

**REVIEW OF THE EFFECTIVENESS
OF METHADONE MAINTENANCE
TREATMENT AND ANALYSIS OF
ST MARY'S CLINIC, SYDNEY**

JUDY RANKIN &
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Summary of conclusions

Methadone is a long-acting opioid analgesic with well-understood pharmacological characteristics which make it suitable for stabilising opioid dependent patients in a maintenance treatment approach.	2
Methadone maintenance treatment is one of the best researched treatment option for opioid-dependent individuals, being demonstrated to be more effective than either no-treatment, drug-free counselling and rehabilitation, placebo medication, and detoxification/withdrawal in randomised controlled trials. The research from differing countries shows consistent benefits in terms of reduced illicit opioid use, reduced criminal behaviour and improved social functioning.	3
The evidence shows that methadone maintenance therapy is associated with a lower risk of death compared to that associated with no treatment, drug free treatment or detoxification/withdrawal. Methadone maintenance treatment protects users from death due to over-dosage of opiates, particularly heroin, and thus achieves an important health outcome	4
Methadone maintenance treatment has been repeatedly shown to be associated with lowered rates of HIV infection. Observational study and natural experiment findings converge to show a consistent protective effect against this infectious disease of being in methadone maintenance treatment. The ability of methadone maintenance therapy to protect against hepatitis B and C infection is less well established.	5
Methadone maintenance treatment repays \$4-\$5 to the community in terms of reduced health care costs, reduced crime and other benefits for every \$1 spent on it.	5
Almost all clients attending Queen’s Court Clinic live in Wentworth or Western Sydney Area Health Services. Notably, of clients who live in Wentworth but receive methadone elsewhere, 65% access clinics in Western Sydney. Wentworth AHS catchment area data are similar showing 54% methadone clients living in and attending home AHS and 42% residing outside Wentworth region (Drug and Alcohol Directorate, NSW Health). Therefore clients are crossing into the neighbouring Area Health Services to receive methadone. Results do not indicate that Queen’s Court Clinic is attracting new residents to Wentworth AHS and those clients living in Wentworth AHS have been for sometime (average number of years 8). Furthermore, clients reported visiting St. Mary’s shopping	

area in the context of clinic appointments and then leaving the area. Methadone therapy was associated with improvements in client's quality of life as indicated by better health, family and social life and employment as well as decreased heroin use and involvement in illegal activities. Urine analysis data substantiate self reports of decreased heroin use since attending the clinic. 7

1). EFFECTIVENESS OF METHADONE MAINTENANCE THERAPY

The current review draws on monographs written in Australia as part of the development of detailed guidelines for treatment approaches to the management of dependent drug users (Mattick & Hall, 1993; Ward et al., 1992b).

a) Rationale for methadone maintenance therapy

Currently, the major form of medical therapy for heroin dependence internationally involves orally administered methadone. Methadone is an analgesic medication developed to treat pain in Germany in the 1940s when war-time blockades stop the supply of morphine to that country. It has been and is still prescribed widely for the management of pain in Australia and overseas.

It was in New York in the 1960s during an increase in heroin use and dependence, that researchers (Dole & Nyswander, 1965; Dole & Nyswander, 1967) examined different prescribed opioids to manage heroin dependence, and reported that they found that methadone was most suitable to the task. They believed that long-term heroin use caused a permanent metabolic deficiency in the central nervous system and an associated physiological disease, which required regular administration of opiates to correct the metabolic deficiency (Dole & Nyswander, 1965). The disorder of opioid dependence has been represented in the International Classification of Disease of the World Health Organisation (World-Health-Organization, 1992). It is a chronic or long-term and relapsing disorder, similar in nature to other long-term diseases such as diabetes mellitus and high blood pressure (hypertension). All of these disorders require ongoing maintenance medication to achieve the benefits they achieve.

The aspects of methadone that have led to its use as a substitute drug for heroin include the following:

- At the basis of methadone maintenance treatment (MMT) is the observation that opioid analgesics can be substituted for one another (Jaffe, 1990).
- Methadone prevents or reverses withdrawal symptoms, and thus reduces the need to use illegal heroin (Jaffe, 1990).
- Methadone remains effective for approximately 24 hours, requiring a single daily dose rather than the more frequent administration of three to four times daily which

occurs with the shorter-acting heroin (Jaffe & Martin, 1990).

- Methadone can "block" the euphoric effects of heroin, discouraging illicit use and thereby relieving the user of the need or desire to seek heroin (Dole et al., 1966). This allows the opportunity to engage in normative activities, and "rehabilitation" if necessary.
- But methadone can cause death in overdosage, like other similar medications such as morphine, and for this reason it is a treatment which is dispensed under medical supervision and relatively strict rules.

Summary.

