Prescribing injectable and oral methadone to opiate addicts: results from the 1995 national postal survey of community pharmacies in England and Wales

John Strang, Janie Sheridan, Nick Barber

See editorial by Swinson and pp 264, 272

Abstract

***Objective*—To establish the extent of prescribing injectable and oral methadone to opiate addicts and the practice characteristics and dispensing arrangements attached to these prescriptions.**

***Design*—National survey of 25% random sample of community (high street) pharmacies through postal questionnaire, with four mailings.**

***Setting*—England and Wales.**

***Subjects*—1 in 4 sample of all 10 616 community pharmacies, stratified by family health services authority.**

***Main outcome measures*—Data were collected on each prescription for controlled drugs currently being dispensed by pharmacies to misusers, describing the drug, form, dose, source (general practice or hospital; and NHS or private), and numbers of dispensing pick ups a week.**

***Results*—Methadone was the opiate most commonly dispensed to misusers (96.0% of 3846 opiate prescriptions). 79.6% of methadone prescriptions were for the oral liquid form, 11.0% for tablet, and 9.3% for injectable ampoules. More than one third of all methadone prescriptions were for weekly or fortnightly pick up, with a further third being for daily pick up. Tablets and ampoules were even less likely to be dispensed on a daily basis. Private prescriptions were significantly more likely than NHS ones to be for tablets or ampoules, to be for substantially higher daily doses, and to be collected on a weekly or fortnightly basis.**

***Conclusions*—The distinctively British practice of prescribing injectable methadone was found to be widespread and, contrary to guidance, to be as prevalent in non-specialist as specialist settings. In view of the frequent crushing and injecting of methadone tablets, clearer more authoritative guidance is needed on the contexts in which injectable methadone (tablets as well as ampoules) should be prescribed and on the responsibilities for monitoring and supervision which should be attached.**

National Addiction Centre, Institute of Psychiatry and Maudsley Hospital, London SE5 8AF
John Strang, *professor of the addictions*
Janie Sheridan, *research pharmacist*

School of Pharmacy, London WC1N 1AX
Nick Barber, *professor of the practice of pharmacy*

Correspondence to:
Professor Strang.

BMJ 1996;313:270–2

Introduction

Prescribing injectable methadone to opiate addicts is a practice almost exclusive to Britain[1] but is now being considered and piloted elsewhere.[2-4] Despite longstanding international fascination with the prescribing of heroin in Britain, quantities of injectable methadone from doctors specialising in drug misuse overtook heroin in 1973[5] and have remained larger ever since. Injectable methadone can also be prescribed by non-specialist doctors, who do not need a special prescribing licence (as they do for heroin).

No data have previously been presented on the extent of this practice.

Method

During 1995 we surveyed a 25% random sample of the 10 616 community (high street) pharmacies in England and Wales—overall response rate 74.8% (details described elsewhere).[6] Of the responding pharmacies, 50.1% were currently dispensing prescribed supplies of controlled drugs to misusers. Of the 3846 prescriptions for opiates being dispensed to drug misusers, 3693 were for methadone, 64 for heroin, and 89 for other opiates. We analysed the different forms and doses of methadone prescribed and the dispensing intervals. the significance tests have been calculated on the basis of simple random sampling of the prescriptions.

Results

DIFFERENT FORMS OF METHADONE

Methadone was most commonly prescribed as oral liquid (for example, methadone mixture 1 mg/ml, *British National Formulary*) 79.6%, tablets (11.0%) and ampoules (9.3%) (see table 1). Oral liquid was the form most commonly prescribed by both hospital doctors and general practitioners, with little evidence of higher rates of prescribing the more unusual forms (tablets and ampoules) in secondary specialist services (table 1).

Of NHS prescriptions for methadone, 80.1% were for oral liquid, with the rest being tablets (10.9%) or ampoules (9.0%). In private practice, tablets and ampoules were more commonly prescribed (33% in each case) than in the NHS, with only 35% of private prescriptions being for oral liquid (table 1). Private prescribing of methadone occurs predominantly in London, with 80% (44/55) of such prescriptions being from the Thames regions.

DOSE

Overall, significantly higher daily doses were prescribed by hospital and clinic doctors than by general practitioners (Mann-Whitney test, $t = -7.2$, df = 3533; $P<0.0001$) and by doctors working in private practice rather than in the NHS ($t = -4.6$, df = 53; $P<0.0001$). Examination of data for each form of methadone showed that daily doses of methadone for ampoules were nearly twice as high in private prescriptions as in NHS prescriptions (table 2).

