

# Correctional Alcohol and Drug Treatment

## INVESTMENT BRIEF

Two-thirds of prisoners have problems with abuse of Alcohol and Other Drugs (AOD). In response, the Department of Corrections provides a range of prison- and community-based AOD treatment programmes. These programmes are effective at reducing crime.

### OVERVIEW

- There is a robust international and local evidence base that alcohol and other drug treatment can reduce offending and improve broader social outcomes.
- Both psychological and pharmacological treatment have been shown to be effective, particularly services such as the Drug Treatment Units (DTUs) that apply the Therapeutic Communities model.
- Rehabilitation programmes are most effective when targeted at people at high risk of reoffending.
- For New Zealand-based programmes in prison, one person is prevented from being re-imprisoned for every 20 prisoners receiving the programme.
- Treatment for adolescent offenders can reduce substance use, but it does not tend to reduce reoffending.
- There are nine DTUs in prisons and a range of shorter programmes for prisoners unable to complete the full DTU programmes. There is also a range of services for community-based offenders.
- Demand within the Corrections system is now largely being met, limiting the need for further investment.

### INVESTMENT CLASS SUMMARY

Evidence rating:	Strong
Unit cost:	\$5,155 per start
Effect size (number needed to treat):	According to the latest Corrections outcomes analysis, treatment reduces re-imprisonment rates by at least five percentage points. This means that for every 20 people who receive treatment, one fewer is re-imprisoned
Current spend:	\$5.8m (Corrections – excludes health-funded programmes)
Unmet demand:	Low

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## DOES CORRECTIONAL AOD TREATMENT REDUCE CRIME?

### International evidence

Several recent international meta-analyses (summaries of research) confirm that both psychological and pharmacological treatment for offenders tend to reduce substance abuse and reoffending.<sup>i</sup>

The majority of the studies conducted in this area are from the United States. Mitchell and others (2012) included 74 separate estimates of effectiveness, of which 88% were from the United States, 5% were from Canada and 4% from Australia. 60% of these studies were published after 1999, which suggests that the results are applicable to modern approaches of delivery.

The effect of psychological treatment on reoffending is typically modest. For the best-performing psychological treatments that are delivered to a moderate-risk group, such as a typical group of prisoners, for every 10-20 people put through treatment we would expect to prevent one instance of general reoffending.

Reviews of the evidence for pharmacological treatment have often found them to have a larger effect on reoffending than psychological treatment. This conclusion is tentative because there are fewer and more inconsistent studies into pharmacological treatment.

For example, heroin maintenance appears to have a relatively large effect size (one crime reduced for every five people in the programme), but this estimate is based on only five studies.<sup>ii</sup>

An earlier meta-analysis found that heroin maintenance was not effective.<sup>iii</sup> There may also be limited applicability in New Zealand where relatively few people use heroin in comparison

to other countries. A recent study of New Zealand prisoners found that less than 2% reported recent opiate dependence or abuse.

While the international evidence is mostly of a quasi-experimental type, there have been several randomised controlled trials that have replicated the findings of studies with weaker research designs.

For example, Holloway and others (2008) identified 16 studies examining the effect of Therapeutic Communities on criminal offending, of which five used a randomised design. 88% of the 16 total studies and 80% of the five randomised studies concluded that treatment reduces reoffending. As such, we can be confident that well-delivered substance abuse treatment in itself can reduce reoffending.

### New Zealand Evidence

Of New Zealand's correctional AOD treatment programmes, only the DTUs have been evaluated for their impact on crime.

The DTUs have delivered a consistently positive and statistically significant reduction in re-imprisonment, though typically modest in scale, of five to ten percentage points (e.g. from an expected 35% of individuals being re-imprisoned within 12 months of release, reducing to 25 - 30% re-imprisoned).

This implies that for every 10-20 people who go through a DTU, on average one person could be expected to not return to prison who otherwise would have. This effect size is in-line with international evidence, as outlined in the appendix.

