analyses of Nemes 1999 study</td>
</tr>
<tr>
<td></td>
<td>Reason for exclusion: Reports on a logistic regression analysis of participants with and without antisocial personality disorder and treatment outcome, not analysed in randomised groups</td>
</tr>
<tr>
<td>Morral 2004</td>
<td>Reason for exclusion: Not randomised, observational study</td>
</tr>
<tr>
<td>Newbern 1999</td>
<td>Cluster RCT, probationers randomised to mapping versus standard counselling within 12 therapeutic communities. Reason for exclusion: did not evaluate the effects of the TC directly, evaluating the effects on motivation and life skills</td>
</tr>
<tr>
<td>Nuttbrock 1997b</td>
<td>Subsidiary analyses of Nuttbrock 1998 study</td>
</tr>
<tr>
<td></td>
<td>Reason for exclusion: Reports on a logistic regression analysis of predictors of attrition</td>
</tr>
<tr>
<td>Nuttbrock 1999</td>
<td>Therapeutic community versus community residence</td>
</tr>
<tr>
<td></td>
<td>Reason for exclusion: No review outcomes, measures perception of treatment environment</td>
</tr>
<tr>
<td>Sacks 2004b</td>
<td>Homeless prevention TC (HP-TC) versus standard TC</td>
</tr>
<tr>
<td></td>
<td>Reason for exclusion: Not randomised, quasi-experimental, propensity analysis used for selection of control group</td>
</tr>
</tbody>
</table>
## DATA AND ANALYSES

### Comparison 1. Residential treatment versus day treatment

<table>
<thead>
<tr>
<th>Outcome or subgroup title</th>
<th>No. of studies</th>
<th>No. of participants</th>
<th>Statistical method</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Attrition at 2 weeks</td>
<td>1</td>
<td>508</td>
<td>Risk Ratio (M-H, Fixed, 95% CI)</td>
<td>0.77 [0.64, 0.92]</td>
</tr>
<tr>
<td>2 Completion of 6 months</td>
<td>1</td>
<td>508</td>
<td>Risk Ratio (M-H, Fixed, 95% CI)</td>
<td>1.09 [0.74, 1.63]</td>
</tr>
<tr>
<td>3 ASI Employment final score at 6 months</td>
<td>1</td>
<td>216</td>
<td>Mean Difference (IV, Fixed, 95% CI)</td>
<td>0.03 [-0.04, 0.10]</td>
</tr>
<tr>
<td>4 ASI Legal final score at 6 months</td>
<td>1</td>
<td>216</td>
<td>Mean Difference (IV, Fixed, 95% CI)</td>
<td>-0.02 [-0.06, 0.02]</td>
</tr>
<tr>
<td>5 ASI Alcohol final score at 6 months</td>
<td>1</td>
<td>216</td>
<td>Mean Difference (IV, Fixed, 95% CI)</td>
<td>0.05 [0.01, 0.09]</td>
</tr>
<tr>
<td>6 ASI drug final score at 6 months</td>
<td>1</td>
<td>216</td>
<td>Mean Difference (IV, Fixed, 95% CI)</td>
<td>Not estimable</td>
</tr>
<tr>
<td>7 SCL-90-R Global severity final score at 6 months</td>
<td>1</td>
<td>216</td>
<td>Mean Difference (IV, Fixed, 95% CI)</td>
<td>-0.07 [-0.24, 0.10]</td>
</tr>
</tbody>
</table>

### Comparison 2. Standard TC versus enhanced, abbreviated TC

<table>
<thead>
<tr>
<th>Outcome or subgroup title</th>
<th>No. of studies</th>
<th>No. of participants</th>
<th>Statistical method</th>
<th>Effect size</th>
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</thead>
<tbody>
<tr>
<td>1 Currently employed</td>
<td>1</td>
<td>412</td>
<td>Risk Ratio (M-H, Fixed, 95% CI)</td>
<td>0.78 [0.63, 0.96]</td>
</tr>
<tr>
<td>2 Urinalysis positive for cocaine/crack</td>
<td>1</td>
<td>412</td>
<td>Risk Ratio (M-H, Fixed, 95% CI)</td>
<td>1.05 [0.87, 1.27]</td>
</tr>
<tr>
<td>3 Urinalysis positive for marijuana</td>
<td>1</td>
<td>412</td>
<td>Risk Ratio (M-H, Fixed, 95% CI)</td>
<td>0.88 [0.66, 1.16]</td>
</tr>
<tr>
<td>4 Urinalysis positive for alcohol</td>
<td>1</td>
<td>412</td>
<td>Risk Ratio (M-H, Fixed, 95% CI)</td>
<td>0.88 [0.66, 1.16]</td>
</tr>
<tr>
<td>5 Urinalysis positive for opiates</td>
<td>1</td>
<td>412</td>
<td>Risk Ratio (M-H, Fixed, 95% CI)</td>
<td>1.09 [0.83, 1.43]</td>
</tr>
<tr>
<td>6 In prison, on probation/parole or on pre-trial release at follow-up: criminal justice records based status</td>
<td>1</td>
<td>412</td>
<td>Risk Ratio (M-H, Fixed, 95% CI)</td>
<td>0.97 [0.80, 1.16]</td>
</tr>
<tr>
<td>7 Completed treatment</td>
<td>1</td>
<td>412</td>
<td>Risk Ratio (M-H, Fixed, 95% CI)</td>
<td>1.15 [0.89, 1.50]</td>
</tr>
</tbody>
</table>
### Comparison 3. Therapeutic community versus community residences

