Sheffield Hallam University | Helena Kennedy Centre for International Justice

Residential Treatment Services Evidence Review

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The Helena Kennedy Centre for International Justice
& Phoenix Futures

Phoenix Futures
Experts in recovery for more than 40 years

Institutional details:

The Helena Kennedy Centre for International Justice (HKCIJ)

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- innovation in teaching and education
- research and scholarship work
- international projects
- impact on policy
- professional training and advocacy

HKCIJ's central values are widening access to justice and education, promotion of human rights, ethics in legal practice, equality and respect for human dignity in overcoming social injustice. This report is a part of our commitment to evidencing effective community reintegration of marginalised and vulnerable populations, challenging stigma and exclusion, and enabling people in recovery to fulfil their potential and be active members of their families and communities.

Phoenix Futures

Phoenix Futures provides services, and raises awareness, for people affected by drug and alcohol misuse. Since opening its first service in 1969 in London, Phoenix Futures has become a registered housing association and supports people affected by drugs and alcohol across the UK in prison, community and residential settings.

For more than 45 years Phoenix Futures has worked with individuals, families, and communities to show that recovery from substance misuse is possible. Whether struggling with substance misuse, supporting a loved one, seeking appropriate housing or employment or wanting to build relationships within the community, Phoenix Futures works to ensure people receive the support they need.

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Introduction & Overview

Residential treatment services have been a core component of the alcohol and drug treatment system in the UK and internationally for a number of years, yet continue to provoke debate about their role and their effectiveness, particularly given concerns that they are expensive and too disruptive to the lives of people who are trying to reintegrate with their families, find employment and establish stable homes.

What we set out to do in this review is to overview the evidence in two areas - first the overall evidence, largely from cohort studies, about whether residential treatment services are effective. Much of this work comes from (predominantly) drug treatment effectiveness studies. We then follow this up with a more detailed analysis of what the evidence base is for one particular kind of residential treatment - the Therapeutic Community.

This review is important at this time when funding for alcohol and drug treatment is under great pressure. Service users, providers and commissioners all share a desire and need for a clear evidence base in order to allocate critical and limited resources effectively and efficiently. This review is intended to increase stakeholders' and interested persons' knowledge and understanding of the operation of this sector of alcohol and drug treatment services and guide decisions towards enhancing and improving outcomes.

The parameters for the initial evidence search aimed to find national level adult cohort studies that investigated whether residential treatment for alcohol addiction was more or less effective than community treatment. Therefore the primary search interest was concerned with studies that address research question one (RQ1), whether residential treatment improved an individual's treatment outcomes across a range of measures - not only alcohol and drug use but also offending and criminal justice involvement, employment, housing and quality of life.

The key secondary research questions that we wished to address were:

- RQ2: Is there an optimal or minimum duration of time for residential treatment to be effective?
- RQ3: Is residential treatment more or less effective with different populations?

- RQ4: What are the key components of preparation, continuity of care and aftercare that may predict who does well in residential treatment?

For the initial section, around treatment effectiveness, the aim was to look at national and international research that used naturalistic methods with cohorts of treatment seekers to assess the evidence for:

(a) is residential treatment effective?

(b) is there an added value to residential treatment compared to other forms of treatment?

Summary of key conclusions

- Overall, it is clear that an effective and recovery-oriented treatment system must include ready access to residential treatment for alcohol and drug users both to manage the needs of more complex populations and for those who are committed to an abstinence-based recovery journey

- There is a strong and consistent evidence base supportive of the benefits of residential treatment that derives both from treatment outcome studies and randomised trials
- The areas of benefit focus primarily on reductions in substance use and offending behaviour but some studies also show benefits in areas including physical and mental health, housing stability and employment
- Although more expensive, there is evidence that the initial costs of residential treatment are to a large extent offset by reductions in subsequent healthcare and criminal justice costs
- There is a clear dose effect for residential treatment with longer duration of treatment and treatment completion both strong predictors of better outcomes
- Although there have been arguments (particularly in the UK) for minimum effective doses of 28-days for detoxification and 90-days for residential treatment, the evidence would suggest a cumulative benefit of longer times in treatment
- In some studies, particularly from Australia, there is a strong longevity of added value for residential treatment with differences still apparent in the ATOS project at the 11-year outcome point
- There is a limited evidence base about who does better in residential treatment although there is some evidence that those who are older and who have less forensic and psychiatric histories will have better outcomes
- There is a strong supportive evidence base around continuity of care, whether this takes the form of recovery housing or ongoing involvement in mutual aid groups
- There is almost no evidence for appropriate selection and preparation of clients for residential treatment and this is a major gap in the literature
- A much stronger evidence base exists around attaining employment, stable housing, and ongoing support and aftercare as predictors of success

Section 1: Evidence for residential treatment from treatment outcome studies

In the UK, there have been major treatment outcome studies conducted in England, Scotland and Ireland and each of these will be briefly reviewed. Then studies that have been conducted in Australia and the US will be reviewed.

