

**Training General Practitioners to Prescribe Methadone
(and Other Pharmacotherapies):
Outcomes and Uptake in Four Jurisdictions**

**Libby Hotham
Ann Roche
Natalie Skinner**

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**National Centre for Education and Training on Addiction
Flinders University**

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Executive Summary

Opioid use, particularly use of 'street' heroin, continues to be an important public health issue in Australia. For opioid users with established dependence there are proven pharmacotherapies available as treatment options. Methadone remains the treatment 'gold standard', however newer pharmacotherapies, particularly buprenorphine, are gaining in popularity.

For more than a decade there has been growing interest in treatment of opioid dependence with pharmacotherapies. Provision of treatment has also progressively broadened from the public to the private sector, most notably primary care, in most jurisdictions in Australia. However, there is still a shortfall in the provision of pharmacotherapy services. A considerable investment has been made in training general practitioners (GPs) to facilitate their participation in this area of practice. However, training is not sufficient of itself to guarantee GP involvement, and anecdotally it is recognised that many GPs do not engage with opioid using clients after completing pharmacotherapy training.

Project aims

The three central aims of this project were to establish (1) the extent of GP training in relation to opioid pharmacotherapies, (2) the extent of prescribing practice after training, and (3) the degree to which the GP prescriber workforce is sufficient to service the client population. Data were examined from four states : New South Wales, Queensland, Victoria and South Australia.

Overview of key findings

Detailed and systematic data collection: a priority issue across states

The goal of the current report was to identify patterns of GP prescriber training and methadone prescription across four states. One of the most important findings to emerge from this study, however, concerns the significant lack of detailed, systematic and precise information addressing these issues. Three main factors impeded access to sufficient data: (1) different documentation and data collection procedures across jurisdictions, (2) failure to retain past records beyond one or two years, and (3) responsibility for data collection shared between organisations across time (i.e., the organisation responsible for data collection changes over a number of years) and issues (e.g., one organisation collects data on training and another collects data on prescribing). The findings from this study clearly indicate the

need for a centralised data collection system to be developed in each jurisdiction. In order to facilitate continuity and standardisation of data collection this role would be best filled by state departments of health.

The following list provides examples of the types of information required for effective workforce development and planning initiatives, and for accurate comparison of GPs' opioid pharmacotherapy prescribing between states:

- Number of GP prescribers (total, and proportion of entire GP workforce)
- Number of GPs undergoing prescriber training (total, and proportion of entire GP workforce)
- Proportion of GPs undertaking prescribing following training
- Number of clients per GP prescriber
- Number of prescribers per client load category
- Type of opioid pharmacotherapy prescribed (e.g., methadone, buprenorphine)
- Demographics of GP trainees and prescribers (e.g., age, gender, years qualified, years authorised as prescriber, location of practice)
- Number of active versus inactive authorised GP prescribers.

Training

Quantifying the outcomes of training in the four selected states proved to be difficult. In the two most populous states, New South Wales and Victoria, the relevant training consortia have changed in recent years and longer-term records were inaccessible. In South Australia and Queensland, the other two states reviewed, records are only kept for periods ranging from three to five years. High attrition rates between GP training and subsequent prescribing were evident in South Australia and Queensland, but less so in Victoria.

Significant variation was observed across states in the style and delivery of training (e.g., use of clinical placements). There is a clear need for a comprehensive evidence base concerning the most effective style and delivery of training to maximise prescribing uptake and quality of service provision (e.g., rapport with clients, relationship with dispensing pharmacist). Similarly, client quota systems differ significantly across states. The impact on the quality of service delivery, and the retention of GPs in prescribing programs, is not known. Anecdotal evidence, however, suggests that large client loads are associated with increased GP stress and dissatisfaction which in turn may lead to a withdrawal from provision of prescription services.

Implications for workforce development

There is a clear need for a national workforce development strategy to facilitate the effective coordination, provision and uptake of training and to ensure professional practice change (i.e., enhanced levels of prescribing). The foundation of this strategy rests on accurate information concerning facilitators and barriers to service provision, rates of training uptake by GPs, and proportions of trainees subsequently providing prescribing services.

Mapping the GP prescriber workforce

Details of the prescribing activity of general practitioners related to methadone and other pharmacotherapies were sought from state health departments in Queensland, Victoria, New South Wales and South Australia.

As discussed previously, limitations in the available data prevented a detailed assessment of the current GP prescriber workforce. The limited data available indicated significant shortfalls in the number of prescribers available in each state to service opioid pharmacotherapy clients (state variations in private versus public service provision notwithstanding). It was consistently observed across states that a relatively small number of prescribers were providing services for the majority of opioid pharmacotherapy clients.

Very little demographic data was available on the current GP prescriber workforce. Data from South Australia illustrate the value of this type of information, where the GP prescriber workforce is characterised by a preponderance of male prescribers aged 45 years or older. This information indicates that workforce development strategies focused on the recruitment and retention of a younger cohort of GP prescribers, and female prescribers, is essential for the long term sustainability of effective and accessible methadone programs in South Australia. Yet in the absence of comparable demographic data in other states, it is unclear whether this pattern, with its implications for retention and recruitment, also occurs in other states. The capacity to distinguish between active and inactive registered prescribers also has major implications for the development of effective workforce development and planning strategies. In South Australia and New South Wales one third of registered prescribers are not currently providing prescription services. This information suggests that a key strategy in addressing the shortfall of prescribers in these states would be to address barriers to service provision experienced by inactive prescribers, rather than focus exclusively on the recruitment of new prescribers. In the absence of relevant data, the extent to which this strategy is also appropriate for other jurisdictions cannot be established.

Implications for workforce development

General practitioner participation in the provision of opioid pharmacotherapies represents an important strategy by which to ensure that alcohol and other drug using clients can access quality, holistic health care. The findings of this study indicate a clear and urgent need for workforce development strategies to improve the recruitment and retention of GP prescribers (particularly younger GPs and female GPs), and encourage inactive registered prescribers to resume service provision.

The following recommendations are designed to enhance provision of methadone and other pharmacotherapies to opioid dependent people.

Recommendations

1. There is a pressing need for the establishment of ongoing accurate quantification of the demand for, and suspected shortfalls in, pharmacotherapy provision in each jurisdiction.
2. Given the substantial investment made in training general practitioners to prescribe pharmacotherapies, it is important that the outcome of training be fully evaluated. Each jurisdiction should implement appropriate and comprehensive training records to enable outcomes to be accurately assessed. A formal notification process should be established between the state regulatory authority and the training organisation.
3. Prescribing data related to pharmacotherapies is collated differently in the various jurisdictions, making evaluation of prescribing patterns across Australia difficult. Jurisdictional personnel should be encouraged to liaise on the development of congruent methods of data collection. Such data would allow valuable interstate comparisons to be undertaken.
4. Of the four states reviewed, consistent information at the time of data collection about GP prescribing of opioid pharmacotherapies was not available in either New South Wales or Victoria. In those states, medical practitioner registration records do not currently indicate whether or not the practitioner is in general practice. Given that the majority of Australia's heroin use occurs in these two states, establishing accurate information regarding GP involvement in treatment is a high priority.

Project Overview

The current trend towards community-based care of heroin dependent individuals is placing increasing pressure on GPs to provide methadone prescribing services – a trend that is expected to continue into the future. Workforce development and workforce planning are crucial to the provision of effective services that meet the training and support needs of providers (i.e., GPs) and the needs of clients for accessible and high quality care. In order to meet these goals detailed and accurate data concerning patterns of training and service provision is essential. This project aimed to establish a comprehensive map of methadone prescriber training and service provision undertaken by GPs in four Australian states: New South Wales, Victoria, Queensland and South Australia. The report is presented in three sections.

Section 1 focuses on four key issues concerning the training of GPs to become methadone prescribers:

- (1) a review of our current state of knowledge concerning the barriers and facilitators to GPs' involvement in prescribing services
- (2) current uptake of training by GPs in the four Australian states
- (3) proportion of GPs engaged in prescribing services following training
- (4) the style and delivery of training in each state.

Section 2 is focused on mapping the GP prescriber workforce in the four states with a particular focus on the types of information necessary for effective workforce development and planning:

- (1) number of GP prescribers
- (2) client loads of current GP prescribers
- (3) characteristics of current GP prescribers.

The final section presents a general discussion of the research findings with a particular focus on:

- (1) the urgent need for systematic and detailed data collection in each state and
- (2) implications of the current findings for workforce development and planning.

A brief overview follows of heroin use and treatment in Australia with a particular focus on the increasing shift from public clinics to community-based models of care.

Background

Heroin use and treatment for heroin dependence

Heroin supply and the prevalence of heroin use varies across Australia with higher rates of use in New South Wales and Victoria than in South Australia and Queensland (Darke, Topp & Kaye, 2001). In spite of an increase in the use of other drugs (cocaine, methamphetamine, benzodiazepines) in response to the decreased availability of heroin in 2000 and 2001 (Darke et al., 2001), levels of heroin use remain high (Darke, Kaye & Topp, 2002).

Throughout Australia, estimates of the number of heroin dependent people (Hall, Ross, Lynskey, Law & Degenhardt, 2000) indicate a shortfall in the provision of treatment services.

The predominant treatment for opioid dependence is substitution pharmacotherapy. Recent years have seen the development of newer pharmacotherapies such as LAAM (not available clinically in Australia), buprenorphine, naltrexone and consideration of heroin itself (Mattick, Oliphant, Ward & Hall, 1998). Methadone maintenance has remained the most widely used pharmacotherapy (Mattick, Breen, Kimber, et al., 2001; National Institute of Health, 1998), although buprenorphine is currently increasing in popularity.

Opioid pharmacotherapy programs have successfully reduced the spread of HIV, unsafe injecting and sharing of injecting equipment, criminal activity and other social costs, and to a lesser extent hepatitis C among injecting drug users (Darke, 1992; Loxley, 2000; Marsch, 1998; Seivewright & Iqbal, 2002). Opioid pharmacotherapy programs are also a central element in Australia's harm minimisation response to drug use (Roche & Evans, 2000; Roche, Evans & Stanton, 1997; Single & Rohl, 1997). Delivery of effective community-based programs is essential for continuation and expansion of these services (Bell, 1995a).

