

## An examination of the influences on New South Wales general practitioners regarding the provision of opioid substitution therapy

SIMON HOLLIDAY<sup>1,2</sup>, PARKER MAGIN<sup>3,4</sup>, CHRISTOPHER OLDMEADOW<sup>5,8</sup>,  
JOHN ATTIA<sup>5,8,9</sup>, JANET DUNBABIN<sup>3</sup>, JULIE-MARIE HENRY<sup>1</sup>, NICHOLAS LINTZERIS<sup>6,7</sup>,  
SUSAN GOODE<sup>3</sup> & ADRIAN DUNLOP<sup>10,11</sup>

<sup>1</sup>Albert St Medical Centre, Taree, Australia, <sup>2</sup>Drug and Alcohol Clinical Services, Hunter New England Health, Taree, Australia, <sup>3</sup>Discipline of General Practice, University of Newcastle, Newcastle, Australia, <sup>4</sup>General Practice Training Valley to Coast, Newcastle, Australia, <sup>5</sup>Centre for Clinical Epidemiology and Biostatistics, University of Newcastle, Newcastle, Australia, <sup>6</sup>Drug and Alcohol Services, South Eastern Sydney Local Health District, Sydney, Australia, <sup>7</sup>Department Psychological Medicine, Sydney University, Sydney, Australia, <sup>8</sup>Hunter Medical Research Institute, Newcastle, NSW, <sup>9</sup>General Medicine, John Hunter Hospital, Newcastle, Australia, <sup>10</sup>Drug and Alcohol Clinical Services, Hunter New England Health, Newcastle, Australia, and <sup>11</sup>School of Medicine and Public Health, Faculty of Health, University of Newcastle, Newcastle, Australia

### Abstract

**Introduction.** Few general practitioners (GP) prescribe opioid substitution therapy. Our aim was to analyse their previously identified motivating factors by describing their frequency and demographic associations. **Methods.** An anonymous, cross-sectional questionnaire-based survey on opioid prescribing in pain and dependency was distributed across five New South Wales Divisions of GPs. Questions elicited opinions on 11 barriers and five facilitators previously described in qualitative literature. Data were analysed against demographic variables, including opioid substitution therapy prescriber (OSTP) status and postgraduate training status. 'Profiles' of non-OSTPs were then constructed using latent class analysis. **Results.** Of the 1735 surveys posted, there were 404 responses (23.3%), with 16% respondents being OSTPs. Frequently reported barriers included: 'negative experiences with the opioid dependent' (72%), 'heavy workload' (60%) and 'lack of specialist support' (58%), with most barriers less frequent among OSTPs. Facilitating factors included: 'more accessible specialist support' (75%), 'more accessible training' (67%) and 'better evidence of safety and efficacy' (64%), with the latter two significantly less frequently among OSTPs. Latent class analysis of the non-OSTPs revealed three distinct clusters. The smallest ('class 3') had the least barriers and resembled OSTPs demographically. **Discussion and Conclusions.** The pattern of motivating factors towards the psychological, social and behavioural challenges of the management of dependency has a predominantly negative bias. However, this lessens with postgraduate training and OSTP experience. Structural and logistical options are identified to promote OSTP recruitment and retention. GPs resembling class 3 may be more amenable to becoming OSTPs and may be worth targeting for recruitment. [Holliday S, Magin P, Oldmeadow C, Dunbabin J, Henry J-M, Lintzeris N, Attia J, Goode S, Dunlop A. An examination of the influences on New South Wales general practitioners regarding the provision of opioid substitution therapy. Drug Alcohol Rev 2013]

