A cost-consequences analysis of an adherence focused pharmacist-led medication review service

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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 of the study was to examine the costs and outcomes of a pharmacist-led medication review service for patients who were having difficulty managing their medication independently. The authors concluded that the costs of providing the medication review were offset by a reduction in subsequent health care costs assuming that the findings of the evaluation were real. The authors appropriately highlighted the limitations of the study design and these indicated that there was uncertainty in the results.

Type of economic evaluation
Cost-effectiveness analysis

Study objective
The objective of the study was to examine the costs and outcomes of a pharmacist-led medication review service for patients who were having difficulty managing their medication independently.

Interventions
The intervention was the Norfolk Medicine Support Service (NMSS). This included a home visit by a pharmacist who had completed training in medication review and service procedures. During the visit, the pharmacist attempted to determine the problem the patient was having managing their medication, decide on an appropriate solution and feed the results back to the patient's GP (general practitioner). Appropriate solutions were then implemented.

Location/setting
Norfolk, England/home.

Methods
Analytical approach:
An economic evaluation was carried out alongside a single study. The authors reported that a secondary care NHS perspective was adopted. The time horizon was one year.

Effectiveness data:
Effectiveness data were based on a pre and post assessment of 117 patients who participated in the NMSS. Patients were sent postal questionnaires prior to the intervention and at six weeks and six months post intervention. The primary outcomes were self-reported medication adherence and health-related quality of life.

Monetary benefit and utility valuations:
Health-related quality of life (HRQOL) was assessed using the EQ-5D. This was given to patients at baseline, six weeks and six months.

Measure of benefit:
There was no single summary measure of benefit. The key endpoints of the analysis were medication adherence and HRQOL.

Cost data:
The economic analysis included costs of the intervention, medication and hospital admissions. Resource use and cost...
estimates were derived from various sources. Resource use and unit costs associated with the intervention were derived from NMSS administrative records. Numbers of emergency hospital admissions were derived from hospital episode statistics and associated costs were based on the healthcare resource group cost of admission. Costs were presented in UK pounds (£). The price year was 2005/06.

Analysis of uncertainty:
A two-way sensitivity analysis of two of the cost estimates was conducted to examine the robustness of the study results to changes in cost estimates.

Results
The average cost per patient was £2,190 before the intervention and £1,883 after the intervention. This was a cost saving of £307 per patient (95% confidence interval -£1,269 to £655). Self-reported medication adherence increased from a mean of 22.15 before the intervention to 23.15 after the intervention and the proportion of patients classified as adherent increased from 19 to 29. There was a slight non-significant reduction in utility of 0.038 from baseline at six months.

Varying the cost estimates showed the cost savings to range from a minimum of £253 to a maximum of £525.

Authors' conclusions
The authors concluded that the costs of providing the medication review were offset by the reduction in subsequent health care costs assuming that the results were real.

CRD commentary
Interventions:
The intervention was clearly described. Typical practice for the authors' setting was included.

Effectiveness/benefits:
Effectiveness data were derived from a pre and post assessment of patients who participated in the scheme under evaluation. The authors noted that this methodology had potential drawbacks, the most important of which was that factors other than the intervention may have influenced the study results. For example, questionnaires on adherence were an element of the study not real clinical practice and may have encouraged adherence. The authors noted that a regression to the mean effect may have explained admission results. The sample size did not reach the numbers required to detect prior statistically significant differences.

Health utility values were obtained appropriately for the population using the EQ-5D instrument.

Costs:
A secondary NHS perspective was stated but costs of non-emergency admissions were not included in the analysis. Unit costs and resource use were generally reported. Resource use and effectiveness data were based on the same set of patients. The source of the unit costs data was reported and appeared appropriate. The price year was reported. No discounting was necessary because of the short time horizon of the analysis.

Analysis and results:
No incremental cost-effectiveness ratio was calculated. The authors intended to conduct a cost-consequences analysis. Sensitivity analysis was done on cost estimates and confidence intervals were produced for cost, adherence and utility differences from baseline. Other than the difference in adherence, there was a lot of uncertainty in the evidence of any difference and any incremental cost-effectiveness ratio estimate would have been very uncertain. The authors presented a good discussion of the limitations of the study design.

Concluding remarks:
The authors appropriately highlighted the limitations of the study design and these indicated that there was uncertainty in the results.

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