Service delivery models: public clinics versus community-based care

Service delivery in Australia has increasingly moved towards a community-based model involving GPs, pharmacists and other "frontline" health professionals. A number of factors stimulated this move towards community-based care including rising rates of heroin use (Darke, Hall & Topp, 2000; Hall, Ross, Lynskey, Law & Degenhardt, 2000), and an increase in the demand for methadone maintenance treatment (Kutin, Lintzeris, Ezard & Mulheisen, 1996). In addition, a brake on funding for public clinics in Australia in the early to mid 1990's

coupled with an increasing commitment to community-based health care (Ali, 2002) led to initiatives to encourage general practitioners to undertake the treatment of opioid dependent clients with methadone maintenance (Bell, 2000).

In the United Kingdom, a similar shortage of public services led to the engagement of general practitioners in methadone prescribing from the early 1980's (Advisory Council on the Misuse of Drugs, 1982; Groves et al., 1996). This integration of treatment for opioid dependency into general community settings occurred in parallel with people from mainstream society becoming drug users, rather than drug use being restricted to a discrete sub-group (Glanz, 1993; Strang, 1989).

The development of a community model of treatment for drug users mirrors a general broadening in health and social care from institutions to the community, with the view of 'the client as a whole' and not simply as a collection of signs and symptoms. In addition, methadone maintenance in a community setting is more likely to place the client in an individualised 'treatment' framework rather than in the role of a recipient of a 'social service' (Bell, 1998a). The move to community-based methadone services has the advantage to clients of 'normalisation' of treatment, and a simultaneous increase in access to other health services (Kutin et al., 1996).

Whilst this shift from specialist clinics to community-based services may maximise use of existing services (Bell, 1995a), it may also reduce appropriate monitoring controls and quality of service, retention in treatment (Ward, Hall & Mattick, 1999), and client safety (Ernst, 2002). Workforce development (ensuring appropriate levels of knowledge, skill, motivation and support) and capacity building (including removal of barriers to professional involvement in prevention and treatment) are central to the success of the community-based model of care and have been recognised as such in the National Drug Strategic Framework (Ministerial Council on Drug Strategy, 1998) and National Action Plan on Illicit Drugs (Commonwealth Dept of Health and Aged Care, 2001).

Study 1: Training the GP Prescriber Workforce: Rates of Training Uptake and Subsequent Prescribing

Overview

In Australia, GPs must be authorised to prescribe methadone, and prior to this authorisation they are required to undertake designated training. Methadone training for medical practitioners has been undertaken over the past five to ten years across most Australian jurisdictions, but is increasingly being replaced by broader training encompassing the prescribing of other opioid pharmacotherapies particularly buprenorphine. Methadone training guidelines and learning objectives have been developed with substantial inter-jurisdictional collaboration regarding models of training (Allsop et al., 1997). The purpose of this training has been chiefly to provide health professionals with the knowledge and skills to work with opioid dependent users. Methadone training also provides opportunity to facilitate interest in, and general involvement with, drug using individuals (Bell, 1998b).

Anecdotal information suggests that significant effort has been directed to the recruitment of general practitioners into pharmacotherapy training programs. However, GP recruitment has often been lower than anticipated and of those trained only a limited proportion go on to become active pharmacotherapy prescribers (Bell, 1998b).

In Australia training represents the first (compulsory) step towards becoming a methadone prescriber. In order to ensure a GP prescriber workforce of sufficient size, and to ensure effectiveness and sustainability, two key issues must be addressed: (1) barriers and facilitators to GPs' uptake of prescriber training, and (2) rates of service provision (i.e., methadone prescribing) following training. A large body of research conducted over the past 10 years has identified a number of facilitators and barriers to GPs' involvement in treatment services for illicit drug users. An overview of this research is provided below. In contrast, very little is known about rates of training uptake and subsequent prescribing by Australian GPs. Presented below is provisional data addressing these issues in four Australian states (SA, NSW, VIC and QLD).

The topic of training has received some research attention (Bell, 2000; Bell, 1995b; King et al., 1998). The content, delivery mode and assessment of training programs is continually being revised, with acknowledgment that the urgent need for provision of methadone (and increasingly of other pharmacotherapies) must not lead to inadequacies in training

(Seivewright & Iqbal, 2002). It is now recognised that pharmacotherapy training should incorporate awareness that drug therapy is not an isolated treatment option and that practitioners should also become skilled in other facets of drug dependence and its management (Bell, 2000; Groves et al., 1996). In addition, the opportunity exists for enhancing understanding that drug dependence treatment entails an array of complexities, with abstinence a possible outcome, although not the only desirable one (Bell, 2000; Rawson & Ling, 1991).

Generic alcohol and drug training ideally commences at an undergraduate or pre-service level (Roche, 1997). Training in the prescribing of opioid pharmacotherapies would routinely encompass such generic training in drug dependence, with emphasis on its intricacies (Sheridan, Strang, Taylor & Barber, 1997). This understanding may encourage practitioners to perceive the engagement and retention of clients into the treatment system as their primary aims (Rawson & Ling, 1991). In the UK, a recently developed training manual for treatment of drug misuse places training on pharmacotherapies in a broad drug dependence framework (Royal College of General Practitioners, 2001). Increasingly, Australian training is moving in the same direction.

Barriers and facilitators to GP service provision: An overview of existing literature

Attitudes

A common theme in the research literature is that general practitioners exhibit a lack of open-mindedness towards drug users (Zweben, 1991) and hold stereotypical and generally negative views towards these individuals (Glanz, 1993; Jacka, Clode, Patterson & Wyman, 1999; Roche, Watt & Fischer, 2001). Low motivation to change may be perceived as an unchangeable characteristic of the drug user (Roche, 1997), so that intervention is assumed to be difficult and perhaps fruitless (Parker & Gay, 1987; Roche, Guray & Saunders, 1991). It is also a common belief that remuneration for management of these often complex clients is not consistently adequate (Bell, 1998b), a criticism also voiced in the UK (Gruer et al., 1997).

Reservations have also been expressed regarding whether it is a legitimate role for general practitioners to intervene with illicit drug users (Sheridan et al., 1997) and whether drug using clients are concordant with a family-centred general practice (Holmwood & McCabe, 2001; Roche et al., 1991). Reluctance by practitioners to undertake pharmacotherapy prescribing may also arise because of difficulties with other staff in their practices (Richards,

Geddis & Whitton, 1998). For instance, in some settings in the UK a Practice Partner Agreement is mandatory before a GP can be accepted into a methadone provision scheme. In New South Wales it has been observed, however, that as practical experience in dealing with individual clients accumulates, positive changes in the general practitioner's practice, particularly in the attitudes of support staff, are likely to occur (Richards et al., 1998). Positive attitude changes of staff are enhanced if the assistance of a specialist referral team is available (Richards et al., 1998). However, such experience will not accrue if the climate in the practice is hostile to initial engagement with alcohol and other drug clients (Bell, 2000). More attention to the training needs of receptionist staff (Heuston et al., 2001) could lead to better responses to these clients' needs.

Isolation

A recurring concern expressed by general practitioners about treating opioid dependent clients is the feeling of isolation which is often heightened with respect to the often challenging task of prescribing of pharmacotherapies such as methadone. Isolation may stem from insufficient support by practice partners or a specialist back-up service (Bell, 2000; McNeely, Drucker, Hartel & Tuchman, 2000; Parker & Gay, 1987; Sheridan et al., 1997; Tantam, Donmall, Webster & Strang, 1993). Isolation can lead to professional 'burn-out' and the loss of previously committed clinicians from this area of practice (Glanz, 1993; Hoffman & Moolchan, 1994). For female general practitioners in particular, isolation may be compounded by concerns that drug dependent clients may become abusive or violent (Jacka et al., 1999).

Increasing interest is evident in the U.K and Australia concerning the role of shared care models to support GPs and other primary health care providers in the provision of services to illicit drug users. Shared care models aim to address the issue of isolation by involvement of specialist referral services (Gruer et al., 1997; Kutin et al., 1996). This system was introduced into Victoria in 1995 (Cook, Thomson & Jackson, 1995; Kutin et al., 1996) and there are now similar arrangements in other states (Penrose-Wall, Copeland & Harris, 2000; Richards et al., 1998). In New South Wales, the successful Central Coast model (Morris et al., 1996) was extended to other area health services following the New South Wales' Drug Summit in 1999. A comprehensive review by Penrose-Wall et al. (2000) documented the rising popularity of shared care models in Australia but highlighted the lack of evidence concerning the impact of such models on quality of care and client outcomes. Nevertheless, there is evidence that general practitioners have responded positively to the expectation and provision of supportive shared care models of practice (Bell, 1998b; Bell, 1995b; Cook et al., 1995; Dwyer, Allsop & Reilly, 1998; Gruer et al., 1997).

As demonstrated above, a large research literature has identified common facilitators and barriers to GP's provision of methadone prescription services. Whilst this information is important for workforce development and planning, the effectiveness of these strategies rests upon accurate data concerning rates of training uptake and subsequent prescribing undertaken by GPs. The latter issue was addressed in Study 1 of this report which is described below.

Study 1: Methodology

For each of the four jurisdictions examined enquires were made regarding method of recruiting general practitioners into training and the numbers of GPs who had been trained in recent years. In addition, it was established whether or not the training provider had a mechanism for determining the outcome of training, that is whether trainees completed clinical placements (if a requisite) and whether they commenced prescribing.

As described below, documentation and record keeping procedures differ significantly between states. In view of this, the information provided should be considered as preliminary data based on the most detailed information available at the time of writing. The key findings from each of the four states are described below.

South Australia

Training provider

The Drug and Alcohol Services Council (DASC) conducts training in South Australia.

Availability of data

DASC holds records on the uptake of training and subsequent prescribing practices for three years only. Earlier records were sent to the Royal Australian College of General Practitioners but are not now available. As three years of data were held by DASC, it was decided to seek a similar data set from the other jurisdictions to allow meaningful comparisons to be made.

GP recruitment

Invitations to participate are issued via a fax stream from the Divisions of General Practice. If a practitioner agrees to attend training the Department of Human Services is notified and a check performed regarding the appropriateness of the particular prescriber.

Training content and structure

Training consists of a one-day session (usually a Sunday) and one evening session during the week (some GPs do not complete both sessions).

Authorisation to prescribe methadone

In order to be authorised to prescribe opioid pharmacotherapies in South Australia GPs are required to undergo a clinical placement following theory training and an examination.

