Economic evaluation: a comparison of methadone versus buprenorphine for opiate substitution treatment

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Record Status
This is a critical abstract of an economic evaluation that meets the criteria for inclusion on NHS EED. Each abstract contains a brief summary of the methods, the results and conclusions followed by a detailed critical assessment on the reliability of the study and the conclusions drawn.

CRD summary
The study compared the cost-effectiveness of buprenorphine and methadone for people who were opiate dependent and who had requested substitution treatment. The authors concluded that the costs were similar, and buprenorphine’s increased effectiveness at stopping illicit drug use suggested that it was cost-effective, but long-term research, from a wider perspective, was needed. The reporting was generally good, with clear, appropriate methods, and the conclusions were appropriately cautious.

Type of economic evaluation
Cost-effectiveness analysis

Study objective
This study compared the cost-effectiveness of buprenorphine and methadone for people who were dependent on opiates and who had requested substitution treatment.

Interventions
Methadone was compared with buprenorphine. Dosage was titrated over three days. Participants received their medication under pharmacy supervision or were allowed to take home doses, on an individual basis, where appropriate. The level of contact was negotiated between the clinic staff and the participant. All participants were offered counselling and support.

Location/setting
UK/secondary care.

Methods
Analytical approach:
The cost-effectiveness analysis was conducted alongside a clinical study. The time horizon was the duration of the study, which was six months. The authors stated that the analysis was conducted from the perspective of the Trust Alcohol and Drug Service.

Effectiveness data:
The primary clinical outcome was the proportion of participants who stayed in the programme for at least six months, or who had completely detoxed from the substitute prescription drugs and illicit opiates, before six months. A participant was considered to have detoxed if five of their six monthly opiate urine tests were negative. The data were from a cohort study of methadone and buprenorphine. Participants, from one rural and two urban community drug clinics, chose which treatment they received; 227 chose methadone and 134 chose buprenorphine. The outcome was adjusted for baseline variables that might have differed between groups. An intention-to-treat analysis was conducted.

Monetary benefit and utility valuations:
Not relevant.

Measure of benefit:
The measure of benefit was the percentage of participants who stayed on treatment successfully at six months, adjusted for baseline factors.
Cost data:
The programme costs included medication, supervising and dispensing it at the pharmacy, personnel, and urine testing at the clinic. Medication use, visits between clinic staff and participants, and urine tests were recorded prospectively during the study. Medication costs were from the NHS England and Wales electronic drug tariff of September 2010. The fees for dispensing, controlling and supervising were the rates charged in Norfolk, UK. Staff contact costs were from the Unit Costs of Health and Social Care. The costs were adjusted for baseline variables that could differ between groups. They were reported in UK £, and the price year was 2010 to 2011.

Analysis of uncertainty:
Confidence intervals were reported for some of the cost results. The effect of motivation to attend the clinic (voluntary or by law) on costs and outcomes was evaluated.

Results
The percentage of participants who stayed on the programmes for six months or who detoxed completely was 70 in the methadone group and 50 in the buprenorphine group.

Methadone was £63 (95% CI -88 to 213) less costly per participant than buprenorphine.

For retaining participants, methadone was 19.4% more effective than buprenorphine. Methadone dominated buprenorphine, as it was more effective and less costly.

For complete detox, one patient detoxed completely on methadone, while 10 detoxed completely on buprenorphine. The incremental cost per person who detoxed completely with buprenorphine, compared with methadone, was £903.

Authors' conclusions
The authors concluded that the costs were similar, and buprenorphine's increased effectiveness at stopping illicit drug use completely suggested that it was cost-effective, but long-term research, from a wider perspective, was needed.

CRD commentary
Interventions:
The interventions were described. Both programmes appeared to be used in practice in the UK. Buprenorphine plus naloxone was also used in practice.

Effectiveness/benefits:
Patients selected the treatment programme that they received. This lack of randomisation means confounders cannot be completely ruled out, but the design may have been appropriate for the context. Few details of the clinical study were reported; the reference was given. The clinical outcome was relevant, but might not capture the long-term health outcomes. The finding that buprenorphine was more effective at stopping illicit drug use could mean that it had more long-term benefits. As acknowledged by the authors, the outcome measures did not encompass quality of life, and a longer study would be more likely to capture cessation of illicit drug use attributable to the programmes. Discounting was not necessary for the short time horizon.

Costs:
The costs appeared to have been well evaluated. Resource use was prospectively collected alongside the clinical study which means that the estimates are likely to have been accurate. The unit costs were from sources appropriate to the study setting, and were reported in detail. The price year was reported. The authors reported that the patent on buprenorphine had recently expired, but no generic version was analysed. The difference in price between generic and proprietary buprenorphine could change its cost-effectiveness. Additional health service costs were not included, nor were the costs for employment and the criminal justice system. As acknowledged by the authors, opioid substitution therapy was likely to affect these costs; the effects of their inclusion remain unclear.

Analysis and results:
There were inconsistencies in the reporting of the results. Under incremental cost-effectiveness ratios, it was stated that methadone was 19.4% less effective, when it was more effective for the retention outcome. It was not clear whether buprenorphine was 19.4% less effective or 19.4 percentage points less effective. Confidence intervals were reported for...
some results, but uncertainty in the cost-effectiveness outcome was not evaluated. The authors thoroughly discussed their study limitations and the uncertainty in their results due to the study perspective, time horizon, outcomes, and costs.

**Concluding remarks:**
The study had generally good reporting and clear and appropriate methods. The authors’ conclusions appropriately considered the study limitations and the uncertainty in the outcomes.

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