1.1 England

a. **The National Treatment Outcome Research Study (NTORS) (Initiated in 1995).** Authors: Gossop, M., Stewart, D. & Marsden, J. (2000).

The aim of the National Treatment Outcome Research Study (NTORS) was to recruit a cohort of drug users at the initiation of a range of types of specialist drug treatment. The study was a prospective five-year cohort multi-site study investigating four drug treatment modalities (in-patient detoxification (*n*=8), residential rehabilitation (*n*=15), methadone reduction and methadone maintenance) across 4 time-points (baseline, 1 year, 2 years, 4-5 years). Participants at the baseline assessment comprised 1075 treatment seekers recruited from 54 residential and community agencies. Participants recruited from 23 residential treatment programmes were 408 problem opiate users.

Results at the 1 year follow-up for residential patients showed statistically significant reductions in all drug related behaviour; rates of abstinence for all drugs had increased with one third of participants from residential treatment programmes abstinent from all target drugs over the previous 3 months. Less than one fifth of participants were exceeding recommended levels for alcohol use. Levels of criminal activity had approximately halved (see Gossop, Marsden, Stewart, Duncan, & Rolfe, 1999). At the two year follow-up point, 33% of participants (*n*=192) from the residential units were abstinent from all six illicit target drugs in the last 3 months. Psychological and physical health problems were also significantly lowered. At the 5 years' follow-up, 38% of participants from residential programmes were abstinent from all six illicit target drugs. Sharing of injecting equipment fell (non-significant) from 2-year follow-up, and there were significantly fewer psychological problems recorded between 4-5 years and intake. Levels of criminal activity (acquisitive and drug-selling) were significantly lower than at intake.

Better post-treatment outcomes (abstinence from opiates and alcohol) were observed in participants from residential treatment programmes who attended NA/AA in

comparison to non-attenders and infrequent attenders (less than one week) (Gossop et al., 2003), supporting the need for continuity of care and support for this population.

There was a clear benefit from residential treatment programmes for female residents in the area of psychological health.

Logistic regressions showed that there were critical minimum durations of stay of 28 days for in-patient detoxification and short term rehabilitation and 90 days for longer term rehabilitation services (see Gossop et al., 1999).

These critical periods were related to the likelihood of improvement in overall drug use and abstinent rates (all target drugs), which were five times higher at follow-up. Numbers of clients who stayed for critical times were: inpatient programmes, 20% (28 days); short stay rehabilitation, 64% (28 days); longer-stay rehabilitation, 40% (90 days). Gossop, Stewart, Browne and Marsden (2002) in assessing the predictors of relapse in the residential sub-group of the NTORS reported that treatment completion in both detoxification and rehabilitation services was predictive of positive outcomes as was higher levels of coping skills.

Overall recommendations: Treatment time and retention is predictive of positive post-treatment outcomes. Residential rehabilitation programmes are especially suited to patients with more complex needs for whom greater benefits are observed. Provision of treatment facilities (length of stay and quantity of provision) should be driven by clinical considerations and not by short-term cost cutting exercise of outside providers for short-term gain. It was suggested that allocation of sparse resources needs careful consideration to achieve these outcomes.

Additionally, in a follow-up paper that focused specifically on cost-benefit analysis of the NTORS sample, Healey et al. (2003) concluded that ***increasing expenditure on treatment services for heroin addicts can reduce their offending behaviour, and also shows the differentiation between residential and non-residential services in the amounts saved, with the greatest reductions for residential clients. In other words, the NTORS project***

was clear in suggesting that while all treatment was beneficial to the public purse the greatest economic benefit was conferred by residential treatment.

b. **The Drug Treatment Outcome Research Study (DTORS, 2006-2007).** Authors: Donmall, M., A. Jones, Davies, L. and Barnard, M. (2009).

