A cost-effectiveness analysis of a community pharmacist-based smoking cessation programme in Thailand

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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 objective was to assess the cost-effectiveness of a structured community pharmacist-based smoking cessation (CPSC) programme compared with usual care in Thailand. The authors concluded that, from the perspective of the health system, the CPSC programme yielded cost savings as well as additional life-years. Despite limited reporting around some model parameters the methodology of the study seems appropriate and comprehensive. The conclusions reached by the authors appear appropriate.

Type of economic evaluation
Cost-effectiveness analysis

Study objective
The objective was to assess the cost-effectiveness of a structured community pharmacist-based smoking cessation (CPSC) programme compared with usual care in Thailand.

Interventions
The structured CPSC programme included the identification and documentation of smoking status; provision of personalised and supportive advice on smoking cessation; an assessment of a smoker's interest in quitting and level of nicotine dependence; and the provision of appropriate therapy with self-help materials and seven scheduled ten-minute follow-up visits. Usual care consisted of discussion of smoking status, assessment of motivation and nicotine dependence, provision of brief advice and support, and provision of therapy without follow-up care.

Location/setting
Thailand/community care.

Methods
Analytical approach:
A Markov model was used to assess the cost and outcomes of a CPSC programme. The time horizon of the analysis was the lifetime and the authors stated that the study perspective was that of the health care system.

Effectiveness data:
The effectiveness data used in the model was derived from published studies. The estimate of successful quitting was derived from a systematic review of randomised controlled trials. Transition probabilities between health states were taken from international published studies which, in some cases, were modified by the authors to better reflect the experience of the Thai population. The main clinical parameters were the efficacy of the smoking cessation programme, the risk of developing smoking-related diseases and the risk of death.

Monetary benefit and utility valuations:
None.

Measure of benefit:
The measure of benefit was the number of life-years gained and future health benefits were discounted at an annual rate of 3%.
Cost data:
The cost categories were derived from a wide range of sources and included the pharmacists' training cost, the pharmacists' fees, the cost of medications and disease specific treatment costs. The costs were in Thai bahts (THB) and adjusted to 2005 prices. Future costs were discounted at an annual rate of 3%.

Analysis of uncertainty:
Deterministic, probabilistic and threshold sensitivity analyses were conducted and the results of the latter analyses were presented using cost-effectiveness acceptability curves.

Results
For all age cohorts (40, 50 and 60 years) and for both males and females, the CPSC programme dominated usual care (i.e. it was less costly and more effective). For example, for 50 year old males, the CPSC programme resulted in a cost saving of THB 16,355.62 and an increase in life expectancy of 0.1520 years, while for 50 year old females, the CPSC programme produced cost savings of THB 20,073.98 and an increase in life expectancy of 0.2050 years.

In the deterministic and probabilistic sensitivity analyses, the results were generally robust. They were only sensitive to variations in the discount rate and the long-term smoking quit rate associated with the intervention. The cost effectiveness acceptability curve indicated that, at a willingness to pay of THB 315,000 per life-year gained, the probability of the CPSC programme being cost effective was 0.996.

Authors’ conclusions
The authors concluded that, from the perspective of the Thai health system, the CPSC programme produced cost savings as well as additional life-years.

CRD commentary
Interventions:
Both the intervention and comparator were clearly described and the comparator was appropriate as it represented current practice in the authors' setting.

Effectiveness/benefits:
The effectiveness data were derived from a number of published studies. Although the methods used to identify the relevant studies were not reported, the studies appear to have been of a relatively high quality. For example, the estimate of the efficacy of the smoking cessation programme came from a systematic review of randomised controlled trial data, and cohort studies provided estimates of transition probabilities between health states. However, many of the actual estimates used to populate the model were not reported in the paper. The measure of benefit was life-years saved, which was appropriate for the intervention.

Costs:
The analysis of costs was consistent with the authors’ stated perspective and the categories of costs included in the analysis. The costs were presented as macro-categories and a breakdown of unit prices and resources was not given, which limits the generalisability of the analysis. The price year, details of discounting and the exchange rate used were all adequately reported.

Analysis and results:
The model structure was clearly described with the authors providing all relevant details and modelling assumptions. A synthesis was not undertaken possibly because the intervention was the dominant strategy, that is, less costly and more effective. The impact of uncertainty in the model parameters was extensively explored through one-way, two-way and probabilistic sensitivity analyses and the results of these were clearly reported. The authors noted a number of limitations to their analyses, in particular the exclusion of relapse rates.

Concluding remarks:
Despite limited reporting around some model parameters the methodology of the study seems appropriate and comprehensive. The conclusions reached by the authors appear appropriate.
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