**Key words:** general practitioners, opioid substitution therapy, dependency, pain, motivating factors.

Simon Holliday BMed, FACHAM, FRACGP, FACRRM, DA, DipRACOG, GradDipA&DSt, General Practitioner & Staff Specialist, Parker Magin PhD, FRACGP, Conjoint Professor, Medical Educator, Christopher Oldmeadow B.Math. (Hons.), PhD, John Attia PhD, FRCPC, FRACP, Professor, Academic Director, Research Fellow, Janet Dunbabin BAgSc, PhD, Senior Project Officer, Julie-Marie Henry Diploma of Applied Science (Nursing), Registered Nurse, Nicholas Lintzeris PhD, FACHAM, Director, Clinical A/Professor, Susan Goode B.Sc. (Hons.), Dip. Management, Research Manager, Adrian Dunlop PhD, FACHAM, GradDipEpi&Biostat, Area Director & Senior Staff Specialist, Conjoint Associate Professor. Correspondence to: Dr Simon Holliday, Albert St Medical Centre, 78 Albert Street, Taree, NSW 2430, Australia. Tel: + 61 2 6552 5533; Fax: + 61 2 6552 4249; E-mail: simon.holliday@albertstmc.com

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## Introduction

The earliest account of opioid maintenance involved the physician Galen in Ancient Rome, who supplied a daily opium compound to the Emperor Marcus Aurelius. This saw dispute over the dose and veering between oversedation and withdrawal [1]. In 1963, Halliday proposed to treat ‘the addicts as a sick person, rather than a criminal’, using methadone so they could ‘live and function in the community’ [2]. With buprenorphine, this model of care became known as opioid substitution therapy (OST). Opioid substitutes have been classed as ‘essential medicines’ yet, globally, only approximately 8% of opioid injectors receive OST [3,4]. In the USA, there are still three states without any OST programs (personal communication 21/2/2013 Beatrice Eld, American Psychiatric Association). OST was originally restricted to urban specialist clinics, which were highly regulated and marginalised from mainstream services [5,6]. General practice has become an effective setting, with advantages, including: decreased travel time and cost, shorter waiting times, lower stigma, less exposure to others in the drug culture and more holistic care for the associated multimorbidities [4,6–8].

Many doctors are loath to offer OST, and only 1444 of Australia’s 92 503 registered medical practitioners are registered as OST prescribers (OSTP) [9,10]. OSTP numbers have remained relatively fixed, whereas client numbers have been increasing 5–6% most years [9]. Approximately half of total OST demand remains unmet [7,11] and an estimated 4–5000 new OST places are required annually to meet demand [12]. In general, general practitioners (GP) have to do training to prescribe OST, although in South Australia, New South Wales and the Australian Capital Territory, untrained GPs may have limited prescribing rights [9,13]. GPs invited to train in OST infrequently agree to do so and most then prescribe for few or no patients [14].

Instead of heroin, the face of opioid misuse in Australia has become the opioid analgesics, with a prevalence of misuse in adults of 3.0% [4,5,15]. Pain physicians have called for wider training in addictions to improve the prevention, identification and management of opioid-related harms [4,16,17]. Palliative care physicians also support wider training in the use of methadone and buprenorphine for terminal pains that are opioid refractory or associated with hepatic and renal failure, respectively [18,19]. It is unclear what proportion of pain patients become dependent, but among those initiating or continuing continuous chronic opioid therapy (COT) for pain, there are higher frequencies of past or present dependence [17]. In one US OST program, 29% of 140 entrants were intro-

duced to opioids iatrogenically with many still reporting current pain (83%) or chronic non-cancer pain (CNCP) (49%) [20]. These overlaps mean the principles of COT cannot simply be divided between prescribing for pain and prescribing for dependency [17].

The denial of OST service has frustrated health authorities and patient groups alike [5–8,11,17,21]. Numerous influences have been elicited by qualitative studies both in Australia and internationally [6,8,14,22,23]. Most drivers reflect stigma towards the dependent or the additional time and risk demanded. Qualitative studies have tended to be small and to recommend further quantitative research to establish the extent to which these perceived barriers are borne out in practice, related to demographic factors or tempered by either experience or training [8]. Characterising these relationships may improve access to OST by more effective targeting of OSTP recruitment and retention strategies [4,7,14]. Given also that OST targets the most frankly dependent of opioid consumers, these data may also improve understanding of the drivers of the current levels of opioid analgesia prescribing [5].

## Methods

This was an anonymous, cross-sectional questionnaire-based study. It addressed both barriers and facilitators of OST and was incorporated within an evaluation of the quality of COT spanning over three months for CNCP [24].