The Drug Treatment Outcome Research Study (DTORS) was commissioned by the Home Office and carried out at Manchester University (2007). The aim was to measure and update the overall outcomes of those seeking drug treatment within England, with a particular emphasis upon treatment outcomes, treatment-related issues and including a cost-benefits analysis. Although sample retention for the follow-up component of the study was poor, there were general improvements reported across all of the treatment modalities included. ***Nonetheless, controlling for baseline factors, those who had received residential rehabilitation (regardless of current situation), CJS referrals, and primary users of drugs other than heroin recorded better health outcomes at all time-points of the study.***

Supplementing these outcome studies, Gossop and Strang (2000) reviewed the evidence for the cost effectiveness of residential treatment. The authors found that the costs of the services are markedly different, with the weekly costs of inpatient detoxification 24 times more than outpatient detoxification. When adjustments are made for outcome, the gap narrows. A lengthier stay on an inpatient unit was over 3 times more expensive than a brief admission to a general psychiatric ward. Additionally, the characteristics and inherent problems of drug users who use each of the services are very different. In general, more difficult cases are dealt with by residential programmes and are important factors to consider when analysing cost.

1.2 Ireland

Research Outcomes Study in Ireland evaluating Drug Treatment Effectiveness (ROSIE) (Initiated in 2003). Authors: Comiskey, C.M., Kelly, P., Leckey, Y., McCulloch, L., O'Duill, B., Stapleton, R.D. & White, E. (2009).

The Research Outcomes Study in Ireland evaluating Drug Treatment Effectiveness (ROSIE) was commissioned by NACD and implemented by the National University of Ireland. The

aim was to provide the first prospective longitudinal outcome study of effectiveness of treatment and other options for opiate users. 404 opiate users were recruited from 54 services provided by 44 separate agencies/organisations.

Significant reductions in drug use at the one-year point were sustained to the three-year follow-up, particularly around substance use, offending and injecting, but the picture was more mixed around physical and psychological health. However, it was difficult to factor out the impact of residential treatment as it contained both detoxification and rehabilitation services and the 'abstinence' group also contained a small number of patients treated in the community.

1.3 Scotland

The Drug Outcome Research in Scotland (DORIS) (Initiated in 2001). Authors: McKeganey, N., Bloor, M., Robertson, M., Neale, J., & Macdougall, J. (2006).

The Drug Outcome Research in Scotland study (DORIS) was funded by the Robertson Trust with additional support from the Scottish Government and Health Protection Scotland. Implementation was by the Centre for Drug Misuse Research, University of Glasgow. DORIS was designed to deliver evidence regarding the effectiveness of drug treatment modalities within the country. The project was a multi-site cohort study investigating a range of drug treatment modalities (substitute prescribing, non-substitute prescribing, counselling, residential rehabilitation, detoxification, needle-exchange) followed up across 4 time-points (baseline, 8 months, 16 months and 33 months after the baseline interview).

Among the key findings of the study were that ***at the 33-month follow-up point, participants recruited from residential rehabilitation programme had greater levels of abstinence from non-prescription drug use (24.7%) than those from a community-based drug treatment agency (6.4%) and a prison-based drug treatment agency (4.9%).*** There were strong association between residential rehabilitation treatment engagement and abstinence and, for the majority of participants interviewed (76%), the main aim of treatment (56%) was abstinence. In a comparison between abstinent and non-abstinent participants from DORIS, abstinence was associated with significantly higher 33-month reductions in levels of arrest, crime, suicide/self-harm, alcohol misuse, and with greater levels of employment/education, and self-reported health benefits (McKeganey et al.,

2006). The authors concluded that there was an imbalance of services where the most effective route for abstinence was residential rehabilitation and yet where minimal provision was offered, with only 2% of project participants being offered this form of treatment.

1.4 Australia

a. **The Australian Treatment Outcomes Study-Heroin (ATOS) (2002-2013).** Authors: Teesson, M., Ross, J., Darke, S., Lynskey, M., Ali, R., Ritter, A., & Cooke, R. (2006).

The study aimed to investigate the population of individuals seeking treatment for problems linked with heroin use who received treatment and to develop treatment outcomes in the Australian context. The study was conducted in collaboration with National Drug and Alcohol Research Centre in New South Wales, Turning Point Alcohol and Drug Centre in Victoria and the Drug and Alcohol Services Council in Southern Australia.