Patterns of training uptake and subsequent prescribing

As shown in Table 1, a steady decline in the number of GPs undertaking prescriber training occurred between 1999 and 2001. Table 1 also indicates a high attrition rate occurs between training and prescribing in South Australia, with less than 50 percent of trainees becoming prescribers.

Table 1: GP methadone (pharmacotherapy) training in South Australia 1999-2001

	Number commencing theory training	Number (%) completing theory training	Number prescribing (after authorisation following clinical placement)	Proportion of trainees prescribing
1999	45	22 ¹ (49%)	12	27%
2000	26	15 ¹ (58%)	8	31%
2001	15	15 (100%)	6 + 1 ²	40% (47% ³)

¹ Incomplete data

² Willing to prescribe but no clients as yet

³ Includes prescriber willing to prescribe as noted (2)

Client load quotas

GPs are authorised to prescribe for not more than 2 new clients per week in initial weeks and not more than a total of 20 clients in the first 3 months. The maximum quota allowed is 50 clients. After two years experience, the quota may be raised to 75.

Queensland

Training provider

The Queensland Drug and Alcohol Research and Education Centre (QADREC) at the University of Queensland conducts training.

Availability of data

QADREC supplies details of trainees who have completed the theory training to the Queensland Health Department. There is currently no feedback mechanism to enable QADREC to determine whether those who completed training finish clinical placements and whether they then apply for authorisation and become methadone prescribers. Complete data are available for the years 1999-2001 on the numbers of doctors who have completed training.

GP recruitment

Sessions are promoted via three main methods: (1) faxes to regional offices of the State Government's Alcohol, Tobacco and Other Drugs Service (ATODS), (2) faxes to various GP Divisions (and then publicity through divisional newsletters), and (3) directly by email or phone to individuals and organisations that have previously enquired about training.

Training content and structure

Training consists of one day of theory training with an exam at the conclusion of the day. There is no attrition during training (as occurred in South Australia). Doctors discuss their first five clients with a nominated peer before initiating prescribing.

Authorisation to prescribe methadone

Following theory training and an examination, clinical placement (two half-day sessions) is necessary before authorisation. Checks regarding the appropriateness of the particular prescriber (e.g., if they have previously breached legislation) are made by the Queensland Health Department prior to the granting of authority to prescribe.

Patterns of training uptake and subsequent prescribing

As Table 2 shows, a slight decline in the number of GPs undertaking training occurred between 1999 and 2001. There is also evidence that the number of GPs prescribing following training declined between 1999 to 2001.

Table 2: GP methadone (pharmacotherapy) training in Queensland 1999-2001

	Number completing theory training	Number prescribing (after authorisation following clinical placement)	Percentage of trainees prescribing
1999	26	21	81%
2000	17	7	41% (53% ¹)
2001	20	7	35%

¹Includes 2 GPs working as methadone prescribers in government facilities.

Client load quotas

GPs are authorised to initially prescribe for 5 clients. The maximum client quota allowed is 15 individuals.

Victoria

Training provider

The GP training provider is a consortium of the Victorian branch of the Royal Australian College of General Practitioners (RACGP), Turning Point Alcohol and Drug Centre and the Monash University's Department of Community Medicine. Other consortia coordinate training for specialist doctors (i.e., obstetricians).

Availability of data

Changes in recent years in the training providers that deliver pharmacotherapy training has led to a loss of previous training records. For the period under examination (1999-2001) Victorian data was only available for the years 2000 and 2001.

GP recruitment

General practitioners are recruited to training in a number of ways including: personal approach by a team of three Pharmacotherapy Program Development Officers attached to the Drugs and Poisons Unit of the Department of Human Services, word of mouth including peer recruitment, and articles/advertisements placed in Division of General Practice newsletters, the RACGP web site and RACGP newsletters.

Training content and structure

Training consists of a one-day theory component only. Training includes role plays with selected clients currently on a methadone or buprenorphine program.

Authorisation to prescribe

There is no requirement for clinical placements, so those doctors who complete the one-day course are eligible to apply for authorisation to prescribe. The history or files of applicants are checked for appropriateness by the DHS Drugs and Poisons Unit prior to approval to prescribe being given.

Patterns of training uptake and subsequent prescribing

As Table 3 shows, the number of GPs undertaking training increased significantly between 2000 and 2001. Attrition rates between training and prescribing in Victoria are relatively modest. Thirty-four doctors (29%) of those who have completed pharmacotherapy training in Victoria during 2000 and 2001 did not become prescribers.

Table 3: GP methadone (pharmacotherapy) training in Victoria 1999-2001

	Number completing theory training (no clinical placement)	Number prescribing (after authorisation)	Proportion of trainees prescribing after completion of theory training
1999	Not available	Not available	Not available
2000	38	27	71%
2001	82	58	71%

Client load quotas

Client quotas are set according to the extent of prescribers' experience and the perceived need in geographical locations where the GP is practising (the 'need' is determined by Drugs and Poisons Unit). There is no maximum client quota in Victoria.

New South Wales

Training provider

Training is coordinated by the University of Sydney in collaboration with the individual Area Health Services.

Availability of data

As in Victoria, changes in the organisation responsible for the provision of training have led to the non-accessibility of training records for the years 1999-2001 on a state-wide basis, although some retrospective information has been provided by individual Area Health Services.

Training content and structure

Training consists of a 2 week preparation period involving reading of the workshop manual and a pre-workshop test. Participants must then complete either a one day face-to-face workshop or an on-line alternative over 3 weekends, both of which require completion of an examination at the end. A half day clinical placement is then necessary before application for authorisation.

Authorisation to prescribe

Authorisation follows theory training, an examination and clinical placement. Applications are made through the Pharmacotherapy Credentialing Subcommittee (PCS) and are then granted through the Health Department.

Client load quota

GPs are initially approved to prescribe for 25 clients. To increase the quota above 50 clients the prescriber must be in a clinic or general practice that is accredited by the Australian Council on Healthcare Standards (ACHS). Approval to increase the quota above 100 clients is dependent on the context of practice (e.g., previous and current methadone prescribing, quality of prescribing practice including length and frequency of consultations and keeping of complete records). The maximum client quota allowed is 150 individuals. Any GP is able to treat up to 5 clients referred from a clinic or another prescriber without authorisation, provided they seek approval on a case by case basis from the PCS.

Conclusion

Significant gaps in the available data concerning training uptake and subsequent prescribing rates limit the conclusions that can be drawn from this data. High attrition rates between GP training and subsequent prescribing were evident in South Australia and Queensland, and to a lesser extent in Victoria. Less than 50% of trainees in South Australia and Queensland (2000, 2001) become prescribers, and 71% in Victoria. The absence of data precludes comment on attrition in New South Wales.

Observation of attrition raises important issues concerning variation across states in the style and delivery of training (e.g., use of clinical placements). The implications for subsequent uptake of prescribing and the quality of prescribing services provided by GPs are yet to be firmly established. Extensive research has been conducted to establish the evidence base for the effectiveness of opioid pharmacotherapies. What is clearly lacking, however, is an equivalent evidence base concerning the most effective style and delivery of training to maximise prescribing uptake and quality of service provision (e.g., rapport with clients, relationship with dispensing pharmacist). Similarly, client quota systems differ significantly across states. The impact on the quality of service delivery, and the retention of GPs in prescribing programs, is not known. Anecdotal evidence, however, suggests that large client loads are associated with increased GP stress and dissatisfaction which in turn may lead to a withdrawal from provision of prescription services.

It should be acknowledged that participation in training, regardless of subsequent uptake of prescribing, provides an important opportunity to increase GPs' awareness and understanding of opioid use and available treatments. Nevertheless, the current findings indicate a clear need for a national workforce development strategy to facilitate the effective coordination, provision and uptake of training and ensure professional practice change (i.e., enhanced levels of prescribing). The foundation of this strategy rests on accurate information concerning facilitators and barriers to service provision, rates of training uptake by GPs, and proportions of trainees becoming prescribers.

Study 2: Mapping the GP Prescriber Workforce

Despite increasing concerns in Australia regarding use of psychostimulants, especially methamphetamine, and awareness of a 'drought' in the supply of heroin from late 2000 to 2002, there remains a pressing need to provide treatment for opioid dependent people. With the instigation of a methadone program in the Northern Territory during 2002, pharmacotherapy programs for opioid dependence are now available throughout Australia. Estimates of the number of heroin dependent people in Australia (Hall et al., 2000), and consideration of the number of clients of methadone programs, indicate a significant gap in services. Given that the capacity of public methadone programs is limited, there is a growing need to place greater emphasis on the private practitioner sector.

As the following section demonstrates, only limited data on the GP prescriber workforce is available for each state considered in the current study. It is crucial that this situation is remedied in the near future, since accurate and detailed data on the GP prescriber workforce forms the foundation of effective workforce development and planning initiatives to ensure a sustainable and appropriately sized GP prescriber workforce.

Methodology

Details of the prescribing activity of general practitioners related to methadone and other pharmacotherapies was sought from state health department personnel in South Australia (as of 27/2/02), Queensland (as of 28/2/02), Victoria (as of 15/3/02) and New South Wales (as of 30/6/02).

Availability of data

Due to differences in documentation procedures, complete data concerning the number of GP prescribers (total and proportion of all GPs) and number of methadone clients of GPs was not available from all states. New South Wales and Victorian data do not record "general practitioner" status as this information is not a "mandatory field" for doctor registration. The Victorian Department of Human Services manually extracted the number of GP methadone prescribers from their records. This information was not available for New South Wales. South Australian data does not distinguish between providers prescribing methadone and buprenorphine.

Overview

As Table 4 shows, the number of Australian GPs involved in methadone prescribing is low relative to the number of people in methadone treatment. In light of the increasing emphasis on community-based care there is a clear need for greater GP involvement. In addition, there is a strong case for systematic data collection systems to be implemented across all states to enable development of effective workforce planning strategies.

