Drug Sub 59

Submission to the

Education and Health Standing Committee

Inquiry into the Adequacy and Appropriateness of Prevention and Treatment Services for Alcohol and Illicit Drug Problems in WA

from

Fresh Start Recovery Programme
65 Townshend Road, Subiaco, WA

8 July 2010

Introduction

This submission to the Inquiry aims to clarify and give background detail on some questions that came up during Fresh Start's evidence to the Inquiry on Wednesday 16 June 2010. I have included statistics on treatment outcomes, cost comparisons and a document prepared by a former patient. The SHRAC report requested by the chair of the Committee is also included as an appendix. The financial audit which you requested is not yet available to us. The auditors have confirmed that they are still on track to have it completed on schedule so I will ensure it is sent to you promptly once I have it.

Patient drug use

The graph in Figure 1 shows patient self-reported heroin use for Fresh Start patients before and after their first naltrexone implant treatment. The data is based on a survey done of patients who could be contacted who had had at least one implant treatment. Patients were asked to recall when they used heroin over the 5 years before and after treatment. Since not all patients being surveyed were treated over 5 years after treatment, percentages for each quarter were based on those who were able to answer for that quarter. In Figure 1 all 288 patients who reported using heroin any time during the 10-year period were included in the percentages.

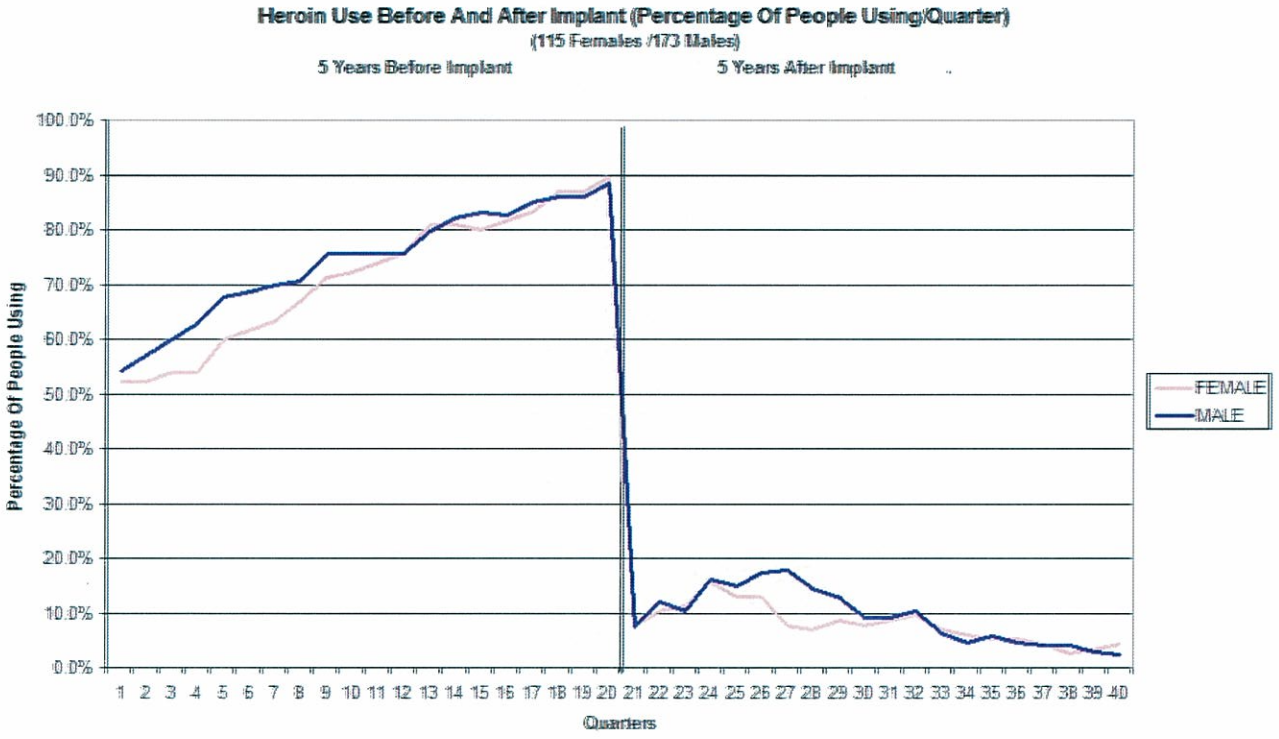

Figure 1 Percentage of Fresh Start patients using heroin by quarter before and after treatment

Figure 2 and Figure 3 are also included to provide a comparison with Fresh Start patients' use of methadone and amphetamines. Figure 2 percentages are for all patients who reported using methadone any time within the 10-year period of the survey and Figure 3 percentages are for all patients who reported using amphetamines any time within the 10-year period of the survey.

In Figure 3 the data includes a number of patients who started using amphetamines for the first time after receiving their first implant. Naltrexone blocks opioids, but is not recognised for amphetamines. The drop in amphetamine use after implant treatment, however, has been noted to be very appreciable. This is thought to be because one of the body's natural chemicals, dopamine, is involved in cravings, and dopamine is an opioid which is partially blocked by naltrexone. Patients who come to be treated for amphetamine dependence find that they do not crave it very much after treatment. A significant percentage is successful in stopping use.

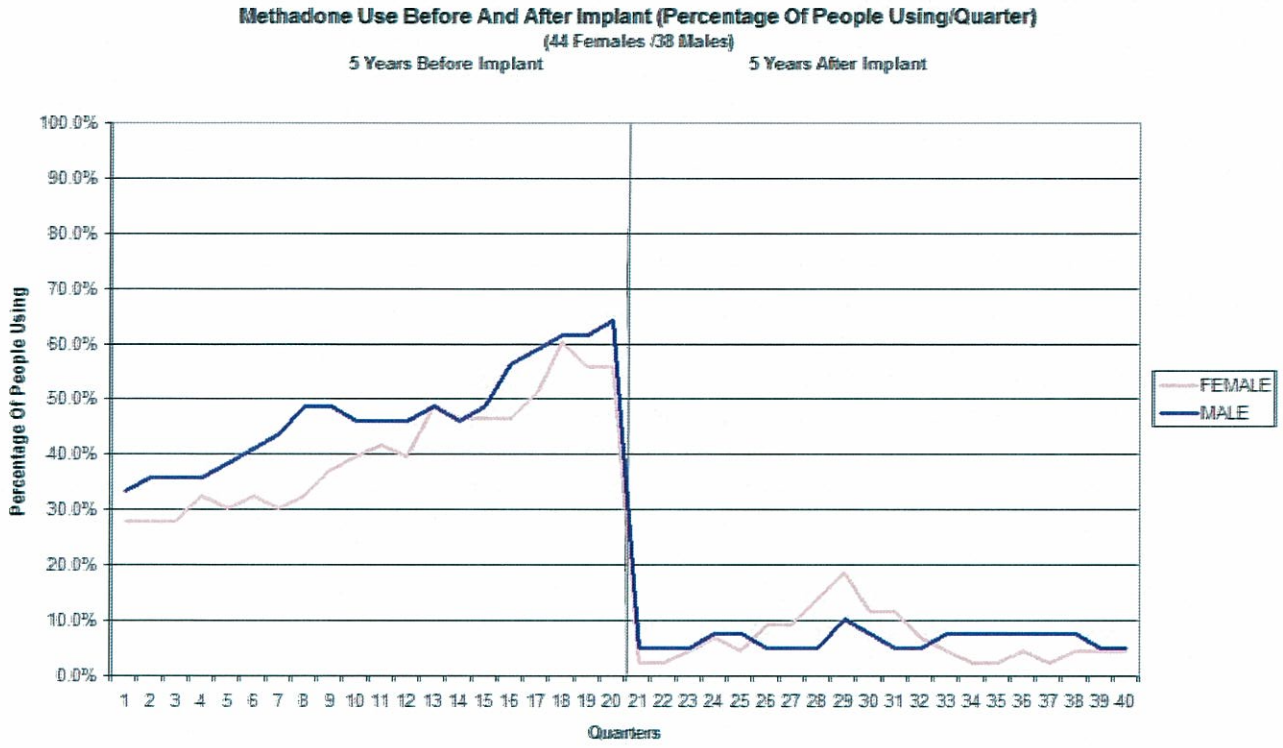

Figure 2 Percentage of Fresh Start patients using methadone by quarter before and after treatment