<table>
<thead>
<tr>
<th>Outcome or subgroup title</th>
<th>No. of studies</th>
<th>No. of participants</th>
<th>Statistical method</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Completed 2 months treatment</td>
<td>1</td>
<td>694</td>
<td>Risk Ratio (M-H, Fixed, 95% CI)</td>
<td>1.00 [0.81, 1.24]</td>
</tr>
<tr>
<td>2 Completed 6 months treatment</td>
<td>1</td>
<td>694</td>
<td>Risk Ratio (M-H, Fixed, 95% CI)</td>
<td>0.92 [0.69, 1.25]</td>
</tr>
<tr>
<td>3 Completed 12 months treatment</td>
<td>1</td>
<td>694</td>
<td>Risk Ratio (M-H, Fixed, 95% CI)</td>
<td>0.82 [0.56, 1.22]</td>
</tr>
<tr>
<td>4 Urinalysis positive for substance use</td>
<td>1</td>
<td>185</td>
<td>Risk Ratio (M-H, Fixed, 95% CI)</td>
<td>0.14 [0.05, 0.38]</td>
</tr>
</tbody>
</table>

### Comparison 4. Three month modified TC versus six month modified TC

<table>
<thead>
<tr>
<th>Outcome or subgroup title</th>
<th>No. of studies</th>
<th>No. of participants</th>
<th>Statistical method</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Treatment completion</td>
<td>1</td>
<td>444</td>
<td>Risk Ratio (M-H, Fixed, 95% CI)</td>
<td>1.83 [1.45, 2.31]</td>
</tr>
<tr>
<td>2 Forty day retention</td>
<td>1</td>
<td>444</td>
<td>Risk Ratio (M-H, Fixed, 95% CI)</td>
<td>1.02 [0.91, 1.14]</td>
</tr>
</tbody>
</table>

### Comparison 5. Six month traditional TC versus twelve month traditional TC

<table>
<thead>
<tr>
<th>Outcome or subgroup title</th>
<th>No. of studies</th>
<th>No. of participants</th>
<th>Statistical method</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Treatment completion</td>
<td>1</td>
<td>184</td>
<td>Risk Ratio (M-H, Fixed, 95% CI)</td>
<td>1.59 [0.97, 2.63]</td>
</tr>
<tr>
<td>2 Forty day retention</td>
<td>1</td>
<td>184</td>
<td>Risk Ratio (M-H, Fixed, 95% CI)</td>
<td>0.82 [0.70, 0.96]</td>
</tr>
</tbody>
</table>

### Comparison 6. Prison TC versus no treatment

<table>
<thead>
<tr>
<th>Outcome or subgroup title</th>
<th>No. of studies</th>
<th>No. of participants</th>
<th>Statistical method</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Reincarceration 12 months post-prison release</td>
<td>1</td>
<td>715</td>
<td>Risk Ratio (M-H, Fixed, 95% CI)</td>
<td>0.68 [0.57, 0.81]</td>
</tr>
</tbody>
</table>
### Comparison 7. Modified prison TC versus Mental Health Treatment Programmes

<table>
<thead>
<tr>
<th>Outcome or subgroup title</th>
<th>No. of studies</th>
<th>No. of participants</th>
<th>Statistical method</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Reincarceration 12 months post-prison release</td>
<td>1</td>
<td>139</td>
<td>Risk Ratio (M-H, Fixed, 95% CI)</td>
<td>0.28 [0.13, 0.63]</td>
</tr>
<tr>
<td>2 Criminal activity 12 months post-prison release</td>
<td>1</td>
<td>139</td>
<td>Risk Ratio (M-H, Fixed, 95% CI)</td>
<td>0.69 [0.52, 0.93]</td>
</tr>
<tr>
<td>3 Alcohol/drug offence 12 months post-prison release</td>
<td>1</td>
<td>139</td>
<td>Risk Ratio (M-H, Fixed, 95% CI)</td>
<td>0.62 [0.43, 0.90]</td>
</tr>
</tbody>
</table>

### Analysis 1.1. Comparison 1 Residential treatment versus day treatment, Outcome 1 Attrition at 2 weeks.

**Review:** Therapeutic communities for substance related disorder

**Comparison:** 1 Residential treatment versus day treatment

**Outcome:** 1 Attrition at 2 weeks

<table>
<thead>
<tr>
<th>Study or subgroup</th>
<th>Residential n/N</th>
<th>Day n/N</th>
<th>Risk Ratio M-H,Fixed,95% CI</th>
<th>Weight</th>
<th>Risk Ratio M-H,Fixed,95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guydish 1998</td>
<td>108/255</td>
<td>139/253</td>
<td>0.77 [0.64, 0.92]</td>
<td>100.0%</td>
<td>0.77 [0.64, 0.92]</td>
</tr>
<tr>
<td><strong>Total (95% CI)</strong></td>
<td><strong>255</strong></td>
<td><strong>253</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total events: 108 (Residential), 139 (Day)

Heterogeneity: not applicable

Test for overall effect: Z = 2.81 (P = 0.0050)
### Analysis 1.2. Comparison 1 Residential treatment versus day treatment, Outcome 2 Completion of 6 months treatment.

**Review:** Therapeutic communities for substance related disorder  
**Comparison:** 1 Residential treatment versus day treatment  
**Outcome:** 2 Completion of 6 months treatment

<table>
<thead>
<tr>
<th>Study or subgroup</th>
<th>Residential</th>
<th>Day</th>
<th>Risk Ratio</th>
<th>Weight</th>
<th>Risk Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n/N</td>
<td>n/N</td>
<td>M-H,Fixed,95% CI</td>
<td></td>
<td>M-H,Fixed,95% CI</td>
</tr>
<tr>
<td>Guydish 1998</td>
<td>43/255</td>
<td>39/253</td>
<td>100.0% 1.09 [0.74, 1.63]</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total (95% CI)</strong></td>
<td><strong>255</strong></td>
<td><strong>253</strong></td>
<td><strong>100.0% 1.09 [0.74, 1.63]</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total events: 43 (Residential), 39 (Day)  
Heterogeneity: not applicable  
Test for overall effect: Z = 0.44 (P = 0.66)

### Analysis 1.3. Comparison 1 Residential treatment versus day treatment, Outcome 3 ASI Employment final score at 6 months.

