The effectiveness of community maintenance with methadone or buprenorphine for treating opiate dependence
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CRD summary
This review evaluated community maintenance programmes for treating opiate addiction. The authors concluded that the results supported the effectiveness of community maintenance with methadone or buprenorphine, and provided some evidence that treatment in a primary care setting may be effective. The reliability of these conclusions could not be assessed, as some details of the review process were inadequately reported.

Authors' objectives
To assess the effectiveness of community maintenance programmes with methadone or buprenorphine for treating opiate addiction.

Searching
MEDLINE, EMBASE, PsycINFO, CINAHL, the Social Sciences Citation Index, the Lindesmith Library database, the Cochrane Controlled Trials Register, ASSIA, EBSCO and the British Library Catalogue; the search terms were reported. Relevant journals were searched online or by hand. Further studies were identified through handsearches of conference abstracts (International Conferences on the Reduction of Drug-Related Harm, 1997 to 2000; the Association of University Departments of General Practice, 1997 to 2001; and the British Pharmaceutical Conference) and professional newsletters (Pharmacy Misuse Advisory Group, Substance Misuse Management Group). The review was restricted to English-language articles and studies published from 1990 to 2002. The authors also contacted colleagues to locate unpublished and ongoing research.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) were eligible for inclusion.

Specific interventions included in the review
Studies of community-based maintenance programmes with methadone or buprenorphine were eligible for inclusion. Programmes had to include the following components: the provision of methadone or buprenorphine, medical care, counselling and support, health promotion and education, and links to other community-based services. Studies that assessed in-patient treatment and prison-based programmes were excluded. Most of the studies provided treatment in out-patient clinics, although some were conducted in a primary care setting. The studies used a variety of methadone and buprenorphine doses, buprenorphine dosing intervals, treatment durations, additional programme components, and comparators.

Participants included in the review
Studies with opiate-dependent patients over 18 years old were eligible for inclusion; patients could be dependent on other drugs in addition to opiates. The experimental group could be detoxified before starting the maintenance programme, treated pharmacologically, and/or receive other therapy. The control group could receive pharmacological treatment, placebo, or no treatment. Studies of pregnant women or patients with major psychiatric co-morbidities were excluded. The studies included in the review generally involved patients in good health, who had not recently undergone treatment for drug dependence.

Outcomes assessed in the review
The inclusion criteria for the outcomes were not stated explicitly. The primary outcomes examined in the review were abstinence from illicit opiate use, reduction in illicit opiate use, severity of withdrawal and retention in treatment. The secondary outcomes assessed were changes in employment status, housing status, education, crime rates, quality of life and level of injecting.

How were decisions on the relevance of primary studies made?
Two reviewers independently assessed studies for inclusion, with any disagreements being resolved by a third reviewer.
Assessment of study quality
Study quality was assessed according to criteria outlined in the Cochrane Collaboration Handbook, which assess the potential for selection, performance, detection, information and attrition bias. The authors did not state how the papers were assessed for quality, or how many reviewers performed the quality assessment.

Data extraction
Two reviewers independently extracted the data, with any disagreements being resolved by a third reviewer. The authors extracted data on patient and intervention characteristics, and outcomes reported in the primary studies. To assess the primary outcome of the reduction in opiate use, the percentage of participants with opiate-positive urine samples was extracted for each group.

Methods of synthesis
How were the studies combined?
The studies were combined in a narrative discussion.

How were differences between studies investigated?
The authors discussed differences between the studies in terms of patients, settings, methadone or buprenorphine dose, dosing interval, and other treatment components.

Results of the review
The review included 48 RCTs; the total number of participants was not reported. There were 14 trials of methadone maintenance, 20 trials of buprenorphine maintenance, and 14 trials comparing the two treatments.

The authors did not present full details of the validity assessment, but highlighted features that might have led to bias in some trials: systematic differences between treatment groups; variable rather than fixed drug doses; high drop-out rates in buprenorphine groups; small sample sizes; and short duration of treatment.

Community maintenance treatment with methadone or buprenorphine was shown to be effective, as measured by treatment retention, abstinence and reduction in illicit opiate use. However, there was considerable variation between the studies in the results achieved. Both methadone and buprenorphine were more effective at higher doses. Compared with a buprenorphine dose of 2 to 8 mg per day, 'low dose' methadone (20 mg/day) was less effective, but a higher dose (more than 50 mg/day) was slightly more effective. There was some evidence that buprenorphine could be given in larger doses, at intervals of more than 24 hours, without affecting treatment retention. There was also evidence to suggest that the maximum dosing interval may be 120 hours.

Two trials compared treatment provision in primary care and out-patient clinics. One trial found that methadone maintenance had similar effectiveness in the two settings in terms of illicit drug use. A trial of buprenorphine maintenance showed improved treatment retention and abstinence, and reduced illicit drug use, in the primary care setting.

The impact of other components of the treatment programme was investigated for methadone maintenance. In several trials, the use of take-home incentives reduced illicit opiate use and improved compliance with other aspects of treatment. The provision of additional services (e.g. medical and psychosocial services, or behavioural skills sessions) increased the effectiveness of treatment; however, each of these was investigated in only one trial.

Authors' conclusions
The authors concluded that there was evidence to support the effectiveness of community maintenance treatment with methadone or buprenorphine. There was also some evidence that the provision of treatment in a primary care setting may be effective.

CRD commentary
The review question was clearly defined in terms of the interventions, participants and study designs. The literature search was adequate, and the restriction to studies published between 1990 and 2002 was justified by the authors on
clinical grounds. The restriction to English-language papers might have resulted in the omission of some relevant studies. The study selection and data extraction processes were performed independently and in duplicate, which helps to reduce the potential for errors and reviewer bias.

The authors did not provide details of the included studies. Many were included in a report (see Other Publications of Related Interest) on which this review was based, but for some studies no details were available. The authors stated that the included studies differed in patient characteristics, settings, exact details of the interventions, and outcomes assessed. In view of this heterogeneity, the decision to use a narrative summary was appropriate. However, the impact of heterogeneity and study quality on the results was not discussed. Furthermore, it was sometimes unclear which studies had been used to derive the results presented. Some of the findings relating to particular aspects of the treatment programme were also based on a small number of studies.

Since the study details and data synthesis were inadequately reported, it is not possible to assess the reliability of the conclusions. The authors also cautioned that the applicability may be limited, because conditions in the studies were often not typical of routine drug treatment, and because drug misuse behaviour and treatment programmes vary between countries. Overall, owing to the paucity of reporting of the primary study details, further research is needed to examine the reliability of the authors' conclusions.

Implications of the review for practice and research

Practice: The authors stated that the review provided evidence to support community maintenance therapy with methadone or buprenorphine. For methadone maintenance, guidelines should emphasise its increased effectiveness at higher doses, and highlight the need for supervision of treatment. Buprenorphine has potential as an alternative to methadone, and may be effective at a less frequent dosing interval. Maintenance treatment in a primary care setting may be effective, but this requires primary care physicians to be appropriately trained, and may only be suitable for patients with sufficient clinical stability.

Research: The authors made suggestions for further research. They stated that future research should address: maintenance treatment in primary care, in terms of its effectiveness and suitability for particular patient groups; optimum treatment intensity in terms of starting dose, dose range, buprenorphine dose frequency, and treatment duration; the long-term effectiveness of community maintenance treatment; the effects of different medical, psychosocial and behavioural services; and the effect of community maintenance treatment on secondary outcomes such as employment, housing, education, crime, quality of life and level of injecting.

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Other publications of related interest

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.