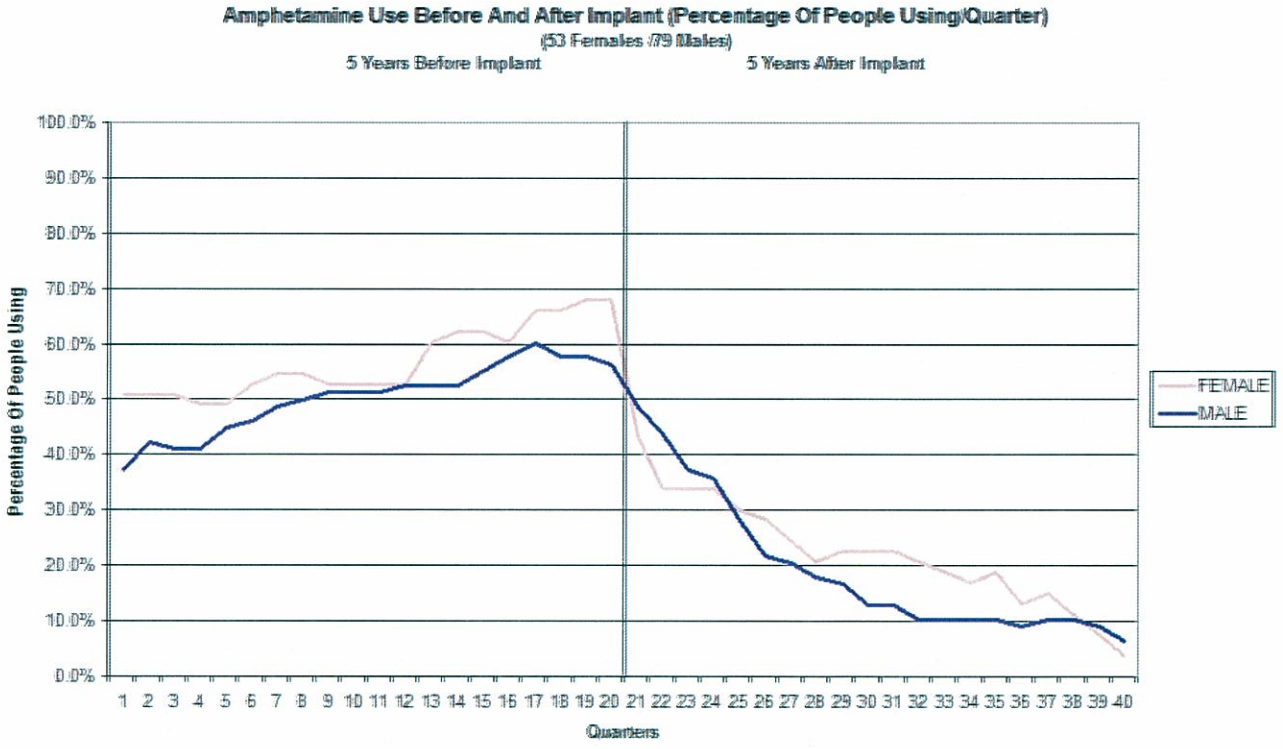

Figure 3 Percentage of Fresh Start patients using amphetamine-type substances by quarter before and after treatment

Patient satisfaction surveys

A survey was done between October 2008 and January 2010, asking 329 patients attending for treatment about their satisfaction with previous implant treatments. The responses were in relation to the question 'How would you rate the implant as treatment for opiate dependence?' where the patient had had an implant in the past. This information was collected at baseline interview on the day of implant. The survey found that 51% rated the implant as 10 out of 10 and 84% rated the implant 7 or higher out of 10.

Here are some quotes from the patients surveyed about the positives of the implant treatment:

- Never been clean for that long. Removed that factor from my life.
- Emotionally for self and children. Norm of living - financially. Having identity.
- Everything went back to normal. Whole lifestyle changed.
- Allows you to concentrate on the important things in life.
- Can't use opiates. Don't even think about using as it is no longer an option.
- Lifestyle improved, got on better in relationships, stayed out of gaol, life in general improved.
- Changes your attitude a little bit. Doesn't just fend off the heroin. Doesn't just keep the monkey off your back, it keeps the whole zoo off!
- Managed finances, mental state improved, stopped me thinking about it, had control.
- Changed my life - way my brain works, ability to function, relationship with wife and daughter. Gift from heaven.

Reasons people gave for the ways in which the implant was a positive experience for them:

- cravings were reduced and/or stopped
- they stopped using and/or couldn't use after the implant
- they weren't sick anymore
- they got their life back
- they saved money
- their employment situations were improved
- didn't worry about 'hanging out' (waiting for next shot due to withdrawal symptoms)
- relationships improved - e.g. family and friends

During a structured follow up program for 546 implant patients treated between October 2008 and January 2010, patients were asked to score their implant treatment. It was not possible to contact all of the 546 patients. This finding is not unusual for patients with alcohol or other drug issues.

The findings were:

87% of 340 patients contacted after 1 week rated the implant as 7 /10 or better, 45% gave it 10/10.

87% of 295 patients contacted after 4 weeks rated the implant as 7/10 or better, 48% gave it 10/10

86% of 222 patients contacted after 12 weeks rated the implant as 7/10 or better, 47% gave it 10/10

82% of 143 patients contacted after 24 weeks rated the implant as 7/10 or better, 41% gave it 10/10

Next Step detoxification costs

Dr O'Neil has stated at the Inquiry hearing held on 16 June 1020, that Next Step residential detoxification costs $12,000 per opiate patient. This figure is based on the following calculations:

Next Step provides a medical inpatient alcohol and drug withdrawal service. The service, which is located at Moore Street in East Perth, has 13 standard beds. In addition the Aboriginal Withdrawal Unit has 4 beds. Generally, withdrawal will involve a 7 day admission. Individual counselling, group work and activities programs are offered to clients while admitted; and referral to appropriate follow-up treatment services is encouraged to provide support for clients post-withdrawal.

The number of patients starting the Next Step 7-day residential detox program was reported in the 2007[1] and 2008[2] DAO Annual reports but not the 2009[3] annual report. The number of patients was reported as 502 in the 2006-07 financial year and in 2007-08 as 542. However, these figures

include all patients, not just opiate patients. A letter from the CEO of Next Step to Dr O'Neil[4] confirmed that the number of opiate patients starting Next Step 7-day residential detox between February 2008 and February 2009 was 83. The cost to the state per patient completing the program is reported in the DAO Annual Reports[2] is $7,731 (an average of the 3 years from 2005-06 to 2007-08, ignoring inflation).

Of the 83 opiate patients starting the program between February 2008 and February 2009, 47 patients finished the 7-day program[4]. This is because many patients absconded before finishing. If a staffing cost of $6,000 per abscondee is assumed, and these costs are added to costs of patients completing the program, the cost per successful patient is over $12,000 (that is, 47 x $7,731 + 36 x $6,000 all divided by 83).

The cost of rehab follow-up for each successfully detoxified patient is estimated at $20,000 per patient. The total per person is therefore $32,000.

Cost estimates for opioid pharmacotherapy

Appendix 1 contains a Fresh Start internal report, estimating the cost of methadone and buprenorphine (opioid pharmacotherapy) programs in WA, both to the State government and the PBS.

These estimates used a report[5] evaluating methadone program costs state-by-state for the 1993-94 financial year. Costs did not include the cost of methadone syrup, the costs of any urinalysis tests billed through Medicare, nor any costs to clients for the dispensing of methadone which may vary between States. The cost to the PBS of the actual methadone and buprenorphine were published for the financial years 2001-02 to 2005-06[6]. The program costs and medication costs have been corrected to current values using health inflation figures, updated numbers of opioid pharmacotherapy patients in WA, and trend-based estimation. Estimates of costs to patients of dispensing per year, variations in costs due to different types of provider (public, private or prison) or any other costs (for example, urinalysis) have not been attempted.

We estimate that running the methadone, buprenorphine and buprenorphine/naloxone programs in WA cost the State government $10.6 million in 2008-09 and $11.7 million in 2009-10.

We estimate that, in addition, the PBS costs of the medications for all patients in WA methadone, buprenorphine and buprenorphine/naloxone programs were $2.2 million in 2008-09 and $2.5 million in 2009-10.

Adding together these two costs, the totals are $12.9 million in 2008-09 and $14.2 million in 2009-10.

The purpose of estimating the costs of the opioid pharmacotherapy programs and medications is to demonstrate that Fresh Start Recovery Programme saves the State and Federal governments money every year, far in excess of funding received.

Fresh Start Recovery Programme treats about 700 patients per year, 90% of whom receive treatment for opiate addiction. A conservative estimate is that at least 70% of our patients remain clean from opiates. Our records indicate that above 90% of our patients are resident in WA. It could be assumed at least 400 patients have been removed from potential use of the WA opioid pharmacotherapy programs permanently per year. This assumes that if Fresh Start Recovery Programme was not available, the patients would seek opioid pharmacotherapy treatment. In fact many of our opiate patients have chosen in the past not to seek treatment with methadone or buprenorphine. However, we believe that heroin addiction costs the government more per person than opioid pharmacotherapy treatment due to the crime and health consequences of heroin use so the assumption would still give rise to a very conservative figure for cost savings.

