Costs and cost-effectiveness of a low-intensity patient-directed intervention to promote colorectal cancer screening
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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.

CRD summary
This study examined the cost-effectiveness of a patient-directed intervention intended to promote colorectal cancer (CRC) screening for average-risk patients. The authors concluded that the intervention improved the proportion of patients undergoing the CRC screening colonoscopy at an affordable price from the perspective of the health care organisation. Given the objective, this economic evaluation used valid methodology and was well described. Overall, the authors’ conclusions appear to be robust.

Type of economic evaluation
Cost-effectiveness analysis

Study objective
The objective was to examine the cost-effectiveness of a patient-directed intervention intended to promote colorectal cancer (CRC) screening for average-risk patients.

Interventions
The intervention was directed at patients who were referred for a screening colonoscopy. It consisted of a customised mailed brochure, which included a reminder to schedule the colonoscopy, general information about CRC, the importance of CRC screening, and how to prepare for the procedure. The intervention was compared against a strategy of no screening promotion.

Location/setting
USA/outpatient clinic.

Methods
Analytical approach:
This economic evaluation was based on a single study. The time horizon of the analysis was four months. The authors stated that the study was carried out from the perspective of the health care organisation.

Effectiveness data:
The clinical data came from a published randomised controlled trial (RCT), which was carried out at two general medicine clinics at the University of Colorado. Between February and November 2005, 395 patients were enrolled in the control group and 386 patients in the intervention group. The key clinical endpoint was the rate of CRC screening with or without the intervention.

Monetary benefit and utility valuations:
Not relevant.

Measure of benefit:
The summary benefit measure was the rate of CRC screening (completion of screening colonoscopy), which was derived from the clinical trial.

Cost data:
The economic analysis considered only the additional costs associated with the patient-directed intervention and
assumed that there were no costs of usual care. The cost items were the cost of the initial data set-up, the time costs for
the outreach coordinator to generate and personalise the mailed brochures, the time costs of the outreach coordinator to
collect data by manual review of the electronic medical record, and the cost of the mailed brochure itself (including
stationery and postage). All economic data were derived directly from the personnel team and referred to a hypothetical
outreach coordinator’s annual salary, including benefits, of $50,000. All costs were in US dollars ($) and the price year
was not reported.

Analysis of uncertainty:
A deterministic one-way sensitivity analysis was carried out by varying the various cost inputs by ±10%. The
incremental cost-effectiveness ratio (ICER) was calculated for different subgroups of patients defined by their marital
status, sex, insurance type, and race or ethnicity.

Results
The rate of CRC screening was 71% in the intervention group and 59% in the control group (p=0.001). The total cost of
the intervention per patient was $5. The incremental cost per additional patient screened with the intervention was $43.
This figure ranged from $38 to $47 in the sensitivity analysis, depending on the cost assumptions.

The range of ICERs in the subgroup analyses was $25 to $110. The worst figures were observed in the following
subgroups: unmarried, black and non-Latino, with commercial insurance, and Medicare patients.

Authors’ conclusions
The authors concluded that the intervention improved the proportion of patients actually undergoing the CRC screening
colonoscopy, at an affordable price from the perspective of the health care organisation.

CRD commentary
Interventions:
The selection of the comparators was appropriate as the screening promotion was compared with usual care. Details of
the patient-directed intervention were extensively presented.

Effectiveness/benefits:
A RCT is generally considered to be a valid and appropriate source of clinical evidence as the strengths of its design
should minimise the potential impact of selection bias and confounding factors. It seems that an intention-to-treat
analysis was carried out, which further enhances the validity of the evidence. Only few details on the study were
provided, because these had already been published. Thus, the appropriateness of the sample size and baseline
comparability of study groups were not reported. The study was carried out at two academic centres, which might not
be representative of other health care institutions. The benefit measure was derived directly from the RCT and was the
natural outcome of the screening programme, but it captured only the intermediate, and not the final, impact of the
intervention on the patients’ health.

Costs:
The economic analysis considered only the additional costs of promoting screening. The subsequent screening costs and
averted disease costs were not considered. Thus, the costs of usual care were considered to be zero. This assumption
arose from the restricted nature of the economic analysis, which focused exclusively on the colonoscopy enhancing
intervention. The unit costs and quantities of resources used were not presented separately and the price year was not
reported. Costs appear to have been derived from authors’ opinions.

Analysis and results:
The synthesis of the costs and benefits was appropriately based on an incremental analysis. The issue of uncertainty was
restricted to the cost estimates and the impact of variations in the clinical endpoint was not considered. The use of
subgroup analyses was interesting, but it is unclear whether they had sufficient power to capture the differences in
uptake rates between groups. The authors made extensive comparisons with the cost-effectiveness of other screening-
enhancing interventions. They noted some limitations of their analysis, such as the fact that the specific patient
population might not be representative of other non-urban and self-insured patient groups.
Concluding remarks:
Given the objective, this economic evaluation used valid methodology and was well described. Overall, the authors’ conclusions appear to be robust.

Funding
Supported by grants from the American Cancer Society; and the National Cancer Institute.

Bibliographic details

PubMedID
18024871

DOI
10.1200/JCO.2007.13.4098

Original Paper URL
http://jco.ascopubs.org/cgi/reprint/25/33/5248

Other publications of related interest


Indexing Status
Subject indexing assigned by NLM

MeSH
Colonoscopy /economics /statistics & numerical data; Colorectal Neoplasms /diagnosis; Cost-Benefit Analysis; Female; Humans; Male

AccessionNumber
2200800083

Date bibliographic record published
02/03/2009

Date abstract record published
16/09/2009