### *Questionnaire*

The previously published questionnaire [24] elicited demographic variables, including the identification of those with mental health, addictions or pain medicine qualifications or postgraduate training (PGT) and OSTPs. Eleven barriers and five facilitating factors were identified from previous Australian qualitative work [6,14]. Each was scored as a dichotomous yes/no. In order to elicit original options, the facilitator item included a free response field. Ethics approval was granted by the Hunter New England Human Research Ethics Committee (Reference: 10/11/17/5.03).

### *Recruitment*

Five urban and rural divisions of GPs (contemporary geographically based coordination associations) within several hours drive of the University of Newcastle were approached and agreed to participate. They stretched from central Sydney to the remote North West Slopes of New South Wales. Divisions posted a study pack to all 1735 GP members in mid-2011, with a blanket repeat

mailout a month later. The study pack included an information statement, the survey and, for four divisions, a letter of support from the Chief Executive Officer. Responses were invited anonymously via prepaid envelopes. A monetary incentive was offered for each returned survey and donated to the Medical Benevolent Society.

### Analysis

Responses to the 11 barrier questions and five facilitator questions were compared for OSTPs and non-OSTPs and for PGTs and non-PGTs. Differences within each dyad were calculated using Pearson's  $\chi^2$ -test. Tetrachoric correlations were calculated between all questionnaire items for the barriers and facilitator items separately.

Assuming non-OSTPs were not a homogenous group, we performed a latent class analysis (LCA) to allow the identification of classes ('profiles') based on their patterns of motivating factors. The Bayesian Information Criterion was used to determine the optimum number of classes, with the model with the smaller Bayesian Information Criterion being preferred. For each fitted model, we used 60 000 iterations to reach convergence. To avoid detection of maximum likelihood estimates that were not global maximums, the models were estimated 10 times using different initial parameter values. The results that corresponded to the model with the greatest value of the log-likelihood function were retained. We also assessed the effect of non-OSTP characteristics on the latent classes using a latent class regression model; this allowed the inclusion of covariates to predict latent class membership. We first performed univariate LCA regression on all the potential predictor variables, before variables with a  $P$ -value less than 0.125 (in at least one of the comparisons) were included in a multivariable model. To arrive at a final model, variables were sequentially removed from the multivariable model if there was no reduction of Akaike Information Criterion. To make the LCA more informative, we assigned individuals to their most likely class, which allowed us to generate more detailed demographic class descriptions. We then compared the class demographics with those of OSTPs to see if their profile identified likely recruitment targets.

All analysis were performed using R statistical software (version 2.15, R Foundation for Statistical Computing, Vienna, Austria); LCA analysis used the poLCA R package [25,26].

### Results

We had 404 usable responses, a response rate of 23.3%. The demographics of the participants are shown in

Table 1 and elsewhere [24], with mean age 50.9, gender 55% male, mean workload 7.6 half-day sessions per week, solo practice 16%, international medical graduates (IMG) 28%, 95% prescribed COT for CNCP, 30% reported PGT and 16% were OSTPs. Comparing the demographics of OSTPs and non-OSTPs, there was one significant demographic difference, a higher frequency of postgraduate training among OSTPs (52% vs. 27%;  $P < 0.001$ ).

The most common barrier was negative experiences with dependent patients (72%) (see Table 2: Combined column); though barriers involving workload, clinical support, confidence and fear were commonly reported. All facilitator options scored highly.

Comparing OSTPs to non-OSTPs, barrier endorsement rates were marginally or significantly lower among OSTPs for: 'negative experiences' (63% vs. 74%,  $P = 0.09$ ), 'fear of violence' (34% vs. 50%,  $P = 0.03$ ), 'lack of confidence' (28% vs. 52%,  $P < 0.001$ ) and 'lack of specialist support' (42% vs. 61%,  $P = 0.009$ ). OSTPs were significantly less likely to nominate encouragement from 'more accessible training' (55% vs. 69%,  $P = 0.037$ ), or 'better evidence of safety and efficacy' (51% vs. 66%,  $P = 0.024$ ).