At 2010 prices, the cost saving for 400 patients for a year is $1.4 million. However, Fresh Start has been treating patients since 1999, and about 7000 patients have been through our doors. If 4,000 patients have been removed from potential use of the WA opioid pharmacotherapy programs, the WA government saved an estimated $14 million in 2009-10.

If even a proportion of these savings could be allocated to the Fresh Start Recovery Programme, the potential would be to enable enormous improvements in the quality of care, accelerate the naltrexone implant TGA registration program, make treatment available to larger numbers of patients and create further real cost savings to the WA methadone program by actually reducing the number of methadone patients year by year.

In addition, Fresh Start Recovery Programme would like to receive funding from the PBS for the cost of naltrexone implants. If 4,400 patients nationally have been removed from opioid pharmacotherapy programs across Australia, the saving to the PBS is $3.1 million per year using 2009-10 prices. It is recognised that PBS funding for naltrexone implants is unlikely before TGA registration has been completed.

While these cost estimates have been made to the best of our ability, I am asking the Committee to make their own estimates of the total costs of opioid pharmacotherapy programs in WA.

Drug facts and figures

A recovering patient who has previous experience in journalism volunteered her time to help Fresh Start prepare material for communications. As part of her volunteer work, she was asked to provide a summary of drug facts that may help the Inquiry. The resulting 'Drug Stats & Facts' report is contained in Appendix 2. I commend this former patient for her hard work and extensive research on this project and I want to highlight a few of the facts she has chosen to include.

- According to the *2007 National Drug Strategy Household Survey,* 16.2 per cent of Western Australians aged 14 years or older used an illicit drug in the past 12 months, second only to the Northern Territory and well above the national average.
- A recent trend has been an increase in the misuse of prescription of opioids such as MS Contin and Oxycontin. Drug treatment agencies across Australia are also seeing an increase in the number of people seeking treatment with problems from prescription opioid dependence. (N. Lintzeris, "The new wave of opioid dependence". In *Of Substance*, (7) 3: 10-11, 2009.)
- The WA Drug and Alcohol Office found a consistent trend that has been observed in recent years, the increasing tendency towards polydrug use - using two or more drugs. (Hando et al. (1997) cited in Dietze et al (2004), *The Epidemiology of Australian Drug Use, in Drug Use in Australia: Preventing Harm*, p. 43)
- The most significant costs to society from drug and alcohol abuse have been identified in the following areas:

  Crime:

  - Alcohol attributable - $1.7 billion
  - Illicit drugs - $4.0 billion
  - Both - $1.4 billion

  Health:

  - Illicit drugs – $202 million

  Productivity:

  - Illicit drugs $1.6 billion

  Road accidents:

  - Illicit drugs - $702 million

  (WA Drug and Alcohol office, citing D. J. Collins & H. M. Lapsley, *The Costs of Tobacco, Alcohol and Illicit Drug Abuse to Australian Society in 2004/05*, National Drug Strategy Monograph Series No. 30, 2008.)
- In 2001 there was a total of 4,605 'other drug' (other than tobacco and alcohol) related hospital admissions in Western Australia, which resulted in a total of 20,394 bed days of

inpatient treatment, at a total cost of $10,156,656. The mean cost of this hospitalisation was $2,206 per admission, and $498 per bed day spent in hospital. (Drug and Alcohol Office, *Indicators of Drug Use: Western Australia.* Perth, 2003)

- Sixty per cent of females and 50 per cent of males in custody with and alcohol and other drug problems also have a mental health problem (Australian Government National Drug Strategy, 2008)
- As of August 2009, there were 240 current opiate pharmacotherapy clients in Western Australian prisons; 225 of these were on methadone and 15 on buprenorphine. (N. Guard, Executive Director, WA Drug and Alcohol Office, *Submission to the Adequacy and Appropriateness of Prevention and Treatment Services for Alcohol and Illicit Substances in Western Australia,* 2009)
- The total cost per prisoner per day in 2007 was $269 or $98,000 per year per prisoner (Productivity Commission, 2009) as opposed to $98 per day from residential rehabilitation (Moore et al. 2007)

In preparing the report included as Appendix 2 and other communications work for Fresh Start, this patient said that being given work to do that felt helpful to others was very helpful to her own recovery. The patient's counsellor was quoted as saying, "I don't know what you have done to [the patient], but she's a different person."

Cost savings through treatment

Appendix 3 is a facsimile of the SHRAC report which George O'Neil referred to during the Inquiry hearing held on 16 June 1020. It is a study of the cost savings in hospital admissions that were achieved by treating patients with naltrexone implants for alcohol dependency. Patients' hospital admissions records before and after treatment were compared. Quoting from the executive summary of the report,

> "The study demonstrated that treatment for problematic alcohol consumption with NIT was associated with a reduction in health services utilisation and annual cost savings to WA Department of Health of over $1,000 per patient treated. The cost savings were achieved through a decrease in hospital admissions, emergency department presentations and the use of mental health services. Improved health outcomes were recorded across various measures in both cohorts, including levels of alcohol misuse, alcohol dependence, health and well-being and health-related quality of life."

It is hoped that Fresh Start's research team will be able to obtain grant funding to carry out an equivalent study on cost savings in hospital admissions that were achieved by treating patients with naltrexone implants for opiate dependency. I anticipate that the savings would be even greater per patient than for alcohol patients.

Infection rates

As part of a submission to the Inquiry, Dr Alex Wodak asserted that Go Medical implant treatments have a high infection rate. This is inaccurate. In an Adverse Events Summary prepared for the Investigator Brochure of a clinical trial, Fresh Start patient records for all implants given between January 2009 and June 2010 were analysed for 'adverse events' (negative health outcomes after receiving an implant). All Fresh Start's implant treatments used Go Medical implants. In compiling the report, Fresh Start research staff made every attempt to contact patients and included any reports reaching Fresh Start second hand.

The rate of reported infections was 4 patients out of 656 or 0.6% of implant treatments. Two of these were self reported and two diagnosed by a Medical Officer. None of the reported infections were confirmed by taking a wound swab. All 4 resolved themselves without removal of the implant.

In addition to these four infections, during the same period, eight patients' implants were removed (1.2% of implant treatments). The reasons for these varied:

- 1 patient requested the implant to be removed 10 days after implantation because the patient was not coping with opiate withdrawal symptoms.
- 1 patient carried out self removal - the patient gave reasons for this as feeling 'uncomfortable'. Multiple attempts were made to contact the patient after initial report with no response.
- 4 patients experienced implant complications: site swollen, painful and red. In two of these four cases a wound swab was taken, confirming that there was no infection.
- 1 patient had a suspected infection but no wound swab was taken.
- 1 patient had confirmed infection.

Adding together cases of suspected infection which resolved without removal and cases of suspected or confirmed infection leading to removal, a total of 8 (one confirmed, 7 suspected) infections or 1.2% of implant treatments between January 2009 and June 2010 were reported.

References

[1] Drug and Alcohol Office annual report 2007. Available from http://www.dao.health.wa.gov.au/Publications/tabid/99/EntryId/1/DMXModule/427/Default.aspx accessed 2 July 2009

[2] Drug and Alcohol Office annual report 2008. Available from http://www.dao.health.wa.gov.au/Publications/tabid/99/EntryId/1/DMXModule/427/Default.aspx accessed 2 July 2010.

[3] Drug and Alcohol Office annual report 2009. Available from http://www.dao.health.wa.gov.au/Publications/tabid/99/EntryId/1/DMXModule/427/Default.aspx accessed 2 July 2010.

[4] Personal Communication. Letter from the CEO of Next Step to Dr George O'Neil 2009

[5] Review of methadone treatment in Australia. Final Report October 1995. Commonwealth Department of Human Services and Health. Data from page 69. Available at http://www.health.gov.au/internet/main/publishing.nsf/Content/D051EA0FCC004232CA257554007DCE2B/$File/ndsp7.11.pdf accessed 28 June 2010

[6] Matthew Thomas and Luke Buckmaster. *'Naltrexone or methadone'? Debates about drug treatments for heroin dependence in the context of drugs policy.* Parliament of Australia Department of Parliamentary Services www.aph.gov.au/library 6 September 2007, no. 7, 2007–08, ISSN 1834-9854. Available at http://www.aph.gov.au/library/pubs/RP/2007-08/08RP07.pdf accessed 1 July 2010

Appendix 1

Opioid pharmacotherapy program cost estimates

Background information

A report[i] published on methadone containing figures for the 1993-94 financial year, estimated methadone program costs state-by-state. Costs did not include the cost of methadone syrup, the costs of any urinalysis tests billed through Medicare, nor any costs to clients for the dispensing of methadone which may vary between States. The cost to the PBS of the actual methadone and buprenorphine have been published for the financial years 2001-02 to 2005-06[ii]. The two types of estimate should be corrected to current values.