Methadone is a long-acting opioid analgesic with well-understood pharmacological characteristics which make it suitable for stabilising opioid dependent patients in a maintenance treatment approach.

b) Effects on drug use, crime and social functioning

i) Randomised controlled research

Methadone maintenance treatment has been one of the best researched treatments for opioid dependence (Cooper et al., 1983; Gerstein & Harwood, 1990; Hargreaves, 1983; Mattick & Hall, 1993; Ward et al., 1992b). It is the only treatment for opioid dependence which has been clearly demonstrated to reduce illicit opiate use more than either no-treatment (Dole et al., 1969; Yancovitz et al., 1991), drug-free treatment (Gunne & Grönbladh, 1981), placebo medication (Newman & Whitehill, 1979; Strain et al., 1993a; Strain et al., 1993b), and detoxification (Vanichseni et al., 1991) in clinical controlled trials. These trials have been conducted by different research groups, in markedly differing cultural settings, yet have converged to provide similar results.

- In the first controlled study, Dole and colleagues (Dole et al., 1969) compared methadone maintenance with no-treatment for heroin dependent prisoners in New York. They found that untreated opiate addict ex-prisoners were over 50 times more likely to be re-incarcerated (odds ratio = 53.31, 95% confidence interval = 2.71-108.20), and over 90 times more likely to return to daily heroin use (odds ratio = 91.67, 95% confidence interval = 4.51-1864.92), than those ex-prisoners who were maintained on methadone (Ward et al., 1992b). They note that all "the untreated men became readdicted to heroin shortly after release, whereas none of the treated group became regular, daily users" (p.1375). At follow-up, 50% of the treated men were employed or studying, whereas none of the untreated men were so employed.
- In a Swedish study (Gunne & Grönbladh, 1981) at two year follow-up, methadone maintained subjects were almost 40 times more likely to reduce illicit opiate use than those receiving only rehabilitation (odds ratio = 38.40, 95% confidence level = 4.00-373.10) (Ward et al., 1992b).
- A more recent trial conducted in Bangkok has shown greater benefits for methadone maintenance above detoxification/withdrawal (Vanichseni et al., 1991). The study found that patients in a withdrawal program were significantly more likely to leave treatment (odds ratio = 6.05, 95% confidence interval = 3.44-10.62) and to continue heroin use (odds ratio = 10.33, 95% confidence interval = 3.40-31.35) than those in MMT (Ward et al., 1992b).
- In New York, methadone maintenance was recently compared with no intervention (Yancovitz et al., 1991). The methadone maintenance patients showed a marked decrease in heroin positive urine samples, while there was no change in the use of heroin by the control patients (odds ratio = 3.55, 95% confidence interval = 1.86-6.77) (Ward et al., 1992b).
- Most recently, Strain (Strain et al., 1993a; Strain et al., 1993b) has reported methadone maintained patients were more likely to be successfully retained in treatment (odds ratio = 4.10, 95% confidence interval = 2.10-8.20) (Ward et al., 1994) and have significantly fewer urine samples positive for illicit opioids and cocaine, than placebo maintained patients.

Summary.

Methadone maintenance treatment is one of the best researched treatment option for opioid-dependent individuals, being demonstrated to be more effective than either

no-treatment, drug-free counselling and rehabilitation, placebo medication, and detoxification/withdrawal in randomised controlled trials. The research from differing countries shows consistent benefits in terms of reduced illicit opioid use, reduced criminal behaviour and improved social functioning.

c) Effects on health

MMT produces a decrease in injecting drug use and thereby reduces the risk of spreading human immuno-deficiency virus, but not necessarily hepatitis B virus, or hepatitis C virus.

There is also increasing evidence showing that there is an association between being in MMT and lower rates of sharing of injecting equipment, compared to those opioid dependent individuals not in MMT (Ball & Ross, 1991; Longshore et al., 1993; Selwyn et al., 1987).

Injecting drug use is associated with a high risk of premature death (Haastrup & Jepsen, 1984; Hser et al., 1993; Joe & Simpson, 1987; Perucci et al., 1991; Perucci et al., 1992). Compared to untreated opioid users, those in MMT have a much reduced risk of dying (Davoli et al., 1993; Gearing & Schweitzer, 1974; Grönbladh et al., 1990). Australian research has examined the outcome of 307 heroin addicts and confirmed that their relative risk of dying in MMT was one-third that when not in MMT (odds ratio = 0.35, 95% confidence interval = 0.18-0.69) (Caplehorn et al., 1994).

Summary.

The evidence shows that methadone maintenance therapy is associated with a lower risk of death compared to that associated with no treatment, drug free treatment or detoxification/withdrawal. Methadone maintenance treatment protects users from death due to over-dosage of opiates, particularly heroin, and thus achieves an important health outcome.

According to Ward and his colleagues (Ward et al., 1992a; Ward et al., 1992b), this evidence, in combination with the existing evidence for the effectiveness of methadone

maintenance in reducing injecting opiate use, leads to the conclusion that methadone maintenance is an important component of any overall strategy to contain the spread of HIV among injecting drug users, a view that is supported by others (Des Jarlais, 1992; Des Jarlais et al., 1992).

Summary.

