Retrospective drug utilization review and the behavior of Medicaid prescribers: an empirical marginal analysis

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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.

Health technology
Drug utilization review (DUR) letters as a (retrospective) method for reducing the cost of medications under Medicaid.

Type of intervention
Other; a method to control inappropriate prescribing.

Economic study type
Cost-effectiveness analysis.

Study population
Physicians and dentists from within and from outside the state of Alabama, USA, prescribing Medicaid patients with one or more of six antiulcer drugs.

Setting
The study was based in a community setting and the economic analysis took place in the United States.

Dates to which data relate
Effectiveness and resource use data were collected for the period 23 March 1993 - 31 October 1993 and for the corresponding period one year before. The dates of the prices used were not stated.

Source of effectiveness data
Effectiveness data were taken from a single study.

Link between effectiveness and cost data
The costing was undertaken retrospectively on the same sample as that used in the effectiveness study.

Study sample
There were 21,684 Alabama Medicaid prescribers as of September 1993. During the 7 month period after DUR implementation the target population consisted of 5,189 prescribers who had prescribed at least one of the target drugs during the study period. Of this group of prescribers, 1,413 were sent DUR letters. Among these, 118 (1,835 cases) were sent DUR letters in March 1993 when the programme was initially implemented and were chosen as the study sample. The remaining 1,295 prescribers who were sent letters later in the study period were excluded from the study. The group consisting of the 3,776 eligible prescribers whose behaviour had not warranted receipt of any DUR letter during the study period served as the comparator. Finally, the study sample was further reduced to 100 prescribers (96 physicians and 4 osteopaths) who had complete data for 1992 and 1993.
Study design
According to the authors, the study in question used an 'interrupted time series design' (nonrandomised design). Nevertheless, the characterisation as a 'controlled before-and-after study' seems more appropriate. The duration of follow-up was 7 months.

Analysis of effectiveness
The principle used in the analysis was not relevant to the results. The primary outcome used in the analysis was the mean number of days of drug therapy per recipient per prescriber per month. The groups were not shown comparable.

Effectiveness results
Of the 1,835 cases, 65.7% involved overutilization or inappropriate duration of treatment; 17.3% involved therapeutic duplication; 16.5% involved incorrect drug dosage; 0.3% involved drug-drug interactions; and 0.1% involved drug-disease contraindications. No underdose case was identified. After one-way analysis of variance (ANOVA) results, potential intervention effects were observed. Although there was a 'significant' (p<0.05) decreasing trend for days of therapy, month-by-month analyses showed that a clear reduction in days of therapy in the study (intervention) group relative to the comparator after the DUR intervention was observed only in August (p<0.05).

Clinical conclusions
Medicaid DUR letter intervention is a useful method for influencing prescribers to maintain the quality of prescribing provided through Medicaid. Prescribers can change their behaviour in several ways, such as eliminating the duplication of antiulcer drugs, reducing the prescription dosage, switching brand name drugs to generic drugs and reducing the days of drug supply.

Measure of benefits used in the economic analysis
The measure of benefit in the economic analysis was the number of days of drug therapy avoided.

Direct costs
Quantities of resource use were not analysed separately from the costs. Only drug acquisition costs were included in the analysis. The costing was derived from drug reimbursement (Medicaid) data. The price year was not clearly stated.

Currency
US dollars ($).

Sensitivity analysis
No sensitivity analysis was performed.

Estimated benefits used in the economic analysis
Although a reduction in days of drug therapy, for one out of seven months of the study period after the intervention, was reported, the corresponding estimate of the effect size was not stated.

Cost results
For the six target anti-ulcer drugs, there was an average saving of $112.73 per prescriber per month and a total saving of $136,370.82 per month for the Alabama Medicaid program.
Synthesis of costs and benefits
Since the intervention turned out to be the dominant strategy, the costs and benefits were not combined.

Authors' conclusions
Retrospective DUR letter intervention is recommended as a promising method to reduce or minimise the cost of health care under Medicaid in Alabama. Further cost-effectiveness analyses are recommended.

CRD Commentary
As the authors noted, there were a number of uncontrolled external events that could have affected the results of the study (for instance, the Alabama Medicaid Agency issued a policy during the study period stating that the maximum days of drug supply for Medicaid patients should not exceed 34 days per prescription). The retrospective and nonrandomised study design used is prone to bias the corresponding results. The measure of benefits used may not be an adequate measure of effectiveness in the present context.

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