Table 4: Estimated number of heroin dependent people, pharmacotherapy clients and prescribing GPs across four Australian states

	Heroin dependent people (estimated Hall et al. 2000)	People in pharmacotherapy treatment (% estimate of all heroin dependent) (June 2002)¹	Pharmacotherapy clients of GPs (March 2002)	Total number of GPs (March 2002)	GPs prescribing pharmacotherapies (% of total GPs for state) (March 2002)
SA	4700	2417 (51%)	1347	3308 (2965) ⁴	49 (1.5%)
QLD	4400	3986 (91%) ²	309	6750	44 (0.7%)
VIC	19600	7700 (39%)	Not known ³ (7504 clients of medical practitioners)	Not known ² (total no. medical practitioners 15071)	431 (% not calculable) ³
NSW	35400	15471 (44%)	Not known ³ (10029 clients of medical practitioners)	Not known ³ (total no. medical practitioners 22745)	Not available

¹ National Pharmacotherapy Statistics Annual Data as at 30 June 2002. Estimated percentage of heroin dependent people in treatment using 2000 estimate of numbers of dependent people and 2002 figures for clients in pharmacotherapy treatment.

² Number of heroin dependent persons in QLD is likely to be an under-estimate. Proportion of heroin dependent people in treatment, therefore, is likely to be an over-estimate (Hall et al., 2000, p. 53-54).

³ Data do not distinguish between GPs and other private practitioners.

⁴ Number registered and resident.

South Australia

Number of prescribing GPs

In South Australia 49 (1.5%) GPs treat almost 60% (1374 individuals) of the state's clients on opioid pharmacotherapy programs.

Availability of data

Data was provided by the South Australian Department of Human Services (DHS), including de-identified data on the demographic characteristics of current prescribers, and the number of registered prescribers not currently providing prescribing services. Departmental records do not distinguish between methadone and buprenorphine prescribers. To allow comparison with Victoria and South Australia, prescribing data was analysed to determine the client load for general practitioners prescribing opiate pharmacotherapies. However, these data are not directly comparable as the Victorian records do not distinguish between general practitioners and other medical practitioners who prescribe methadone.

Client loads of prescribing GPs

Figure 1 shows the number of general practitioners in each client load category (i.e., 17 GPs have client loads of < 10 individuals, 2 GPs have client loads of > 100 individuals). Category values were selected so as to be identical with those in the Victorian summary data. Figure 2 shows the number of clients treated by GPs within each client load category (i.e., 5% of clients are provided for by GPs with client loads < 10 individuals, 17% of clients are provided for by GPs with clients loads of > 100 individuals).

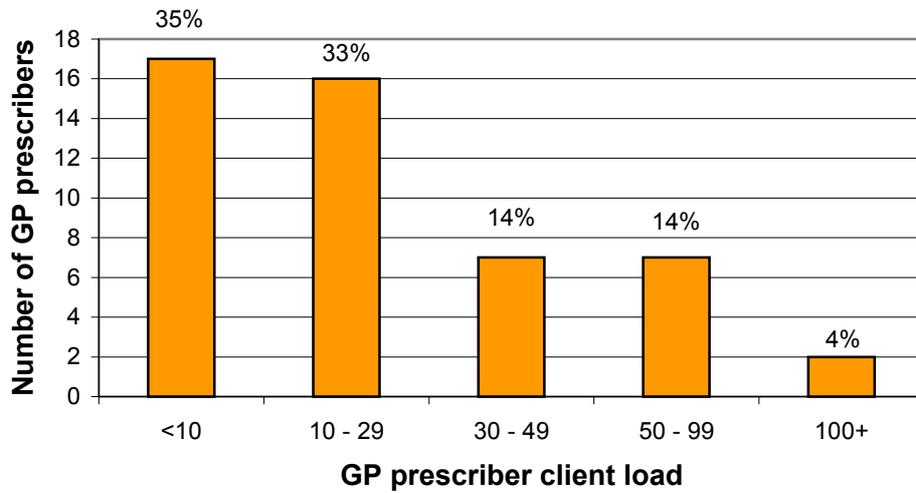


Figure 1: South Australia: GPs by pharmacotherapy client load

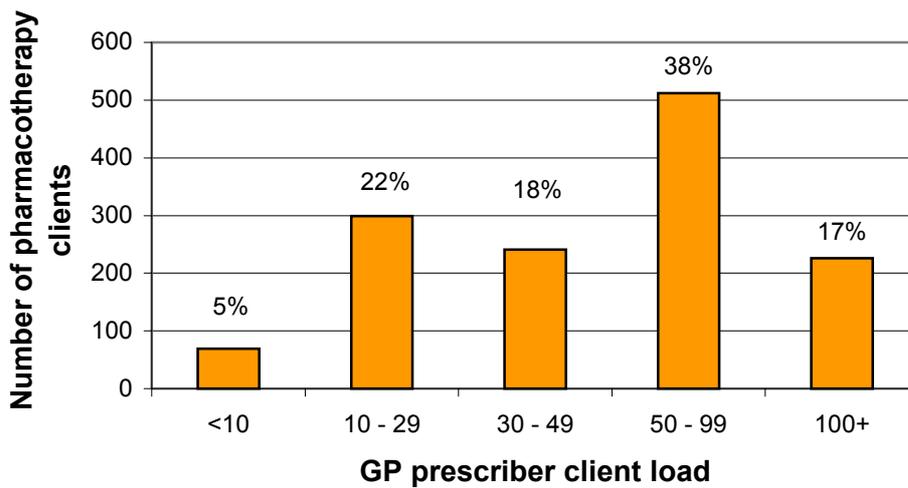


Figure 2: South Australia: distribution of pharmacotherapy clients by GP methadone client load

Figure 1 indicates that the majority of GPs in South Australia have client loads well within the recommended state quota of 50 clients per GP. Figure 2, however, indicates a less favourable picture, with 55% of clients receiving prescribing services from a GP with greater than the recommended 50 or 75 (allowable with 2 years experience) clients.

Characteristics of current GP prescribers

By cross-matching data from the two data sets discussed previously, South Australian DHS officials were able to provide extensive information regarding general practitioners prescribing opioid pharmacotherapies and their prescribing activity. The de-identified

demographic data for each general practitioner included age, gender and years authorised as a prescriber. The following section summarises the key findings concerning the relationship between these demographic characteristics and GP client load.

GP prescriber age

Figures 3 and 4 show the number of GP prescribers in each designated age category and the number of clients treated by GPs in different age categories, respectively.

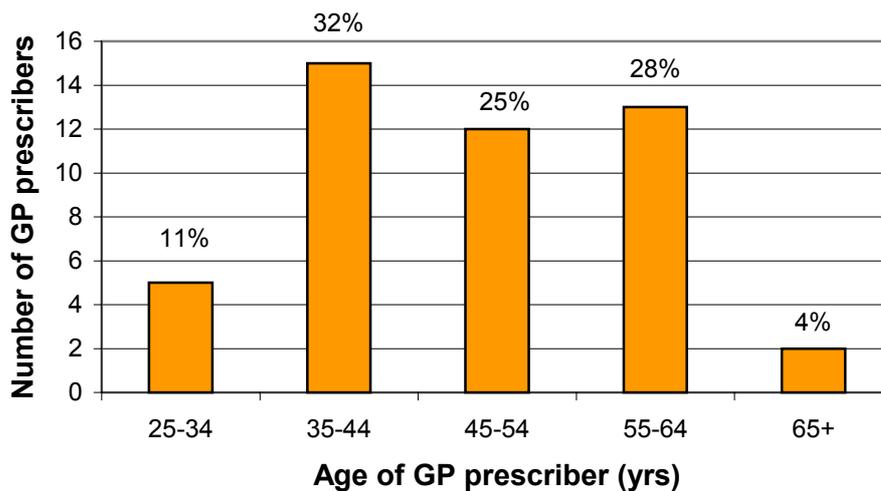


Figure 3: South Australia: distribution of GP pharmacotherapy prescribers by age

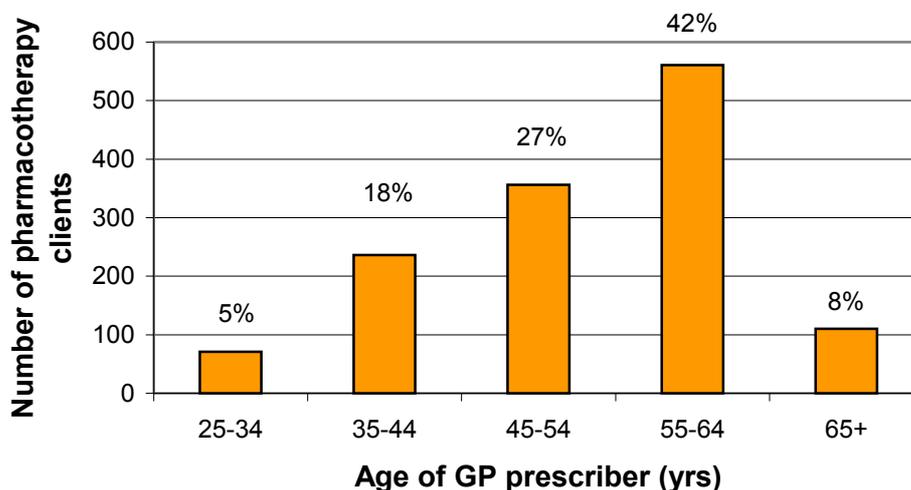


Figure 4: South Australia: number of pharmacotherapy clients by prescriber age

Figure 3 indicates that GP prescribers in South Australia represent an older workforce with 55% of GP prescribers in South Australia aged 45 or older, and 31% of GP prescribers aged 55 years or older. As shown in Figure 4, 50% of South Australian opioid pharmacotherapy clients receive prescribing services from a GP aged 55 or older. The disproportionate

responsibility for clients assumed by older compared to younger GPs is clearly reflected in the average client loads per individual GP in each age category. As Table 5 shows, GP prescribers aged 55 or older have client loads approximately twice the size of their younger colleagues.

Table 5: South Australia: average number of methadone clients per GP according to GP age

GP age category (years)	Average number of opioid pharmacotherapy clients
25-34	14
35-44	16
45-54	27
55-64	37
65+	55

GP prescriber gender

In addition to the imbalance between younger and older GP prescribers, a significant gender imbalance in the South Australian GP prescriber workforce was also observed. As Figure 5 shows, only 14% of clients receive prescribing services from a female GP.