The PGT subgroup analysis (Table 3) showed a similar pattern to OSTPs with equivalent barriers from 'negative experiences' (64% vs. 76%,  $P = 0.016$ ). However, PGTs had more frequent barriers from 'colleague objections' (31% vs. 21%,  $P = 0.04$ ) and more frequent encouragement by 'better financial rewards' (51% vs. 36%,  $P = 0.005$ ).

The most frequent responses to the open-ended option in the facilitation question were actually expressions of rejection, for example 'Nothing would change my mind. The risk to the practice reputation is too high' (#377); 'Are you proposing to manage chronic pain or drug addicts (typically those are personality disordered and a different kettle of fish). The latter are not welcome in GP' (#396); and 'Unable to cope with conflicts that arise. I would need a personality transplant' (#364).

The LCA was unable to be used on the facilitating factors due to their generally high correlation and positive responses, so LCA was only performed on the barriers. Diagnostics using the Bayesian Information Criterion indicated there were likely three classes or 'profiles' (Figure 1). Class 1, the largest (42%), nominated the highest frequency of most barriers except 'part-time work'. Class 2 (32%) had a similar but less extreme profile except for the highest frequency of 'part-time work'. Class 3 (26%) reported the lowest frequencies of every barrier except 'part-time work'.

A series of univariate then multivariate LCA regression analyses were performed to see which demographic characteristics were associated with each of

**Table 1.** Demographics of non-OSTPs by predicted class membership (and OSTPs)

	<i>n</i>	Class 1 <i>n</i> = 107	Class 2 <i>n</i> = 83	Class 3 <i>n</i> = 67	OSTP <i>n</i> = 48
Age, years	305	44 49 56	36 44 50	50 55 64*	44 54 59*
Gender: female	305	21% (22)	90% (75)	21% (14)	40% (19)
Years as GP in Australia.	303	10.0 19.5 26.0	5.5 15.0 22.5	15.5 25.0 33.0	5.0 20.0 30.0
International medical graduation:	305	28% (30)	11% (9)	40% (27)	40% (19)
Workplace role: permanently employed doctor	304	20% (21)	42% (35)	18% (12)	27% (13)
GP registrar		3% (3)	11% (9)	2% (1)	6% (3)
Locum		3% (3)	4% (3)	2% (1)	6% (3)
Partner or associate		63% (67)	37% (31)	45% (30)	50% (24)
Sole practitioner		12% (13)	6% (5)	33% (22)	10% (5)
Half-day sessions worked per week	303	8 9 10	4 5 7	7 9 10	7 8 10
Total patient numbers seen last fortnight	305	200 260 300	70 110 150	180 200 300*	159 229 260*
Qualifications or postgraduate training: Yes	305	29% (31)	30% (25)	15% (10)	48% (23)
Socioeconomic status—decile [ranges from lowest (1) to highest (10)] [27]	305	5 7 8	6 8 9	4 6 8*	4 6 8*
Patients in last fortnight prescribed opioids continuously for at least three months for chronic non-cancer pain	303	4.0 10.0 20.0	2.0 3.0 8.0	3.5 6.0 10.0	4.0 10.0 14.5
Prescription shopping information service registration: yes	297	78% (83)	63% (52)	65% (40)	72% (34)

a, b and c represent the lower quartile a, the median b, and the upper quartile c for continuous variables. *n* is the number of non-missing values. Numbers after percents are frequencies. OSTP, opioid substitution therapy prescriber. \*, For all non-gender demographic variables significantly associated with class membership, Class 3 was nearly identical to the OSTPs.

