Costs and benefits of cervical screening. II: Is it worthwhile reducing the screening interval from 5 to 3 years?

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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
Reducing the cervical screening interval from 5 to 3 years.

Type of intervention
Screening.

Economic study type
Cost-effectiveness analysis.

Study population
Women aged 20-64 years undergoing cervical screening.

Setting
Hospital. The economic study was set in Tayside, UK.

Dates to which data relate
Effectiveness and resource use data were collected from studies published between 1968 and 1990. Cost data were collected from a study published in 1996. The price year was 1995.

Source of effectiveness data
The effectiveness data were derived from a literature review.

Outcomes assessed in the review
The review assessed the number of women screened, registrations, and screening history. Life expectancy was also assessed in the review.

Study designs and other criteria for inclusion in the review
Not stated.

Sources searched to identify primary studies
Effectiveness estimates were derived from a list of all women aged 20-64 years developing cervical cancer in Tayside in 1988, personal files, and a MEDLINE search using the keywords 'cervical', 'screening', 'cost-effectiveness', and 'costs'.
Criteria used to ensure the validity of primary studies
Not stated.

Methods used to judge relevance and validity, and for extracting data
Not reported.

Number of primary studies included
At least 3 primary studies were included in the review.

Methods of combining primary studies
The narrative method was used to combine studies.

Investigation of differences between primary studies
Not stated.

Results of the review
81% of women attended for screening at least every 5 years. Of a total of 105,000 women, 7% had hysterectomies and 17% did not attend for screening, leaving 79,800 in the screening system. Around 10% of these would be on accelerated follow-up after a smear, leaving 71,820 to be screened routinely. Life expectancy at that age was 50 years. Women with cervical cancer were either cured or dead by 5 years.

Measure of benefits used in the economic analysis
The number of life years saved was used as the measure of benefits.

Direct costs
Direct costs were discounted at an annual rate of 7%. Quantities and costs were not reported separately. Direct costs included costs of cervical smears, colposcopy clinic attendance, hospital admission, and avoidance of the costs of treating invasive cancer (mainly those of hospital admissions for treatment of cervical cancer). The quantity/cost boundary adopted was that of the health service. The estimation of quantities and costs was based on actual data. Cost estimates were derived from a study published in 1996. The price year was 1995.

Indirect Costs
Indirect costs were not included.

Currency
UK pounds sterling (£).

Sensitivity analysis
A sensitivity analysis was conducted on the number of women in the screening age range.

Estimated benefits used in the economic analysis
24 women under 65 years of age developed cervical cancer. Of these 25, 12 had never been screened, 2 had been screened over 5 years before cancer was diagnosed, and 10 had been screened within the previous 5 years. Three-yearly screening would only have benefited the two women with negative smears. One of these women would have been cured
by treatment. Three-yearly screening might have saved one life.

Cost results
The marginal costs of three-yearly screening were approximately 214,000 after discounting at 7%.

Synthesis of costs and benefits
The cost per life saved was 7,600 (range: 1,538 - 15,286).

Authors' conclusions
The cost per life year saved would be approximately 250,000 at 1995 prices or around 8,000 per life year saved. The opportunity cost of reducing the interval may be too great, since it is likely that the National Health Service would achieve greater health benefits by investing the funds in other health care activities.

CRD COMMENTARY - Selection of comparators
A justification was given for the comparator used namely the current 5-yearly screening programme. You, as a user of the database, should decide if this scenario is relevant to your own setting.

Validity of estimate of measure of benefit
The authors did not state that a systematic review of the literature had been undertaken. More details could have been provided about the design and conduct of the review and the methods used to combine the primary effectiveness studies. Effectiveness estimates were derived credibly from primary studies. The estimation of benefits was obtained directly from the effectiveness analysis. Benefits were not discounted, which is acceptable for UK studies. Benefits will differ in regions with a higher or lower incidence of cervical cancer.

Validity of estimate of costs
All categories of costs relevant to the perspective adopted were included in the analysis. The costs to society incurred by the loss of a woman's life were not considered. Quantities and costs were not reported separately. Sensitivity analysis was conducted on quantities, but not on costs. The price year was reported. Costs were discounted at a rate of 7%, which might differ from current rates recommended in other countries.

Other issues
The authors did make appropriate comparisons of their findings with those from other studies and the issue of generalisability to other settings was also discussed. The study considered women aged 20-64 years undergoing cervical screening and this was reflected in the authors' conclusions. It would have been helpful if the sensitivity analyses had been expanded further to explore the uncertainties in the data. The authors acknowledged that screening in younger age groups may have been more frequent than 5-yearly, but that in the over 40s, (who experienced the malignancies) there was little evidence, even in 1991, of 3-yearly screening being common.

Implications of the study
The opportunity cost of reducing the interval of cervical screening programmes may be too great, since it is likely that the National Health Service would achieve greater health benefits by investing the funds in other health care activities.

Source of funding
None stated.
Bibliographic details

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Other publications of related interest

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Subject indexing assigned by NLM

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