There is also some evidence that substance abuse treatment is particularly effective in reducing reoffending among Maori prisoners, and in reducing the overall seriousness of the reoffending.<sup>iv</sup>

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## WHEN IS CORRECTIONAL AOD TREATMENT MOST EFFECTIVE?

The international evidence base is not yet strong enough to be able to conclusively identify the characteristics of the programmes that are more or less effective. It is also not entirely clear whether treatment is more or less effective for alcohol abuse than for abuse of different kinds of drugs.

However, some of the indicative findings include that:

- Therapeutic communities are more effective than other approaches, in both prison and the community.<sup>v</sup>
- Therapeutic communities work for both men and women, and violent and non-violent offenders.<sup>vi</sup>
- Programmes that have been delivered for more than a year are more effective than other treatment types.<sup>vii</sup>
- Voluntary programmes are more effective.<sup>viii</sup>
- Shorter programmes appear effective during incarceration, but not in the community.<sup>ix</sup>
- Treatment in the community appears to be more effective combined with the threat of swift, certain sanctions for non-compliance.<sup>x</sup>
- There is evidence that treatment of adolescents can reduce substance use<sup>xi</sup>, but the effect on reoffending is inconclusive.<sup>xii</sup>
- Treatment among younger adults may more effectively reduce crime than treatment for older adults.<sup>xiii</sup>
- Among pharmacological treatments in the community, heroin maintenance and naltrexone treatment for heroin addiction tend to reduce reoffending.<sup>xiv</sup>
- However, naltrexone has significantly positive impact on re-incarceration only in combination with behavioural treatment.<sup>xv</sup>
- Methadone maintenance and buprenorphine substitution tend to have positive effects, but these were not statistically significant in the latest review.<sup>xvi</sup>
- Pharmacological treatment within prisons appears to either not affect reoffending or make reoffending more likely, though this finding is based on a small number of studies.<sup>xvii</sup>

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## WHAT MAKES CORRECTIONAL AOD TREATMENT EFFECTIVE?

There is insufficient evidence to conclude why AOD programmes are effective. In theory, the mechanisms are likely to be different for the two major types of drug and alcohol treatment:

- psychological treatment, such as Cognitive-Behavioural Therapy
- drug substitution programmes for opioid-dependent offenders, such as methadone maintenance therapy.

Both approaches seek to reduce reoffending indirectly, by reducing substance abuse.

Alcohol and drug use is often associated with offending, particularly violent offending, perhaps because of reduced self-control. For illegal drug use, possession itself is a crime.

Psychological treatment can help with this by providing offenders with cognitive-behavioural strategies to help them retain self-control.

Psychological treatment for alcohol and drug use can teach skills relevant to managing offending behaviour, including recognising behavioural triggers, developing plans to manage them, and supporting motivation to change.

Further, substance dependent offenders can commit thefts, burglaries or robberies to fund their addictions. In addition, lifestyle factors associated with substance abuse can facilitate offending, such as connection with anti-social networks and difficulty maintaining connection to employment and other pro-social supports. Pharmacological treatment can counteract this by reducing cravings for expensive illegal drugs.

Drug courts and supervision-based approaches (such as compulsory drug testing) will be considered in separate investment briefs.

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## WHAT OTHER BENEFITS DOES CORRECTIONAL AOD TREATMENT HAVE?

### Health outcomes

AOD treatment can improve health outcomes by reducing substance abuse. The evidence is stronger for pharmacological treatments, which PHARMAC considers the evidence sufficiently strong for to justify investment.<sup>xviii</sup>

Psychological treatment can also be effective for improving health outcomes. However, a review from the Cochrane Collaboration found inconclusive evidence for whether psychological treatments are effective for people with both substance abuse and mental health problems.<sup>xix</sup>

### Employment, earnings and benefit receipt

We were unable to find a literature review examining the effect of AOD treatment on employment-related outcomes. However, we did find several examples of specific programmes that had found that AOD treatment had been effective at improving employment.<sup>xx</sup>

### Family functioning, child welfare and educational achievement

We were unable to find any reliable evidence investigating a link between AOD treatment for parents and family functioning, child welfare and educational achievement.