**Review:** Therapeutic communities for substance related disorder  
**Comparison:** 1 Residential treatment versus day treatment  
**Outcome:** 3 ASI Employment final score at 6 months

<table>
<thead>
<tr>
<th>Study or subgroup</th>
<th>Residential</th>
<th>Day</th>
<th>Mean Difference</th>
<th>Weight</th>
<th>Mean Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>N Mean(SD)</td>
<td>n</td>
<td>N Mean(SD)</td>
<td>IV,Fixed,95% CI</td>
</tr>
<tr>
<td>Guydish 1998</td>
<td>115</td>
<td>0.79 (0.25)</td>
<td>101</td>
<td>0.76 (0.27)</td>
<td>100.0% 0.03 [-0.04, 0.10]</td>
</tr>
<tr>
<td><strong>Total (95% CI)</strong></td>
<td><strong>115</strong></td>
<td><strong>101</strong></td>
<td><strong>100.0% 0.03 [-0.04, 0.10]</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Heterogeneity: not applicable  
Test for overall effect: Z = 0.84 (P = 0.40)  
Test for subgroup differences: Not applicable
Analysis 1.4. Comparison 1 Residential treatment versus day treatment, Outcome 4 ASI Legal final score at 6 months.

Review: Therapeutic communities for substance related disorder
Comparison: 1 Residential treatment versus day treatment
Outcome: 4 ASI Legal final score at 6 months

<table>
<thead>
<tr>
<th>Study or subgroup</th>
<th>Residential</th>
<th>Day</th>
<th>Mean Difference</th>
<th>Weight</th>
<th>Mean Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N  Mean(SD)</td>
<td>N   Mean(SD)</td>
<td>IV,Fixed,95% CI</td>
<td></td>
<td>IV,Fixed,95% CI</td>
</tr>
<tr>
<td>Guydish 1998</td>
<td>115 0.07 (0.14)</td>
<td>101 0.09 (0.17)</td>
<td>100.0 % -0.02 [-0.06, 0.02]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total (95% CI)</td>
<td>115 101</td>
<td>100.0 % -0.02 [-0.06, 0.02]</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Heterogeneity: not applicable
Test for overall effect: Z = 0.94 (P = 0.35)
Test for subgroup differences: Not applicable

Analysis 1.5. Comparison 1 Residential treatment versus day treatment, Outcome 5 ASI Alcohol final score at 6 months.

Review: Therapeutic communities for substance related disorder
Comparison: 1 Residential treatment versus day treatment
Outcome: 5 ASI Alcohol final score at 6 months

<table>
<thead>
<tr>
<th>Study or subgroup</th>
<th>Residential</th>
<th>Day</th>
<th>Mean Difference</th>
<th>Weight</th>
<th>Mean Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N  Mean(SD)</td>
<td>N   Mean(SD)</td>
<td>IV,Fixed,95% CI</td>
<td></td>
<td>IV,Fixed,95% CI</td>
</tr>
<tr>
<td>Guydish 1998</td>
<td>115 0.13 (0.19)</td>
<td>101 0.08 (0.14)</td>
<td>100.0 % 0.05 [0.01, 0.09]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total (95% CI)</td>
<td>115 101</td>
<td>100.0 % 0.05 [0.01, 0.09]</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Heterogeneity: not applicable
Test for overall effect: Z = 2.22 (P = 0.027)
Test for subgroup differences: Not applicable
Analysis 1.6. Comparison 1 Residential treatment versus day treatment, Outcome 6 ASI drug final score at 6 months.

Review: Therapeutic communities for substance related disorder
Comparison: 1 Residential treatment versus day treatment
Outcome: 6 ASI drug final score at 6 months

<table>
<thead>
<tr>
<th>Study or subgroup</th>
<th>Residential</th>
<th>Day</th>
<th>Mean Difference</th>
<th>Weight</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guydish 1998</td>
<td>115</td>
<td>101</td>
<td>0.1 (0.1)</td>
<td>100.0%</td>
<td>-0.03, 0.03</td>
</tr>
<tr>
<td>Total (95% CI)</td>
<td>115</td>
<td>101</td>
<td>0.0</td>
<td>100.0%</td>
<td>-0.03, 0.03</td>
</tr>
</tbody>
</table>

Heterogeneity: not applicable
Test for overall effect: Z = 0.0 (P = 1.0)
Test for subgroup differences: Not applicable

Analysis 1.7. Comparison 1 Residential treatment versus day treatment, Outcome 7 SCL-90-R Global severity final score at 6 months.

Review: Therapeutic communities for substance related disorder
Comparison: 1 Residential treatment versus day treatment
Outcome: 7 SCL-90-R Global severity final score at 6 months

<table>
<thead>
<tr>
<th>Study or subgroup</th>
<th>Residential</th>
<th>Day</th>
<th>Mean Difference</th>
<th>Weight</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guydish 1998</td>
<td>115</td>
<td>101</td>
<td>0.68 (0.7)</td>
<td>100.0%</td>
<td>-0.24, 0.10</td>
</tr>
<tr>
<td>Total (95% CI)</td>
<td>115</td>
<td>101</td>
<td>-0.07</td>
<td>100.0%</td>
<td>-0.24, 0.10</td>
</tr>
</tbody>
</table>

Heterogeneity: not applicable
Test for overall effect: Z = 0.79 (P = 0.43)
Test for subgroup differences: Not applicable
### Analysis 2.1. Comparison 2 Standard TC versus enhanced, abbreviated TC, Outcome 1 Currently employed.