Reduction in heroin use was observed at 3- to 12- to 24- to 36-month follow-up assessments and remained stable. At all follow-ups, reduction in use of other drugs was observed at 3- to 12- to 24-months, and then remained stable to 36-months. The number of treatment episodes was not linked to this reduction. Reductions in criminal activity were observed between 3- to 12- to 24-months, and then remained stable to 36-months. Poorer outcome was linked to fewer treatment episodes, youthful age and presence of major depression. Physical health improved from 3- to 12-months, remained stable to 24-months, and then deteriorated to 36-months.

More time spent in residential rehabilitation was associated with a greater reduction in heroin dependency and more abstinence from heroin. More time spent in residential treatment was also associated with reductions in other drug use, needle sharing, and criminal activity. ***Overall improvement in physical health was related to residential rehabilitation to a greater extent than involvement in other forms of treatment.***

A further analyses of recipients of residential clients (*n*=100) from the NSW component of the ATOS study was conducted at 3 years follow-up (Teesson et al., 2008), which showed that the reduction in heroin use evidenced at 12-month follow-up was still present. Twenty-five percent of residential clients reported one year of heroin abstinence from index admission. Eighteen percent were still heroin abstinent at two years with females more likely

to have achieved this status. These participants were nine times more likely to have completed their index treatment programme. ***Most significantly, analyses demonstrated that successful completion and graduation from the residential treatment programme was linked with greatly enhanced outcomes. Successful completion and graduation was of greater importance for sustained abstinence than programme type or length.***

An 11-year follow-up was conducted by Teesson et al. (2015) in which the authors successfully engaged 431 participants (70.1%) from the original sample. At the 11-year follow-up, 24.8% were still using heroin, and almost half were still in current treatment. Where heroin had reduced or stopped, there were significant improvements across a range of life domains. Current heroin abstinence was more likely in the group who had engaged in residential rehabilitation at baseline (OR=1.68), while residential rehabilitation treatment at baseline was also associated with lower likelihood of needle sharing at the 11-year follow-up. Criminality at the 11-year follow-up was higher among those whose baseline treatment had been detoxification and lower among those whose baseline treatment had been residential rehabilitation. At some point in the 11 years, 54.2% of the sample had accessed residential rehabilitation treatment. ***As such, the long-term outcomes from the ATOS study provide a strong endorsement of residential treatment and the longevity of its positive effects.***

b. **The Methamphetamine Treatment Evaluation Study (MATES) (2006-2008).** Authors: Mcketin, R., Najman, J. M., Baker, A. L., Lubman, D. I., Dawe, S., Ali, R., Lee, N.K., Mattick, R.P. & Mamun, A. (2012).

The study was the first Australian longitudinal cohort outcome study to evaluate community-based treatment for methamphetamine and derive treatment effects. The study was conducted by the Centre for Mental Health Research, Australian National University, Canberra.

Participants were recruited on entry from 11 randomly selected detoxification units (*n*=112) and 15 residential rehabilitation facilities (*n*=248) in Sydney and Brisbane. Overall, the study findings showed positive benefits of treatment for methamphetamine users with particularly strong effects in the residential rehabilitation group. There was a significant increase in continuous abstinence observed at 3 months follow-up for the cohort attending residential

rehabilitation when compared with the quasi-control and detoxification groups, although this effect reduced with time.

c. **Australian Study of Patient Pathways in Alcohol and Other Drug Treatment (2012-2013).** Authors: Manning, V., Garfield, J. B., Best, D., Berends, L., Room, R., Mugavin, J., Larner, A., Lam, T., Buykx, P., Allsop, S. & Lubman, D. I. (2016).

Patient treatment experiences have typically been measured through outcome studies investigating individual substance use, with the primary focus upon the individual treatment journey. As such, they have neglected the complexity of the pathways that have led to improvement in overall health, greater social capital and reduction in acute healthcare costs. This study attempted to map the pathways of specialist and linked services that clients utilize to navigate their route to healthier outcomes for a combination of alcohol and drug users. 796 clients (62% male) were recruited to the study on entry to their primary index treatment (PIT); 29% from long-term residential treatment, 44% from acute withdrawal services, and 27% from a range of other outpatient services.