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## CURRENT INVESTMENT IN NEW ZEALAND

New Zealand provides AOD treatment within specially designated units at nine prisons (the DTUs). These programmes incorporate some principles of the therapeutic community model. Two formats (a 3- and 6-month programme) are matched with the severity of the offenders' AOD needs and their sentence length.

A range of shorter programmes, delivered both to an individual and small-group, are also available for prisoners unable to complete the full DTU programmes.

Drug and alcohol treatment is also available within the community. Drug substitution is provided to a very limited number of opioid-dependent prisoners and through the public health system to those in the community. Corrections provides brief interventions for offenders in the community.

Corrections has expanded the number and range of Alcohol and Other Drug interventions provided within prisons. There are four types of interventions available within the 16 public prisons in New Zealand.

Community probation, prison health and case management staff provide screening and brief interventions. It is expected that all prisoners who are in prison for longer than a month will be screened for Alcohol and Other Drugs problems.

- Brief Support Programme – 4 session motivational programme delivered by internal Corrections programme staff.
- Intermediate Support Programme – 8 session introductory skills and goal setting delivered by internal Department programme staff.
- Intensive Treatment Programmes – includes our 11 Drug Treatment Unit programmes available at 9 prisons but also 2 new 8-week programmes. The Intensive Treatment

Programmes are divided up into 7 x 6-month and 4 x 3-month DTU programmes.

- 8-week Intensive Treatment Programmes.

The scale of provision has steadily increased over recent years. Now there are over 1,000 places delivered per year in prison DTUs, with a total investment of \$5.8m per year, or \$5,155 per offender per programme.

Further, a range of shorter interventions is delivered both individually and in small groups. The number of prisoners offered these interventions is being increased in order to meet the needs of prisoners serving shorter sentences.

This addresses the issue of prisoners not participating in the DTUs due to shorter sentences. As such, demand is now close to being fully met.

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## EVIDENCE RATING AND RECOMMENDATIONS

Each Investment Brief provides an evidence rating between Dubious and Very Strong.

According to the standard criteria for all Investment Briefs,<sup>1</sup> the appropriate evidence rating for AOD treatment is Strong. This rating reflects that the international research base shows consistent positive results, supported by reasonable quality New Zealand research that indicates these programmes reduce reoffending. There is also evidence that AOD treatment improves broader social outcomes.

As per the standard definitions of evidence strength outlined in our methodology, the interpretation of this evidence rating is that:

- there is robust international and local evidence that the investment tends to reduce crime
- the investment is likely to generate a return if implemented well
- this investment type could benefit from additional evaluation to confirm investment is delivering a positive return and to support fine-tuning of the investment design.

A successful high-quality randomised controlled trial of treatment on crime outcomes in New Zealand would raise the evidence rating to Very Strong. New Zealand-based evaluation of treatment in the community and pharmacological treatment would also be useful.

Other advantages of this investment type include that:

- drug and alcohol use is implicated in a wide range of serious and less serious offending
- there are substantial health and social benefits associated with drug and alcohol treatment

- we have longstanding experience in this investment area and a proven track record of results.

However, it is also important to note that drug and alcohol treatment, while consistently successful in reducing recidivism, typically delivers relatively modest reductions in reconviction rates. Because up to 20 people need to attend treatment to prevent a single instance of reconviction, it is important to keep delivery costs reasonable to ensure cost-effectiveness.

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<sup>1</sup> Available upon request from the author

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## FIND OUT MORE

### Email

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### Recommended reading

Drake, E. (2012). *Chemical dependency treatment for offenders: A review of the evidence and benefit-cost findings*. Olympia: Washington State Institute for Public Policy

Mitchell, O., Wilson, D. & Mackenzie, D. (2012). The effectiveness of incarceration-based drug treatment on criminal behaviour: A systematic review. *Campbell Systematic Reviews*.