**Review:** Therapeutic communities for substance related disorder

**Comparison:** 2 Standard TC versus enhanced, abbreviated TC

**Outcome:** 1 Currently employed

<table>
<thead>
<tr>
<th>Study or subgroup</th>
<th>Abbreviated TC</th>
<th>Standard TC</th>
<th>Risk Ratio</th>
<th>Weight</th>
<th>Risk Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n/N</td>
<td>n/N</td>
<td>M-H,Fixed,95% CI</td>
<td>M-H,Fixed,95% CI</td>
<td></td>
</tr>
<tr>
<td>Nemes 1999</td>
<td>91/218</td>
<td>104/194</td>
<td>0.78 [ 0.63, 0.96 ]</td>
<td>100.0 %</td>
<td></td>
</tr>
<tr>
<td><strong>Total (95% CI)</strong></td>
<td><strong>218</strong></td>
<td><strong>194</strong></td>
<td></td>
<td></td>
<td><strong>0.78 [ 0.63, 0.96 ]</strong></td>
</tr>
</tbody>
</table>

Total events: 91 (Abbreviated TC), 104 (Standard TC)
Heterogeneity: not applicable
Test for overall effect: Z = 2.40 (P = 0.016)

### Analysis 2.2. Comparison 2 Standard TC versus enhanced, abbreviated TC, Outcome 2 Urinalysis positive for cocaine/crack.

**Review:** Therapeutic communities for substance related disorder

**Comparison:** 2 Standard TC versus enhanced, abbreviated TC

**Outcome:** 2 Urinalysis positive for cocaine/crack

<table>
<thead>
<tr>
<th>Study or subgroup</th>
<th>Abbreviated TC</th>
<th>Standard TC</th>
<th>Risk Ratio</th>
<th>Weight</th>
<th>Risk Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n/N</td>
<td>n/N</td>
<td>M-H,Fixed,95% CI</td>
<td>M-H,Fixed,95% CI</td>
<td></td>
</tr>
<tr>
<td>Nemes 1999</td>
<td>117/218</td>
<td>99/194</td>
<td>1.05 [ 0.87, 1.27 ]</td>
<td>100.0 %</td>
<td></td>
</tr>
<tr>
<td><strong>Total (95% CI)</strong></td>
<td><strong>218</strong></td>
<td><strong>194</strong></td>
<td></td>
<td></td>
<td><strong>1.05 [ 0.87, 1.27 ]</strong></td>
</tr>
</tbody>
</table>

Total events: 117 (Abbreviated TC), 99 (Standard TC)
Heterogeneity: not applicable
Test for overall effect: Z = 0.53 (P = 0.59)
### Analysis 2.3. Comparison 2 Standard TC versus enhanced, abbreviated TC, Outcome 3 Urinalysis positive for marijuana.

Review: Therapeutic communities for substance related disorder

Comparison: 2 Standard TC versus enhanced, abbreviated TC

Outcome: 3 Urinalysis positive for marijuana

<table>
<thead>
<tr>
<th>Study or subgroup</th>
<th>Abbreviated TC</th>
<th>Standard TC</th>
<th>Risk Ratio M-H,Fixed,95% CI</th>
<th>Weight</th>
<th>Risk Ratio M-H,Fixed,95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nemes 1999</td>
<td>65/218</td>
<td>66/194</td>
<td></td>
<td>100.0%</td>
<td>0.88 [0.66, 1.16]</td>
</tr>
<tr>
<td><strong>Total (95% CI)</strong></td>
<td><strong>218</strong></td>
<td><strong>194</strong></td>
<td></td>
<td><strong>100.0%</strong></td>
<td><strong>0.88 [0.66, 1.16]</strong></td>
</tr>
</tbody>
</table>

Total events: 65 (Abbreviated TC), 66 (Standard TC)
Heterogeneity: not applicable
Test for overall effect: Z = 0.91 (P = 0.36)

### Analysis 2.4. Comparison 2 Standard TC versus enhanced, abbreviated TC, Outcome 4 Urinalysis positive for alcohol.

Review: Therapeutic communities for substance related disorder

Comparison: 2 Standard TC versus enhanced, abbreviated TC

Outcome: 4 Urinalysis positive for alcohol

<table>
<thead>
<tr>
<th>Study or subgroup</th>
<th>Abbreviated TC</th>
<th>Standard TC</th>
<th>Risk Ratio M-H,Fixed,95% CI</th>
<th>Weight</th>
<th>Risk Ratio M-H,Fixed,95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nemes 1999</td>
<td>65/218</td>
<td>66/194</td>
<td></td>
<td>100.0%</td>
<td>0.88 [0.66, 1.16]</td>
</tr>
<tr>
<td><strong>Total (95% CI)</strong></td>
<td><strong>218</strong></td>
<td><strong>194</strong></td>
<td></td>
<td><strong>100.0%</strong></td>
<td><strong>0.88 [0.66, 1.16]</strong></td>
</tr>
</tbody>
</table>

Total events: 65 (Abbreviated TC), 66 (Standard TC)
Heterogeneity: not applicable
Test for overall effect: Z = 0.91 (P = 0.36)
### Analysis 2.5. Comparison 2 Standard TC versus enhanced, abbreviated TC, Outcome 5 Urinalysis positive for opiates.

Review: Therapeutic communities for substance related disorder  
Comparison: 2 Standard TC versus enhanced, abbreviated TC  
Outcome: 5 Urinalysis positive for opiates

<table>
<thead>
<tr>
<th>Study or subgroup</th>
<th>Abbreviated TC</th>
<th>Standard TC</th>
<th>Risk Ratio</th>
<th>Weight</th>
<th>Risk Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n/N</td>
<td>n/N</td>
<td>M-H,Fixed,95% CI</td>
<td></td>
<td>M-H,Fixed,95% CI</td>
</tr>
<tr>
<td>Nemes 1999</td>
<td>76/218</td>
<td>62/194</td>
<td>1.09 [ 0.83, 1.43 ]</td>
<td>100.0 %</td>
<td>1.09 [ 0.83, 1.43 ]</td>
</tr>
<tr>
<td><strong>Total (95% CI)</strong></td>
<td><strong>218</strong></td>
<td><strong>194</strong></td>
<td><strong>100.0 %</strong></td>
<td><strong>1.09 [ 0.83, 1.43 ]</strong></td>
<td></td>
</tr>
</tbody>
</table>

Total events: 76 (Abbreviated TC), 62 (Standard TC)  
Heterogeneity: not applicable  
Test for overall effect: Z = 0.62 (P = 0.53)

### Analysis 2.6. Comparison 2 Standard TC versus enhanced, abbreviated TC, Outcome 6 In prison, on probation/parole or on pre-trial release at follow-up: criminal justice records based status.