Methadone maintenance treatment has been repeatedly shown to be associated with lowered rates of HIV infection. Observational study and natural experiment findings converge to show a consistent protective effect against this infectious disease of being in methadone maintenance treatment. The ability of methadone maintenance therapy to protect against hepatitis B and C infection is less well established.

d) Costs and benefits

Research from the U.S. has shown that methadone provides more benefits to the community and to users than its cost to the health care system (Gerstein & Harwood, 1990). Specifically the for every dollar spent providing methadone to heroin dependent patients in a clinic system in California, the benefits in dollar terms were \$4 to \$5 benefit to each \$1 outlaid (Gerstein & Harwood, 1994).

Summary.

Methadone maintenance treatment repays \$4-\$5 to the community in terms of reduced health care costs, reduced crime and other benefits for every \$1 spent on it.

2). PROFILE OF THE ST MARYS METHADONE CLINIC

In response to community concern about the location of Queen's Court Clinic, the Drug and Alcohol Directorate (NSW Health) invited the National Drug and Alcohol Research Centre to collect information on the clinic's client profile as well as local data about

methadone treatment effectiveness. The debate in St. Mary's includes issues relating to whether clients reside in the local Area Health Service, how much time they spend in St. Mary's shopping area and the clinic's role in the local community.

To address these concerns Queen's Court clients were invited to participate in a short survey. A total of 124 surveys were completed over a three day period. This represents about half of clients attending the Clinic. Urine analysis data collected by the clinic on a random basis over the past year was reviewed.

a) Client Survey

The survey questions can be grouped according to the three areas mentioned above:

- Client Demographics
- Client Congregation
- Changes in client quality of life indicators

i) Client Demographics

The Queen's court is privately owned and provides methadone to approximately 250 of 357 clients registered in Wentworth Area Health Service. The Wentworth Area Health Service covers Blue Mountains, Hawkesbury and Penrith statistical local areas (SLA). 42% of clients surveyed live in Wentworth AHS and 57% live in neighbouring Western Sydney Area Health Service (AHS). Twenty eight clients moved since starting treatment at the clinic. Of these, thirteen changed home Area Health Service resulting in a 7% increase in clients residing within Wentworth AHS. The increase is due to five clients moving from Western Sydney and four from other AHS. These clients reported changing addresses to be closer to family and friends.

The majority of clients are long term residents of Wentworth AHS. 42 % of clients have lived in the AHS more than 5 years. The average length of residence was 8 years.

ii) Client Congregation

In response to St. Mary's Chamber of Commerce's concerns that methadone clients were hanging around the shopping area and interfering with store trading, the clients were asked how they spent their time before and after methadone dosing at the clinic.

Over 75% of clients reported spending less than 15 minutes before and after clinic.

iii) Changes in client quality of life indicators

Clients rated changes in health, employment, family and social life, heroin use and illegal activities on a five point scale since starting methadone at the clinic . Survey results show the following changes: 86% decrease in heroin use; 83% decrease in illegal activities; 84% improvement in social life; 58% improvement in health and 37% improvement in employment.

iv) Urine results

Clients attending Queen's Court Clinic are randomly tested on a regular basis for the presence of opiates, morphine, cocaine, benzodiazepines, amphetamines and cannabis. 1479 urine samples were analysed in the past twelve months. Almost all (94%) of samples indicate no heroin use by clinic clients.

b) Conclusions

Almost all clients attending Queen's Court Clinic live in Wentworth or Western Sydney Area Health Services. Notably, of clients who live in Wentworth but receive methadone elsewhere, 65% access clinics in Western Sydney. Wentworth AHS catchment area data are similar showing 54% methadone clients living in and attending home AHS and 42% residing outside Wentworth region (Drug and Alcohol Directorate, NSW Health). Therefore clients are crossing into the neighbouring Area Health Services to receive methadone. Results do not indicate that Queen's Court Clinic is attracting new residents to Wentworth AHS and those clients living in Wentworth AHS have been for sometime (average number of years 8). Furthermore, clients reported visiting St. Mary's shopping area in the context of clinic appointments and then leaving the area.

Methadone therapy was associated with improvements in client's quality of life as indicated by better health, family and social life and employment as well as decreased heroin use and involvement in illegal activities. Urine analysis data substantiate self reports of decreased heroin use since attending the clinic.

3). SUMMARY

Concerns about the location of Queen's Court Clinic were addressed in the study. The survey results do not substantiate claims that the Clinic is attracting new residents to

Wentworth AHS. Clients surveyed reported visiting the clinic in the context of receiving methadone service and then leaving St. Mary's shopping area. Though the study can not refute St. Mary's Chamber of Commerce claims that the clients interfere with store trading by hanging around the shopping area, it is possible that the combination of a high volume of clients (about 250) and visible location of the clinic (across from St. Mary's train station) may lead to the impression of many people hanging around. The role of the clinic in the local community is evidenced in the positive changes clients reported in their quality of life and dramatic drops in heroin use and criminal involvement.

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