**Table 2.** Influences regarding prescribing OST (OSTPs vs. non-OSTPs)

	<i>n</i>	Combined <i>n</i> = 392	Non-OSTP <i>n</i> = 331	OSTP <i>n</i> = 61	Test Statistic: Pearson test
<b>Barriers</b>					
Negative experiences with opioid-dependent patients	376	72% (265)	74% (228)	63% (37)	$\chi^2_1 = 2.9, P = 0.09$
Fear of the effect of opioid-dependent patients on other patients	375	46% (171)	48% (149)	37% (22)	$\chi^2_1 = 2.4, P = 0.12$
Fear of violence	374	47% (173)	50% (153)	34% (20)	$\chi^2_1 = 5, P = 0.026$
Part-time work	370	30% (107)	29% (89)	31% (18)	$\chi^2_1 = 0.03, P = 0.86$
Lack of opioid-dependent patients in my practice	374	45% (166)	47% (147)	33% (19)	$\chi^2_1 = 3.9, P = 0.05$
Heavy workload	375	60% (221)	60% (186)	60% (35)	$\chi^2_1 = 0, P = 0.96$
Inadequate financial reward	370	41% (151)	43% (131)	34% (20)	$\chi^2_1 = 1.7, P = 0.19$
Colleague objections	365	24% (87)	25% (74)	22% (13)	$\chi^2_1 = 0.13, P = 0.71$
Lack of confidence	375	48% (176)	52% (160)	28% (16)	$\chi^2_1 = 11, P < 0.001$
Lack of specialist support	377	58% (213)	61% (188)	42% (25)	$\chi^2_1 = 6.8, P = 0.009$
Cost to patients	361	21% (73)	21% (62)	19% (11)	$\chi^2_1 = 0.07, P = 0.79$
<b>Facilitators</b>					
Better financial rewards	363	41% (145)	40% (118)	45% (27)	$\chi^2_1 = 0.57, P = 0.45$
More accessible training	363	67% (239)	69% (207)	55% (32)	$\chi^2_1 = 4.3, P = 0.037$
More accessible specialist support	369	75% (274)	76% (230)	72% (44)	$\chi^2_1 = 0.44, P = 0.51$
Help with practice staff training and organisation	363	59% (210)	60% (177)	55% (33)	$\chi^2_1 = 0.44, P = 0.51$
Better evidence of safety and efficacy	362	64% (227)	66% (197)	51% (30)	$\chi^2_1 = 5.1, P = 0.024$

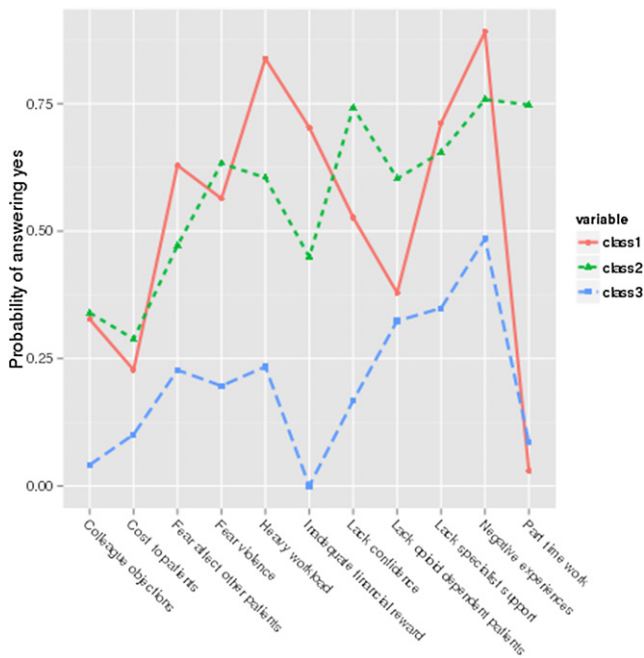
*n* is the number of non-missing values. Numbers after percents are frequencies. OST, opioid substitution therapy; OSTP, opioid substitution therapy prescriber.



