

Economic Impact of Residential Treatment for Alcohol and Other Drug Addiction in a Therapeutic Community (TC)

Jeffrey Rae

Summary

A Therapeutic Community (TC) is a form of Residential Rehabilitation that is used to treat alcohol and other drug problems. Such Communities are common across Australia and throughout the world. Odyssey House Victoria (OHV) operates such a program at its premises in Melbourne, Australia.

Although research has been conducted in Australia and elsewhere into the economic costs of alcohol and other drug addictions, little work has been carried out on the economic impact of TC programs. This analysis seeks to fill that gap by quantifying the net present value (NPV) of the economic benefits that the OHV TC program generates over time for the community as a whole. These benefits were estimated in terms of the impacts of the program over a 30-year period on:

- *economic output;*
- *public spending on social security;*
- *property crime; and*
- *loss of life.*

Over the rest of their potential working life, each person who is treated by OHV generates an average economic benefit for the rest of the community that is equivalent to a lump sum of \$1.08 million.

This estimate does not include the cost of treatment. Overseas research on the TC treatment of addiction indicates that each TC client undergoes at least six separate treatment episodes over their addiction career. Based on the cost of treatment at OHV, the lifetime cost of treatment would be no more than \$80,000 per client.

On this basis, each person who enters the OHV TC program, on average, generates a net economic benefit for the community as a whole that is around \$1 million in present value terms (i.e. when expressed as a lump sum) .

About Jeffrey Rae

Jeffrey Rae is a qualified economist with more than three decades of experience in policy analysis and advice involving a wide range of domestic and international issues. Jeff is currently the Chief Economist with ITS Global, an international trade and economic development consultancy based in Melbourne, and has gained his experience from working in the public and the private sectors, both in Australia and overseas.

Jeff's experience has encompassed numerous cost-benefit and economic impact assessments of public infrastructure and private investment proposals, the taxation and regulation of a wide variety of economic activities, as well as the provision of border protection and budgetary assistance to domestic industry. Jeff has been used on a number of occasions as an expert witness in litigation before the Australian Competition Tribunal, the Australian Federal Court, and State tribunals in Australia. Prior to moving into private consultancy in 1998, Jeff was a senior executive with the Australian Government. As such he worked in the Department of Finance, the Bureau of Agricultural Economics, the Department of Primary Industries and Energy and the Industry Commission.

Jeff completed this economic analysis for Odyssey House Victoria without any payments.

Economic Impact of Residential Treatment for Alcohol and Other Drug Addiction in a Therapeutic Community (TC)

Background

While there is some published research on the economic impacts of drug use, there is very little on the cost-effectiveness of rehabilitation programs, especially of Therapeutic Communities (TC), either in Australia or overseas.

In the case of Australia, the most notable research has been published by Collins & Lapsley (2008) for the Commonwealth Government. They have estimated that the economic burden of alcohol abuse and illicit drug use in Australia in 2004-05 was about \$24.6 billion a year, which included the following costs:

- crime (\$6.1 billion a year)
- loss of life (\$5.3 billion a year)
- loss of production in the workplace (\$5.2 billion a year)
- road accidents (\$2.7 billion a year)
- healthcare (\$2.2 billion a year)
- loss of production in the home (\$2.1 billion a year).

Collins & Lapsley provide a snapshot of the economic impacts of drug use on all Australians at a particular point in time but they do not, however, address those associated with particular groups of people over their lifetimes (such as people treated for their addiction or those who are untreated). A life-cycle perspective on such impacts is essential for evaluating the cost-effectiveness of treatment for drug use.

Estimation Approach

This analysis addressed the long-term economic impacts of the Therapeutic Community (TC) treatment program operated by Odyssey House Victoria (OHV). For this purpose, the long term was specified as the 30-year period following the treatment. This represents the potential time period that an OHV client could expect to spend in the workforce were their treatment to be a complete success.

The analysis involved estimating the annual stream of economic impacts associated with drug addiction over the long-term and on the changes to those impacts as a consequence of TC treatment. The focus was on the major economic impacts of drug or alcohol addiction, namely drug-related property crime, government spending on social security, premature loss of life, and losses of economic output.

