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 objective was to assess the cost-effectiveness of once daily, osmotic-controlled release oral delivery system (OROS) hydromorphone relative to other strong oral opioids for the treatment of chronic pain. The authors concluded that OROS hydromorphone was cost-effective, for chronic severe malignant or non-malignant pain, in all five countries. There were limitations in the reporting of the methods making it difficult to meaningfully comment on the validity of the analysis; the source study should be consulted.

Type of economic evaluation
Cost-utility analysis

Study objective
The objective was to assess the cost-effectiveness of once daily, osmotic-controlled release oral delivery system (OROS) hydromorphone relative to other strong opioids for the treatment of chronic pain.

Interventions
OROS hydromorphone was compared with sustained-release morphine, extended-release oxycodone, and twice daily hydromorphone.

Location/setting
Germany, Denmark, Slovakia, Portugal, and Italy/not reported.

Methods
Analytical approach:
The analysis was based on a published two-phase model. The initial phase was titration to find the stable dose of a drug or switching to another drug. The second phase was the maintenance phase. The time horizon was one year and the perspective was not reported.

Effectiveness data:
Much of the clinical data was from one published German study (Greiner, et al. 2006, see ‘Other Publications of Related Interest’ below for bibliographic details). The remaining data were determined by expert opinion. The main measure of clinical effectiveness was pain control.

Monetary benefit and utility valuations:
The utility values were from published sources.

Measure of benefit:
Quality-adjusted life-years (QALYs) were the summary measure of benefit.

Cost data:
The economic analysis included the drugs, treatment of adverse events, and physician and nurse visits. The resource use was from published sources. All costs were reported in Euros (EUR). Where necessary, they were converted from Danish kroner or Slovak kore. The price year was 2008.

Analysis of uncertainty:
Probabilistic sensitivity analysis was performed to examine the impact of uncertainty in the model inputs on the results. One-way sensitivity analyses were carried out and the results were displayed in tornado diagrams.

**Results**
For non-malignant pain, the incremental cost per QALY gained for OROS hydromorphone, compared with each of the alternatives, in each country, was always less than EUR 11,000. For malignant pain the highest incremental cost per QALY gained was EUR 21,456 which was in Portugal compared with sustained-release morphine.

OROS hydromorphone was dominant, as it was less costly and more effective, compared with extended-release oxycodone for malignant pain in Germany, and compared with twice daily hydromorphone in Germany, in Denmark for malignant pain, and in Slovakia.

The sensitivity analysis showed that the results were most sensitive to the probability of chronic constipation as an adverse effect.

**Authors’ conclusions**
The authors concluded that OROS hydromorphone was cost-effective, compared with other oral strong opioids, for chronic severe malignant or non-malignant pain, in all five countries.

**CRD commentary**

**Interventions:**
The interventions were described, but it was not clear why they were chosen, and the usual practice in each country was not stated.

**Effectiveness/benefits:**
The method used to identify the sources for the effectiveness estimates was not reported, making it impossible to determine if the most up-to-date and relevant data were used. Most of the effectiveness data, including some of the utility estimates, were from one study, which was referenced, but not fully described, making it difficult to assess its validity. The measure of benefit, QALYs, was appropriate and will allow comparisons with the benefits of interventions for other diseases and conditions.

**Costs:**
No perspective was reported making it impossible to determine whether the costs were relevant. The method used to derive the drug use was reported, but the sources for the other resource use and cost estimates were not given. The cost estimates were from a variety of countries and it was unclear whether they were adjusted for purchasing power parity. Discounting was not necessary, as the follow-up was one year.

**Analysis and results:**
The clinical and cost data were synthesised using a published model, but few details of this model were reported. The results of the incremental analysis were clearly reported. One-way and probabilistic sensitivity analyses were performed, but only the results of the one-way sensitivity analyses were presented and discussed. The authors identified some limitations to their analysis, including the uncertainty around some of the utility estimates.

**Concluding remarks:**
There were limitations in the reporting of the methods making it difficult to meaningfully comment on the validity of the analysis; the source study should be consulted.

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