Outcomes were recorded from baseline and 12 month follow-up (*n*=555) interviews. Reliable change criteria (RCC) (Jacobson & Truax, 1991) demonstrated significant reduction from baseline to follow-up in primary drug of concern (PDOC) for over half of participants. Over thirty percent of participants were abstinent one month prior to 12-month follow-up. Sixty-six percent reported completion of PIT with 6% remaining in their PIT for the study duration. ***Significant predictors of treatment success were completion of PIT and attendance at mutual aid. For clients with alcohol as their PDOC, abstinence was predicted by residential rehabilitation and mutual aid attendance. For client with drugs as their PDOC, completion of PIT was more relevant than either residential rehabilitation or mutual aid attendance.*** Overall, positive health outcomes were linked with a period of residential rehabilitation and continuity into specialist AOD treatment, with completion of PIT the most significant predictor of treatment success.

Residential rehabilitation was significantly implicated in positive health outcomes, especially for those with alcohol as their PDOC in the Australian Patient Pathways study. The authors concluded that greater access to residential rehabilitation would benefit individuals as they navigate treatment pathways.

d. **Retention, early dropout and treatment completion among the therapeutic community admissions**. Authors: Darke, S., Campbell, G. and Popple, G. (2012).

This study aimed to examine the correlations between treatment retention and completion, drop-out rates and baseline client characteristics. Based in a single service in Sydney, the median length of stay was 39 days, 64 days for men and 32 days for women. A total of 17% left treatment in the first week, 25% between 2 and 4 weeks, 13% between 5 and 8 weeks, and 18% between 9 and 12 weeks; 27% remained in treatment for more than 12 weeks. A total of 41% of participants left treatment against advice (men 40%, women 45%). ***A significant correlation was observed between length of stay and previous TC completion, better physical health scores and lower number of stressful life events.*** A gender difference was noticeable, with 2 in 5 men completing compared to 1 in 5 women.

1.5 USA

a. **The Drug Abuse Reporting Programme (DARP) (1968-1980).** Authors: Simpson, D. D. & Sells, S. B. (1982).

The aim of the study was to evaluate and monitor the federal addiction treatment system within the United States and Puerto Rico. The study also created a database for treatment evaluation research. The study was implemented by the Institute of Behavioural Research (IBR), Texas Christian University.

DARP was a prospective, longitudinal study of four treatment modalities: methadone maintenance (MM), residential therapeutic communities (TC), outpatient drug-free (DF) and outpatient detoxification (DT). Additionally, there was a comparison group labelled intake-only (IO) for those who sought but never accessed treatment. Follow-up interviews ranged from 3 months to 12 years after treatment initiation.

Results for TCs consistently demonstrated 'highly favourable' and 'favourable' post treatment outcomes, compared to DT and IO groups. Levels of criminal activity dropped significantly for TC and were 'highly favourable'. Levels of employment increased and were 'highly favourable'. 'Highly favourable' outcomes were achieved through longer retention periods (over 90 days). One of the key findings of the DARP

study was a strong endorsement of duration of treatment with longer retention across modalities being associated with better outcomes.

b. **Treatment Outcome Prospective Study (TOPS) (1979-1986).** Authors: Hubbard, R. L., Rachal, J. V., Craddock, S. G., & Cavanaugh, E. R. (1984).

The aim of the TOPS project was to replicate DARP to assess the outcomes of short and long-term drug treatment options within the US. Length of time in treatment was a significant predictor for behavioural change with longer periods necessary for any positive outcomes to occur, which meant typically more than 12-months. Heroin use reduced in the methadone maintenance and residential rehabilitation groups only. There were ***noted differences in the quality of treatment offered to clients of residential rehabilitation as the study progressed with 'noticeably' less services being offered (family, educational and vocational services). This is further opportunistic evidence that rehabilitation services need appropriate duration and resourcing to maximise treatment gains.***

c. **The Drug Abuse Treatment Outcome Study (DATOS) (Initiated in 1989).** Authors: Hubbard, R. L., Craddock, S. G., Flynn, P. M., Anderson, J., & Etheridge, R. M. (1997).

This was a prospective, longitudinal outcomes study from multiple selected sites (*n*=96) in eleven cities. Four treatment modalities were included - outpatient methadone (OM), outpatient drug-free (ODF), long-term residential (LTR) and short-term inpatient (STI). In the 12-months follow-up interview, the only significant finding between groups was that participants who spent 90 days or more in long-term residential treatment had the most significant reductions in drug-use (cocaine, marijuana, alcohol), along with significant reductions in criminal activity and significant increases in rates of employment. ***A key finding from this study revealed that the most positive outcomes over 4 treatment modalities were linked with long-term residential treatment when the duration of stay was over 90 days.***

Preliminary conclusions

There are a number of preliminary conclusions that can be made on the basis of the review of treatment outcome studies that are summarised here and discussed in greater length at the end of the review:

1. There is little evidence for detoxification as an evidence-based standalone treatment

2. There is often poor access to residential treatment, particularly rehabilitation, in the UK and internationally in spite of a strong supportive evidence base

3. There are good outcomes for residential treatment, but these are generally linked to longer retention in treatment and treatment completion

4. There is some evidence in the UK for minimum periods of stay for both residential treatment (90 days) and in-patient detoxification (28 days) to maximise effectiveness; and a very clear international evidence base supporting continuity of care following completion of residential treatment

5. Residential rehabilitation services are generally dealing with a complex client group with multiple disadvantages, yet generally achieve equivalent or better results to other modalities of treatment

6. Completion rates for residential treatment are typically low but retention linked to outcomes and positive outcomes are also linked to continuity of care

7. Staff quality and treatment resourcing has also been associated with more positive treatment outcomes in the US (TOPS)

8. Budget cuts have adversely affected the integrity and availability of this key resource and may lead to sub-optimal delivery

9. There is limited evidence about targeted populations with better outcomes associated with those with less criminal justice involvement who achieve employment after residential treatment and who engage in aftercare

10. There is almost no evidence around preparation for treatment or selection of residents that is associated with better outcomes

Section 2: Evidence for the benefits of Therapeutic Communities

There have been inconsistent findings from systematic reviews of the evidence around the effectiveness of Therapeutic Communities (TC) that have been based on methodological differences. Thus, the Cochrane Review conducted by Smith, Gates and Foxcroft in 2008 concluded that there was little evidence that TCs conferred additional benefit over other forms of residential treatment, or that one type of TC is better than another in terms of either treatment outcomes or retention. However, this review was based on only seven randomised controlled trials and there were both significant methodological weaknesses and inconsistencies between the studies included in the review. Further, as Vanderplasschen et al. concluded in their review for the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), randomised trials may not be the most appropriate study design for an intervention such as a TC which requires significant personal commitment to a holistic model of care.

Earlier, Lees, Manning and Rawlings (2004) had conducted a systematic review of TCs based on 29 studies of which 8 were randomised trials. Using a single global measure of successful outcome, the authors concluded that there was a strong positive effect for TC treatment compared to a range of control interventions. In a subsequent systematic review, De Leon (2010) included four different categories of studies - field effectiveness studies, randomised trials, meta-analyses and cost benefit studies - and concluded that there was consistent evidence of positive effects of TCs across all four categories of research study. De Leon concluded that all five cost-benefit analyses have shown positive findings in favour of TCs, in particular associated with reduced involvement in criminal justice and increased involvement in employment. De Leon also argued that there is a clear relationship between both treatment completion and treatment outcome, and between duration of stay and positive outcomes.

The focus on retention was picked up by Malivert, Fatseas, Denis, Langlois and Auriacombe (2012) in a systematic review based on 12 studies that focused on the effectiveness of TC

treatment following other forms of treatment. In keeping with previous studies, one of the prime concerns was the variable and low rates of treatment completion (between 9% and 56% in the included studies) - however, ***the authors concluded that the most robust predictors of abstinence at follow-up were treatment completion and duration of stay in the TC treatment facility.***

In their subsequent review of the evidence for the EMCDDA, Vanderplasschen, Vandevelde and Broeckaert (2014) included both controlled studies internationally (30 publications) and field effectiveness studies undertaken in Europe (20 publications). The 30 trial publications covered 13 studies with analysis indicating that 10 of 14 showed better substance use outcomes among the TC group and 9 of 13 showed at least one better legal (criminal justice) outcome for the TC group. ***Crucially, Vanderplasschen and colleagues also assessed predictors of relapse and recidivism and concluded that participation in aftercare, post-treatment employment and older age were the strongest predictors of effective desistance and abstinence***. These findings were largely consistent with the findings from the field effectiveness studies in Europe, with a particularly clear relationship reported between longer duration of stay and better treatment outcomes.

Vanderplasschen and colleagues concluded that the most obvious benefits of TC treatment are lower rates of recidivism and lower rates of relapse (found in more than half of all of the studies included) in spite of significant differences in study design and participant characteristics within each study. The authors conclude that treatment in TCs takes time - typically 6 to 12 months - and that as a result is probably only suited for those substance users whose needs cannot be met in less intensive forms of treatment. However, Vanderpasschen and colleagues concluded on a cautious note, stating that "because of the variance in client profiles it is yet to be established who benefits from TC treatment (and at what point in the recovery process)" (p.56).