It is not known whether the reported figures include the cost of providing methadone to prisons. In the 1990s methadone was not available to WA prisoners except those who were pregnant[iii]. The number of female prisoners at 30 June 1999 was reported[iv] as 227 and had increased from 108 in 1988. The number of these who were pregnant and on methadone is likely to be a very small figure.

In June 2009 the number of prisoners in WA receiving opioid pharmacotherapy was 305[v] - around 10% of all opioid pharmacotherapy recipients.

Estimates of costs to patients of dispensing per year, variations in costs due to different types of provider (public, private or prison) or any other costs (for example, urinalysis) have not been attempted.

To provide a current estimate of methadone and buprenorphine program costs, it is necessary to correct for inflation and for the rise in the numbers of opiate pharmacotherapy patients.

The Western Australian costs of methadone program excluding the cost of the methadone syrup were estimated[i] at $1,220,672 total or $2,043 per patient (based on 598 patients). The assumption is that although many more clients would have participated in these programs at some stage and for different durations during the course of the year, the average annual cost per client derived represents an estimate of the costs for a full year's placement in a public program. The same assumption is extended to the estimated current costs.

Various sources were used for the health inflation figures, as detailed in Table 1.

Table 1: health inflation figures used in the estimation of methadone cost increases

year	health inflation	source of figures
1994-95	2.6%	Ref. vi
1995-96	2.6%	Ref. vi
1996-97	2.6%	Ref. vi
1997-98	2.6%	Ref. vi
1998-99	2.5%	Ref. vii
1999-00	2.4%	Ref. vii
2000-01	3.9%	Ref. vii
2001-02	3.3%	Ref. vii
2002-03	3.5%	Ref. vii
2003-04	3.5%	Ref. vii
2004-05	4.2%	Ref. vii
2005-06	4.0%	Ref. vii
2006-07	4.3%	Ref. vii
2007-08	2.9%	Ref. vii
2008-09	5.9%	Ref. viii
2009-10	5.1%	Ref. ix

Based on the health inflation figures in Table 1, and assuming that the cost of opiate pharmacotherapy programs per patient has risen in line with health inflation (and that buprenorphine and buprenorphine/naloxone programs cost the same per patient as the methadone program to run), the cost per WA opiate pharmacotherapy patient is corrected to $3,333 for 2008-09 or $3,503 for 2009-10.

Ignoring the costs of the medication, and any urinalysis tests billed through Medicare, nor any costs to clients for the dispensing of methadone, our estimate of the 2008-09 costs of running the WA methadone, buprenorphine and buprenorphine/naloxone programs in WA is $10.6 million. Our estimate for 2009-10 is $11.7 million. These costs are borne by the WA government. In addition, PBS costs, although borne by the Federal government, should be considered.

The costs to the PBS of methadone, buprenorphine and buprenorphine/naloxone medications is reported in reference ii. The reported costs are summarised in Table 2. They are figures for Australia, not broken down by state.

Table 2 total costs to the PBS of methadone syrup and buprenorphine and buprenorphine/naloxone tablets

year	Cost of methadone	Cost of buprenorphine and buprenorphine/naloxone
2001-02	$ 4,354,000	$ 5,139,000
2002-03	$ 4,384,000	$ 11,352,000
2003-04	$ 4,336,000	$ 14,888,000
2004-05	$ 4,549,000	$ 16,659,000
2005-06	$ 4,780,000	$ 17,633,000

In order to estimate a cost per patient for methadone and an average for buprenorphine and buprenorphine/naloxone, figures for the numbers of methadone, buprenorphine and buprenorphine/naloxone have been taken from the AIHW national minimum data set[x] for 2005-06. The reported numbers of clients at June 2006 are

- 71% (or 27,588) of clients were receiving methadone
- 23% (or 8,950) of clients were receiving buprenorphine
- 6% (or 2,121) of clients were receiving buprenorphine/naloxone

The figures above include patients receiving pharmacotherapy from public and private pharmacies and prisons.

Using these figures, the average cost to the PBS in 2006 of methadone syrup per patient per year is $173.26 and an estimated average cost to the PBS of buprenorphine or buprenorphine/naloxone per patient per year is $1,592.72

Based on health inflation figures from Table 1, these costs can be corrected to current values giving $195.04 and $1,792.88 respectively for 2008-09 and $204.98 or $1,884.32 respectively for 2009-10. It is assumed for the purpose of estimation that these figures are valid across Australia and that there is no variation in the average doses given state by state.

The latest published figures for the number of opiate pharmacotherapy patients in Western Australia are for June 2009[v], at 3,187 (2,172 methadone, 147 buprenorphine and 868 buprenorphine/naloxone). Using a simple linear formula to obtain a trend of patient numbers in WA for the most recent three years[v,xi,xii], estimates for the number of opiate patients in WA in June 2010 is 3,337 (2256 methadone, 92 buprenorphine and 989 buprenorphine/naloxone). When considering the number of opioid pharmacotherapy patients in WA, it should be noted that there has been a change in the reporting method between 2003-04 and 2004-05. Client data in the NOPSAD reports are reported in Western Australia for the entire month of June. Prior to 2005, Western Australia reported clients over a year. Each individual patient may not have remained in the program consistently for a whole year, and this could influence the apparent trends.

The PBS costs of the medications for all patients in WA methadone, buprenorphine and buprenorphine/naloxone are estimated as $2.2 million in 2008-09 and $2.5 million in 2009-10. This assumes that buprenorphine and buprenorphine/naloxone cost the same.

Therefore, adding together the costs of running the program and the medications themselves, our estimate of the totals are $12.9 million in 2008-09 and $14.2 million in 2009-10.

Using WA opiate pharmacotherapy total cost estimates for the years 2006 to 2010 to calculate a simple linear trend, the costs of the programs and medications in WA could reach $23 million by the 2014-15 financial year.

Patients receiving treatment at Fresh Start Recovery Programme

Fresh Start Recovery Programme treats about 700 patients per year (although less in 2009 and 2010, partly due to a 15-week period when the number of treatment days per week was cut in half). About 90% of patients at Fresh Start receive treatment for opiate addiction. The treatment blocks the "high" and cravings associated with opiates for an average of 6 months. A conservative estimate of at least 70% of our patients remain clean from opiates either with or without returning for repeat treatment. Further, our records indicate that above 90% of our patients are resident in WA. It could be assumed at least 400 patients have been removed from potential use of the WA opioid pharmacotherapy programs permanently per year. This takes into account the assumption that if Fresh Start Recovery Programme was not available, the opiate patients would seek opioid pharmacotherapy treatment. In fact this assumption is not quite valid, because many of our opiate patients have chosen in the past not to seek treatment with methadone or buprenorphine even before becoming aware of Fresh Start, and instead stayed on heroin. However, we believe that heroin addiction costs the government more per person than opioid pharmacotherapy treatment, due to many factors including crime and health. So the assumption would still give rise to a very conservative figure for cost savings.

If the 2010 estimate of costs to the WA government of running the opioid pharmacotherapy programs above are used to calculate the cost saving for 400 patients for a single year, the resulting figure is $1.4 million. However, assuming that in the following year, the 400 patients permanently removed from the opioid pharmacotherapy programs are joined by a further 400, the savings quickly escalate. Fresh Start has been treating patients since 1999, and about 7000 patients have been through our doors. Using the same reduction in figures above, about 4,000 patients have probably been removed from potential use of the WA opioid pharmacotherapy programs, saving the WA government an estimated $14 million in 2009-10.

If 4,400 patients nationally can be assumed to have been removed from opioid pharmacotherapy programs across Australia (7,000 times 90% times 70%), the saving to the PBS is $3.1 million per year using 2009-10 prices (assuming 70% methadone, 30% buprenorphine and buprenorphine/naloxone). It is recognised that PBS funding for naltrexone implants is unlikely before TGA registration has been completed.

References for Appendix 1

[i] Review of methadone treatment in Australia. Final Report October 1995. Commonwealth Department of Human Services and Health. Data from page 69. Available at http://www.health.gov.au/internet/main/publishing.nsf/Content/D051EA0FCC004232CA257554007DCE2B/$File/ndsp7.11.pdf accessed 28 June 2010

[ii] Matthew Thomas and Luke Buckmaster. *'Naltrexone or methadone'? Debates about drug treatments for heroin dependence in the context of drugs policy.* Parliament of Australia Department of Parliamentary Services www.aph.gov.au/library 6 September 2007, no. 7, 2007–08, ISSN 1834-9854. Available at http://www.aph.gov.au/library/pubs/RP/2007-08/08RP07.pdf accessed 1 July 2010

[iii] for example, see the 2002 report *Drug Issues in Correctional Services* (chapter 20 of a larger publication) available at http://www.nceta.flinders.edu.au/pdf/GP-Project/Chap20.pdf accessed 2 July 2010

[iv] *Evaluation of the performance of prison health services* (chapter 6 of a larger publication). Available at http://www.ombudsman.wa.gov.au/Publications/Documents/reports/deathsinprisons/6-10.pdf accessed 8 July 2010.

