

not injected and is a good alternative to injectable methadone. In detoxification it seems much easier to reduce.

Rather than suggesting that the treatment of drug use should be a single strand management package—the use of oral methadone in a restricted and supervised manner—it would be useful to point out the many complex issues relating to drug dependence, which require exploration and constant innovation, evaluation, and modification of policies.

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### Only half of patients store methadone in safe place

EDITOR.—The value of oral methadone maintenance programmes in opiate dependence has now been established,<sup>1</sup> but supplies of methadone given to patients to take home pose risks of overdose to adults and children who inadvertently drink the linctus.<sup>2,3</sup> Altogether 36% of prescriptions for methadone are reportedly dispensed in weekly instalments,<sup>4</sup> yet no information is available on the adequacy of the storage of take home supplies. We report on the domestic storage arrangements of 87 patients who were dependent on opiates and receiving prescribed take home supplies of methadone.

Forty patients had current parental responsibility for at least one child under the age of 12. Current parental responsibility was commoner among the women (16/27 (59%)) than the men (24/60 (40%)) ( $\chi^2 = 2.06, P < 0.05$ ). Methadone supplies were stored in a wide variety of locations: in a cupboard or wardrobe (32 patients), fridge (7), or drawer (6) or by the bed (12). We considered 43 to be storing their methadone safely. Safe storage was commoner among those with children at home (75% v 28%,  $P < 0.001$ ; table 1). Nevertheless, 18 reported leaving methadone lying around the home, including five with current parental responsibility. Women were more likely to store their methadone safely (17/27 (63%) v 26/60 (43%)),

although, among those with parental responsibility, three quarters of both men and women stored their methadone safely.

Greater precautions were taken in storing illicit drugs: of the 68 still using illicit drugs, 51 stored them safely. As with methadone, safe storage was commoner among those with current parental responsibility (90% v 63%,  $P < 0.05$ ; table 1). For the 51 patients with needles and syringes at home safe storage was commoner among those with current parental responsibility (83% v 32%,  $P < 0.001$ ). Sixty four patients had seen posters in drug agencies warning of the dangers of methadone to children. Only 25, however, were aware of someone having discussed with them the dangers of methadone to children, although this was twice as likely among patients with parental responsibility than without (43% v 17%,  $P < 0.05$ ; table 1).

Widespread reliance on weekly take home supplies of methadone<sup>4</sup> increases the risks of inadvertent overdose by children and others. A substantial minority of patients do not take adequate safeguards over the security of drugs in the home. The greater precautions taken with illicit drugs may indicate a failure to appreciate the equivalent risk of overdose associated with prescribed supplies. The lack of attention to this important issue is disturbing. Counselling on this danger should become routine when take home supplies of methadone are prescribed.

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### Methadone concentrations taken as indicating deaths due to overdose need to be reviewed

EDITOR.—We are concerned that recent reports of death from methadone overdose may be greatly exaggerated owing to the use of inappropriately low serum methadone concentrations in attributing cause of death.<sup>1,2</sup>

Alison Cairns and colleagues do not specify what was considered to be a fatal serum methadone concentration in the 90 cases reported from Manchester,<sup>1</sup> but a recent study from Sheffield of deaths due to methadone reported an average concentration of 560  $\mu\text{g/l}$ .<sup>2</sup> Pathologists generally regard a serum methadone concentration of over 400  $\mu\text{g/l}$  as sufficient to cause death in those who have tolerance to opiates (A Cairns, personal communication). This is at odds with recommendations for monitoring patients receiving methadone maintenance, whose serum concentrations should be kept within a range of 150-600  $\mu\text{g/l}$ <sup>3</sup> or above a minimum of 400  $\mu\text{g/l}$ .<sup>4</sup>

Furthermore, methadone seems to have a high safety margin in those receiving maintenance treatment. We were recently contacted by a pharmacist who had mistakenly made up methadone mixture to a strength of 10 mg/ml instead of 1 mg/ml and dispensed 10 times the normal daily dose of methadone to three of our patients. The pharmacist delayed informing us of his mistake until all three had failed to appear for their next dispensing the following day. We immediately visited the patients at their homes and were relieved to find them alive. Two were used to taking their methadone twice daily and had not felt the need to take their second dose. One had swallowed all of her 50 ml daily dose, thereby taking 500 mg of methadone, a 10-fold overdose. Although all three felt grossly intoxicated, none had felt the need for treatment.

There is an urgent need to review the criteria by which pathologists attribute cause of death to methadone overdose. Inflated statistics on deaths due to methadone will only impede the development of effective services, which should be available to all people dependent on opiates.<sup>5</sup>

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### Treatment in general practice can be successful

EDITOR.—We are not surprised that John Strang and colleagues found that prescribing of injectable methadone was widespread and was prevalent in non-specialist settings.<sup>1</sup> At our practice we receive many requests from drug users to prescribe injectable methadone as well as other replacement drugs at higher doses than those recommended by the specialist service protocols or, indeed, the prescribing guidelines suggested by the Department of Health. This position is partly forced on us by the limited prescribing practices of the local specialist services, which often seem unwilling to support or take on the care of drug users whose needs are complex and fall outside the accepted criteria for those who are perhaps best managed in general practice.

We have often taken on such drug users, because from a public health and client centred perspective the options of continued and increased harm, both through continued consumption of drugs obtained on the black market and through the use of private prescribers, is

Table 1—Storage of methadone by patients with and without children at home. Figures are numbers (percentages) except where stated otherwise

	No children at home (n = 47)	Children at home (n = 40)	Significance
Clinical practice:			
Daily dose (mg)	67	67	t = 0.02, NS
Daily pick up was usual arrangement	29 (62)	24 (60)	$\chi^2 = 0.003$ , NS
Childproof caps used	47 (100)	36 (90)	$\chi^2 = 2.91$ , P < 0.05
Aware of danger through posters	36 (77)	28 (70)	$\chi^2 = 0.20$ , NS
Aware of danger through discussion	8 (17)	17 (43)	$\chi^2 = 5.6$ , P < 0.05
Safe storage at home of:			
Methadone	3/47 (28)	30/40 (75)	$\chi^2 = 19.4$ , P < 0.001
Illicit drugs	24/38 (63)	27/30 (90)	$\chi^2 = 6.4$ , P < 0.05
Needles and syringes	9/28 (32)	19/23 (83)	$\chi^2 = 13.0$ , P < 0.001