More positively, in a subsequent peer-reviewed paper based on the above review, Vanderplasschen et al. (2013) concluded that "Despite various methodological constraints, TCs appeared to generate significantly better outcomes in comparison with other viable interventions in two out of three studies. … If residents stay long enough in treatment and participate in subsequent aftercare, TCs can play an important role on the way to recovery" (page 20).

Section 3: Additional UK evidence

In a specific study focusing on factors that predicted completion of residential treatment in the UK, Meier and Best (2006) found that residential treatment services in the UK had markedly varying retention rates for 90 days of treatment, ranging from 25% to 48%. The aim of the paper was to identify programme level factors associated with retention and these were primarily related to (1) privacy of the client, (2) higher staff/client ratio and domestic services support and (3) individual counselling, with higher levels linked with greater retention of clients. Additionally, greater programme intensity and higher numbers of beds per facility were both associated with lower retention rates to 90 days.

In a follow-up study, Meier and colleagues (2006) recruited 187 residents from two 12-step based residential services and one TC, reporting that 53% achieved 90 days of treatment retention but that 28.7% had left within the first two weeks of treatment. Older individuals with more educational exposure were more likely to complete. Pre-treatment crack use, secure attachment style and developed coping strategies were linked with shorter retention. The author concluded that ***counsellors who were experienced were more able to retain clients who are more able to engage with a therapeutic relationship (i.e., older and higher levels of education).***

Another UK study that looked specifically at the impact of aftercare and continuity of care following residential treatment was carried out in London by Gossop et al. (2003) in a study designed to investigate the influence of the mutual aid fellowship group of Alcoholics Anonymous prior to, during and after in-patient treatment within a specialist South London NHS unit for alcohol problems. ***Significant associations were recorded for participants (15%) between frequency of post-treatment AA attendance and reduction in drinking behaviour***. AA attendance was not significantly associated with reduction in psychiatric symptoms or quality of life at 6-months follow-up, suggesting the importance of both mutual aid and continuity of support in the community following residential treatment.

Along similar lines, Manning et al. (2012) conducted a randomized control trial comparing two active referral interventions - 12-Step peer referral (PI) and doctor referral (DI) - with a standard/no intervention (NI) to ascertain the effectiveness of linkage to 12-Step mutual aid groups (Alcoholics Anonymous, Narcotics Anonymous, Cocaine Anonymous) with participants from a short-term inpatient detoxification. The sample was a cohort of 153 in-

patients attending short-term residential treatment. ***Assertive linkage to 12-Step mutual aid groups resulted in positive outcomes, with intervention groups attending more frequently post-discharge. Abstinence was significantly linked with more frequent attendees of 12-Step groups. The importance of peer support and assertive linkage was underlined, and this adds to the literature on continuity of care.***

Section 4: Additional international evidence

4.1 Australia: **Predicting dropout in the first 3 months of 12-step residential drug and alcohol treatment in an Australian sample.** Authors: Deane, Wootton, Hsu and Kelly (2012).

Deane and colleagues collected data from eight residential drug and alcohol treatment programs run by The Australian Salvation Army, based on a sample of 618 participants. Individuals were more likely to drop out by the 3-month time frame if at intake their primary drug of concern was a drug other than alcohol or they reported greater forgiveness of self.

4.2 Thailand: **Evaluation of a Therapeutic Community Treatment Model**. Authors: Johnson, Young, Shamblen, Suresh, Browne and Chookhare (2012).

The study, conducted in 2005 to 2007, used a proscriptive cohort design, based on 769 residents in 22 treatment programs. The results show large positive treatment effects on 30-day and 6-month illegal drug use and small to medium effects on the severity of alcohol use and related problems. Reduced stigma, adaptation of the TC model, and frequency of alcohol and drug use-related consequences partially predict treatment success.

4.3 New Zealand: **Predictors of 3-month retention in a drug treatment therapeutic community.** Authors: Mulder, Frampton, Peka, Hampton and Marsters (2009).

This study examined rates of 3-month retention in a drug treatment therapeutic community and the characteristics of residents who remain in treatment, based on 187 consecutive admissions. 107 remained in the program for at least 3 months. These residents had a better baseline mental health score (SF-36), higher current sedative/hypnotic dependence and less

lifetime stimulant dependence, with differences predicting around 18% of the variance in outcome.