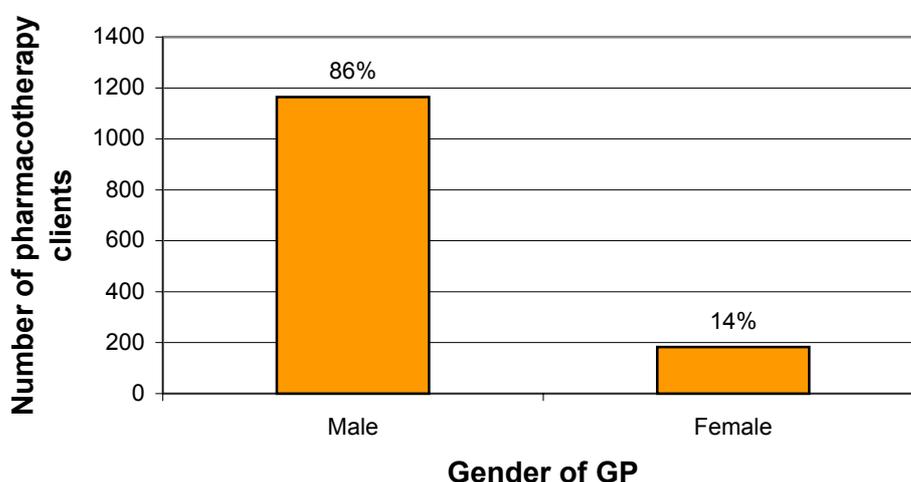


Figure 5: South Australia: number of pharmacotherapy clients by prescriber gender

Length of registration as a prescriber

The impact of length of registration as a GP prescriber on client load is not straightforward. As Figure 6 shows, GPs registered for 1-2 years or for longer than 7 years are responsible

for the majority of opioid pharmacotherapy clients in South Australia (35% and 40%, respectively).

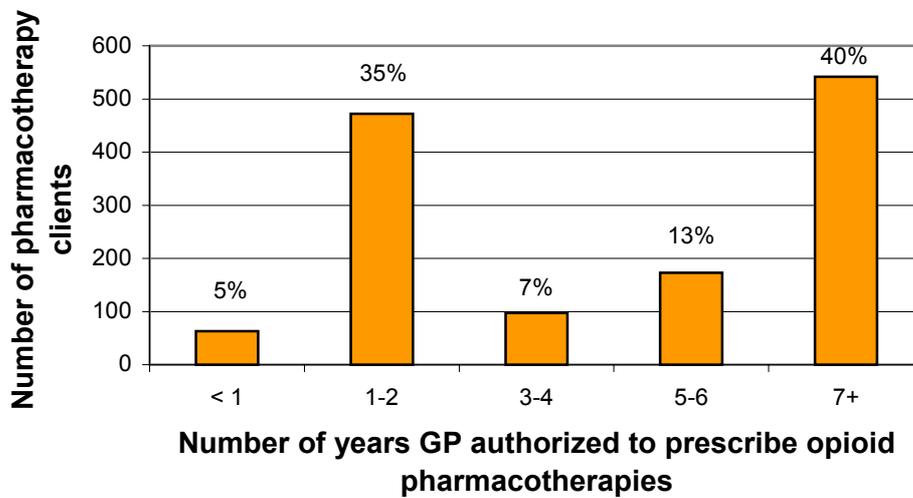


Figure 6: South Australia: number of pharmacotherapy clients by length of prescriber authorization

Inactive registered GP prescribers

Identifying the proportions of registered prescribers who are currently active versus inactive (i.e., not currently prescribing) is crucial to developing an accurate map of the GP prescriber workforce. As Figure 7 below shows, 35% of registered prescribers in South Australia are not currently providing opioid pharmacotherapy prescription services.

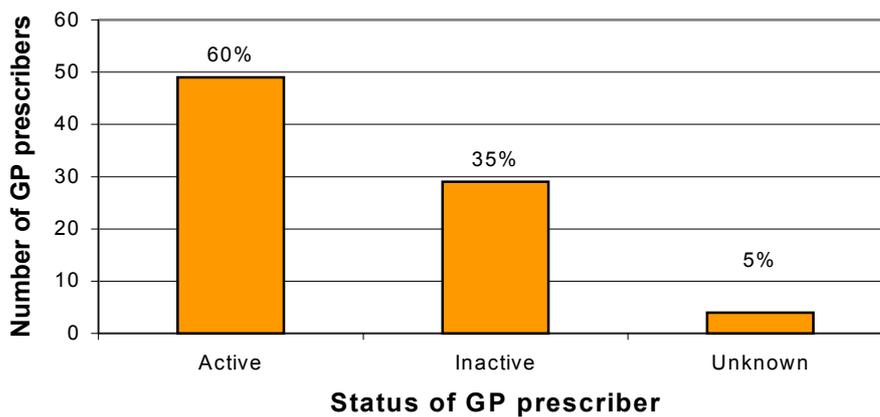


Figure 7: South Australia: inactive and active registered GP prescribers

South Australia: Conclusion

In South Australia the majority of GPs are responsible for client loads within the recommended state quotas. The large proportion of clients receiving dispensing services from GPs with client loads above the recommended quota, however, indicates a serious

shortfall in the number of prescribing GPs in South Australia. In addition, the disproportionate responsibility for prescribing assumed by GPs aged 55 or older indicates the shortfall of prescribing GPs is likely to worsen in the future as older GP prescribers reach retirement age. A significant gender imbalance was also observed, with 86% of clients receiving prescribing services from male GPs. There is evidence that concerns about abusive or violent clients are particularly salient for female GPs (Jacka et al., 1999). The current findings indicate that recruitment and support strategies tailored to meet the particular needs and concerns of female GPs are essential to the enlargement of the GP workforce in South Australia. The inactive prescribing status of over one third of authorised prescribers in South Australia, combined with the age and gender imbalance observed in the current GP prescriber workforce, indicates an urgent need for workforce development strategies focused on the retention and support of GPs and other medical practitioners authorised to prescribe opioid pharmacotherapies. Such strategies are crucial to the long-term sustainability of an effective and accessible opioid pharmacotherapy prescribing service in South Australia.

Queensland

Number of prescribing GPs

GPs in Queensland prescribe for only a small proportion of methadone clients throughout the state, the majority being treated in public clinics. Queensland's 44 currently active GP prescribers provide services for less than 10 percent (309 individuals) of methadone clients.

Availability of data

Data was supplied by the Queensland Health on methadone prescribing in the private, public and corrections sectors. No demographic data for current GP prescribers was available.

Client loads of prescribing GPs

Due to the large number of GPs in QLD with client loads smaller than 10, Figure 8 shows the number of GPs per client loads of 5 to 9 individuals and less than 5 individuals. Figures 9 and 10 present this same data but with client load categories selected to be identical to the categories in the data supplied by Victoria. As noted with the South Australian analysis, the data are not directly comparable as the Victorian records do not distinguish between general practitioners and other medical practitioners prescribing methadone.

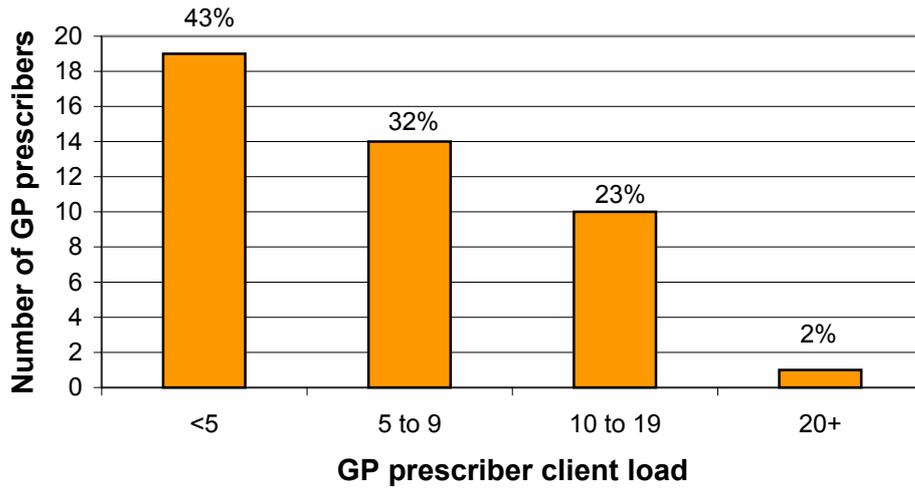


Figure 8: Queensland: GPs by GP prescriber client load

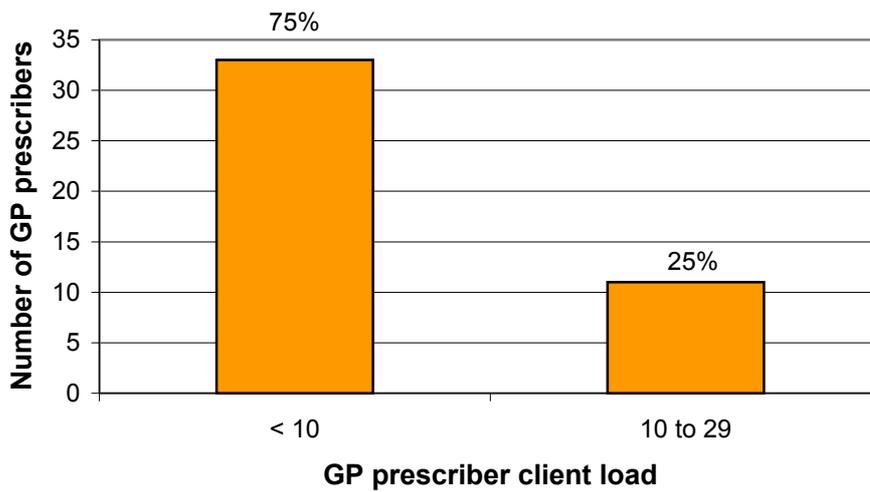


Figure 9: Queensland: GPs by GP prescriber client load

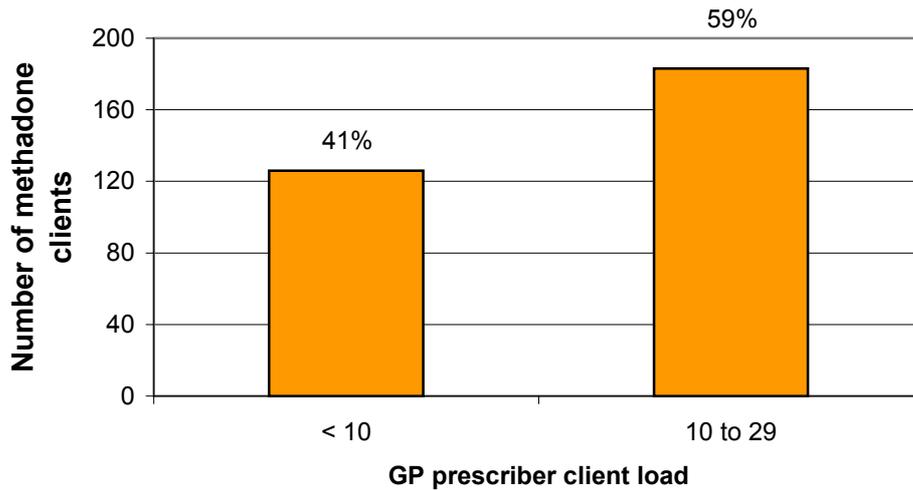


Figure 10: Queensland: distribution of methadone clients by GP prescriber client load

As Figure 8 shows, the majority of prescribing GPs in Queensland have client loads within or close to the recommended state quota of 15 clients per GP. Seventy five percent of GP prescribers in Queensland have fewer than 10 clients, whereas 23% of GPs have 10-19 clients. Similar to South Australia, Figure 10 indicates that nearly 60% of clients receive dispensing services from GPs with larger client loads.