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<sup>i</sup> Koehler et al 2014, Drake 2012, Mitchell et al 2012, Egli et al 2009, Holloway et al 2008, Vaughn and Howard 2004, Prendergast et al 2002

<sup>ii</sup> Egli et al 2009

<sup>iii</sup> Holloway et al 2008

<sup>iv</sup> Corrections 2010

<sup>v</sup> Drake 2012, Mitchell et al 2012, Pearson and Lipton 1999

<sup>vi</sup> Mitchell et al 2012

<sup>vii</sup> Mitchell et al 2012

<sup>viii</sup> Mitchell et al 2012

<sup>ix</sup> Drake 2012

<sup>x</sup> Drake 2012

<sup>xi</sup> Vaughn and Howard 2004

<sup>xii</sup> Drake 2012 and Mitchell et al 2012

<sup>xiii</sup> Prendergast et al 2002

<sup>xiv</sup> Egli et al 2009

<sup>xv</sup> Kirchmayer et al (2002)

<sup>xvi</sup> Egli et al 2009

<sup>xvii</sup> Mitchell et al 2012

<sup>xviii</sup> PHARMAC 2008, 2010

<sup>xix</sup> Hunt et al 2013

<sup>xx</sup> Wickizer et al 2000, Zarkin et al 2002, WSDSH 2002, Ginexi et al 2003, Ettner et al 2006, Kissin et al 2015

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## SUMMARY OF EFFECT SIZES FROM META-ANALYSES

Meta-analysis	Treatment type	Reported average effect size	Number of estimates meta-analysis based on	Percentage point reduction in offending (assuming 50% untreated recidivism)	Number needed to treat (assuming 50% untreated recidivism)
Egli et al 2009	Naltrexone	OR=3.21*	2	0.26	4
Egli et al 2009	Buprenorphine	OR=2.78	3	0.24	4
Koehler et al 2014	Overall treatment (in Europe)	d=0.47*	15	0.18	5
Egli et al 2009	Heroin maintenance	OR=2.44*	5	0.21	5
Holloway et al 2008	Therapeutic Communities	OR=2.06*	10	0.17	6
Pearson & Lipton 1999	Therapeutic Communities	r=0.13*	7	0.11	9
Mitchell et al 2012	Counselling	OR=1.53*	26	0.10	10
Mitchell et al 2012	Therapeutic Communities	OR=1.40*	35	0.08	12
Egli et al 2009	Methadone	OR=1.40	10	0.08	12
Holloway et al 2008	Overall	OR=1.35*	37	0.07	13
Mitchell et al 2012	Overall (psychological)	OR=1.34*	73	0.07	14
Drake 2012	Drug treatment in prison	d=0.142*	32	0.06	17
Drake 2012	Therapeutic communities in the community	d=0.147*	8	0.06	17
Prendergast et al 2002	Psychological	d=0.130 <sup>2</sup>	25	0.05	19
Pearson & Lipton 1999	Boot camps	r=0.05	6	0.04	24
Drake 2012	Drug treatment in the community (overall)	d=0.085	17	0.04	29
Mitchell et al 2012	Narcotic maintenance within prison	OR=1.15	6	0.03	29
Pearson & Lipton 1999	Group counselling	r=0.04	7	0.03	30
Holloway et al 2008	Methadone	OR=1.14	9	0.03	31
Drake 2012	Treatment for juveniles	d=0.07	10	0.03	35
Holloway et al 2008	Heroin maintenance	OR=1.12	2	0.03	35
Mitchell et al 2012	Boot camps	OR=1.06	2	0.01	69
Holloway et al 2008	Other treatment	OR=0.84	3	(0.04)	NA

\* Statistically significant at a 95% threshold

OR=Odds ratio

d=Cohen's d or variant (standardised mean difference)

Φ=phi coefficient (variant of correlation coefficient)

NA=Not applicable (no positive impact from treatment)

NS: Not significant

NR: Significance not reported

RRR: Relative risk

<sup>2</sup> Statistically significant with a fixed effects model, not with a random effects model.