[v] National Opioid Pharmacotherapy Statistics Annual Data collection: 2009 report – available at http://www.aihw.gov.au/publications/aus/125/11417.pdf accessed 1 July 2010

[vi] Health expenditure Australia 2001–02. September 2003. Australian Institute of Health and Welfare Canberra. AIHW cat. no. HWE 24. Available at http://www.aihw.gov.au/publications/hwe/hea01-02/hea01-02.pdf accessed 28 June 2010

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[viii] Christian Kerr. Private health insurance to rise at double the inflation rate. The Australian February 24, 2010. Available at http://www.theaustralian.com.au/news/health-science/private-health-insurance-to-rise-at-double-the-inflation-rate/story-e6frg8y6-1225833652373 accessed 28 June 2010

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[xi] National Opioid Pharmacotherapy Statistics Annual Data collection: 2008 report. Available from http://www.aihw.gov.au/publications/index.cfm/title/10698 accessed 1 July 2010

[xii] National Opioid Pharmacotherapy Statistics Annual Data collection: 2007 report. Available from http://www.aihw.gov.au/publications/index.cfm/title/10586 accessed 1 July 2010

Appendix 2

Drug Stats & Facts

A. Drug Stats

I. The cost of illicit drugs to Australian and WA society

1. The Heart Foundation states the total annual social cost of illicit drug abuse in Australia is $8 billion. (www.nationaldrugstrategy.gov.au/internet/drugstrategy/publishingnet/Content/mono64/SFile/mono64.pdf)
2. The most significant costs to society from drug and alcohol abuse have been identified in the following areas:

   Crime:

   - Alcohol attributable - $1.7 billion
   - Illicit drugs - $4.0 billion
   - Both - $1.4 billion

   Health:

   - Illicit drugs – $202 million

   Productivity:

   - Illicit drugs $1.6 billion

   Road accidents:

   - Illicit drugs - $702 million

   (WA Drug and Alcohol office, citing D. J. Collins & H. M. Lapsley, *The Costs of Tobacco, Alcohol and Illicit Drug Abuse to Australian Society in 2004/05*, National Drug Strategy Monograph Series No. 30, 2008.)
3. For the period 1995 – 2001, there was an annual average of 3,854 drug related admissions into WA hospitals, which resulted in an annual total of 16,682 bed days of inpatient treatment. The annual average cost to WA taxpayers for all drug related hospitalisations was $7,905,812 (Drug and Alcohol Office, *Indicators of Drug Use: Western Australia*, Perth, 2003).
4. In 2001 there was a total of 4,605 'other drug' (other than tobacco and alcohol) related hospital admissions in Western Australia, which resulted in a total of 20,394 bed days of inpatient treatment, at a total cost of $10,156,656. The mean cost of this hospitalisation was $2,206 per admission, and $498 per bed day spent in hospital. (Drug and Alcohol Office, *Indicators of Drug Use: Western Australia*. Perth, 2003)
5. As of August 2009, there were 240 current opiate pharmacotherapy clients in Western Australian prisons; 225 of these were on methadone and 15 on buprenorphine. (N. Guard, Executive Director, WA Drug and Alcohol Office, *Submission to the Adequacy and Appropriateness of Prevention and Treatment Services for Alcohol and Illicit Substances in Western Australia,* 2009)
6. The total cost per prisoner per day in 2007 was $269 or $98,000 per year per prisoner (Productivity Commission, 2009) as opposed to $98 per day from residential rehabilitation (Moore et al. 2007)

II. Drug trends in Australia and WA

1. A recent trend has been an increase in the misuse of prescription of opioids such as MS Contin and Oxycontin. Drug treatment agencies across Australia are also seeing an

increase in the number of people seeking treatment with problems from prescription opioid dependence. (N. Lintzeris, "The new wave of opioid dependence". In *Of Substance*, (7) 3: 10-11, 2009.)

2. The WA Office of Road Safety found that in 2006, 21.8 per cent of all fatalities tested positive for illicit drugs. (http://www.officeofroadsafety.wa.gov.au/documents/ReviewofWesternAustralianDrugDrivingLaws2009.pdf)
3. *According to the 2007 National Drug Strategy Household Survey,* 16.2 per cent of Western Australians aged 14 years or older used an illicit drug in the past 12 months, second only to the Northern Territory and well above the national average.
4. Beyond Blue noted there is extensive evidence indicating that co-occurring depression/anxiety and illicit drug use is highly prevalent. Findings from the Illicit Drug Reporting System (*Australian Drug Trends 2004: Findings from the Illicit Drug Reporting System (IDRS), J.Stafford et al.* 2005, Sydney: National Drug and Alcohol Research Centre, University of New South Wales) reveal that the main reasons for illicit drug users attending a health professional were for depression (69 per cent), anxiety (34 per cent), schizophrenia (12 per cent), panic (8 per cent), drug induced psychosis (6 per cent), manic depression (5 per cent) and paranoia (5 per cent).
5. In mid 2001 between 37 per cent and 52 per cent of offenders in Australia reported that their offending was attributable to their drug problem. (Makkai & Payne, 2003)
6. An estimate of 91 per cent of prisoners, in 2005, with alcohol and other drug problems do not have access to treatment and support in jail (WA Government budget submission presented by DCS and DAO in 2006)
7. In 2007, 15 per cent (the highest in the country) of East Perth detainees, who had illicitly used drugs in the past 12 months self-reported they had been turned away from treatment due to lack of places (Institute of Criminology, 2005)
8. Sixty per cent of females and 50 per cent of males in custody with and alcohol and other drug problems also have a mental health problem (Australian Government National Drug Strategy, 2008)
9. By the end of secondary school, most young people will have experimented with alcohol and/or other drugs (ADCA, 2003). In 2008 Mission Australia conducted a nation wide survey, with 3200 participants in WA, drugs were identified in the survey as one of the top three issues of concern, identified by one in four young people. This increased from one in five in 2007. In WA the proportion of young people who were concerned about drugs was slightly higher than the national figure. The proportion of 11 to 14 year olds identifying drugs as an important issue also rose considerably from 22.9 per cent in 2007 to 31.2 per cent in 2008.
10. The WA Drug and Alcohol Office found a consistent trend that has been observed in recent years, the increasing tendency towards polydrug use - using two or more drugs. (Hando et al. (1997) cited in Dietze et al (2004), *The Epidemiology of Australian Drug Use, in Drug Use in Australia: Preventing Harm*, p. 43)
11. The *2007 NDSHS Survey* showed that Aboriginal people were almost twice as likely to be have used illicit drugs in the past 12 months as other Australians (24.2 per cent compared with 13.0 per cent). Australian Institute of Health and Welfare, 2008 (*2007 National Drug Strategy Household Survey: detailed findings*. Drug statistics series no. 22. Cat.no. PHE 107, AIHW, Canberra).
12. Fifty-seven per cent of Department of Child Protection orders cite drug and alcohol issues as a contributing factor. (Leek et al, 2004).
13. From 2001 to 2005, the proportion of people in Western Australia who had a drug and/or alcohol use problem and committed suicide increased from 31.7 per cent to 36.1 per cent (WA Suicide Prevention Strategy 2008-2013)

14. A Sydney study has found that 41 per cent of homeless people experience an alcohol use disorder and 36 per cent a drug use disorder. (Australian National Council on Drugs, *Factsheet: Alcohol and Other Drug Use Among Those who are Homeless*)

III. The cost and effectiveness of the methadone program

1. In Scotland the methadone programme now has more methadone patients than heroin addicts with over 25 years of pro-methadone and anti-detoxification government policy. (Professor Neil McKeganey, University of Glasgow, Power Point Presentation – *The Global Impacts of Drugs and the Effects of Drug Policies in Australia*, UWA August Conference 2010)
2. Methadone maintenance treatment does not completely abolish heroin use among clients. (AIHW National Opioid Pharmacotherapy Statistics Annual Data Collection: Report, 2008). Approximately half of all methadone patients leave treatment within 12 months due to continued illicit heroin use. (W. Hall, J. Ward & RP. Mattick, *The effectiveness of methadone maintenance treatment 1: Heroin use and crime. In Methadone Maintenance Treatment and Other Opioid Replacement Therapies*, edited by J. Ward, RP. Mattick & W. Hall. Harwood Academic Publishers: Amsterdam, 1998, pp 17-57)
3. Studies have identified insomnia, sweating, painful joints and bones, constipation and craving as the most common complaints of methadone maintenance clients. These complaints are experienced by 40-50 per cent of clients and to a severe degree by approximately 20 per cent. (Dyer KR & White JM, *Patterns of symptom complaints in methadone maintenance patients*. Addiction, 92(11):1445-1455, 1997. Cited by Ali R and Gowing L (2009), pers. comm.)
4. The Australian Government fully funds the cost of methadone supplied under the Pharmaceutical Benefits Scheme (PBS) for treatment of opioid dependence through clinics and pharmacies approved by state and territory governments. In 2006 methadone and buprenorphine cost the Federal government's PBS over $21 million (Thomas M and Buckmaster L (2007) *Naltrexone or methadone? Debates about drug treatments for heroin dependence in the context of drugs policy*. Parliament of Australia, from http://www.aph.gov.au/library/pubs/RP/2007-08/08RP07.pdf),
5. Buprenorphine is described by drug users as facilitating 'more normal' levels of daily activity, compared to methadone, and leaving them more clear-headed and able to make decisions. (Holt M, Treloar C, McMillan K, Schultz M & Bath N. *Barriers and incentives to treatment for illicit drug users with mental health comorbidities and complex vulnerabilities*. National Drug Strategy Monograph Series No 61. Commonwealth of Australia: Canberra, 2007).

