Efficacy of preoperative bowel preparation at home

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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
Home-based versus hospital-based preoperative bowel preparation for colorectal surgery.

Type of intervention
Preoperative treatment.

Economic study type
Cost-effectiveness analysis.

Study population
Patients undergoing preoperative bowel preparation for colorectal surgery. The malemale ratio varied from 2:1 to 1:1, depending upon the year in which surgery was performed. Age ranges also varied from year to year, the overall range being 17-93 years.

Setting
Home and hospital. The economic study was conducted in Cleveland, Ohio, USA.

Dates to which data relate
Effectiveness data were collected between 1989 and 1992. Costs data related to 1991. No prices were stated.

Source of effectiveness data
Single study.

Link between effectiveness and cost data
Costing was undertaken retrospectively on a different patient sample than that considered in the effectiveness study.

Study sample
62 patients covering 4 years of elective major colorectal surgery performed by a single general surgeon were retrospectively reviewed. The patients were divided into 4 groups depending on the year in which they had surgery (1989 to 1992). The changeover from hospital-based to home-based bowel cleansing was gradual: in the first year of the study all patients had bowel cleansing in hospital, while in the final year, 87.5% of patients had bowel cleansing at home. Patients undergoing bowel cleansing at home were given an easy-to-understand instruction sheet as well as prescriptions for mannitol solution, neomycin, and erythromycin base. No power calculations were stated.

Study design
Retrospective case series. The duration of follow-up and loss to follow up were not reported.

**Analysis of effectiveness**
The analysis of effectiveness was performed on treatment completers only. The main health outcomes considered were morbidity (wound infection) and mortality.

**Effectiveness results**
No death or wound infection resulted in any patient group. One patient developed postoperative pancreatic ascites and another an inflammatory mass in the region of the anastomoses. Both patients had been admitted preoperatively for bowel cleansing. Several patients in both groups developed partial small bowel obstruction which resolved without surgical treatment. No confidence intervals and p-values of outcomes were reported.

**Clinical conclusions**
Preoperative bowel preparation for colorectal surgery can be performed safely at home.

**Measure of benefits used in the economic analysis**
Wound infection and morbidity were measured as health outcomes.

**Direct costs**
Direct health service costs were considered, namely average daily hospital costs (all from 1991 literature).

**Currency**
US dollars ($).

**Sensitivity analysis**
No sensitivity analysis was performed.

**Estimated benefits used in the economic analysis**
No death or wound infection resulted in any patient group. One patient developed postoperative pancreatic ascites and another an inflammatory mass in the region of the anastomoses. Both patients had been admitted preoperatively for bowel cleansing. Several patients in both groups developed partial small bowel obstruction which resolved without surgical treatment.

**Cost results**
As a result of the reduced hospital days, and in view of the number of colorectal surgical procedures performed yearly in the USA and an average daily hospital cost of $752.10, a saving of the order of $150 million per year could be achieved by the universal adoption of this methodology by colorectal surgeons in the USA.

**Synthesis of costs and benefits**
Home-based preoperative bowel preparation could lead to significant hospital cost savings with no increase in wound infections or mortality.

**Authors’ conclusions**
Home bowel preparation and same-day admission for elective colorectal surgery were safe and effective means of
patient management.

CRD Commentary
This was a good study, simply and clearly designed, which answered the initial question. The study lacked statistical and sensitivity analyses, and no prices were stated. Also there was an incomplete analysis of (potential) benefits of home preparations (i.e. hospital bed days saved). No justification was given for the patients chosen, the large variation in age ranges between 1989 and 1992, or the large change in the male/female subject ratio over the same period.

Implications of the study
In its present state the analysis is incomplete and a further cost-effectiveness analysis incorporating those factors excluded from the present analysis would provide higher quality results.

Source of funding
None stated.

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