Economic analysis of outreach assessment clinics in breast screening programmes.

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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
Outreach assessment clinics were compared with no outreach assessment clinics in a breast-screening programme. Two cases, single-view or double-view screening, were considered. This gave four options for evaluation:

- double-view (oblique and craniocaudal) screening of all women in outreach assessment clinics where possible (option A);
- double-view screening of all women in the main centre (option B);
- single-view (oblique) screening of women who had undergone prior screening in outreach assessment clinics where possible (option C); and
- single screening of women who had undergone prior screening in the main centre (option D).

Type of intervention
Screening.

Economic study type
Cost-effectiveness analysis.

Study population
The study population comprised the population of women served by the Scottish Breast Screening Programme who were living in island communities. No further details about the study population were reported.

Setting
The setting was the community. The study was conducted in three islands groups in Scotland.

Dates to which data relate
The authors did not report any effectiveness data. The resource use and cost data were derived from studies published in 1995 and data from the Scottish Health Board. The dates to which the Health Board data related were not reported. The price year was not reported.

Source of effectiveness data
The authors assumed that there were no differences in health outcomes between the options considered, but did not demonstrate or justify this assumption.

Modelling
The costs of the alternative screening settings and methods were estimated using a cost model.
Methods used to derive estimates of effectiveness
The estimate of no difference in the health outcomes was derived from the authors’ assumptions.

Estimates of effectiveness and key assumptions
It was assumed that there was no difference in the health outcomes between the alternative options.

Measure of benefits used in the economic analysis
This study was a cost-minimisation analysis and a measure of benefit was, therefore, not appropriate.

Direct costs
The quantities and the costs were analysed separately. The analysis of the costs included the fixed costs (clinics, staff travel, subsistence and accommodation for outreach assessment), the time costs of the assessment team, the women’s travel costs for participation in the screening programme, and the marginal cost of screening. Whilst the authors reported that marginal costs were used, they assumed that the marginal costs were equal to the average costs. The fixed costs of screening were assumed to be the same for all options and were thus excluded from the analysis.

The resource use and the cost data were obtained from the breast screening centres, local Health Boards and published literature. The papers providing cost data were published in 1995. The authors did not report any other dates relating to the cost data. Discounting was irrelevant as the costs were incurred over a period of less than 2 years. The price year used was not reported. It was not stated whether the cost data were adjusted for inflation where necessary.

Statistical analysis of costs
A statistical analysis of the costs was not reported.

Indirect Costs
The indirect costs were excluded as they were not appropriate to the perspective of the study.

Currency
UK pounds sterling (£). No currency conversions were reported.

Sensitivity analysis
A sensitivity analysis was carried out. The following assumptions made in the model were investigated:

the recall rate (single and two view);

the proportion of women for whom outreach assessment was feasible (single and two view);

the women’s travel costs to the main centre;

the marginal cost of the outreach clinic assessment;

the marginal cost of the main centre assessment;

the fixed cost per clinic; and

the difference in cost for single and two-view screening.

The authors did not report the method used for the sensitivity analysis but it appears to have been a one-way sensitivity
analysis. For each parameter, the impact of a 20% change in the baseline value of the breakeven point was investigated.

**Estimated benefits used in the economic analysis**
It was assumed that there were no differences in the health outcomes between the options evaluated. The authors stated that they had conducted a cost minimisation analysis.

**Cost results**
The total costs for each programme assessed were not reported.

**Synthesis of costs and benefits**
The study was a cost-minimisation analysis. The number of women who needed to be screened for the additional total cost (ATC) of outreach assessment to be zero, compared with the main clinic assessment, was calculated.

Orkney: the number of women that had to be screened for an ATC of zero was 261 women when option A was compared with option B, 293 when option A was compared with option D, 223 when option C was compared with option B, and 247 women when option C was compared with option D.

Shetland: the number of women that had to be screened for an ATC of zero was 286 women when option A was compared with option B, 322 when option A was compared with option D, 246 when option C was compared with option B, and 271 women when option C was compared with option D.

Western Isles: the number of women that had to be screened for an ATC of zero was 165 women when option A was compared with option B, 210 when option A was compared with option D, 104 when option C was compared with option B, and 127 women when option C was compared with option D.

The sensitivity analysis demonstrated that changes in the values of the parameters had an effect on the breakeven points, but that in all cases, the current number of women screened was substantially higher than the breakeven point.

**Authors' conclusions**
All of the breakeven points involved screening 322 or fewer women, while the actual number of women screened ranged from 1,510 to 1,822. Thus, outreach assessment on island communities appeared to be cost-minimising.

**CRD COMMENTARY - Selection of comparators**
A justification was given for the comparators used. Non-outreach assessment is standard practice and was compared with outreach assessment. In addition, single-view and two-view screening were compared because two-view screening reduces the rate of recall, and may thus be appropriate in sparsely populated areas.

**Validity of estimate of measure of effectiveness**
The authors assumed that there was no difference in the health outcomes between the four options considered. However, they did not report any evidence to demonstrate that this assumption of equivalence was valid.

**Validity of estimate of measure of benefit**
The analysis of the benefits was based upon an assumption of therapeutic equivalence of the treatment alternatives. The authors stated that the economic evaluation was a cost-minimisation analysis. The authors noted that outreach clinics have a number of potential benefits that were not accounted for. These included an increased involvement of local surgeon and nursing staff, and a greater ownership of the screening programme by the local community and local Health Board. Against this, women may lose benefits from not having the opportunity to visit the main centre. In addition, they may have to wait longer for an assessment in an outreach clinic than in the main clinic.
Validity of estimate of costs
All the categories of cost relevant to the perspective appear to have been included in the analysis. For each category, all the relevant costs were included in the analysis. The costs and the quantities were reported separately and were obtained from the breast screening centres, local health boards and published literature. A one-way sensitivity analysis investigated the proportion of women for whom outreach assessment was feasible, and the recall rate and cost variables. The ranges used appear to have been appropriate. Discounting was irrelevant and was not conducted.

Other issues
The authors did not compare their results with the findings from other studies. They did, however, address the issue of generalisability to other settings. The results were not presented selectively. The authors reported that if their model were applied to other screening programmes, it would have to be adapted to take account of different screening options.

Implications of the study
The model provides useful guidance with respect to screening policy. It is readily applicable to the case of outreach assessment in mainland communities away from major population centres, and to breast and other screening programmes in other countries. <OTHER PUBLICATIONS OF RELATED INTEREST>>

Source of funding
Supported by the Chief Scientist Office of the Scottish Office Department of Health.

Bibliographic details

PubMedID
10351680

DOI
10.1002/(SICI)1099-1751(199901/03)14:13.0.CO;2-U

Indexing Status
Subject indexing assigned by NLM

MeSH
Breast Neoplasms /diagnosis /prevention & control; Community Health Services /economics /organization & administration; Community-Institutional Relations; Data Collection; Female; Health Care Costs /statistics & numerical data; Health Services Research; Humans; Mammography /economics /utilization; Mass Screening /economics; Models, Economic; Scotland

AccessionNumber
21999008059

Date bibliographic record published
31/10/2002

Date abstract record published
31/10/2002