Small bowel obstruction: outcome and cost implications of admitting service
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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 clinical and economic impact of admission to surgical versus medical care for patients presenting with small bowel obstruction at the emergency department. The authors concluded that admission to surgical care might result in lower costs and a shorter hospital stay than admission to medical care. Bowel resection and death were more likely for patients with comorbidities. There were a few methodological limitations that might affect the validity of the authors’ conclusions.

Type of economic evaluation
Cost-effectiveness analysis

Study objective
This study examined the clinical and economic impact of surgical versus medical care for patients with small bowel obstruction, who were admitted via the emergency department.

Interventions
The interventions were admittance to surgical or medical care for small bowel obstruction. Patients admitted to either care service could undergo surgery or be managed conservatively with nasogastric decompression, bowel rest, hydration, and regular clinical examination to assess for resolution or progression of signs and symptoms.

Location/setting
USA/hospital.

Methods
Analytical approach:
The analysis was based on a study over a short period. The authors did not state the perspective adopted.

Effectiveness data:
The clinical data were from a retrospective comparative study of patients admitted to the authors’ institution between January 2003 and December 2007. This included 636 patients, 482 of whom were admitted to surgical care (mean age 65.9 years; 39.6% men) and 153 of whom were admitted to medical care (mean age 68.89 years; 37.9% men). The follow-up was limited to the hospitalisation period. No differences in demographic features were found between the two groups at baseline, but there were differences in clinical features, such as comorbidities. The two primary clinical endpoints were the rate of bowel resection and the death rate. A subgroup analysis was carried out for those patients who actually received surgery (210 surgical and 34 medical patients).

Monetary benefit and utility valuations:
Not considered.

Measure of benefit:
The rate of death and incidence of bowel resection were the two main endpoints.

Cost data:
The analysis included the hospital charges associated with the two interventions. The total costs were presented and were from the authors’ institution. They were in US dollars ($).
Analysis of uncertainty:
The uncertainty was not investigated.

Results
The rates of death were 1.66% with surgical care and 3.92% with medical care (p=0.11). The rates of bowel resection were 13.1% with surgical care and 5.2% with medical care (p=0.007). The length of hospital stay was 6.1 days (±5.8) with surgical care and 7.5 days (±6.5) with medical care (p=0.01).

Baseline differences between groups in comorbidities (coronary artery disease and acute renal failure), type of admission, gender, and use of diagnostic computed tomography were significant factors in predicting bowel resection, while only differences in co-morbidities were predictors of death.

The hospital costs were $29,549 (±28,234) for surgical care and $35,789 (±37,561) for medical care (p=0.06).

In the subgroup of patients who received surgery, the rates of death were 3.81% with surgical care and 11.76% with medical care (p=0.07). The rates of bowel resection were 30% with surgical care and 23% with medical care (p=0.44). The hospital costs were $46,258 (±33,853) with surgical care and $62,778 (±46,178) with medical care (p=0.05).

Authors' conclusions
The authors concluded that admission to surgical care might result in lower costs and a shorter hospital stay than admission to medical care. Bowel resection and death were more likely for patients with comorbidities, who might benefit most from admission to surgical care.

CRD commentary
Interventions:
The selection of the comparators was appropriate because the two possible admission options were considered for patients presenting with small bowel obstruction at the emergency department.

Effectiveness/benefits:
The clinical analysis was based on a review of patients’ charts at one institution. The retrospective nature of this study was its main limitation, but appropriate statistical tests (univariate and multivariate logistic regression) were performed to identify the predictors of outcomes. The frequency of comorbidities differed between groups and they significantly predicted bowel resection and death. The teaching hospital where the study took place might not have been representative of other institutions. The sample size was not justified and it is possible that the analyses were insufficiently powered to capture differences in clinical endpoints, especially for the subgroup.

Costs:
The perspective was not explicitly stated, but only the costs of the hospitalisation period were considered. Very little detail was given; the transparency of the economic analysis was limited. A list of cost items was not provided and no unit costs and resource quantities were given. The price year was not reported. Conventional statistical tests were used to determine the significance of the cost differences. The resource data were from the patients included in the clinical analysis and should be representative of standard practice.

Analysis and results:
The results were clearly reported. A synthesis of the costs and benefits was not performed, as the study used a cost-consequences design. The uncertainty was not investigated in sensitivity analyses nor in alternative scenarios. The authors acknowledged some limitations of their clinical analysis that have already been mentioned. The transferability of the results was not discussed and the results appear to be specific to the authors’ institution.

Concluding remarks:
: There were a few methodological limitations that might affect the validity of the authors’ conclusions.

Funding
