Flexible sigmoidoscopy in general practice  
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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
The use of flexible sigmoidoscopy (FS) for the investigation of rectal bleeding and other gastrointestinal symptoms.

Type of intervention
Diagnosis.

Economic study type
Cost-effectiveness analysis.

Study population
The study population comprised patients with symptoms or signs of colorectal disease.

Setting
The setting was primary care. The economic study was conducted in the UK.

Dates to which data relate
The effectiveness and resource use data were gathered from January 1995 and December 1998. The price year was likely to have been 1994.

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
The use of power calculations was not reported. Eligible patients were identified at two practices. FS was performed by a consultant surgeon at practice A and by a GP trained in FS at practice B. The study sample comprised 430 patients. There were 262 patients in the consultant surgeon group and 168 in the GP group. In the consultant surgeon group, the mean age was 54.7 years (age range: 18 - 87) and 129 of the patients were men. In the GP group, the mean age was 55.9 years (age range: 18 - 91) and 90 of the patients were men. It was not stated whether some patients were excluded from the initial study group, or refused to participate for any reasons.

Study design
This was a prospective cohort study that was conducted at two general practices in Newport, UK. The length of follow-
up was unclear and all follow-up information was obtained from the computer records at the general practice. No patient was lost to follow-up.

**Analysis of effectiveness**
All of the patients included in the initial study sample were considered in the effectiveness analysis. The main outcome measure used was the diagnostic yield at each surgery. Morbidity and depth of insertion were also recorded and compared. The yield observed at the two surgeries was externally compared with that obtained at two direct access services in Bristol in 1987 (n=630) and Nuneaton in 1996 (n=756). The baseline comparability of the two groups was not discussed, although the mean age and gender distribution were comparable between the groups. No statistical test was used to compare the outcomes between the groups.

**Effectiveness results**
The diagnostic yield was:

- for cancer, 4.2% at practice A and 2.4% at practice B (average 3.5%);
- for adenoma, 10.7% at practice A and 10.7% at practice B;
- for diverticular disease, 11.5% at practice A and 25.6% at practice B;
- for anal disease, 27% at practice A and 35.7% at practice B; and
- for inflammatory bowel disease, 2.7% at practice A and 1.8% at practice B.

Normal results were observed in 43.9% (practice A) and 23.8% (practice B) of patients in each group.

The main differences in yield between practices were in the recording of diverticular disease and anal disease.

The yield of adenomas greater than 5 mm diameter at around 10% was similar in each practice.

There was no morbidity in either group.

The average depth of insertion of the sigmoidoscope for all cases was 47 cm, with no difference between groups.

The yield was comparable with hospital-based data, as observed at two direct access services in Bristol and Nuneaton.

**Clinical conclusions**
The effectiveness analysis showed that a similar yield was observed for FS performed by either a surgeon consultant or a GP at general practice surgeries.

**Measure of benefits used in the economic analysis**
The health outcomes were left disaggregated and no summary benefit measure was used in the economic analysis. In effect, a cost-consequences analysis was conducted.

**Direct costs**
Discounting was not relevant since the costs per patient were incurred during a short time. The unit costs and the quantities of resources used were not presented separately. The categories of costs included in the economic evaluation were capital costs and costs related to FS. The capital costs covered the purchase of the endoscopes, disinfectors, light source and accessories, as well as building alterations for safe disinfection. The FS-related costs were the endoscopist, nurses, secretarial and administrative support, disposables and insurance. Training for the GP was provided free of charge, but the locum costs for the sessions away from practice were considered. The cost/resource boundary is likely
to have been that of the NHS. The source of the costs was not reported, but it could have been the general practice. Resource use was estimated from the sample of patients involved in the effectiveness study. The price year appears to have been 1994.

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

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

**Currency**
UK pounds sterling (€).

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

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

**Cost results**
The capital costs amounted to 25,000 per health centre.

The cost per examination was 87 for the consultant surgeon and 75 for the GP.

The locum costs due to GP training amounted to 2,200.

These costs were similar to those incurred by the hospital (145 for outpatient FS and 210 for FS in the endoscopy unit).

**Synthesis of costs and benefits**
A synthesis of the costs and benefits was not relevant since a cost-consequences analysis was conducted.

**Authors’ conclusions**
Flexible sigmoidoscopy (FS) performed by general practitioners (GPs) was a safe procedure resulting in a diagnostic yield similar to that achieved when consultant surgeons performed the procedure. However, better utilisation of services and value for money could be obtained by providing the service for a group of practices, owing to the high capital costs of the equipment.

**CRD COMMENTARY - Selection of comparators**
The choice of the comparators appears to have been appropriate, as FS was usually performed by consultant surgeons but GPs had developed an interest for the procedure in the last few years. The authors also stated that, increasingly, FS was being performed by nurse practitioners after suitable training. You should decide whether these are valid comparators in your own setting.

**Validity of estimate of measure of effectiveness**
The analysis of effectiveness was based on a prospective cohort study, which is usually associated with selection bias as
no random procedure for patient allocation is used. Some assessment bias could also have been introduced, as both the patients and physicians were aware of the study objectives and procedures performed. The study groups were quite similar at baseline, although their comparability was not explicitly discussed. Power calculations were not conducted to justify the sample size. The study sample is likely to have been representative of the patient population. The length of follow-up was unclear. Likewise, the methods of sample selection were not stated. The dates during which the effectiveness evidence was gathered were reported. The comparability of the results was not assessed using statistical tests. These issues tend to limit the internal validity of the analysis.

**Validity of estimate of measure of benefit**
No summary benefit measure was used in the analysis because a cost-consequences analysis was conducted.

**Validity of estimate of costs**
The cost analysis was conducted from the perspective of the NHS. As such, it appears that all the relevant categories of costs have been included in the analysis. However, information on the unit costs or quantities of resources used was not reported, which limits the possibility of replicating the cost analysis. The source of the data was not provided, but the costs were presumably derived from the practice database. The costs were estimated in 1994, which is also likely to have been the price year. The costs were treated deterministically. The estimates were specific to the study setting as no sensitivity analyses were conducted.

**Other issues**
The authors did not compare their findings with those from other studies. They also did not address the issue of the generalisability of the study results to other settings. This had a negative impact on the external validity of the analysis. Caution is therefore required when interpreting the results of the study, owing to the limitations of the analysis. The study involved the general population of patients undergoing FS for symptoms or signs of colorectal disease and this was reflected in the conclusions of the analysis.

**Implications of the study**
The study results suggested that GPs can safely and effectively perform FS, although a more efficient allocation of resources could be achieved if groups of practices combined to organise a service to allow several GPs or nurses to perform the examination.

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**Other publications of related interest**

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