B. Drug Facts

1. Professor Neil McKeganey of the University of Glasgow has asked the following four questions about the current approach to harm minimisation:
    - What is the most cost effective? There is a 'blank cheque' element to providing addicts with limitless methadone "year after year after year". These costs escalate to the point where "serious questions have to be asked about value for money."
    - Do addicts get better on methadone? The results of his research is that "addicts on methadone don't actually get better but continue to use illegal drugs and to live a life that is in considerable disarray. Particularly important here has been to show the influence of parental drug addiction on children."
    - Does harm reduction work? "With twenty years of harm reduction and an escalating not reducing drug problem, it is necessary to try alternative (abstinence based) programmes. In the main, these have been vigorously rejected by the methadone lobby."
    - Why not make abstinence our aim? Services need to be provided that "do indeed get addicts off drugs rather than leave them in a continuing state of addiction." This has led

to a shift in drug policy in the UK, which now stresses "the importance of ensuring that drug treatment is leading to abstinence." The British Government has also recognised "the importance of having a variety of services available rather than a slavish reliance solely on methadone"

(Personal Communication: Email from Professor Neil McKeganey to Dr George O'Neil, 7 June 2010)

2. According to Professor Neil McKeganey of the University of Glasgow, recent "drug death figures" in the UK have further underlined the dangers of our methadone programme, with now around a third of addict deaths showing signs of methadone on autopsy." (Personal Communication: Email from Professor Neil McKeganey to Dr George O'Neil, 7 June 2010)
3. The UK National Institute of Clinical Excellence (NICE) has said it is not ethical to say "sorry we can only offer you a legal opiate substitute – you will have to stay addicted." (Personal Communication: Email from Dr G. O'Neil to Mark Butler MP, 6 June 2010)
4. "We have a national responsibility to correct the current indigenous alcohol and drug epidemic. The risk is WA's indigenous populations are 28 times more likely to be incarcerated for an addiction issue." (Personal Communication: Email from Dr G. O'Neil to Federal Senators Eric Abetz and Jo Behrens, 21 May 2010)
5. "About 80 per cent of our WA juvenile prisons are made up of Indigenous prisoners. Less than 4 per cent of WA's population is Indigenous. This is a disgraceful situation and even worse than the United States situation of young black men from the South occupying a large percentage of the prison population in the United States." (Personal Communication: Email from Dr George O'Neil to Mark Butler MP, 6 June 2010)
6. "The provision of naltrexone implant treatment has been made more difficult under Labor who interrupted supplies of implants to British patients after seven years of the TGA approving these exports. This was damaging to the British patients, to the credibility of Fresh Start's work and to the supply of implants to Australian patients. The policy variations between Liberal and Labor have caused severe upsets to doctors, families and even the Medicines and Healthcare Regulatory Agency in the United Kingdom." (Personal Communication: Email from Dr George O'Neil to Mark Butler MP, 6 June 2010)
7. Ninety per cent of naltrexone implanted patients carry on a non-opiate dependant lifestyle six months after treatment. (G. Hulse, UWA, Annals of General Psychiatry, October 2009)
8. "Dr O'Neil has joined the handful of clinicians who have proved that we can withdraw people from vast amounts of benzodiazepine tranquilisers in a few days with remarkably little distress. Fresh Start recognises that most patients need much more than a humane detox and medication to help them resist the temptations to relapse. Fresh Start provides impressive post-detox support and rehabilitation services." (Dr Colin Brewer, The Stapleford Centre London, foreword to *Fresh Start Recovery Programme Treatment Services Booklet,* revised edition May 2010, page 3)
9. In a randomised clinical trail of 12 weeks of double-blind naltrexone or placebo treatment, it was found the naltrexone group had a significantly higher number of amphetamine-negative urine samples compared with the placebo group. Survival analyses showed that the treatment groups differed in rate of continuous abstinence, in both the intention-to-treat and completer samples, in favour of naltrexone treatment. There was a significant reduction in craving levels and self-reported consumption of amphetamine in the naltrexone group compared with the placebo group. Treatment with naltrexone was well tolerated in this sample. This trial demonstrated the efficacy of naltrexone in reducing amphetamine use in amphetamine-dependent individuals. (N. Jayaram-Lindström, A. Hammarberg, O. Beck, and J. Franck. *Naltrexone for the Treatment of Amphetamine Dependence: A Randomized, Placebo-Controlled Trial*, *American Journal of Psychiatry*, published online September 2, 2008; doi: 10.1176/appi.ajp.2008.08020304)

Appendix 3

Government of **Western Australia**
Department of **Health**

State Health Research Advisory Council

SHRAC Research Translation Projects 2008/09

'Evidence for a Sustainable Health System'

FINAL REPORT

Section A. Principal Investigator details

Principal Investigator	Dr George O'Neil
Chief Investigator 1	Prof Gary Hulse
Chief Investigator 2	Delia Hendry
Project Title	Review of Patients Treated for Alcohol Abuse or Dependency within Fresh Start Recovery Programme
Administering Institution	Australian Medical Procedures Research Foundation Ltd T/A Fresh Start Recovery Programme
Date project commenced	November 2008
Date project completed	October 2009
Grant Amount	$193,350

Section B. OUTCOMES

1. Executive Summary

The aim of the study was to review patients treated for problematic alcohol consumption patterns within Fresh Start Recovery Programme, in particular focusing on

1. Cost savings associated with treatment using Naltrexone Implant Therapy (NIT) or more specifically the O'Neil Long Acting Naltrexone Implants,
2. Health outcomes for patients
3. Cost of the treatment program

The study was conducted using two cohorts of patients. The first group (patients treated before July 2008) was used to identify the impact of treatment on the use and costs of health services and the general health and wellbeing of patients. The second cohort (treated from October 2008 to June 2009) was used to calculated treatment costs and also the impact on the general health and wellbeing. The study demonstrated that treatment for problematic alcohol consumption with NIT was associated with a reduction in health services utilisation and annual cost savings to WA Department of Health of over $1,000 per patient treated. The cost savings were achieved through a decrease in hospital admissions, emergency department presentations and the use of mental health services. Improved health outcomes were recorded across various measures in both cohorts, including levels of alcohol misuse, alcohol dependence, health and well-being and health-related quality of life. The cost of treating patients with NIT was $4 612 per patient. The conclusion of the study was that treatment for alcohol abuse or dependency with NIT resulted in improved health outcomes for most patients and in cost savings for the Health Department through the decrease in health services utilisation.

2. Methods

- **Study design**

The study consisted of two components. The first was made up of 124 patients treated prior to July 2008. The second consisted of 33 patients treated from October 2008 to June 2009. Patients in both cohorts were treated at Fresh Start for problematic alcohol consumption. The first cohort was used to examine the impact of treatment on the use of health services and the general health and wellbeing of patients. The second cohort was used to calculate the cost of treatment with NIT and to identify the impact of treatment on the general health and wellbeing of patients.

Cohort One – Linked Data

Data collection

A file audit was conducted of all patients treated for problematic alcohol consumption at Fresh Start from 2002 to 2008. Contact with patients was attempted using the original phone numbers and addresses supplied, through the Electoral Roll and support number supplied by the patients. All patients who were successfully contacted were sent a letter informing them of the study and a questionnaire relating to changes in their drinking patterns (the Alcohol Use Disorders Identification Test or AUDIT) in the year preceding treatment, the year of treatment and the year post treatment.

In order to identify the impact of treatment on the use of health services, the names and birth dates for patients in the retrospective cohort were submitted to the Linked Data Branch at the WA Department of Health to obtain linked data records of all hospital admissions, emergency

department presentations and mental health service use. Data were requested for the period from January 2001 to June 2009.

- **Data analysis**

The data collected from contacting patients were entered into a Microsoft Access database and analysed using descriptive statistics.