Review: Therapeutic communities for substance related disorder  
Comparison: 2 Standard TC versus enhanced, abbreviated TC  
Outcome: 6 In prison, on probation/parole or on pre-trial release at follow-up: criminal justice records based status

<table>
<thead>
<tr>
<th>Study or subgroup</th>
<th>Abbreviated TC</th>
<th>Standard TC</th>
<th>Risk Ratio</th>
<th>Weight</th>
<th>Risk Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n/N</td>
<td>n/N</td>
<td>M-H,Fixed,95% CI</td>
<td></td>
<td>M-H,Fixed,95% CI</td>
</tr>
<tr>
<td>Nemes 1999</td>
<td>112/218</td>
<td>103/194</td>
<td>0.97 [ 0.80, 1.16 ]</td>
<td>100.0 %</td>
<td>0.97 [ 0.80, 1.16 ]</td>
</tr>
<tr>
<td><strong>Total (95% CI)</strong></td>
<td><strong>218</strong></td>
<td><strong>194</strong></td>
<td><strong>100.0 %</strong></td>
<td><strong>0.97 [ 0.80, 1.16 ]</strong></td>
<td></td>
</tr>
</tbody>
</table>

Total events: 112 (Abbreviated TC), 103 (Standard TC)  
Heterogeneity: not applicable  
Test for overall effect: Z = 0.35 (P = 0.73)
Analysis 2.7. Comparison 2 Standard TC versus enhanced, abbreviated TC, Outcome 7 Completed treatment.

Review: Therapeutic communities for substance related disorder
Comparison: 2 Standard TC versus enhanced, abbreviated TC
Outcome: 7 Completed treatment

<table>
<thead>
<tr>
<th>Study or subgroup</th>
<th>Abbreviated TC</th>
<th>Standard TC</th>
<th>Risk Ratio</th>
<th>Weight</th>
<th>Risk Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nemes 1999</td>
<td>83/218</td>
<td>64/194</td>
<td></td>
<td></td>
<td>100.0 %</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>M-H,Fixed,95% CI</td>
<td>1.15 [ 0.89, 1.50 ]</td>
<td></td>
</tr>
<tr>
<td>Total (95% CI)</td>
<td>218</td>
<td>194</td>
<td>100.0 %</td>
<td></td>
<td>1.15 [ 0.89, 1.50 ]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Total events: 83 (Abbreviated TC), 64 (Standard TC)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Heterogeneity: not applicable</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Test for overall effect: Z = 1.07 (P = 0.28)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Analysis 3.1. Comparison 3 Therapeutic community versus community residences, Outcome 1 Completed 2 months treatment.

Review: Therapeutic communities for substance related disorder
Comparison: 3 Therapeutic community versus community residences
Outcome: 1 Completed 2 months treatment

<table>
<thead>
<tr>
<th>Study or subgroup</th>
<th>TC</th>
<th>CR</th>
<th>Risk Ratio</th>
<th>Weight</th>
<th>Risk Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nuttbrok 1998</td>
<td>123/373</td>
<td>106/321</td>
<td></td>
<td>100.0 %</td>
<td>1.00 [ 0.81, 1.24 ]</td>
</tr>
<tr>
<td>Total (95% CI)</td>
<td>373</td>
<td>321</td>
<td>100.0 %</td>
<td></td>
<td>1.00 [ 0.81, 1.24 ]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Total events: 123 (TC), 106 (CR)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Heterogeneity: not applicable</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Test for overall effect: Z = 0.01 (P = 0.99)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Analysis 3.2. Comparison 3 Therapeutic community versus community residences, Outcome 2 Completed 6 months treatment.

Review: Therapeutic communities for substance related disorder

Comparison: 3 Therapeutic community versus community residences

Outcome: 2 Completed 6 months treatment

<table>
<thead>
<tr>
<th>Study or subgroup</th>
<th>TC</th>
<th>CR</th>
<th>Risk Ratio</th>
<th>Weight</th>
<th>Risk Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n/N</td>
<td>n/N</td>
<td>M-H,Fixed,95% CI</td>
<td></td>
<td>M-H,Fixed,95% CI</td>
</tr>
<tr>
<td>Nuttbrok 1998</td>
<td>72/373</td>
<td>67/321</td>
<td>0.92 [ 0.69, 1.25 ]</td>
<td>100.0 %</td>
<td>0.92 [ 0.69, 1.25 ]</td>
</tr>
<tr>
<td><strong>Total (95% CI)</strong></td>
<td><strong>373</strong></td>
<td><strong>321</strong></td>
<td><strong>100.0 %</strong></td>
<td><strong>0.92 [ 0.69, 1.25 ]</strong></td>
<td></td>
</tr>
</tbody>
</table>

Total events: 72 (TC), 67 (CR)

Heterogeneity: not applicable

Test for overall effect: Z = 0.52 (P = 0.61)

---

### Analysis 3.3. Comparison 3 Therapeutic community versus community residences, Outcome 3 Completed 12 months treatment.