Characteristics of current GP prescribers

No data were available on the age, gender and years authorised as methadone prescriber, or number of inactive registered prescribers.

Queensland: Conclusion

As indicated earlier, Queensland’s current model of care in which forty four GP prescribers account for less than ten percent of methadone clients reflects a newly emerging community-based model of care. On average, GP prescribers have relatively small client loads of 9 individuals or less. However, similar to South Australia there is evidence that a small group of GPs with the largest client loads are responsible for the majority of the clients receiving prescribing services from GPs in that state.

Victoria

Number of prescribing GPs

In Victoria private practitioners provided opiate pharmacotherapy prescription services to 98% (2758 individuals) of the state's buprenorphine clients and 97% (4746) of the state's methadone clients (as of June 2002).

Availability of data

Prescribing data in Victoria were supplied in a summary from the Victorian Department of Human Services. No demographic data was available. Departmental data do not distinguish between general practitioners and other methadone providers, therefore the summary data supplied reflects the total number (431) of private methadone prescribers in that state. After a departmental official made a manual adjustment for doctors prescribing at more than one location, it was established that 383 individuals were methadone prescribers in Victoria. The official also ascertained for this report that only 331 of these prescribers were GPs. The following analysis is based on the figure of 431 prescribers as this is the information on which departmental records are based. The data regarding prescriber client load (Figure 11) indicates the number of permits doctors have for pharmacotherapy clients. It may be an overestimation of client numbers as doctors do not always put in timely terminations for clients no longer on their program. However these numbers can be used as an indication of client load by doctors in Victoria.

Client loads of prescribers

As Figure 11 shows, the majority (62%) of prescribers in Victoria are responsible for fewer than 10 clients each, with few providers (16%) having more than 30 clients. Further data was supplied giving the number of clients per client load category. However, the data do not distinguish between methadone and buprenorphine clients. Similar to South Australia and Queensland, Figure 12 indicates that the majority of clients (nearly 70%) receive prescribing services from prescribers with client loads of 50 or higher individuals. As with South Australia and Queensland, the current findings indicate that in Victoria the majority of pharmacotherapy clients are being provided for by a very limited number of prescribers.

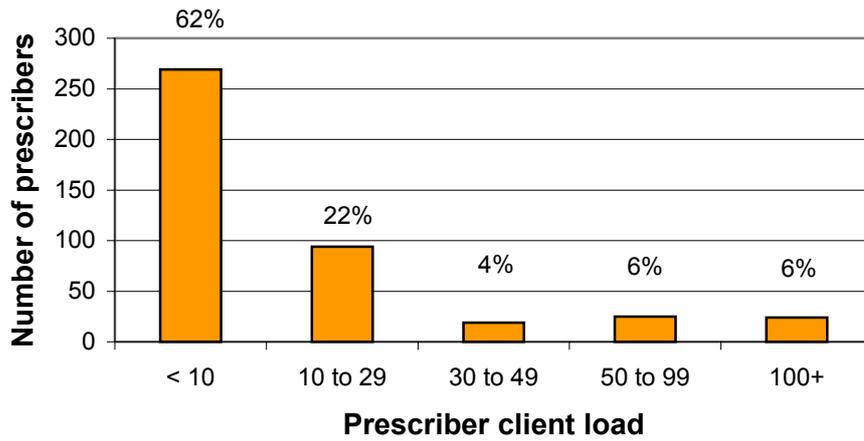


Figure 11: Victoria: prescribers by prescriber client load

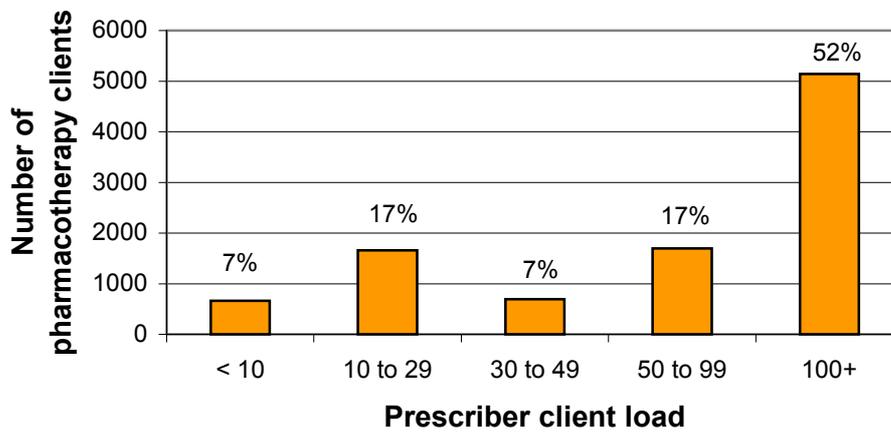


Figure 12: Victoria: distribution of pharmacotherapy clients by prescriber client load

Characteristics of current prescribers

No data was available on the age, gender and years authorised as methadone prescriber, or number of inactive registered prescribers.

Victoria: Conclusion

Data available from Victoria did not allow precise specification of the proportion of GPs providing prescribing services. The relatively large number of clients in Victoria compared to South Australia and Queensland, and the absence of state client load quotas, may to some extent account for the relatively large client loads held by some prescribers (i.e., above 50). This figure may also be inflated by the failure of some doctors to register client terminations from the opiate pharmacotherapy program. Nevertheless, the findings concerning all prescribers indicate a similar pattern to that observed in South Australia and Queensland. Specifically, the majority of prescribers have small to medium sized client loads, whereas the majority of clients are serviced by prescribers with the largest client loads.

New South Wales

Number of prescribers and availability of data

There are 381 active registered prescribers in New South Wales. As in Victoria, records in New South Wales do not distinguish between GPs and other medical practitioners for state registration purposes. Information regarding methadone prescribers and their clients was supplied by New South Wales Health as at 30 June, 2002. At that time there were 10,130 clients on the NSW methadone maintenance program.

Client loads of prescribers

As shown in Figure 13, the majority (61%) of prescribers in New South Wales are responsible for fewer than 29 clients each, with fewer providers (30%) responsible for more than 50 clients. Figure 14 indicates the majority of clients (77%) are provided for by prescribers with client loads of 50 or more individuals.

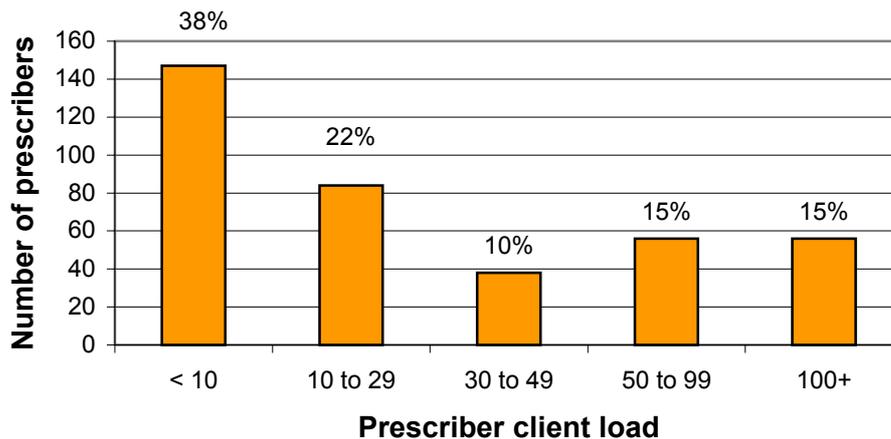


Figure 13: New South Wales: Prescribers by methadone client load

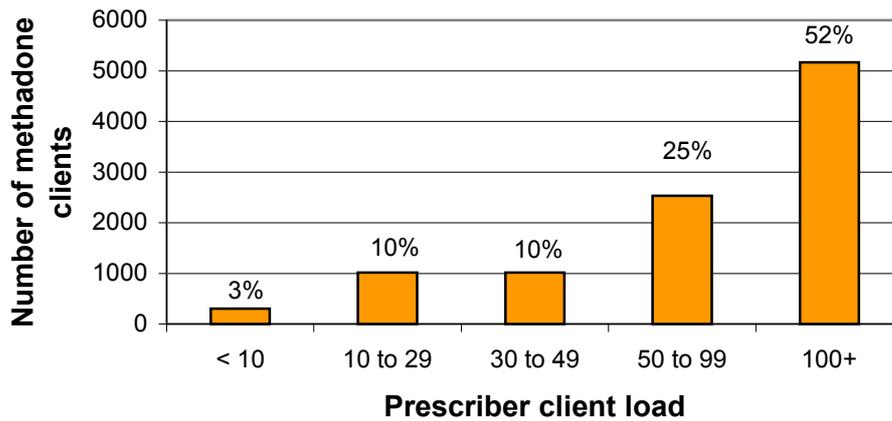


Figure 14: New South Wales: distribution of methadone clients by prescriber client load

Characteristics of current prescribers

No data was available on age, gender and years authorised as a methadone prescriber.

Inactive registered prescribers

Also available for the New South Wales as at 30 June (2002) were data showing the proportion of authorised¹ methadone prescribers with client loads in categories ranging from zero clients through to 100 and over clients. As Figure 15 shows, a significant proportion of methadone prescribers (36%) are inactive.

