Prospective comparison of endoscopy patient satisfaction surveys: E-mail versus standard mail versus telephone


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
Three methods of distributing surveys were examined. The three approaches were standard mail, telephone and e-mail.

Type of intervention
Contact modes.

Economic study type
Cost-effectiveness analysis.

Study population
The study population comprised patients who had undergone routine outpatient esophagogastroduodenoscopy or colonoscopy, and who had access to an e-mail account and telephone.

Setting
The setting was a medical centre that provided primary, secondary and tertiary care. The economic study was carried out at the Rochester Methodist Hospital, Mayo Medical Center, in Rochester (MN), USA.

Dates to which data relate
The effectiveness and resource use data were gathered from June to August 2000. The price year was not explicitly reported, but it is likely to have been 2000.

Source of effectiveness data
The effectiveness evidence was derived from a single study.

Link between effectiveness and cost data
The costing was performed prospectively on the same sample of patients as that used in the effectiveness study.

Study sample
Power calculations do not appear to have been performed. All consecutive eligible patients undergoing endoscopy during the study period were enrolled. Of 140 patients, 63 (45%) were eligible and 77 were excluded because of a lack of e-mail access. There were 23 patients in the e-mail group, 20 in the mail group, and 20 in the telephone group. The median age of the participants was 54 years (age range: 37 - 71) in the e-mail group, 56.5 years (age range: 37 - 64) in the mail group and 62 years (age range: 44 - 70) in the telephone group. The median age of the excluded patients was 63 years (age range: 42 - 75).
**Study design**

This was a randomised controlled trial that was carried out in a single centre (the Mayo Medical Center). Randomisation was performed using sealed opaque envelopes that were opened immediately prior to the endoscopic procedure. The unit of randomisation was the patient. Patients in the e-mail group were contacted once within 3 days of the endoscopy. Patients in the mail group received a standard mail within one week of having the procedure, while those in the telephone group were contacted during the week following their endoscopy. The modes and numbers of contacts in each group were accurately described in the paper. The patients were not followed after this contact had occurred. Nonresponders were contacted by telephone within 4 weeks of having the endoscopic procedure.

**Analysis of effectiveness**

The analysis of the clinical study was conducted on an intention to treat basis. The primary health outcomes used in the effectiveness study were response rate and satisfaction scores. The satisfaction scores were obtained from a questionnaire covering seven main item responses. A multivariate logistic regression analysis was conducted to evaluate the association between responder versus nonresponder status and mode of survey administration. Age, gender and type of endoscopic procedure were used as covariates. The study groups were comparable at baseline in terms of their age, gender and procedure distribution. No statistically significant difference was found between responders and nonresponders.

**Effectiveness results**

The median satisfaction scores (maximum score 35) were 32 (range: 20 - 35) with e-mail, 30 (range: 19 - 35) with mail and 32 (range: 27 - 34) with telephone.

The satisfaction score was significantly higher in the nonresponder group (33.5 +/- 1) than in the whole responder group (30.8 +/- 3.7), (p=0.03).

The multivariate analysis showed no significant relationship between age, gender or type of endoscopic procedure and responder/nonresponder status or total satisfaction score.

**Clinical conclusions**

The effectiveness study showed that the satisfaction scores were comparable in the three study groups, but the response rates (which indicated the efficacy of the distribution modes) were higher in the telephone and mail groups than in the e-mail group.

**Measure of benefits used in the economic analysis**

The summary benefit measure used in the economic analysis was the response rate. This was derived directly from the effectiveness study.

**Direct costs**

Discounting was not relevant because the costs were incurred during a very short time. The unit costs were reported separately from the quantities of resources used for some cost items. The health services included in the economic analysis were labour time (for the preparation and distribution of the questionnaire), stationary and telephone calls. Only variable costs were included. The perspective adopted in the study appears to have been that of the medical centre where the study was conducted. The resource use data came from the same sample of patients as that used in the effectiveness study. The cost data was likely to have been obtained from the study hospital. The price year was not explicitly stated, but it appears to have been 2000.