Review: Therapeutic communities for substance related disorder

Comparison: 3 Therapeutic community versus community residences

Outcome: 3 Completed 12 months treatment

<table>
<thead>
<tr>
<th>Study or subgroup</th>
<th>TC</th>
<th>CR</th>
<th>Risk Ratio</th>
<th>Weight</th>
<th>Risk Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n/N</td>
<td>n/N</td>
<td>M-H,Fixed,95% CI</td>
<td></td>
<td>M-H,Fixed,95% CI</td>
</tr>
<tr>
<td>Nuttbrok 1998</td>
<td>43/373</td>
<td>45/321</td>
<td>0.82 [ 0.56, 1.22 ]</td>
<td>100.0 %</td>
<td>0.82 [ 0.56, 1.22 ]</td>
</tr>
<tr>
<td><strong>Total (95% CI)</strong></td>
<td><strong>373</strong></td>
<td><strong>321</strong></td>
<td><strong>100.0 %</strong></td>
<td><strong>0.82 [ 0.56, 1.22 ]</strong></td>
<td></td>
</tr>
</tbody>
</table>

Total events: 43 (TC), 45 (CR)

Heterogeneity: not applicable

Test for overall effect: Z = 0.98 (P = 0.33)
### Analysis 3.4. Comparison 3 Therapeutic community versus community residences, Outcome 4 Urinalysis positive for substance use.

**Review:** Therapeutic communities for substance related disorder

**Comparison:** 3 Therapeutic community versus community residences

**Outcome:** 4 Urinalysis positive for substance use

<table>
<thead>
<tr>
<th>Study or subgroup</th>
<th>TC n/N</th>
<th>CR n/N</th>
<th>Risk Ratio M-H,Fixed,95% CI</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nuttbrok 1998</td>
<td>498/98</td>
<td>26/87</td>
<td>0.14 [0.05, 0.38]</td>
<td>100.0%</td>
</tr>
<tr>
<td><strong>Total (95% CI)</strong></td>
<td>98</td>
<td>87</td>
<td>0.14 [0.05, 0.38]</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Total events: 4 (TC), 26 (CR)

Heterogeneity: not applicable

Test for overall effect: Z = 3.85 (P = 0.00012)

---

### Analysis 4.1. Comparison 4 Three month modified TC versus six month modified TC, Outcome 1 Treatment completion.

**Review:** Therapeutic communities for substance related disorder

**Comparison:** 4 Three month modified TC versus six month modified TC

**Outcome:** 1 Treatment completion

<table>
<thead>
<tr>
<th>Study or subgroup</th>
<th>3 month TC n/N</th>
<th>6 month TC n/N</th>
<th>Risk Ratio M-H,Fixed,95% CI</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>McCusker 1995</td>
<td>124/223</td>
<td>67/221</td>
<td>1.83 [1.45, 2.31]</td>
<td>100.0%</td>
</tr>
<tr>
<td><strong>Total (95% CI)</strong></td>
<td>223</td>
<td>221</td>
<td>1.83 [1.45, 2.31]</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Total events: 124 (3 month TC), 67 (6 month TC)

Heterogeneity: not applicable

Test for overall effect: Z = 5.13 (P < 0.00001)

---

Therapeutic communities for substance related disorder (Review)  
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### Analysis 4.2. Comparison 4 Three month modified TC versus six month modified TC, Outcome 2 Forty day retention.

**Review:** Therapeutic communities for substance related disorder

**Comparison:** 4 Three month modified TC versus six month modified TC

**Outcome:** 2 Forty day retention

<table>
<thead>
<tr>
<th>Study or subgroup</th>
<th>3 month TC</th>
<th>6 month TC</th>
<th>Risk Ratio</th>
<th>Weight</th>
<th>Risk Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n/N</td>
<td>n/N</td>
<td>M-H,Fixed,95% CI</td>
<td></td>
<td>M-H,Fixed,95% CI</td>
</tr>
<tr>
<td>McCusker 1995</td>
<td>163/223</td>
<td>159/221</td>
<td>1.02 [0.91, 1.14]</td>
<td>100.0 %</td>
<td>1.02 [0.91, 1.14]</td>
</tr>
<tr>
<td><strong>Total (95% CI)</strong></td>
<td><strong>223</strong></td>
<td><strong>221</strong></td>
<td><strong>100.0 %</strong></td>
<td><strong>1.02 [0.91, 1.14]</strong></td>
<td></td>
</tr>
</tbody>
</table>

- Total events: 163 (3 month TC), 159 (6 month TC)
- Heterogeneity: not applicable
- Test for overall effect: Z = 0.27 (P = 0.79)

### Analysis 5.1. Comparison 5 Six month traditional TC versus twelve month traditional TC, Outcome 1 Treatment completion.

**Review:** Therapeutic communities for substance related disorder

**Comparison:** 5 Six month traditional TC versus twelve month traditional TC

**Outcome:** 1 Treatment completion

<table>
<thead>
<tr>
<th>Study or subgroup</th>
<th>6 month TC</th>
<th>12 month TC</th>
<th>Risk Ratio</th>
<th>Weight</th>
<th>Risk Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n/N</td>
<td>n/N</td>
<td>M-H,Fixed,95% CI</td>
<td></td>
<td>M-H,Fixed,95% CI</td>
</tr>
<tr>
<td>McCusker 1995</td>
<td>32/97</td>
<td>18/87</td>
<td>1.59 [0.97, 2.63]</td>
<td>100.0 %</td>
<td>1.59 [0.97, 2.63]</td>
</tr>
<tr>
<td><strong>Total (95% CI)</strong></td>
<td><strong>97</strong></td>
<td><strong>87</strong></td>
<td><strong>100.0 %</strong></td>
<td><strong>1.59 [0.97, 2.63]</strong></td>
<td></td>
</tr>
</tbody>
</table>

- Total events: 32 (6 month TC), 18 (12 month TC)
- Heterogeneity: not applicable
- Test for overall effect: Z = 1.83 (P = 0.067)
### Analysis 5.2. Comparison 5 Six month traditional TC versus twelve month traditional TC, Outcome 2 Forty day retention.

