



Title	Methadone and Buprenorphine for the Management of Opioid Dependence: A Systematic Review and Economic Evaluation
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Aim

To assess the clinical and cost effectiveness of buprenorphine maintenance therapy (BMT) and methadone maintenance therapy (MMT) in managing opioid-dependent individuals.

Conclusions and results

Most of the included systematic reviews and randomized controlled trials (RCTs) were of moderate to good quality and focused on short-term outcomes of retention in treatment and level of opiate use (self-report or urinalysis). Most studies compared a fixed-dose strategy of MMT or BMT and included mainly young men who met criteria as opiate-dependent or heroin-dependent users, without significant comorbidities. RCT meta-analyses have shown that a fixed dose of MMT or BMT has superior levels of retention in treatment and opiate use than placebo or no treatment (higher fixed doses being more effective than lower fixed doses). Evidence showed that fixed-dose MMT reduces mortality, HIV risk behavior, and crime levels compared to no therapy. A small RCT found the mortality level with fixed-dose BMT to be significantly less than with placebo. Flexible dosing of MMT and BMT is more reflective of real-world practice. Retention in treatment was superior for flexible MMT than flexible BMT dosing, but there was no significant difference in opiate use. Population cross-sectional studies suggest that mortality with BMT may be lower than with MMT. A pooled RCT analysis showed no significant difference in serious adverse events with MMT vs BMT. Treatment modifier evidence was limited. One company submitted cost-effectiveness evidence based on an economic model and sourced data from a single RCT; the results showed that for MMT vs no drug therapy, the incremental cost-effectiveness ratio (ICER) was GBP 12 584/quality adjusted life year (QALY), for BMT vs no drug therapy, the ICER was GBP 30 048/QALY and in a direct comparison, MMT was found to be slightly more effective and less costly than BMT. The assessment group model found for MMT vs no drug therapy that the ICER was GBP

13 697/QALY, for BMT vs no drug therapy that the ICER was GBP 26 429/QALY, and in direct comparison MMT was slightly more effective and less costly than BMT. Regarding social costs, both MMT and BMT gave more health gain and were less costly than no drug treatment.

Recommendations

Flexible-dose MMT and BMT are more clinically and cost effective than no drug therapy in dependent opiate users. In direct comparison, a flexible dosing strategy with MMT (daily dose equivalent 20–120 mg) was found to be somewhat more effective in maintaining individuals in treatment than flexible-dose BMT (daily dose equivalent 4–16 mg) and therefore associated with a slightly higher health gain and lower costs. This needs to be balanced by the more recent experience of clinicians in using buprenorphine, the possible risk of higher mortality of MMT, and individual opiate-dependent users' preferences.

Methods

Electronic databases were searched to August 2005. Industry submissions to the National Institute for Health and Clinical Excellence were accessed. Assessment of clinical effectiveness was based on a review of reviews and updated search for RCTs. A decision tree with Monte Carlo simulation model was developed to assess the cost effectiveness of BMT and MMT. Retention in treatment and opiate abuse parameters were sourced from the meta-analysis of RCTs directly comparing flexible MMT with flexible dose BMT. Utilities were derived from a panel representing a societal perspective.

Further research/reviews required

Safety and effectiveness of MMT and BMT as it is delivered in the UK; potential safety concerns of methadone and buprenorphine (mortality and key drug interactions); efficacy of substitution medications; uncertainties in cost effectiveness identified by current economic models.