**Table 3.** Influences regarding prescribing OST (PGTs vs. non-PGTs)

	<i>n</i>	Non-PGT ( <i>n</i> = 281)	PGT ( <i>n</i> = 122)	Combined ( <i>n</i> = 403)	Test statistic
<b>Barriers</b>					
Negative experiences with opioid-dependent patients	376	76% (195)	64% (76)	72% (271)	$\chi^2 = 5.8, P = 0.016$
Fear of the effect of opioid-dependent patients on other patients	375	48% (124)	44% (51)	47% (175)	$\chi^2 = 0.49, P = 0.48$
Fear of violence	374	49% (127)	42% (49)	47% (176)	$\chi^2 = 1.6, P = 0.21$
Part-time work	370	28% (70)	34% (40)	30% (110)	$\chi^2 = 1.8, P = 0.18$
Lack of opioid-dependent patients in my practice	374	46% (120)	43% (49)	45% (169)	$\chi^2 = 0.32, P = 0.57$
Heavy workload	375	57% (148)	65% (76)	60% (224)	$\chi^2 = 1.9, P = 0.16$
Inadequate financial reward	370	40% (101)	44% (52)	41% (153)	$\chi^2 = 0.68, P = 0.41$
Colleague objections	365	21% (53)	31% (35)	24% (88)	$\chi^2 = 4.2, P = 0.04$
Lack of confidence	375	53% (138)	38% (43)	48% (181)	$\chi^2 = 7.3, P = 0.007$
Lack of specialist support	377	59% (153)	54% (64)	58% (217)	$\chi^2 = 0.78, P = 0.38$
Cost to patients	361	23% (56)	17% (19)	21% (75)	$\chi^2 = 1.6, P = 0.21$
<b>Facilitators</b>					
Better financial rewards	363	36% (89)	51% (58)	40% (147)	$\chi^2 = 8, P = 0.005$
More accessible training	363	67% (169)	67% (74)	67% (243)	$\chi^2 = 0.01, P = 0.94$
More accessible specialist support	369	72% (183)	80% (93)	75% (276)	$\chi^2 = 2.6, P = 0.11$
Help with practice staff training	363	57% (142)	64% (72)	59% (214)	$\chi^2 = 1.5, P = 0.21$
Better evidence of safety and efficacy	362	64% (160)	64% (72)	64% (232)	$\chi^2 = 0.01, P = 0.92$

OST, opioid substitution therapy; PGT, postgraduate training or qualifications in pain, addictions or mental health.



**Figure 1.** Latent class analysis for non-OSTP's barriers.

these classes (Table 1). In the final model, the odds ratios of class membership for each of the explanatory variables showed that GPs who saw more patients were more likely to belong to class 1, females were much more likely to belong to class 2 (odds ratio >27) and older GPs were more likely to belong to class 3 (Table 4).

## Discussion

This study found most of the previously identified motivating factors regarding OST highly prevalent and varied with training and experience. It was clear that these attitudes are not related to COT prescribing per se, as almost all respondents provided this for CNCP [24].

The most common barrier, 'negative experiences with dependent patients', reflects how disconcerting the psychological, social and behavioural aspects of dependency may be. One GP noted, 'Not interested in treating addicts—Full stop' (#231). Internationally, drug addiction generates near universal stigma and social disapproval, even more than a criminal record for burglary [28]. Cultural tendencies to judge addicts as blameworthy may reduce their perceived claim to health care and risk discrimination [28], and PGTs and OSTPs described this barrier less frequently. A GP's prejudices, diligence, skills and knowledge determine whether a patient is placed into the pain or addiction categories [17]. The point of inflection between these categories will continue to shift according to improved regulatory surveillance or the proposed new diagnostic criteria in Diagnostic and Statistical Manual of Mental Disorders (planned fifth edition) [4].

The barrier of 'heavy workload' was consistently reported. The dependent need time and their psychosocial management adds an 'onerous' workload [16,21]. Physicians perceive OSTPs need to be available around the clock [23]. Private practice is underwritten by public

**Table 4.** Non-OSTPs: latent class analysis multivariable regression results for the best model

Term	OR class2/class1	OR class3/class1
Intercept	4.075 (0.015, 1074.447)	0.055 (0.004, 0.781)*
Female	27.655 (2.342, 326.489)*	1.342 (0.411, 4.384)
Number of patients	0.973 (0.958, 0.988)*	0.997 (0.994, 1)
Age	1.03 (0.951, 1.116)	1.074 (1.028, 1.123)*
Socioeconomic status-decile	0.958 (0.673, 1.365)	0.908 (0.751, 1.098)

OSTPs, opioid substitution prescribers. \* indicates statistical significance at 5%.

funding from Medicare, and the fee-for-service system favours shorter consultations and rapid patient throughput [21,29]. Because OST patients frequently have multimorbidities, including pain or mental health problems [17,30], they will either receive inferior care or those practices engaging with them will have a reduced income [7,21,29].

