Insomnia: treatment pathways, costs and quality of life
Scott GW, Scott HM, O'Keeffe KM, Gander PH

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
This study examined the cost-effectiveness of several treatments for insomnia in adults aged 20 to 59 years. The authors concluded that successful treatment for insomnia was highly cost-effective, despite conservative assumptions. Most of the data were from interviews with experts and the treatment pathways were not fully described, but the authors' conclusions appear to be valid and robust.

Type of economic evaluation
Cost-utility analysis

Study objective
This study examined the cost-effectiveness of several treatments for insomnia in adults aged 20 to 59 years.

Interventions
A wide range of available treatments for insomnia was compared with no treatment. The treatments were delivered by various health care professionals: pharmacists, general practitioners, psychiatrists, psychologists, nurses, counsellors, herbalists, acupuncturists, or hypnotists.

Location/setting
New Zealand/primary care.

Methods
Analytical approach:
The analysis was based on a deterministic decision-tree model, with a time horizon of one year. The authors stated that a societal perspective was adopted.

Effectiveness data:
The clinical estimates were from a review of the literature or expert opinion. Conventional electronic databases were searched for articles from 1996 onwards. The epidemiological inputs were from New Zealand sources. Treatment efficacy was a key input for the model and appears to have been from published studies or interviews with clinical experts in the authors' setting.

Monetary benefit and utility valuations:
Health-related quality of life estimates were provided by two health care practitioners, who completed the European Quality of life (EQ-5D) questionnaire for their insomnia patients, before and after successful treatment. The questionnaire results were scored using a New Zealand tariff, and these results were combined with estimates from the literature.

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

Cost data:
The economic analysis included the direct medical costs (visits to health care professionals and drugs) and indirect medical costs of transport to treatment. The indirect costs of lost productivity and the non-health costs of accidents were not considered, but the average increase in costs per capita for those with insomnia versus without were included and were from the literature. The quantities of resources were from published literature and expert opinion. The unit
costs were based on official price lists from organisations, such as New Zealand’s Pharmaceutical Management Agency (PHARMAC) and the Ministry of Health. The price year was 2009 and all costs were in New Zealand dollars (NZD).

Analysis of uncertainty:
A random probabilistic Monte Carlo simulation was used to investigate uncertainty. Triangular distributions were applied to inputs and the initial values were varied by ±25%.

Results
The costs of insomnia treatment per patient were NZD 145, and the costs of insomnia per patient were NZD 628. This resulted in a saving of NZD 482 patient with successful treatment. Insomnia treatment led to a gain of 0.157 QALYs over no treatment.

Insomnia treatment was dominant, as it was more effective and saved costs. The net benefit per QALY gained was NZD 3,072.

The sensitivity analysis showed that the net benefit of treatment per person was between NZD 41 and NZD 679 for 90% of the simulations. The net benefit per QALY gained was between NZD 240 and NZD 8,102.

Authors’ conclusions
The authors concluded that successful treatment of insomnia was highly cost-effective, despite conservative assumptions.

CRD commentary
Interventions:
The intervention was a combination of those used by several clinical experts, including general practitioners, specialists, and health practitioners. None of these treatments was described and it was unclear whether they would be relevant for other settings.

Effectiveness/benefits:
The clinical and epidemiological estimates were from a review of the literature and interviews with experts. Little information on the designs of the source studies was provided, making it difficult to judge the validity of this evidence. All inputs were varied in the sensitivity analysis. QALYs were an appropriate measure, as insomnia has an impact on quality of life and can increase mortality due to work or car accidents. The utility weights were obtained using an appropriate instrument, completed by local experts, and these values were combined with published estimates. This appears to have been valid.

Costs:
The authors stated that the perspective of society was taken, but productivity costs were not directly included. The sources for the unit costs were provided and reflected the authors’ setting. The resource use was mainly from interviews with experts and published studies, which were not fully described. The costs were varied in the sensitivity analysis and the price year was reported allowing reflation exercises.

Analysis and results:
The total costs and QALYs for treated versus untreated patients were reported and an incremental analysis was conducted. It was unclear why the net benefit per QALY was calculated as treatment was dominant and the calculation of a ratio was unnecessary. Deterministic and probabilistic sensitivity analyses were conducted and showed that the main results were robust. The authors stated that their results might be conservative against treatment, as the costs of car and work accidents were not included. The findings appear to be specific to the authors' setting and might be difficult to transfer to other countries without making appropriate adjustments.

Concluding remarks:
Most of the data were from interviews with experts and the treatment pathways were not fully described, but the authors' conclusions appear to be valid and robust.
**Funding**
Funded by the New Zealand Lottery Grants Board.

**Bibliographic details**

**PubMedID**
21693060

**DOI**
10.1186/1478-7547-9-10

**Original Paper URL**
http://www.resource-allocation.com/content/9/1/10/abstract

**Indexing Status**
Subject indexing assigned by CRD

**MeSH**
Cost-Benefit Analysis; Decision Trees; Humans; New Zealand; Quality-Adjusted Life Years; Sleep Initiation and Maintenance Disorders /therapy

**AccessionNumber**
22011001459

**Date bibliographic record published**
16/11/2011

**Date abstract record published**
30/11/2012