Costs and cost effectiveness of health checks conducted by nurses in primary care: the Oxcheck study

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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
Health checks with education and follow-up for patients with high risk factor levels, carried out by nurses to identify patients with high level of serum total cholesterol concentration.

Type of intervention
Primary prevention.

Economic study type
Cost-effectiveness analysis.

Study population
Registered patients in primary care between 35 - 64 years of age.

Setting
The practice setting was primary care. The economic study was carried out in the United Kingdom.

Dates to which data relate
Effectiveness and resource data were gathered between 1989 and 1993. The fiscal year was not reported.

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

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

Study sample
No power calculations were stated. 2,205 patients (80% response rate) attending a health check between 1989 - 1990, scheduled for re-examination in 1992 - 1993 formed the intervention group, and 1,916 patients attending for their first check in 1992 - 1993 formed the control group.

Study design
The study was a multi-centre randomised controlled trial (5 practices in Luton and Dunstable in the UK) with a 3 year follow-up. The loss to follow-up was 24.7%.
Analysis of effectiveness
The analysis of the effectiveness was based both on intention to treat and treatment completers only. The primary health outcome measure was reduction in coronary risk gauged by the Dundee risk score.

Effectiveness results
The overall reduction in coronary risk was 20% for attenders of the final examination only (13% including non-attenders). The effect was greater for women at 24% (17% for women overall) compared to men at 18% (7% for men overall).

Clinical conclusions
Health checks tested in the Oxcheck trial were shown to be effective in promoting dietary change that was sustained over three years, but there was no impact on rates of smoking or excessive alcohol intake.

Measure of benefits used in the economic analysis
The main benefit measure was reduction in coronary risk gauged by the Dundee risk score based on the measurement of smoking, blood pressure, and cholesterol.

Direct costs
Costs were discounted. The main element of resource utilisation, namely nurses' time, was reported separately from the costs. Cost items were reported separately. Costs included equipment, consumables, nurses (recruitment and training), and administration, all being obtained from the records of the original trial (overheads were obtained from "external sources"). The perspective of the general practice was adopted. The date of the price data was not specified. The research costs were excluded.

Indirect Costs
Not considered.

Currency
UK pounds sterling ( ).

Sensitivity analysis
The authors believed that, since the cost calculations were based on records of actual expenditure, extensive sensitivity analysis was not required. A one-way sensitivity analysis was performed only on assumptions made regarding the nurses' time.

Estimated benefits used in the economic analysis
The overall reduction in coronary risk was 20% for attenders of the final examination only (13% including non-attenders). The effect was greater for women at 24% (17% for women overall) compared to men at 18% (7% for men overall).

Cost results
The discount rate was 6%. The average cost for the health check cardiovascular risk factor screening and intervention programme was 29.27. The duration of the cost estimation was four years.

Synthesis of costs and benefits
The cost per 1% reduction in coronary risk was used as the measure of cost-effectiveness. The value of the measure of the cost-effectiveness for attenders only was 1.46 for all, and 1.22 and 1.63 for women and men, respectively. The corresponding values for all participants were 2.25, 1.72, and 4.18, respectively.

**Authors’ conclusions**

The cost to the practice of implementing Oxcheck-style health checks in an average sized practice of 7,500 patients would be 47,000, a proportion of which could be paid for through staff pay reimbursements and Band Three health promotion target payments. This study highlights the considerable difficulties faced when calculating the costs and benefits of a health promotion programme. Economic evaluations should be integrated into the protocols of randomised controlled trials to enable judgements to be made on the relative effectiveness of different prevention strategies.

**CRD COMMENTARY - Selection of comparators**

The reason for the choice of the comparator is clear.

**Validity of estimate of measure of benefit**

The estimates of benefits are likely to be internally valid given the randomised design adopted in the effectiveness analysis.

**Validity of estimate of costs**

The quantities were not fully reported separately from the costs, but adequate details of methods of cost estimation were given. The fiscal year was not reported.

**Other issues**

Given the lack of statistical analysis of the costs and a comprehensive sensitivity analysis the results may need to be treated with some caution. The issue of generalisability to other settings or countries was not addressed.

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