INTERVAL DISPENSING

Guidelines from the Department of Health and the Welsh Office advise doctors to instruct dispensing pharmacists to provide methadone in instalments—for example, daily dispensing.[7] General practitioners prescribed with longer intervals between pick ups than hospital doctors, as did doctors working in private practice compared with NHS practice.

Table 1—*Numbers (percentages) of doctors' prescriptions, to opiate addicts, of methadone as oral liquid, tablet, or ampoule, by setting and practice*

Form	Setting		Practice	
	General practice (n = 1519)	Hospital (n = 2135)	NHS (n = 3556)	Private (n = 55)
Oral liquid	1199 (78.9)	1713 (80.2)	2851 (80.1)	19 (35)
Tablet	195 (12.8)	205 (9.6)	386 (10.9)	18 (33)
Ampoule	125 (8.2)	217 (10.2)	319 (9.0)	18 (33)

General practice *v* hospital: $\chi^2 = 12.2$; df = 2; P<0.005. NHS *v* private practice: $\chi^2 = 70.1$; df = 2; P<0.0001.

Table 2—*Dose of methadone (mg), as oral liquid, tablet, or ampoule,* given on doctors' prescriptions to opiate addicts, by practice*

Form	Overall	NHS	Private
Oral liquid:	(n = 2841)	(n = 2759)	(n = 18)
Mean	44.3	44.3	55.2
Median	40	40.0	50
Interquartile range	28-60	28-60	27-70
Range	2-200	2-200	12.5-200
Mann-Whitney U test		U = 22010; P = 0.4	
Tablet:	(n = 394)	(n = 374)	(n = 18)
Mean	53.3	51.9	82.5
Median	50	45	60
Interquartile range	30-70	30-70	34-146
Range	5-300	5-300	10-200
Mann-Whitney U test		U = 2616; P = 0.11	
Ampoule:	(n = 327)	(n = 304)	(n = 18)
Mean	65.5	62.4	117.8
Median	50	50	100
Interquartile range	40-90	40-80	100-150
Range	10-250	10-230	30-250
Mann-Whitney U test		U = 1063; P<0.0001	

*Patients might have received more than one form of methadone and/or more than one opiate.

We then grouped dispensing arrangements as "daily," "several times a week," or "weekly or less frequently." Daily dispensing occurred in only a third of cases (36.6% of all prescriptions requiring pick up on six or seven days a week), while prescriptions of at least a week's supply occurred in a further third (37.2%)

Table 3—*Numbers (percentages) of doctors' prescriptions of different forms of methadone to opiate addicts, by interval of dispensing*

Interval	Oral liquid (n = 2855)	Tablet (n = 393)	Ampoule (n = 333)
Daily*	1172 (41.0)	83 (21.1)	119 (35.7)
Several times a week†	681 (23.8)	87 (22.1)	112 (33.6)
Weekly or less often‡	1005 (35.2)	223 (56.7)	102 (30.6)

$\chi^2 = 95.6$; df = 4; P<0.0001.
*Five, six, or seven times a week. †Two, three, or four times a week. ‡Once a week, once a fortnight, or once a month.

Table 4—*Numbers (percentages) of doctors' prescriptions of methadone to opiate addicts according to interval of dispensing, by setting and practice*

Interval	Setting		Practice	
	General practice (n = 1446)	Hospital (n = 2112)	NHS (n = 3461)	Private (n = 54)
Daily*	534 (36.9)	827 (392)	1335 (38.6)	0 (0.0)
Several times a week†	259 (17.9)	618 (29.3)	864 (25.0)	1 (1.9)
Weekly or less often‡	653 (45.2)	667 (31.6)	1262 (36.5)	53 (98.1)

General practice *v* hospital: $\chi^2 = 88.6$; df = 2; P<0.0001. NHS *v* private practice: $\chi^2 = 86.4$; df = 2; P<0.0001.
*Five, six, or seven times a week. †Two, three, or four times a week. ‡Once a week, once a fortnight, or once a month.

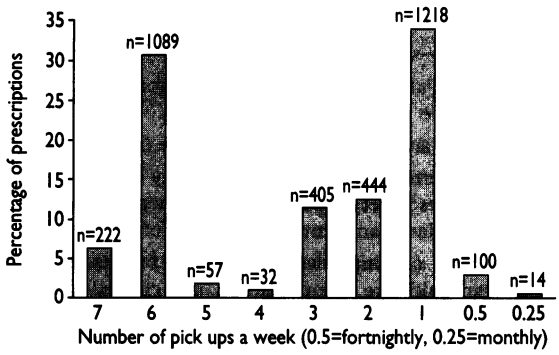

Fig 1—*Interval of dispensing for methadone prescriptions (n = 3585)*

(fig 1). We then analysed whether doctors relied more on interval dispensing for forms of methadone with a greater potential for misuse and risk of diversion—that is, tablets and ampoules. Table 3 shows that doctors relied less on daily dispensing arrangements for tablets and ampoule and that more than half of all prescriptions for tablets and nearly a third of all those for ampoules were for collection weekly or less frequently.

