A randomized trial of the impact of certified mail on response rate to a physician survey and a cost-effectiveness 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
Using certified mail versus first-class mail to increase the response rate to medical surveys.

Type of intervention
Mailing strategy.

Economic study type
Cost-effectiveness analysis.

Study population
The study population comprised neurologist members of the American Academy of Neurology (AAN).

Setting
US postal service. The economic study was performed in the USA.

Dates to which data relate
The effectiveness and resource data were collected in 1993-1994. The date to which the price data refer was not stated.

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

Link between effectiveness and cost data
The costing was undertaken on the same sample as that used in the effectiveness study. It is not clear whether the costing was performed prospectively or retrospectively.

Study sample
Power calculation did not determine the sample size. The survey forms were initially sent to a random sample of 1,778 (21%) of neurologist members of AAN. Two follow-up mailings were sent to nonrespondents. After the first and second mailing, 409 nonrespondents were randomized between intervention and control group. 143 (%35) of the nonrespondents were randomized to the intervention group to receive certified mail and the remaining 266 (%65) were randomly designated to the control group to receive first-class mail. 1.6% of the subjects were excluded from the initial sample.

Study design
The study was a randomized controlled trial. The overall loss to follow up was 1.2%.

**Analysis of effectiveness**
The analysis of the effectiveness study was based on intervention completers only. The main outcome measure was response rate in the intervention and control groups. Furthermore, the number of respondents were reported separately in terms of their membership types and the year they joined the AAN. The difference between the characteristics of respondents to the first and second mailings (as a single category), and the respondents to the third mailings were investigated. The main confounding variables were membership type and duration of membership. The confidence interval was estimated based on the assumption of homogeneity which was verified by Woolf’s test. A Chi-square test was carried out to evaluate the independence between the confounding variables and the respond rate.

**Effectiveness results**
The response rates to the first and second mailings were 65.9% and 30.7%, respectively. In the third mailing, the response rate in the intervention group (certified group) was 41.3%. The corresponding figure for the control group was 24.8%. The relative risk (RR) was 1.66 (95% CI: 1.25,2.21). The Woolf’s test result was Chi-square=5.153, P=0.741.

**Clinical conclusions**
The response rate was higher for the certified mail group compared with the first class mail group.

**Measure of benefits used in the economic analysis**
The main measure of benefit was the response rate in the intervention and control groups.

**Direct costs**
The authors divided the total costs into direct costs and labour costs. Direct costs per survey included printing of the survey, first class postage for the second and third mailings, the cost of certified mailing, the envelope, the stationary for the cover letter, the return envelope, and the return postage. The cost of labour was estimated based on the annual salary of employees. The date to which the price data refer was not specified.

**Currency**
US dollars ($).

**Sensitivity analysis**
A one way sensitivity analysis was performed on labour costs. The authors believed that the labour costs had the most potential for variability.

**Estimated benefits used in the economic analysis**
The main measure of benefit was the response rate in intervention and control groups.

**Cost results**
The total cost for all mailings (first, second and third) in the intervention group was $4,173.75. The corresponding figure for control group was $3,524.64. The net (added) cost of certified mailing was $649.11.

**Synthesis of costs and benefits**
The costs and benefits were combined by the average cost (the cost per respondent). The average cost in the certified
group was $2.77. The corresponding value for the first-class group was $2.34. The sensitivity analysis demonstrated that increased labour costs made the certified mailing even less cost-effective.

Authors' conclusions
A cost-effectiveness analysis showed that the cost per respondent was higher using certified mail versus first-class mail in the third mailing. Thus, use of certified mail is effective in increasing survey response but is more costly.

CRD COMMENTARY - Selection of comparators
The reason for the choice of the comparator is clear.

Validity of estimate of measure of benefit
The authors did their best to provide an unbiased assessment but they admitted that one important element of the benefits of the certified mail was not included in the study, namely the enhanced generalisability of survey results due to increased response rates. The inclusion of this element, difficult though it may be, may alter the results of the cost-effectiveness analysis in favour of the certified mail.

Validity of estimate of costs
The cost estimation appears to be internally valid.

Implications of the study
The authors proposed that further research is needed “to address the impact and the cost-effectiveness of certified mail in other physician and in non-physician population, during earlier waves of survey mailings, with longer surveys, and with surveys not endorsed by a specialty society”.

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