'Lack of specialist support' and 'more accessible specialist support' were the third most common barrier and the most frequent facilitating factor, respectively. As elsewhere, both were reported less frequently by OSTPs [8]. In a Western Sydney GP survey, it was also the most common facilitator of OST shared care [6]. Only 13% of our respondents reported 'often' referring their CNCP patients with aberrant behaviours to addiction specialists [24], who are but one per 120 000 population in number [12]. To improve capacity, in 2010, the Medical Benefits Schedule established private addiction specialist remuneration [7]. Farcically, these rates were set below those of GPs and so virtually no specialists have registered for these payments [7,11]. Furthermore, since this fee was set, the Addiction Medicine registrar workforce has decreased to an estimated 13, compared with the total specialist registrar workforce of approximately 15 500 [12].

'Lack of confidence' was a barrier to approximately half our respondents and to 82% in the Western Sydney survey, although 55% there felt confident with providing non-OST management [6]. As reported elsewhere, training and experience was associated with the easing of this concern [6,8].

The two barriers related to fear were reported by almost half of the respondents. Patients who fear their underlying organic pathology may be overlooked due to covert discrimination or even abandonment [17,28,30] may become upset [30,31]. Drug seekers may become intimidating using medicolegal or street threats [7,21,31], or frank violence [21]. GPs may assume all dependent patients behave in these confronting ways, whether they were stable on OST or not [22], for example 'Living in non metropolitan area patients really do know where you live' (#54). Both fear barriers were reported less frequently by OSTPs and PGTs.

This is consistent with findings elsewhere that training and clinical experience will: decrease stigma based on diagnosis [14], increase familiarity and comfort [8] and decrease aggressive drug seeking presentations [31]. The veracity of one specific barrier, the 'fear of the effect of OST patients on other patients', has been recently tested [32]. A survey of 1138 New South Wales GP patients found they were unaware whether or not their practice included OSTPs and that only 35 attributed negative waiting room experiences to drug intoxicated patients [32].

'Lack of dependent patients in my practice' was a reported barrier for 45% GPs, though significantly less frequently for OSTPs. The dependent may chose not to self-identify due to perceived stigmatising attitudes by the GP or in the waiting room [32]. It also may be from an unwillingness or inability to identify dependency, and our respondents reported usually not screening for it either before commencement or during COT for CNCP [24]. Attracting more dependent patients by offering OST may become a barrier [23].

The barrier of 'inadequate financial reward' and the facilitator of 'better financial rewards' were both reported consistently (41%). A recent report was unable to locate any incentive payments for OSTPs [7]. OST services are highly cost effective, giving a fivefold saving in terms of criminal justice, health and welfare costs [33]. OSTPs and PGTs particularly highlighted remuneration as an OST facilitator, reflecting more pragmatic estimations of the complexities entailed [8].

'Colleague objections' were reported by significantly more by PGTs and slightly less by OSTPs. One ex-OSTP has described how 'his colleagues were much happier, and his income had increased, since he gave it up' [21]. Many OST patients are poor and marginalised that may affect the doctor's ability to charge and their ability to pay for private dispensing fees [7,28,29], and 'cost to the patient' was the most infrequently reported barrier. However, an estimated 80% OST patients face costs from dispensing fees ranging up to one-third of their unemployment benefits [7].

'More accessible training' was a commonly reported facilitating factor, although OSTPs were significantly

less likely to indicate this. This reflects either lack of awareness or lack of interest because our New South Wales respondents could access training online or at face-to-face metropolitan and regional courses. New South Wales and Victoria remain the only Australian state or territory to offer online OST training.

