Costs and cost effectiveness of cardiovascular screening and intervention: the British family heart study

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
Cardiovascular screening and intervention by nurses and, when necessary, onward referral to GPs for prescribing of antihypertensive, lipid lowering, diabetic, HRT, and other drugs.

Type of intervention
Screening.

Economic study type
Cost-effectiveness analysis.

Study population
Men aged between 40-59 years and their partners.

Setting
The practice setting was primary care. The economic study was carried out across Britain.

Dates to which data relate
Effectiveness and resource data were obtained from 1991.1994-1995 prices were used.

Source of effectiveness data
Single study.

Link between effectiveness and cost data
Costing was undertaken on the same patient sample as that used in the effectiveness study. It was not stated whether costing was undertaken prospectively or retrospectively.

Study sample
The study sample comprised 2011 men and their 1425 partners (2174 men and their 1402 partners in the internal comparison group). No power calculations were stated.

Study design
The study design was a multi-centre, randomised, controlled trial. In each of the 13 towns a matched pair of practices was selected for the trial, one from each pair being randomly selected as the intervention practice. All men were randomly allocated to one of the practices: either the intervention or the comparison. Follow-up depended upon the risk
score at the initial screening, i.e. those in the top 20% were invited back every 2 months, whilst those in the bottom 20% were invited back at 1 year intervals only.

**Analysis of effectiveness**
The primary health outcome measure was given as reduction in coronary risk and reduction in Dundee risk score.

**Effectiveness results**
The overall reduction was 16.5% and 12% in Dundee risk score and coronary risk respectively. In the case of men these results were 17.6% and 13% respectively. In the case of women the results were 13.2% and 10% respectively.

**Clinical conclusions**
The screening and intervention programme resulted in significant improvements in patients' risk reduction. This improvement was larger for men than for women.

**Measure of benefits used in the economic analysis**
The primary health outcome measure was given as reduction in coronary risk and reduction in Dundee risk score.

**Direct costs**
Equipment and training costs were discounted at 5%. Some quantities and costs were reported separately. Direct health service costs were calculated, such as health service visits, equipment, quality assurance, overheads, training/nurse support and supervision, and drugs. 1994-1995 prices were used.

**Statistical analysis of costs**
95% confidence intervals were reported.

**Indirect Costs**
The calculation of indirect costs was based on average income, obtained from the literature.

**Currency**
UK pounds sterling (€).

**Sensitivity analysis**
Sensitivity analysis varied nurse time, number of patients that they can see, non-attender time deployment, and the inclusion of the final screen cost to the programme costs, to test final cost-effectiveness ratios.

**Estimated benefits used in the economic analysis**
The overall reduction was 16.5% in Dundee risk score and 12% in coronary risk. In the case of men these results were 17.6% (Dundee) and 13% (coronary risk). In the case of women the results were 13.2% and 10% respectively.

**Cost results**
The estimated 1 year running costs were 63 per person (95% CI: 60 to 65). The overall short term cost to the health service was 77 per man (95% CI: 29 - 124) and 13 per woman (95% CI: -48 - 74), due to health resource utilisation rates. The programme cost approximately 58,000 per annum for a 4-partner 7500 patient practice (not including government reimbursements). Overall costs averaged 51.63 (95% CI: 12 - 91) more for the intervention group.
Synthesis of costs and benefits
The cost per 1% reduction in risk was 5.08 per man (5.92 with overall costs), 5.78 per woman (1.28 with overall costs) and 5.26 per person (4.30 with overall costs).

Authors' conclusions
Concentrating on the short run impact of the intervention, the costs of onward referral including subsequent drug prescribing, were found to increase programme costs for men but to act as an offset for women. Therefore, the broader short term costs to the NHS may augment those costs for men but offset them considerably for women. The effect on coronary risk of a nurse-led cardiovascular screening and intervention programme in general practice may not be sufficient to justify the costs involved. A larger study is recommended to establish such drug cost impact and use of other health care resources.

CRD Commentary
This was a well presented cost-effectiveness analysis. The authors acknowledge, however, that a large-scale study is necessary in order to determine the cost implications in relation to drug costs and the impact and use of competing health care resources.

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