The linked data records of health services utilisation were also placed in a Microsoft Access database and analysed using descriptive statistics. Unit costs were assigned to (i) hospital admissions based on the mean cost of the diagnostic related group of patients reported in the National Hospital Cost Data Collection or NHCDC (Department of Health and Ageing or DoHA 2009), (ii) emergency department presentations based on the estimated mean cost of emergency department presentations in Western Australia as reported in the NHCDC, and (iii) mental health services based on the cost per consultation for clinical psychologists or counsellors recommended in the Manual of Resource Items Used in Submissions to the Pharmaceutical Benefits Advisory Committee (PBAC) updated to 2008/09 prices using the health price index published by the Australian Institute of Health and Welfare or AIHW (DoHA 2002, AIHW 2009). Use of health services was subdivided into 'drug-related contacts' and 'non drug-related' contacts based on the diagnosis associated with the contact using the Australian Modification of the International Classification of Diseases, 10th revision (ICD-10-AM). Data were analysed for the 12 months prior to treatment with the naltrexone implant and 12 months and 24 months post treatment respectively.

Cohort 2 – Costs of Treatment and Impact on Patients

Data collection

The 33 patients in the second cohort were fully informed of the study requirements and prior to commencing the study gave signed consent using Fresh Start's standard consent procedures. These patients completed a baseline questionnaire with a member of the research team. The questionnaire related to demographics, previous implant treatment and health outcomes. Health outcome data were collected using the Assessment of Quality of Life Instrument (AQoL), selected questions from the Australian Alcohol Treatment Outcome Measure for Clinicians (the AATOM-C), the Alcohol Dependence Score, and questions about drug use. A follow up questionnaire was administered again, initially at 24 weeks post-treatment but this period was reduced to 12 weeks post-treatment to meet the reporting deadline for the study.

In order to establish the cost of treatment with NIT, the clinic files of the second cohort were audited to ascertain resource use associated with treatment including medications, diagnostic tests, consultations, implants and the use of rehabilitation residential care.

Data analysis

All data collected in the second cohort were entered into a Microsoft Access database and analysed using descriptive statistics. Unit costs were assigned to resource use based on official or recommended fees and prices obtained from the Medicare Benefits Schedule (DoHA 2009a), the Pharmaceutical Benefits Scheme (DoHA 2009c), the Manual of Resource Items Used in submissions to the PBAC (DoHA 2002) and the basic daily fee arrangements for residential care (DoHA 2009d).

3. Results

Cohort One - Linked Data

Drug-related use and cost of health services

Of the 124 patients treated with a naltrexone implant for problematic alcohol consumption, whose details were provided to the Linked Data Branch at the WA Department of Health, 105 had used at least one health service for a drug-related reason.

For each type of health service and for the analysis based on 12 months pre- and 12 months post-treatment, three groups of patients were identified: Group 1 had pre-treatment drug-related contacts in the 12 months prior to treatment and no drug-related contacts in the 12 months following treatment, Group 2 had post-treatment drug-related contact in the 12 months following treatment but no contacts in the 12 months pre-treatment, and Group 3 had both pre- and post-treatment contacts in the 12 months pre- and post-treatment (Tables 1, 2 and 3). Patients were excluded from the analyses if they did not have 12 months post-treatment follow-up. All patients had 12 months pre-treatment. Equivalent groups were identified for the analyses based on 12 months pre- and 24 months post-treatment.

In relation to hospital admissions, for the three groups combined the number of drug-related hospital admissions was 73 in the 12-months pre-treatment and 32 in the 12-months post-treatment (see Table 1 shaded area). The corresponding costs were $214 023 in the pre-treatment year and $105 658 in the post-treatment year, a reduction in annual costs of $108 365. This reduction in hospital costs in the first year post-treatment was sustained in the second year post-treatment, with costs of $115 057 in the second post-treatment year ($220 715 minus $105 658).

Table 1 Drug-related hospital admissions for 12 months pre- and 12 months and 24 months post-treatment

Groups	Hospital admissions		
	Admissions (n)	Patients (n)	Cost ($)
Group 1 (Pre treatment only)	54	21	150 470
Group 2 (Post treatment only)	10	6	31 987
Group 3 (Pre and post treatment) - Pre	19	10	63 553
- Post	22		73 671
Total	**105**	**37**	**319 681**
Total 12 months Pre-treatment	**73**	**31**	**214 023**
Total 12 months Post-treatment	**32**	**16**	**105 658**
Total 24 months Post-treatment	**72**	**23**	**220 715**

Similar reductions in the use and costs for the pre- and post-treatment periods were recorded for emergency department presentations and mental health service utilisation. The number of emergency department presentations fell from 66 to 27 in the 12 months pre- and 12 post-treatment, with a corresponding decrease in costs from $23 958 to $9 801 (see Table 2 shaded area). This reduction in costs was sustained in the second post-treatment year, with annual costs of $10 527 ($20 328 minus $9 801) for this period. In relation to mental health services, the number of service contacts fell from 44 to 22 in the 12 months pre- and 12 post-treatment, with a corresponding decrease in costs from $3 307 to $1 653 (see Table 3 shaded area). Again this reduction in costs was sustained in the second post-treatment years, with an annual cost of $2 781 ($4 434 minus $1 653).

Based on the 12months pre- and post-treatment periods, the annual net cost savings from fewer hospital admissions, emergency department presentations and mental health services contacts amounted to $124,176 or the equivalent of $1,183 for each of the 105 patients in the cohort.

The source of funding for each of these health services is the WA Department of Health, so any cost savings from a reduction in resource utilisation flow directly to the State Government.

Table 2 Drug-related emergency department presentations for 12 months pre- and 12 months and 24 months post-treatment

Groups	Emergency department presentations		
	Presentations (n)	Patients (n)	Cost ($)
Group 1 (Pre treatment only)	32	18	111 616
Group 2 (Post treatment only)	13	6	4 719
Group 3 (Pre and post treatment) - Pre	34	9	12 342
- Post	14		5 082
Total	**93**	**33**	**33 759**
Total 12 months Pre-treatment	**66**	**27**	**23 958**
Total 12 months Post-treatment	**27**	**15**	**9 801**
Total 24 months Post-treatment	**56**	**19**	**20 328**

Table 3 Drug-related mental health services utilisation for 12 months pre- and 12 months and 24 months post-treatment

Groups	Mental health services		
	Contacts (n)	Patients	Cost ($)
Group 1 (Pre treatment only)	21	6	1 578
Group 2 (Post treatment only)	6	3	451
Group 3 (Pre and post treatment) - Pre	23	5	1 729
- Post	16		1 203
Total	**66**	**14**	**4 960**
Total 12 months Pre-treatment	**44**	**11**	**3 307**
Total 12 months Post-treatment	**22**	**8**	**1 653**
Total 24 months Post-treatment	**59**	**10**	**4 434**

Some patients were excluded from the previous analyses because they did not have a sufficient post-treatment follow-up period (either 12 months or 24 months). An alternative approach, which included these patients, was used to present the changes in the use and cost of health services by expressing the difference as a rate based on number of patient years. This was done for the 12 months pre-and 12 months post-treatment analysis, with all patients included in the analysis regardless of the follow-up period (Table 4).

The decreases in the mean number of hospital admissions, emergency department presentations and mental health service contacts per patient year were 0.39, 0.30 and 0.21 respectively. The equivalent net decreases in the mean cost per patient year were $1 003, $109 and $15 respectively, giving a total net decrease in cost across all three health services of $1 127 per patient year.

The results suggested a rough rule of thumb that the mean post-treatment use and cost of health services per patient year are approximately half the equivalent pre-treatment figures.

Table 4 Drug-related health services utilisation per patient year for 12 months pre- and 12 months post-treatment

		Hospital admissions	Emergency department presentations	Mental health services
Mean contacts per patient year (n)	Pre-treatment	0.70	0.63	0.42
	Post-treatment	0.31	0.33	0.21
	Net decrease	**0.39**	**0.30**	**0.21**

Mean cost per patient year ($)	Pre-treatment	2 038	228	31
	Post-treatment	1 035	119	16
	Net decrease	**1 003**	**109**	**15**

All use and cost of all health services

The results in Tables 1 to 4 reflect drug-related use and cost of health services. The equivalent analyses can be undertaken using the use and cost of all health services in the pre- and post-treatment periods (Table 5). The rationale for using all contacts with health services is that problematic alcohol use could be the cause of conditions other than those that are directly drug-related. However, using all contacts with health services as the basis to estimate decreases in the use and cost of health services following treatment with naltrexone would be an over-estimate as some contacts with the health services are unrelated to problematic alcohol use.

The true decrease in health services utilisation following treatment with naltrexone would most likely fall somewhere between the figures for drug-related contacts and those for all contacts. Based on all contacts (rather than drug-related contacts only) and on the 12 months pre- and 12-months post-treatment periods, the net decrease in the mean number of all contacts with health services was 4.66 per patient year (0.70 + 0.65 + 3.31) with a corresponding net decrease in mean costs per patient year of $2 371 ($1 886 + $236 + $249).