'Better evidence of safety and efficacy' was a commonly reported facilitating factor (64%) though significantly less frequently by OSTPs [8] revealing either a distrust or a lack of awareness of the evidence: 'I don't see any great benefits of OST over ongoing opiates' (#8). While this is a consistent message of the popular media [34], it contradicts OST's strong evidence base of over 30 randomised controlled trials [33]. In contrast for 95% respondents, the emerging literature about the limitations and dangers of liberally prescribed COT in CNCP presented no barrier [4,17]. Our respondents infrequently implemented CNCP guidelines, although PGTs and OSTPs were more guideline concordant [24].

The facilitating factor 'Help with practice staff training and organisation' was reported by 59%, with one OSTP commenting, the 'ability to employ nurses with [OST] expertise—similar to [Mental Health] nurses paid through Medicare—would increase my capacity to take on more patients' (#170).

In the LCA of non-OSTPs class 3, the smallest class with the least barriers, had the highest proportion of solo GPs and the least 'colleague objections'. Class 3 tended to have the lowest rate of PGT and the longest duration of practise in Australia, but these were incidental and not predictive of class membership. Class 3 and OSTPs shared the highest, and indeed identical, proportions of IMGs. These same IMGs also reported more guideline concordant CNCP prescribing, though just below statistical significance [24].

Comparing class 3 with OSTPs for these demographic variables that were significantly associated with class membership, for three of the four they were nearly identical. Their workloads were similar in terms of sessions worked and patient numbers. Both groups were older, reflecting concerns about the ageing of the OSTP workforce [12]. Class 3 and OSTPs both worked in the lowest socioeconomic status decile locations [27]. This may reflect how linkages between poverty and dependency highlight the need for OST or may reflect how GPs with fewer barriers to dependency choose to work in less affluent locations.

Current random and non-selective attempts to recruit GPs to become OSTPs have had little success [14], and these data may identify more rewarding targets. PGTs and OSTPs were more comfortable managing dependency. However, to be encouraged to prescribe OST, PGTs require remuneration [8], preferably through practice level payments, for example

accreditation to placate their colleagues' objections. Training in quality pain management may encourage training in OST and vice versa, as #371 specified facilitation from 'Teaching on how to deal with patients that may or may not be misusing their analgesic prescriptions'. OSTPs without PGT may also be worth targeting. In South Australia, the limited removal of OST training requirements in 2011 has seen 94 new OST prescribers of which four have proceeded to train in OST [13]. Those older GPs in class 3, and possibly IMGs, had fewer barriers, and consideration should be given to targeting a low-threshold or outreach approach towards these groups.

### *Strengths and limitations*

This is the largest Australian GP survey of attitudes regarding OST across both rural and urban settings, gaining strength from the sampling of five complete divisions. Being incorporated within a survey on analgesia management adds currency, given the evolving pathways to opioid dependency. Reliability was evidenced by the same response rates for the reversed questions about specialist support. A limitation of these data is the relatively low response rate. Response rates in questionnaire-based surveys of general practitioners are acknowledged to be problematic [35] and, as we have noted previously [24], similar or poorer response rates have been achieved in previous OST surveys of GPs. While this makes the results less generalisable, the bias created is likely to be away from the null, that is, given that those interested in this area were more likely to have completed the questionnaire, results likely overestimated the proportion of GPs amenable to adopting OST (class 3).

### **Conclusions**

Previously identified influences on the recruitment and retention of OSTPs were reported frequently. Barriers included cultural stereotyping and fear, as well as a reluctance to invest the additional time and effort required to care for the dependent. Facilitators include logistical practice support as well as a viable specialist addiction sector to encourage the more familiar shared care model used to manage chronic disease. Our data suggest that relevant training, OST experience, practice in poorer communities and increased age are associated with more positive attitudes to OST prescribing and may characterise those more amenable to help improve OST accessibility. Previous data analysis from this cross-sectional survey showed both PGT and OSTP status associated with more guideline-concordant COT for CNCP [24]. These findings suggest a mechanism for how this occurs. Relevant training and OST practice

may decrease barriers and unattainable facilitating factors towards the biopsychosocial management of opioid-related harms, helping both pain and OST patients 'live and function in the community' [2].

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