**Statistical analysis of costs**
The costs were treated deterministically.

**Indirect Costs**
The indirect costs were not included in the economic evaluation.

**Currency**
US dollars ($).

**Sensitivity analysis**
Sensitivity analyses were not conducted.

**Estimated benefits used in the economic analysis**
See the 'Effectiveness Results' section.

**Cost results**
The total costs per patient were $0.50 with e-mail, $2.16 with mail, and $1.87 with telephone.

**Synthesis of costs and benefits**
Average and incremental cost-effectiveness ratios were calculated to combine the costs and benefits of the three modes of administering the questionnaire.

The cost per completed questionnaire was $0.71 with e-mail, $2.54 with mail, and $2.08 with telephone.

The mail strategy was dominated by the telephone strategy (more effective and cheaper). The incremental cost per completed questionnaire administered by telephone relative to e-mail was $6.86.

**Authors' conclusions**
The highest response rate was obtained by telephone, but the most cost-effective contact strategy was e-mail.

**CRD COMMENTARY - Selection of comparators**
The rationale for the choice of the comparator was clear. The authors stated that mail and telephone represented typical approaches for administering surveys to evaluate the patients' satisfaction with diagnostic procedures. Contact by e-mail was considered to be the new method of distribution. You should decide whether they represent valid comparators in your own setting.

**Validity of estimate of measure of effectiveness**
The analysis of effectiveness used a randomised study, which was appropriate for the study question. The authors described the method of randomisation and reported details of the methods used to contact the patients, as evaluated in this study. A regression analysis was carried out to evaluate the potential impact of confounding factors. The study groups were shown to be comparable at baseline. The analysis of the clinical study was conducted on an intention to treat basis, and the characteristics of nonresponders were described and compared with those of patients who responded. However, power calculations were not reported and there was no evidence that the number of patients in each group was appropriate. In addition, the authors noted that selection bias may have been introduced, as patients had access to an e-mail account and this may not be true for all patients undergoing an endoscopy procedure. E-mail users are usually a biased population in terms of age, gender and race. These issues must be kept in mind when interpreting the conclusions of the study.
Validity of estimate of measure of benefit
The benefit measure came directly from the effectiveness study.

Validity of estimate of costs
The perspective was not explicitly stated, but it appears to have been that of the study centre. A breakdown of the cost items included in the economic evaluation was provided for each delivery mode (e-mail, mail or telephone). The unit costs were reported for some categories of costs. The reproducibility of the study in other settings appears feasible due to the details provided in the study. However, the price year was not explicitly stated. The cost estimates were specific to the study setting and sensitivity analyses were not conducted. The costs were treated deterministically. Given these facts, the generalisability of the cost results is likely to be limited.

Other issues
The authors made some comparisons of their findings with those from other studies. In terms of the external validity of the study, the authors stated that some caution might be required when extrapolating the study results to other settings because the study sample considered in the analysis is not easily generalisable to the whole population of patients undergoing endoscopic procedures. Sensitivity analyses were not performed, thus the overall external validity of the analysis was low.

Implications of the study
The study results suggested that the ideal strategy would be to use e-mail in the first round and then to contact nonresponders using more traditional methods, such as the telephone. However, the conclusions of the analysis should be interpreted with caution due to the limitations in the effectiveness study. The authors stated that further research should be carried out to confirm the results of the present study. It was also noted that guidelines should be developed to solve the problems related to the ethical and legal issues associated with the use of e-mail to contact patients.

Source of funding
None stated.

Bibliographic details

PubMedID
11774942

DOI
10.1111/j.1572-0241.2001.05331.x

Indexing Status
Subject indexing assigned by NLM

MeSH
Colonoscopy; Data Collection /methods; Endoscopy /standards; Endoscopy, Digestive System; Feasibility Studies; Humans; Internet; Interviews as Topic; Patient Satisfaction; Postal Service; Prospective Studies; Surveys and Questionnaires

AccessionNumber
22002000101