The impact on total health service costs was a decrease of $280,811 in the year post-treatment compared with the year pre-treatment, with hospital costs accounting for 75% ($210,733) of the cost savings. This reduction was largely attributable to 22 of the 56 patients with a history of problematic alcohol use who had required general hospital admission in the year pre-treatment but did not require inpatient treatment in the year post-treatment.

Table 5 All health services utilisation per patient year for 12 months pre- and 12 months post-treatment

		Hospital admissions	Emergency department presentations	Mental health services
Mean contacts per patient year (n)	Pre-treatment	1.54	2.98	5.17
	Post-treatment	0.84	2.33	1.86
	Net decrease	**0.70**	**0.65**	**3.31**
Mean cost per patient year ($)	Pre-treatment	6 194	1 082	389
	Post-treatment	4 307	846	140
	Net decrease	**1 886**	**236**	**249**

- **Health outcomes**

Contact was made with 33 patients who had been treated for problematic alcohol use, of whom 23 agreed to participate in the study. Fifty-seven percent of respondents were males. The mean age of respondents was 42 years, with ages ranging from 25 to 60 years. Twelve respondents had treatment in the past 12 to 24 months, eight respondents had treatment between three and five years ago, and three respondents had treatment more than five years ago.

The AUDIT questionnaire, which screens for alcohol misuse, suggested that in the past year 12 of the 23 respondents were no longer drinking at harmful or hazardous levels but that 8 respondents had scores high enough to likely indicate alcohol dependence. The balance of respondents fell in the range of drinking at harmful or hazardous levels but not at high enough levels to indicate alcohol dependence.

Across the cohort, the frequency of alcohol consumption had decreased (Table 6). In the year prior to treatment, 74% of respondents were consuming alcohol four or more times a week, and a further 17% were consuming alcohol two to three times a week. In contrast, in the past year only 17% and 22% of respondents respectively were consuming alcohol four or more times a week or two to three times a week, and 35% were not consuming any drinks containing alcohol at all.

Table 6 Pre- and post-treatment frequency of having a drink containing alcohol

Frequency of having a drink containing alcohol	Year before treatment		Last year	
	n	%	N	%
Never	0	0.0	8	34.8
Monthly or less	1	4.3	3	13.0
2-4 times a month	1	4.3	3	13.0
2-3 times a week	4	17.4	5	21.7
4 or more times a week	17	73.9	4	17.4
Total	24	100.0	24	100.0

Cohort 2 - Costs of Treatment and Impact on Patients

- **Health outcomes**

Thirty-two patients were enrolled in the prospective study, 19 males and 13 females. The mean age was 42 years, with minimum and maximum ages of 24 years and 77 years respectively. Twenty patients (63%) were successfully followed up, with response rates varying from 55% to 100% across the different instruments used in measuring health outcomes.

Four measures of health outcomes are shown below (Table 7). In each case a mean score for the cohort of respondents is given at baseline and at follow-up, and in addition the number of respondents whose score had improved, remained the same and deteriorated is reported.

The first measure was the frequency of drinking days in a month expressed as a proportion. At baseline, on average, the respondents consumed alcohol on 20 days a month (0.67 = 20 of 30 days) and this reduced to 12 days at follow-up. Twelve respondents reduced their number of drinking days, four respondents reported no change, and 4 respondents had more drinking days at follow-up than at baseline.

This overall improvement in health outcomes was replicated across the other measures used to collect pre- and post-treatment health outcomes.

The Alcohol Dependence Score is a scale between zero and 15, with scores closer to 15 reflecting higher levels of alcohol dependence. The mean scores for respondents decreased from 12.0 at baseline to 4.6 at follow-up, with 18 respondents recording an improved score (i.e. a decrease) between baseline and follow-up.

The AATOM-C instrument was developed for routine clinical use to monitor treatment outcomes for clients receiving treatment for problems arising from their alcohol use. The questions selected in this study focused on the health and psychological well-being of

respondents. For these questions, a minimum score of 10 points reflects the best state of health and wellbeing and a maximum score of 50 points reflects the worst state. The mean AATOM-C score for the selected questions decreased for respondents from 25.7 at baseline to 12.7 at follow-up, with 15 respondents recording an improved score (i.e. a decrease) and the balance recording the same score.

The final measure of health-related outcomes was the AQoL, which is a generic multi-dimensional quality of life instrument scored from 0 (dead) to 1 (normal health) The mean AQoL score for respondents increased from 0.564 to 0.917, with 10 respondents recording an improvement in their AQoL score and one respondent having no change.

Table 7 Pre- and post-treatment health outcomes

	Proportion of drinking days in last 30 days	Alcohol Dependence Score	AATOM-C	AQoL
	Mean score			
Baseline	0.67	12.0	25.7	0.564
Follow-up	0.39	4.6	12.7	0.917
	No. of respondents			
Improved	12	18	15	10
Same	4	1	3	1
Deteriorated	4	1	0	0

- **Treatment Costs of NIT at Fresh Start**

Mean treatment cost including the implant, medications, pathology, consultations and residential care amounted to $4 612 (Table 6).

The most significant cost item was the implants, which accounted for 66% of the total cost and are funded through donations and patient contributions. The Department of Health and Ageing funds the majority of the cost of consultations and pathology through Medicare, and also those medicines that are listed on the Pharmaceutical Benefits Scheme (PBS). Medicines not listed on the PBS and co-payments are funded by donations and patient contributions. Pre- and post-treatment residential care is funded by donations and patient contributions.

Table 6 Mean treatment costs of NIT at Fresh Start

Item	Mean treatment costs ($)
Implant	3 062.50
Medications	198.63
Pathology	300.51
Consultations	513.71
Residential care	536.78
Total	4 612.13

4. Conclusion

The results of the study can be summarised as follows –

- Treatment for problematic alcohol use with NIT (O'Neil Long Acting Naltrexone Implants) resulted in a reduction in the utilisation of health services following treatment.

- In the first year post-treatment, the cost savings from a decrease in drug-related hospital admissions, emergency department presentations and mental health services for the

105 patients included in the retrospective study was $124 176. On a per capita basis, this was a cost saving of $1 183 per patient.

- The annual cost savings were sustained in the second year post-treatment, with cost savings from drug-related contacts in this year of $128 365 or $1 223 per patient.

- Expressed on a per patient year basis for the 12 months pre- and 12 months post-treatment periods, the results show a net decrease in the mean number of drug-related contacts with health services of 0.90 per patient year with a corresponding net decrease in mean costs per patient year of $1 127.

- If all contacts with health services are included (rather than drug-related contacts only) then the net decrease in the mean number of contacts with health services increased to 4.66 per patient year with a corresponding net decrease in mean costs per patient year of $2 371.

- The cost savings achieved through the reduction in resource utilisation following treatment with NIT directly benefits WA Department of Health as it is the funding agency for hospital admissions, emergency presentations and mental health services.

- Improved health outcomes were recorded across various measures in both the retrospective and prospective studies. These measures included levels of alcohol misuse, alcohol dependence, health and well-being and health-related quality of life.

- The cost of treating alcohol abuse or dependency with an O'Neil Long Acting Naltrexone Implant was estimated at $4 612 per patient. This includes the cost of health care during the first stages of recovery. It does not include Fresh Start's administration costs; nor the costs associated with the rehabilitation of long-term patients who may require longer term residential care, counselling and other allied health services before they can re-enter the community.

Overall, the use of NIT as treatment for people who had problems with alcohol was shown to be beneficial for the majority of people who sought treatment, and cost savings were achieved for WA Department of Health from the decrease in the use of their health services.

5. Benefits for the Department of Health

Benefits to the WA Department of Health are achieved from the annual mean cost savings of over $1,000 per patient that result from a decrease in hospital admissions, emergency department presentations and the use of mental health services.

6. Other Benefits

The study also demonstrated that most patients treated with NIT for problematic alcohol use had improved health outcomes.

Although the study did not explore the wider benefits of treatment, other benefits of treatment would likely include a gain in the quality of life of families of people treated for alcohol abuse or dependency and a reduction in the need for support services and perhaps also income support.

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Section C. CERTIFICATION

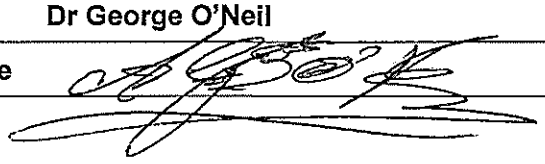
I certify that –

- All investigators agree that this report is an accurate representation of the funded project; and
- Relevant approvals, agreements or standards were maintained.

I acknowledge that –

- SHRAC and/or the Department of Health are not responsible for any recurrent costs beyond the funded research project, including costs that may arise due to the implementation of research findings.

Principal Investigator (or Chief Investigator 1)

Name	**Dr George O'Neil**		
Signature		**Date**	25/Nov/2009.