Similar proportions of prescriptions from general practitioners and hospital doctors were for daily dispensing, but general practitioners were significantly more likely to arrange for a single pick up of a weekly or fortnightly supply (table 4). A significant lack of daily dispensing arrangements existed in private practice (table 4).

Discussion

These data show the feasibility of addictions research into the prescribing behaviour of doctors through the keyhole of community pharmacies. This new information on the extent and nature of prescribing of injectable methadone is an important addition to the debate on the prescribing of injectable opiates. Such a study should be repeated to monitor this feature of Britain's policy on drugs that attracts such international interest.[8 9]

Daily dispensing and supervised consumption of methadone are the norm internationally. British guidelines recommending such practice[7 10 11] carry no statutory authority. No data have previously been presented on doctors' compliance with these guidelines. We find the option of daily dispensing to be widely disregarded, thus increasing known dangers of misuse and diversion to the black market.[12] Particularly disturbing is the widespread disregard of the facility of daily dispensing with prescriptions—especially of tablets and ampoules.

A high prevalence of prescribing injectable methadone—both overtly injectable (ampoules) and covertly injectable (tablets)—has been identified. The extensive prescribing of methadone tablets is disturbing and contrary to recommendations.[7 11] Doses of injectable methadone are sufficiently high to warrant special scrutiny, especially alongside the infrequent use of daily dispensing.

Every British doctor has the authority to prescribe any form of methadone to treat opiate addiction. Recent United Kingdom recommendations from the Drug Treatment TaskForce[13 14] presume the existence of a system for triage, with specialist services having responsibility for the more difficult forms of treatment (such as injectable methadone). We found little evidence, however, of differentiation of prescribing between primary and secondary healthcare services.

Major differences were found between the prescribing habits of doctors working in the NHS and those of doctors in private practice. Methadone prescriptions from doctors in private practice were higher dose, more frequently in the form of ampoule or tablet, and more

Key messages

- Nearly all opiate prescriptions for the treatment of addiction are for methadone
- Tablets and ampoules make up one fifth of methadone prescriptions
- Arrangements already exist for daily dispensing of methadone to patients, but many prescribers (particularly general practitioners and private doctors) prescribe large amounts with long intervals between pick ups
- As well as ampoules, methadone tablets (when crushed) may be injected; clearer guidance is needed on the clinical criteria for prescribing injectable methadone
- Daily dispensing arrangements are insufficiently used, and guidelines for prescribers on dispensing arrangements need to be reviewed

frequently with bulk provision in weekly, fortnightly, or even monthly pick ups. Doctors issuing private prescriptions should exercise the same precautions against misuse and diversion as their NHS colleagues, and the current stark differences between NHS and private prescriptions should be examined critically.

Overall, these findings indicate a system that is operating inefficiently—perhaps even a system in trouble. The lack of evidence of differentiation of primary and secondary healthcare prescribing is disturbing, as are the profound differences between NHS and private practice. The widespread disregard of the opportunities for interval dispensing (especially for tablets and ampoules, which have a greater potential for misuse) indicates a failure to appreciate the abuse potential and the substantial value on the black market of injectable forms of methadone. With the prescribing of methadone increasing so rapidly[15] and with the above evidence of the instability of this feature of Britain's drug policy, policymakers and planners must find improved methods of harnessing the benefits of methadone prescribing.[16-18]

Funding: This study was supported by a grant from the Drug Treatment Effectiveness TaskForce at the Department of Health and by the Welsh Office. The views expressed are those of the authors and do not necessarily represent those of the Department of Health or the Welsh Office.

Conflict of interest: None.