Due to data limitations, the analysis ignored a number of the long-run impacts of addiction such as the economic costs of drug-related violence, as well as most of the short- to medium-run impacts such as the impacts on the health and wellbeing of TC clients, their families and the rest of the community. As the excluded benefits are likely to be significant, the estimation approach is considered to be conservative.

The analysis has differentiated between the economic impacts associated with addiction to illicit drugs and alcohol abuse, as they are qualitatively different. For example, illicit drug addiction is strongly associated with property crime and crimes of violence, whereas alcohol abuse is much less so. Both types of addiction are treated in the OHV program and many clients present with both conditions.

The analysis estimated the Net Present Value (NPV) of the stream of annual impacts over the evaluation period at a discount rate of 7 per cent per annum. The discount rate is a measure of the opportunity cost to the community as a whole of the resources that are invested in drug rehabilitation. The resulting NPV is the lump sum value of the stream of impacts, expressed in the first year of the evaluation period (i.e. the present time).

To identify the behavioral changes that are associated with drug addiction and TC treatment of it, the analysis drew on the results of a 12-year Follow-up Study of the Drug Use Reporting Program (DARP) in the USA (Simpson & Sells, 1990). This is the longest and largest longitudinal study of the addiction careers of opiate users. It found that, 12 years after TC treatment for addiction, 40 per cent of those who had been treated reported no problematic drug use, 11 per cent were in full-time (FT) employment, and 39 per cent in half-time (HT) employment. These outcomes are believed to be robust over the longer term and to be broadly comparable to the outcomes achieved by OHV — which are soon to be published.

Retention rates (days in treatment) for TC treatment cohorts were based on the results of a survey of TC clients in Australia conducted by Ernst & Young (1996) for the Commonwealth Government. The Ernst & Young survey revealed that 56 per cent of TC clients are treated for less than 3 months, 31 per cent for 3-6 months, 9 per cent for 6-12 months, and 4 per cent for more than 12 months.

Results

People with alcohol and illicit drug addiction who are treated by OHV generate a range of economic benefits for the community as a whole. These benefits include:

- greater economic output;
- less public spending on social security;
- less property crime; and
- less premature loss of life.

This analysis has estimated that these benefits are, on average, the equivalent of a lump sum of \$1.08 million for each TC client (see Table 1). The benefits from treatment of primary illicit drug addiction were equivalent to a lump sum of \$1.26 million per TC client, while those from treatment of primary alcohol addiction were \$0.83 million per TC client. The difference between the two estimates reflects the greater premature loss of life and higher incidence of property crime associated with illicit drug use.

Table 1: Economic benefits from OHV Therapeutic Community (TC) treatment (\$'000 per TC client)

Economic Benefit	Type of Addiction		
	<i>Illicit Drugs Only</i>	<i>Alcohol Only</i>	<i>Alcohol & Illicit Drugs</i>
<i>Productivity gains</i>	495	495	495
<i>Social security savings</i>	18	18	18
<i>Reduced property crime</i>	361	0	217
<i>Value of lives saved</i>	385	316	351
<i>Total Benefit per client</i>	\$1,260	\$829	\$1,081

The estimates do not include any allowance for the cost of treatment. Treatment at the OHV TC facility in Melbourne, Australia, typically costs around \$12,000 per episode of treatment per person. This is based on a current unit cost of \$100 per person per day and an average stay of 120 days.

However, treatment histories for people with illicit drug addiction are generally complex, both in terms of the type and the number of separate treatment episodes that they have received. The DARP Follow-up Study indicated that each US client reported undergoing an average of more than six program admissions over their addiction careers (Simpson & Sells, 1990). This implies a lifetime treatment cost of \$72,000 per TC client were they to be treated at OHV each time.

On this basis, each person entering the OHV TC generates, on average, a Net Economic Benefit for the community as a whole of approximately \$1 million in present value terms.