**Review:** Therapeutic communities for substance related disorder  
**Comparison:** 5 Six month traditional TC versus twelve month traditional TC  
**Outcome:** 2 Forty day retention

<table>
<thead>
<tr>
<th>Study or subgroup</th>
<th>6 month TC n/N</th>
<th>12 month TC n/N</th>
<th>Risk Ratio M-H,Fixed 95% CI</th>
<th>Weight %</th>
<th>Risk Ratio M-H,Fixed 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>McCusker 1995</td>
<td>68/97</td>
<td>74/87</td>
<td>100.0 %</td>
<td>0.82 [ 0.70, 0.96 ]</td>
<td></td>
</tr>
<tr>
<td><strong>Total (95% CI)</strong></td>
<td><strong>97</strong></td>
<td><strong>87</strong></td>
<td><strong>100.0 %</strong></td>
<td><strong>0.82 [ 0.70, 0.96 ]</strong></td>
<td></td>
</tr>
</tbody>
</table>

*Total events: 68 (6 month TC), 74 (12 month TC)*  
Heterogeneity: not applicable  
Test for overall effect: Z = 2.41 (P = 0.016)

### Analysis 6.1. Comparison 6 Prison TC versus no treatment, Outcome 1 Reincarceration 12 months post-prison release.

**Review:** Therapeutic communities for substance related disorder  
**Comparison:** 6 Prison TC versus no treatment  
**Outcome:** 1 Reincarceration 12 months post-prison release

<table>
<thead>
<tr>
<th>Study or subgroup</th>
<th>Prison TC n/N</th>
<th>No treatment n/N</th>
<th>Risk Ratio M-H,Fixed 95% CI</th>
<th>Weight %</th>
<th>Risk Ratio M-H,Fixed 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wexler 1999</td>
<td>144/425</td>
<td>144/290</td>
<td>100.0 %</td>
<td>0.68 [ 0.57, 0.81 ]</td>
<td></td>
</tr>
<tr>
<td><strong>Total (95% CI)</strong></td>
<td><strong>425</strong></td>
<td><strong>290</strong></td>
<td><strong>100.0 %</strong></td>
<td><strong>0.68 [ 0.57, 0.81 ]</strong></td>
<td></td>
</tr>
</tbody>
</table>

*Total events: 144 (Prison TC), 144 (No treatment)*  
Heterogeneity: not applicable  
Test for overall effect: Z = 4.25 (P = 0.000021)
Analysis 7.1. Comparison 7 Modified prison TC versus Mental Health Treatment Programmes, Outcome 1
Reincarceration 12 months post-prison release.

Review: Therapeutic communities for substance related disorder
Comparison: 7 Modified prison TC versus Mental Health Treatment Programmes
Outcome: 1 Reincarceration 12 months post-prison release

Study or subgroup | MTC  | MH  | Risk Ratio | Weight | Risk Ratio |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n/N</td>
<td>n/N</td>
<td>M-H,Fixed,95% CI</td>
<td></td>
<td>M-H,Fixed,95% CI</td>
</tr>
<tr>
<td>Sacks 2004a</td>
<td>7/75</td>
<td>21/64</td>
<td>100.0 %</td>
<td>0.28 [0.13, 0.63]</td>
<td></td>
</tr>
<tr>
<td><strong>Total (95% CI)</strong></td>
<td>75</td>
<td>64</td>
<td>100.0 %</td>
<td>0.28 [0.13, 0.63]</td>
<td></td>
</tr>
</tbody>
</table>

Total events: 7 (MTC), 21 (MH)
Heterogeneity: not applicable
Test for overall effect: Z = 3.13 (P = 0.0018)

Analysis 7.2. Comparison 7 Modified prison TC versus Mental Health Treatment Programmes, Outcome 2
Criminal activity 12 months post-prison release.

Review: Therapeutic communities for substance related disorder
Comparison: 7 Modified prison TC versus Mental Health Treatment Programmes
Outcome: 2 Criminal activity 12 months post-prison release

Study or subgroup | MTC  | MH  | Risk Ratio | Weight | Risk Ratio |
<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>n/N</td>
<td>n/N</td>
<td>M-H,Fixed,95% CI</td>
<td></td>
<td>M-H,Fixed,95% CI</td>
</tr>
<tr>
<td>Sacks 2004a</td>
<td>35/75</td>
<td>43/64</td>
<td>100.0 %</td>
<td>0.69 [0.52, 0.93]</td>
<td></td>
</tr>
<tr>
<td><strong>Total (95% CI)</strong></td>
<td>75</td>
<td>64</td>
<td>100.0 %</td>
<td>0.69 [0.52, 0.93]</td>
<td></td>
</tr>
</tbody>
</table>

Total events: 35 (MTC), 43 (MH)
Heterogeneity: not applicable
Test for overall effect: Z = 2.41 (P = 0.016)
Analysis 7.3. Comparison 7 Modified prison TC versus Mental Health Treatment Programmes, Outcome 3 Alcohol/drug offence 12 months post-prison release.

Review: Therapeutic communities for substance related disorder
Comparison: 7 Modified prison TC versus Mental Health Treatment Programmes
Outcome: 3 Alcohol/drug offence 12 months post-prison release

Study or subgroup   Treatment   Control   Risk Ratio   Weight   Risk Ratio
                  n/N        n/N        M-H,Fixed,95% CI
Sacks 2004a        27/75      37/64                 100.0 % 0.62 [ 0.43, 0.90 ]
Total (95% CI)     75         64                        100.0 % 0.62 [ 0.43, 0.90 ]
Total events: 27 (Treatment), 37 (Control)
Heterogeneity: not applicable
Test for overall effect: Z = 2.53 (P = 0.011)

APPENDICES

Appendix 1. CENTRAL search strategy
1. SUBSTANCE-RELATED DISORDERS:MESH
2. (drug* or substance) NEXT (addict* or misuse* or depend* or addict*)
3. #2 OR #3
4. THERAPEUTIC COMMUNITY:MESH
5. (therapeutic NEXT communit*)
6. RESIDENTIAL TREATMENT:MESH
7. COMMUNITY HEALTH CENTERS:MESH
8. rehabilitat*
9. #4 OR #5 OR #6 OR#7 OR #8
10. #3 AND #9
Appendix 2. MEDLINE search strategy