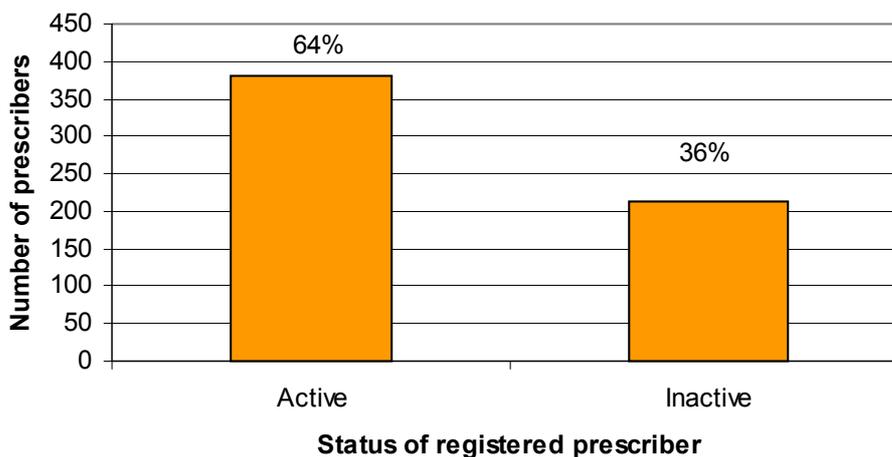


Figure 15: New South Wales: Status of registered methadone prescribers

¹ 'Authorised' signifies that, at some previous time, all prescribers included in these data have been authorised to prescribe methadone. It does not signify that they have all undergone training.

New South Wales: Conclusion

Data available from New South Wales did not allow precise specification of the proportion of GPs providing prescribing services¹. Nevertheless, the findings concerning all prescribers indicate a similar pattern to that observed in the other states. Specifically, the majority of prescribers have small to medium sized client loads, whereas the majority of clients are serviced by prescribers with the largest client loads. Similar to South Australia, the inactive prescribing status of just over one third of authorised prescribers in New South Wales indicates the need for workforce development strategies focused on the retention and support of GPs and other medical practitioners authorised to prescribe opioid pharmacotherapies.

NSW Health reports a proactive approach to enhance and coordinate the delivery of pharmacotherapy services by GPs. A state-wide General Practitioner Support Project has been implemented that focuses on workforce development for GPs. The primary aim of this project is to increase the quantity and quality of GP participation in drug and alcohol treatment. Pharmacotherapy provision is cited as a priority area within this objective, with a specific focus on linking GPs to the NSW Pharmacotherapies Accreditation Course.

¹ NSW health is in the process of revising its pharmacotherapy program database which will enable identification of GP prescribers and the number of clients they are managing by late 2003.

Summary of the data relating to client load of GPs

The data supplied by Victoria, South Australia, New South Wales and Queensland relating to the client load of GPs is summarised in Tables 6 and 7. The absence of precise data related to the prescription of methadone by general practitioners is clearly highlighted. Records from both Victoria and New South Wales do not distinguish between general practitioners and other medical practitioners prescribing methadone. The South Australian data does not distinguish between GPs prescribing methadone and buprenorphine. The Victorian data relating to the number of clients per prescriber load does not distinguish between methadone and buprenorphine prescribers. There is a pressing need for the establishment of ongoing accurate quantification of the demand for, and suspected shortfalls in, the provision of methadone prescriber services by GPs in each jurisdiction.

Table 6: Number of GPs by methadone client load

	<10 clients	10 to 29 clients	30 to 49 clients	50 to 99 clients	100+ clients
Victoria ¹	N/A ²	N/A	N/A	N/A	N/A
South Australia ³	N/A	N/A	N/A	N/A	N/A
Queensland	33	11	0	0	0
New South Wales ¹	N/A	N/A	N/A	N/A	N/A

¹ Records do not distinguish between GPs and other prescribers.

² Records not available.

³ Records do not distinguish between methadone and buprenorphine clients.

Table 7: Distribution of methadone clients by GP methadone client load

	<10 clients	10 to 29 clients	30 to 49 clients	50 to 99 clients	+100 clients
Victoria ¹	N/A ²	N/A	N/A	N/A	N/A
South Australia ³	N/A	N/A	N/A	N/A	N/A
Queensland	N/A	N/A	N/A	N/A	N/A
New South Wales ¹	N/A	N/A	N/A	N/A	N/A

¹ Records do not distinguish between GPs and other prescribers.

² Records not available.

³ Records do not distinguish between methadone and buprenorphine clients.

General Discussion

Despite increasing concerns with methamphetamine use in Australia, the use of opioids and dependence on opioids are still recognised as significant public health issues. A shortfall in treatment provision is evident, but difficult to quantify, and emphasis has been placed on encouraging GPs to be involved in opioid dependence treatment. Training programs are conducted regularly, but it is known anecdotally that many of the trained practitioners do not become prescribers. This project reviewed in four states (South Australia, Queensland, New South Wales and Victoria) the outcomes of the training of general practitioners to prescribe methadone (and other pharmacotherapies) and the prescribing activity of general practitioners in this area of practice.

Overview of key findings

Four key findings emerged from this study:

- (1) there are significant gaps in data currently available on GP training and prescription of methadone
- (2) considerable variation is evident in prescriber training across states, particularly with respect to (a) the style and delivery of training across states, (b) uptake of prescribing following training, and (c) client quota systems
- (3) from the available data there was evidence of significant attrition between GP prescriber training and subsequent service delivery
- (4) the limited data available indicate significant shortfalls in the number of prescribers available in each state to service methadone clients (state variations in private versus public service provision notwithstanding). It was consistently observed across states that a relatively small number of prescribers were providing services for the majority of pharmacotherapy clients.

Detailed and systematic data collection: a priority issue across jurisdictions

The goal of the current report was to identify patterns of GP prescriber training and methadone prescription across four jurisdictions. One of the most important findings to emerge from this study, however, concerns the significant lack of detailed, systematic and precise information addressing these issues. Three main factors impeded access to sufficient data: (1) different documentation and data collection procedures across jurisdictions, (2) failure to retain past records beyond one or two years, and (3) responsibility for data collection shared between organisations across time (i.e., the organisation responsible for data collection changes over a number of years) and issues (e.g., one organisation collects data on training and another collects data on prescribing). The findings from this study clearly indicate the need for a centralised data collection system to be developed in each jurisdiction. In order to facilitate continuity and standardisation of data collection this role would be best filled by the state departments of health.

With the limited data currently available, many important questions concerning workforce development and planning for GP prescriber training remain unanswered. Training is time and resource intensive. Yet in the absence of accurate data concerning post-training rates of service provision, cost effectiveness cannot be assessed nor can evidence-based strategies be developed to improve training outcomes and cost effectiveness.

Data limitations also leave important questions regarding the GP prescriber workforce unanswered. In order to develop targeted and effective GP training, recruitment and retention strategies for opioid pharmacotherapy prescribing, it is crucial that the available data accurately distinguishes between GPs and other medical practitioners. The lack of specificity in the identification of prescribers is of particular concern since general practitioners are being encouraged by government to engage with alcohol and other drug clients. Yet without knowing if individuals are GPs, it is impossible to confirm whether any strategies to facilitate engagement are successful. The increasing rates of buprenorphine prescription also require data collection systems that accurately distinguish between methadone and buprenorphine prescription rates.

In addition, very little data was available concerning the demographics of the current GP prescriber workforce. Data from South Australia illustrate the value of this type of information, where the current findings indicated that the GP prescriber workforce is characterised by male prescribers aged 45 years or older. This information indicates that

workforce development strategies focused on the recruitment and retention of a younger cohort of GP prescribers, and female prescribers, is essential for the long term sustainability of effective and accessible opioid pharmacotherapy programs in South Australia. Yet in the absence of comparable demographic data in other states, it is unclear whether this pattern, with its implications for retention and recruitment, also occurs in other states. The capacity to distinguish between active and inactive registered prescribers also has major implications for the development of effective workforce development and planning strategies. In South Australia and New South Wales a third of registered prescribers were not currently providing prescription services. This information suggests that a key strategy in addressing the shortfall of prescribers in these two states would be to address barriers to service provision experienced by inactive authorised prescribers, rather than focus exclusively on the recruitment of new prescribers. In the absence of relevant data, the extent to which this strategy is also appropriate for other jurisdictions cannot be established.

The following list provides examples of the types of information required for effective workforce development and planning initiatives, and for accurate comparison of GPs' opioid pharmacotherapy prescribing between states.

- Number of GP prescribers (total, and proportion of entire GP workforce)
- Number of GPs undergoing prescriber training
- Proportion of GPs undertaking prescribing following training
- Number of clients per GP prescriber
- Number of prescribers per client load category
- Type of opioid pharmacotherapy prescribed (e.g., methadone, buprenorphine)
- Demographics of GP trainees and prescribers (e.g., age, gender, years qualified, years authorised as prescriber, location of practice)
- Number of active versus inactive authorised GP prescribers.

It is important to acknowledge, however, that an effective data collection system must balance the need for comprehensive and detailed information with the need to provide an efficient system that does not burden GPs with excessive paper work and reporting requirements. Data collection systems, therefore, should be developed in consultation with providers in order to ensure an efficient approach to collecting accurate information in a timely manner.

Implications for training of GP prescribers

Three key findings emerged from the study of GP prescriber training: (1) evidence from three states indicating significant rates of attrition occur between GP prescribing and subsequent service delivery, (2) there is a high degree of variability between states concerning the content and delivery of training, and (3) patient quota systems differ significantly across states.

In order to ensure the effectiveness of opioid pharmacotherapy programs three crucial workforce development priorities must be addressed: (1) establishment of systematic data collection processes concerning the training and subsequent prescription rates of GPs in each state and territory, (2) development of an evidence-based approach to the style and delivery of GP prescriber training to maximise subsequent uptake of prescribing and the quality of service provision, and (3) establishment of an evidence-based approach to client quota systems to ensure appropriate and manageable client loads that are essential to sustaining a GP-based prescribing system.

Implications for GP prescription of methadone & other opioid pharmacotherapies

The findings of this study indicate a clear and urgent need for workforce development strategies to improve the recruitment and retention of GP prescribers (particularly younger GPs and female GPs), and encourage inactive registered prescribers to resume service provision. As discussed previously, the development of evidence-based training strategies to maximise post-training prescribing is essential. The current findings testify to the fact that training alone does not necessarily lead to effective and sustainable service provision. Shared care models of service provision represent one response to this issue and are gaining popularity in Australia, although evidence concerning effectiveness in the recruitment and retention of GPs is sparse (cf. Penrose-Wall et al., 2000). It is important to recognise, however, that accurate and detailed data collection is crucial to the evaluation of shared care (and other initiatives) designed to support effective and sustainable GP prescriber programs.