Assumptions

- All prices are expressed in 2012 terms.
- The average age of an OHV client is 35 years. This implies that they have up to 30 years of productive employment ahead of them.
- The analysis was based on four treatment scenarios:
 1. 56 per cent of clients stay in the TC for less than 3 months, with 6.2 per cent achieving full-time employment post treatment and 10.9 per cent achieving part-time employment post treatment;
 2. 31 per cent of clients stay in the TC for 3 to 6 months, with 3.4 per cent achieving full-time employment post treatment and 6.0 per cent achieving part-time employment post treatment;
 3. 9 per cent of clients stay in the TC for 6 to 12 months, with 1.0 per cent achieving full-time employment post treatment and 1.8 per cent achieving part-time employment post treatment; and
 4. 4 per cent of clients stay in the TC for more than 12 months, with 0.4 per cent achieving full-time employment post treatment and 0.8 per cent achieving part-time employment post treatment.

- The economic value of each year-of-life lost is \$172,447 per year of life lost. This was based on an estimate by the Office of Best Practice Regulation (Australian Government, 2007), which the analysis has updated to 2012 prices. The Department of Finance and Deregulation has recommended its use in cost-benefit analyses.
- Real wages increase by an average of 1.5 per cent per year. Such an assumption is in line with recent experience. It directly affects the annual size of the productivity benefit and the value of life saved over the evaluation period.
- The population of drug users seeking TC treatment was assumed to consist of three distinct but stylized drug types:
 1. the treatment of people with a primary illicit drug addiction;
 2. the treatment of people with a primary alcohol addiction; and
 3. the treatment of those who are equally dependent on both substances.

Currently around 40 per cent of OHV TC clients have a primary alcohol addiction, with the remainder being dependent on illicit substances or multiple substances including alcohol. The alcohol addiction scenario assumes that the people do not have to revert to property crime to fund their alcohol consumption if they relapse.

- Potential productivity of TC clients is \$111,578 per annum. This was based on the total cash earnings of miscellaneous male labourers in Victoria. To this is added a 34 per cent mark-up to cover labour on-costs — employer superannuation guarantee levy, annual leave, sick leave, long service leave, public holidays, payroll tax, etc — plus a further 78 per cent mark-up to cover the capital cost per worker — which was assumed to be equal to the average gross operating surplus (GOS) for businesses in Australia.
- Expenditure on illicit drugs was assumed to be \$147,293 per daily user per year. This was based on the results of a survey of the experience of TC clients in Australia (ACTA 2001), which the analysis has updated to 2012 prices.
- Illicit drug use is completely financed by property crime and the financial gain to the illicit drug user from stolen property is 75 per cent of the value of the property to its owner. The latter discount reflects the transaction costs that the illicit drug user incurs in handling and trading in stolen property and is thought to be an underestimate.
- Abstinence from the use of illicit drugs doubles life expectancy. This was based on an estimate of 41 years for the average potential years of life lost (PYLL) in Australia from illicit drug use (Collins & Lapsley 2008) and a life expectancy of 80.3 years for the average Australian male at 24 years of age (ABS 2011).
- Abstinence from alcohol abuse increases life expectancy by 82 per cent. This was based on an estimate of 32 years for the average potential years of life lost (PYLL) in Australia from alcohol abuse (Collins & Lapsley 2008).

References

ABS [Australian Bureau of Statistics], 2011, *Life Tables, Australian 2008-2010*, Catalogue 3302055001DO001_20082010, Canberra [accessed at www.abs.gov]

ACTA [Australian Therapeutic Communities Association], 2001 as reported in Pitts J., 2009. *Cost-Benefits of Therapeutic Community Programming: Results of an Updated Survey*, The European Federation of Therapeutic Communities, Den Haag.

Australian Government, 2007. *Best Practice Regulation Handbook*, Canberra.

Collins D. & Lapsley H., 2008. *The Costs of Tobacco, Alcohol and Illicit Drug Abuse to Australian Society in 2004/05*, Commonwealth of Australia.

Ernst & Young, 1996. *Review of Long Term Residential Treatment for People with Alcohol and Other Drug Use Problems: National Drug Strategy*, Commonwealth Department of Human Services & Health, Canberra.

Simpson D.D. & Sells S.B., 1990. *Opioid Addiction and Treatment: A 12 Year Follow-up*, Robert E Krieger Publishing Company, Malabar, FL.