1 Strang J, Ruben S, Farrell M, Gossop M. Prescribing heroin and other injectable drugs. In: Strang J, Gossop M, eds. *Heroin addiction and drug policy: the British system.* Oxford: Oxford University Press, 1994:192-206.
2 Bammer G. Should the controlled provision of heroin be a treatment option? Australian feasibility consideration. *Addiction* 1993;**88**:467-75.
3 Derks J. The efficacy of the Amsterdam morphine-dispensing programme. In: Ghodse AH, Kaplan C, Mann R, eds. *Drug misuse and dependence.* Carneforth: Parthanon, 1990:85-108.
4 Uchtenhagen A, Dobler-Miklos A, Gutzwiller F. Medically-controlled prescription of narcotics: fundamentals, research plan and first experiences. In: *Medical prescription of narcotics.* Fribourg: Huber (in press).
5 Mitcheson M. Drug clinics in the 1970s. In: Strang J, Gossop M, eds. *Heroin addiction and drug policy: the British system.* Oxford: Oxford University Press, 1994:178-91.
6 Sheridan J, Strang J, Barber N, Glanz A. Role of community pharmacies in relation to HIV prevention and drug misuse: findings from the 1995 national survey in England and Wales. *BMJ* 1996;**313**:272-4.
7 Department of Health, Scottish Home and Health Department, Welsh Office. *Drug misuse and dependence: guidelines on clinical management.* London: HMSO, 1991.
8 Strang J, Gossop M, eds. *Heroin addiction and drug policy: the British system.* Oxford: Oxford University Press, 1994.
9 Strang J. "The British system": past, present and future. *International Review of Psychiatry* 1989;**1**:109-20.
10 Department of Health and Social Security. *Guidelines for good clinical practice in the treatment of drug misuse.* London: DHSS, 1984.
11 Advisory Council on the Misuse of Drugs. *AIDS and drug misuse: update report.* London: HMSO, 1993.
12 Lauzon P, Vincelette J, Bruneau J, Lamothe F, Lachance N, Brabant M, *et al.* Illicit use of methadone among IV drug users in Montreal. *J Subst Abuse Treat* 1994;**11**:457-61.
13 Polkinghorne J. Task force to review services for drug misusers: progress report (supplement). *Drug Link* 1995;Jan:1-4.
14 Drug Treatment Effectiveness Task Force. *Report to Department of Health.* London: Department of Health, 1996.
15 Home Office. *Statistics on the misuse of drugs: addicts notified to the Home Office, United Kingdom, 1994.* London: HMSO, 1995.
16 Ball JC, Ross A. *The effectiveness of methadone maintenance treatment: patients, programs, services and outcomes.* New York: Springer, 1991.
17 Ward J, Mattick R, Hall W. *Key issues in methadone maintenance treatment.* Sydney: New South Wales University Press, 1992.
18 Farrell M, Ward J, Des Jarlais DC, Gossop M, Stimson G, Hall W, *et al.* Methadone maintenance programmes: review of new data with special reference to impact on HIV transmission. *BMJ* 1994;**309**:997-1001.

(Accepted 17 May 1996)

Role of community pharmacies in relation to HIV prevention and drug misuse: findings from the 1995 national survey in England and Wales

See editorial by Sowcroft and pp 264, 270

Janie Sheridan, John Strang, Nick Barber, Alan Glanz

National Addiction Centre, Institute of Psychiatry and Maudsley Hospital, London SE5 8AF
Janie Sheridan, *research pharmacist*
John Strang, *professor of the addictions*
Alan Glanz, *lecturer*

Centre for Pharmacy Practice, School of Pharmacy, London WC1N 1AX
Nick Barber, *professor of the practice of pharmacy*

Correspondence to:
Dr Sheridan.

BMJ 1996;**313**:272–4

Abstract

***Objectives*—To establish activity levels of community (high street) pharmacies in the provision of HIV prevention services to drug misusers and to compare these findings with the levels identified in 1988.**

***Design*—Self completion questionnaire (four mailings) to a random 1 in 4 sample of all community pharmacies, stratified by family health services authority.**

***Setting*—England and Wales.**

***Subjects*—Data provided by pharmacist in charge of the dispensary, on service provision at the pharmacy.**

***Main outcome measures*—Quantitative reports of current activity levels for (a) dispensing of controlled drugs to drug misusers, (b) sale of needles and syringes, (c) needle and syringe exchange.**

***Results*—74.8% response rate (1984/2654). In 1995, 50.1% (992/1980) of pharmacies were dispensing controlled drugs (mostly methadone), compared with 23.0% (562/2457) in 1988; 34.5% (677/1962) of pharmacies were selling injecting equipment, compared with 28.0% (676/2434) in 1988; 18.9% (366/1937) were providing a needle exchange service, compared with 3.0% (65/2415) in 1988.**

***Conclusion*—Activity levels increased substantially across all three service areas. Increased activity included greater individual activity as well as higher proportions of pharmacies participating. The network of community pharmacies represents an underused point of contact for this Health of the Nation target population.**

Introduction

There are more than 10 500 community (high street) pharmacies in England and Wales. It is now eight years since the last (and only previous) national survey of community pharmacies and their role in preventing the spread of HIV among injecting drug misusers.[1] The number of misusers notified annually to the Home Office Addicts Index[2] has continued to rise by approximately 20% a year, and the proportion of those injecting remains over 50%.[2,3] The number of prescriptions written for methadone continues to rise,[3] and most of these will be taken to community pharmacies. Many "hard to