4.4 USA: a. **Evaluating Alternative Aftercare Models for Ex-Offenders.** Authors: Jason, Olson and Harvey (2015).

This study examined the role played by aftercare following (mainly) inpatient community-based treatment in the outcomes of criminal ex-offenders with substance use disorders. Two hundred and seventy individuals released from the criminal justice system were randomly assigned to either therapeutic communities (TC), recovery homes called Oxford Houses (OHs), or usual care settings (UA). The OHs and TCs are residential settings that emphasized socialization and abstinence from drugs and alcohol, but OHs do not include the formal therapeutic change interventions common to TCs, nor do they include any on-site access to drug abuse or health care professionals. UA involved what occurred naturally after completing treatment, which included staying with friends or family members, their own house or apartment, homeless shelters, or other settings. Longer lengths of stay in either the TCs or OHs were associated with increased employment, and reduced alcohol and drug use. Those assigned to the OH condition received more money from employment, worked more days, achieved higher continuous alcohol sobriety rates, and had more favourable cost-benefit ratios. ***This study provides further evidence of the importance of continuity of care and the importance of a protective and stable home environment that can encourage and nurture recovery pathways.***

b. **A randomized trial comparing day and residential drug abuse treatment: 18-month outcomes.** Authors: Guydish, Sorensen, Chan, Werdegar, Bostrom and Acampora (1999).

Extending an earlier report of 6-month outcomes, this study reports 12- and 18-month follow-up data for clients (*n*=188) entering a therapeutic community drug treatment program who were randomly assigned to day or residential treatment conditions. Both groups showed significant change over time. The pattern of change indicated decreased problem severity in the first 6 months and then maintenance of lowered problem severity. Comparisons between groups indicated greater improvement for residential treatment clients on social problems and psychiatric symptoms but no differences on the remaining outcomes.

c. **Outcomes at 1 and 5 years for older patients with alcohol use disorders.** Authors: Lemke and Moos (2003).

Older patients with alcohol use disorders who had gone through residential treatment were compared with matched groups of young and middle-aged patients (*n*=432 in each age group) on their 1- and 5-year outcomes, use of continuing care services, and outcome predictors. Older patients had better outcomes than did young and middle-aged patients but had comparable levels of continuing substance abuse care and 12-step self-help group involvement. Longer duration of continuing substance abuse care and greater self-help group involvement were related to better outcomes, as were patients' attitudes and coping strategies at program discharge.

Section 5: Conclusions

5.1 Key overall conclusion

- Overall, it is clear that an effective and recovery-oriented treatment system must include ready access to residential treatment for alcohol and drug users both to manage the needs of more complex populations and for those who are committed to an abstinence-based recovery journey

5.2 Key conclusions by related research question

RQ1: Does residential treatment improve an individual's treatment outcomes across a range of measures, to include not only alcohol and drug use but also offending and criminal justice involvement, employment, housing and quality of life?

- There is a strong and consistent evidence base supportive of the benefits of residential treatment that derives both from treatment outcome studies and randomised trials
- The areas of benefit focus primarily on reductions in substance use and offending behaviour but some studies also show benefits in areas including physical and mental health, housing stability and employment
- Although more expensive, there is evidence that the initial costs of residential treatment are to a large extent offset by reductions in subsequent healthcare and criminal justice costs

RQ2: Is there an optimal or minimum duration of time for residential treatment to be effective?

- There is a clear dose effect for residential treatment with longer duration of treatment and treatment completion both strong predictors of better outcomes
- Although there have been arguments (particularly in the UK) for minimum effective doses of 28-days for detoxification and 90-days for residential treatment, the evidence would suggest a cumulative benefit of longer times in treatment
- In some studies, particularly from Australia, there is a strong longevity of added value for residential treatment with differences still apparent in the ATOS project at the 11-year outcome point

RQ3: Is residential treatment more or less effective with different populations?

- There is a limited evidence base about who does better in residential treatment although there is some evidence that those who are older and who have less forensic and psychiatric histories will have better outcomes

RQ4: What are the key components of preparation, continuity of care and aftercare that may predict who does well in residential treatment?

- There is a strong supportive evidence base around continuity of care, whether this takes the form of recovery housing or ongoing involvement in mutual aid groups
- There is almost no evidence for appropriate selection and preparation of clients for residential treatment and this is a major gap in the literature
- A much stronger evidence base exists around attaining employment, stable housing, and ongoing support and aftercare as predictors of success

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