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Ms June McPhail, Central Coast Area Health Service

Queensland

Dr Alun Richards, Queensland Health
Mr Bill Parlet, Queensland Alcohol and Drug Research and Education Centre (QADREC)

References

- Advisory Council on the Misuse of Drugs. (1982). *Treatment and rehabilitation*. London: Her Majesty's Stationery Office.
- Ali, R. (2002). E-mail 14th February.
- Allsop, S., Bell, J., Brough, R., Dwyer, P., Edmonds, C., Lintzeris, N., et al. (1997). *Learning objectives for methadone prescribers*. Canberra: Commonwealth Department of Health and Family Services.
- Bell, J. (1998a). Delivering effective methadone treatment. In J. Ward, R. Mattick & W. Hall (Eds.), *Methadone Maintenance Treatment (pp. 161-175)*. Amsterdam: Harwood Academic Publishers.
- Bell, J. (1998b). Training health professionals to deliver methadone treatment. In J. Ward, R. Mattick & W. Hall (Eds.), *Methadone Maintenance Treatment and Opioid Replacement Therapies (pp. 361-378)*. Amsterdam: Harwood Academic Publishers.
- Bell, J. (2000). Quality improvement for methadone maintenance treatment. *Substance Use & Misuse*, 35(12-14), 1735-1736.
- Bell, J., Ward, J., Mattick, R., Hay, A., Chan, J. & Hall, W. (1995a). *An evaluation of private methadone maintenance clinics*. Canberra: Commonwealth Department of Human Services and Health.
- Bell, J. R. (1995b). Lessons from a training program for methadone prescribers. *The Medical Journal of Australia*, 162, 143-144.
- Commonwealth Department of Health and Aged Care. (2001). *National action plan on illicit drugs 2001 to 2003*. Canberra: Ministerial Council on Drug Strategy.
- Cook, R., Thomson, W. & Jackson, I. (1995). Survey of requirements for specialist methadone services in Victoria. *Australian Journal of Hospital Pharmacy*, 25(1), 91.
- Darke, S. (1992). Injecting drug users and the Human Immunodeficiency Virus: what do we know? *Drug and Alcohol Review*, 11, 153-161.
- Darke, S., Hall, W. & Topp, L. (2000). *The Illicit Drug Reporting System (IDRS) history and development of a national strategic early warning system for monitoring trends in illicit drug use*. Sydney: National Drug and Alcohol Research Centre.
- Darke, S., Kaye, S. & Topp, L. (2002). *NSW drug trends 2001: Findings from the Illicit Drug Reporting System (IDRS)*. Sydney: National Drug and Alcohol Research Centre.
- Dwyer, P., Allsop, S. & Reilly, D. (1998). Workforce issues for rural health professionals. In S. Griffiths, P. Dunn & S. Ramanathan (Eds.), *Drug and Alcohol Services in Rural and Remote Australia (pp. 55-64)*. Wagga Wagga, NSW: Australian Rural Health Research Institute.
- Ernst, E., Bartu, A., Popescu, A., Ilett, K.F., Hansson, R. & Plumley, N. (2002). Methadone-related deaths in Western Australia. *Australian and New Zealand Journal of Public Health*, 26, 364-370.
- Glanz, A. (1993). The role of General Practitioners in the treatment of drug misuse, with particular emphasis on the problem of HIV transmission. PhD Thesis, University of London, London.
- Groves, P., Heuston, J., Durand, M. A., Albery, I., Gossop, M. & Strang, J. (1996). The identification and management of substance misuse problems by general practitioners. *Journal of Mental Health*, 5(2), 183-193.
- Gruer, L., Wilson, P. G., Scott, R., Elliott, L., Macleod, J., Harden, K., et al. (1997). General practitioner centred scheme for treatment of opiate dependent drug injectors in Glasgow. *British Medical Journal*, 314, 1730.
- Hall, W., Ross, J., Lynskey, M., Law, M. & Degenhardt, L. (2000). *How many dependent opioid users are there in Australia? (Monograph 44)*. Sydney: National Drug and Alcohol Research Centre.
- Heuston, J., Groves, P., Al Nawad, J., Albery, I., Gossop, M. & Strang, J. (2001). Caught in the middle: receptionists and their dealings with substance misusing patients. *Journal of Substance Use*, 6, 1511-1157.

- Hoffman, J. A. & Moolchan, E. T. (1994). The phases of treatment model for methadone maintenance: Implementation and evaluation. *Journal of Psychoactive Drugs*, 26(2), 181-197.
- Holmwood, C. & McCabe, D. (2001). *Principles for the assessment, diagnosis and management of patients with co-existing mental health and substance use problems in the general practice setting*. Adelaide: Primary Mental Health Care Australian Resource Centre.
- Jacka, D., Clode, D., Patterson, S. & Wyman, K. (1999). Attitudes and practices of general practitioners training to work with drug-using patients. *Drug and Alcohol Review*, 18, 287-291.
- King, M., Hindler, C., Nazareth, I., Farmer, R., Gerada, C. & Cohen, J. (1998). A controlled evaluation of small-group education of general practitioners in the management of drug users. *British Journal of General Practice*, 48(429), 1159-1160.
- Kutin, J., Lintzeris, N., Ezard, N. & Mulheisen, P. (1996). *Evaluation of the Specialist Methadone Service*. Paper presented at the Autumn School of Studies on Alcohol and Drugs, St Vincent's Hospital, Melbourne.
- Loxley, W. (2000). Doing the possible: harm reduction, injecting drug use and blood borne viral infections in Australia. *International Journal of Drug Policy*, 11, 407-416.
- Marsch, L. (1998). The efficacy of methadone maintenance interventions in reducing illicit opiate use, HIV risk behaviour and criminality: A meta-analysis. *Addiction*, 93(4), 515-532.
- Mattick, R. P., Breen, C., Kimber, J., et al. (2001). (Last update 19/12/01, last substantive amendment 10/8/2000). Methadone maintenance versus no methadone maintenance for opioid dependence (Issue 3), database . The Cochrane Database of Systematic Reviews.
- McNeely, J., Drucker, E., Hartel, D. & Tuchman, E. (2000). Office-based methadone prescribing: Acceptance by inner-city practitioners in New York. *Journal of Urban Health: Bulletin of the New York Academy of Medicine*, 77(1), 96-102.
- Ministerial Council on Drug Strategy. (1998). *National drug strategic framework - Building partnerships*. Canberra: Commonwealth of Australia.
- Morris, D., Edwards, C., Gill, A., Polkinghorne, H., Evershed, K., Morgan, P., et al. (1996). *A summary of the findings of the impact evaluation of the General Practitioner Drug and Alcohol Project*. Gosford: Alcohol and Other Drug Service, Central Coast Area Health Service.
- National Institute of Health. (1998). Effective medical treatment for opiate addiction: National Consensus Development Panel on Effective Medical Treatment of Opiate Addiction. *Journal of the American Medical Association*, 280(22), 1936-1943.
- Parker, J. & Gay, M. (1987). Problem drug users known to Bristol medical practitioners. *Journal of the Royal College of General Practitioners*, 37(299), 260-263.
- Penrose-Wall, J., Copeland, J. & Harris, M. (2000). *Shared care of illicit drug problems by general practitioners and primary health care providers: A literature review*. Sydney: Centre for General Practice Integration Studies, National Drug and Alcohol Research Centre & South Western Sydney Area Health Service.
- Rawson, R. A. & Ling, W. (1991). Opioid addiction treatment modalities and some guidelines to their optimal use. *Journal of Psychoactive Drugs*, 23(2), 151-163.
- Richards, D., Geddis, A. & Whitton, G. (1998). The role of General Practitioners. In S. Griffiths, P. Dunn & S. Ramanathan (Eds.), *Drug and Alcohol Services in Rural and Remote Australia* (pp. 47-54). Wagga Wagga, NSW: Australian Rural Health Research Institute.
- Roche, A. (1997). Have efforts to improve medical students' drug and alcohol knowledge, skills and attitudes worked? *Drug and Alcohol Review*, 16, 157-170.
- Roche, A., Guray, C. & Saunders, J. B. (1991). General Practitioners' experiences of patients with drug and alcohol problems. *British Journal of Addiction*, 86, 263-275.
- Roche, A., Watt, K. & Fischer, J. (2001). General Practitioners' views of home detoxification. *Drug and Alcohol Review*, 20, 395-406.

- Roche, A. M. & Evans, K. R. (2000). Harm reduction as a response to illicit drug use. In G. Stokes, P. Chalk & K. Gillen (Eds.), *Illicit drugs and Australian Democracy: The search for new directions*. Melbourne: Melbourne University Press.
- Roche, A. M., Evans, K. R. & Stanton, W. R. (1997). Harm reduction: Roads less travelled to the Holy Grail. *Addiction*, 92, 1207-1212.
- Royal College of General Practitioners. (2001). Certificate in the Management of Drug Misuse : Department of Health, UK.
- Seivewright, N. & Iqbal, M. Z. (2002). Prescribing to drug misusers in practice- often effective, but rarely straightforward. *Addiction Biology*, 7(3), 269-277.
- Sheridan, J., Strang, J., Taylor, N. & Barber, N. (1997). HIV Prevention and drug treatment services for drug misusers: a national study of community pharmacists' attitudes and their involvement in training. *Addiction*, 92(12), 1737-1748.
- Single, E. & Rohl, T. (1997). *National Drug Strategy: Mapping the future*. Canberra: Ministerial Council on Drug Strategy.
- Strang, J. (1989). A model service: turning the generalist on to drugs. In S. MacGregor (Ed.), *Drugs and British Society*. London: Routledge.
- Tantam, D., Donmall, M., Webster, A. & Strang, J. (1993). Do general practitioners and general psychiatrists want to look after drug misusers? Evaluation of a non-specialist treatment policy. *British Journal of General Practice*, 43, 470-474.
- Ward, J., Hall, W. & Mattick, R. P. (1999). Role of maintenance treatment in opioid dependence. *Lancet*, 353, 221-226.
- Zweben, J. (1991). Counselling issues in methadone maintenance treatment. *Journal of Psychoactive Drugs*, 23(2), 177-191.