1. exp substance-related disorders/
2. (drug or substance$) adj2 (misuse or abuse$ or addict$).tw
3. (abstinent$ or abstain$).tw
4. withdraw$.tw
5. 1 or 2 or 3 or 4
6. exp therapeutic community/
7. (therapeutic adj2 communit$).tw
8. support$.ti,ab
9. residential.ti,ab
10. democratic$.ti,ab
11. hierarchical$.ti,ab
12. (concept adj2 house).ti,ab
13. 6 or 7 or 8 or 9 or 10 or 11 or 12
14. 5 and 13
combined with the phases 1 & 2 of the Cochrane Sensitive Search Strategy for the identification of RCTs as published in Appendix 5b2, Cochrane Handbook for Systematic Reviews of Interventions (Higgins 2005):
15. randomized controlled trial.pt.
16. randomized controlled trials/
17. controlled clinical trial.pt.
18. random allocation/
19. double blind method/
20. single blind method/
21. 15 or 16 or 17 or 18 or 19 or 20
22. clinical trial.pt.
23. exp clinical trials/
24. (clin$ adj trial$).ab,ti.
25. ((singl$ or doubl$ or trebl$ or tripl$) adj (blind$ or mask$)).ab,ti
26. exp PLACEBOS/
27. placebo$.ab,ti
28. random$.ab,ti
29. exp Research Design/
30. 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29
31. 21 or 30
32. 14 and 31
33. limit 32 to human

Appendix 3. EMBASE search strategy

1. exp substance abuse/
2. (drug or substance) adj2 (abuse$ or use$ or misuse or depend$ or addict$).tw
3. exp drug dependence treatment/
4. 1 or 2 or 3
5. exp therapeutic community/
6. (therapeutic$ adj2 communit$).ti,ab.
7. support$.ti,ab.
8. exp RESIDENTIAL CARE/
9. exp Aftercare/
10. residential.ti,ab.
11. democratic$.ti,ab.
12. hierarchical$.ti,ab.
14. 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13
15. 4 and 14
16. randomized controlled trial/
17. placebo.ab,ti
18. (singl$ or doubl$ or trebl$ or tripl$) and (blind$ or mask$).mp
19. (cross-over$ or crossover$).tw
20. randomized controlled trial/
21. phase-2-clinical-trial/
22. phase-3-clinical-trial/
23. double blind procedure/
24. single blind procedure/
25. crossover procedure/
26. Latin square design/
27. exp PLACEBOS/
28. multicenter study/
29. 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28
30. 15 and 29
31. limit 30 to human

Appendix 4. CINAHL search strategy
1. exp drug rehabilitation program/
2. exp substance use disorders/
3. (drug or substance) adj2 (abuse$ or misuse or depend$ or addict$).tw
4. 1 or 2 or 3
5. exp Socioenvironmental Therapy/
6. (therapeuti$ adj2 communit$).ti,ab.
7. support$.ti,ab.
8. rehabilitation.tw
9. residential.ti,ab.
10. democratic$.ti,ab.
11. hierarchical$.ti,ab.
13. 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12
14. 4 and 13
15. randomi$.tw.
16. clini$.tw.
17. trial$.tw.
18. (clini$ adj2 trial$).tw.
19. (singl$ or doubl$ or trebl$ or tripl$).mp. and (mask$ or blind$).tw.
20. crossover.tw.
21. random$.tw.
22. allocate$.tw.
23. assign$.tw.
24. (random$ adj2 (allocate$ or assign$)).tw.
25. exp Random Assignment/
26. 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25
27. 26 and 14
Appendix 5. PsycInfo search strategy

1. (drug or substance) adj2 (abuse$ or misuse or depend$ or addict$)
2. (therapeutic$ adj2 communit$).ti,ab.
3. support$.ti,ab.
4. rehabilitation
5. residential.ti,ab.
6. democratic$.ti,ab.
7. hierarchical$.ti,ab.
8. (concept adj2 house).ti,ab.
9. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8
10. randomi$
11. clini$
12. trial$
13. (clin$ adj2 trial$)
14. (singl$ or doubl$ or tripl$ or trebl$) and (mask$ or blind$)
15. crossover
16. random$
17. allocate$
18. assign$
19. (random$ adj2 (allocate$ or assign$))
20. 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19
21. 29 and 20

Appendix 6. SIGLE search strategy

#1 therapeutic communit$

WHAT’S NEW

Last assessed as up-to-date: 1 November 2005.

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>27 March 2008</td>
<td>Amended</td>
<td>Converted to new review format.</td>
</tr>
</tbody>
</table>

HISTORY

Protocol first published: Issue 3, 2005

Review first published: Issue 1, 2006
CONTRIBUTIONS OF AUTHORS
Lesley Smith wrote the protocol, conducted searches, was involved with selection of studies, data extraction and data analysis, and drafted the review. Simon Gates reviewed the protocol, was involved with selection of studies, data extraction, data analysis and drafting the review. David Foxcroft reviewed the protocol and made comments on drafts of the review.

DECLARATIONS OF INTEREST
None

SOURCES OF SUPPORT
Internal sources

- No sources of support supplied

External sources

- EDAP Project (Evidence for Drugs and Alcohol Policy) sponsored by the European Community- Directorate Public Health (Grant Agreement SPC.2002454), Not specified.

INDEX TERMS
Medical Subject Headings (MeSH)
*Substance Abuse Treatment Centers; *Therapeutic Community; Patient Compliance; Prisons; Randomized Controlled Trials as Topic; Substance-Related Disorders [*rehabilitation]; Treatment Outcome

MeSH check words
Humans