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
A programme for re-engineering the elective surgical service for herniorrhaphy or laparoscopic cholecystectomy, intended to reduce length of hospital stay, was examined. The programme comprised a peri-operative unit, a pre-admission anaesthetic assessment on the basis of self-reported questionnaires, day of surgery admission, enhanced patient education, clinical pathways, and post-acute care.

Type of intervention
Service organisation.

Economic study type
Cost-effectiveness analysis.

Study population
The study population comprised patients who underwent either inguinal or femoral herniorrhaphy, or laparoscopic cholecystectomy. All the patients lived close to the hospital or were admitted to the emergency unit.

Setting
The setting was the community. The economic study was carried out at the Prince of Wales Hospital and the University of New South Wales, Sydney (NSW), Australia.

Dates to which data relate
The effectiveness evidence and resource use data were gathered from March 1995 to October 1996. The price year was not reported.

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

Link between effectiveness and cost data
The costing was undertaken prospectively on the same patient sample as that used in the effectiveness analysis.

Study sample
Power calculations to determine the sample size were not performed. A sample of consecutive patients admitted to the study hospital was enrolled in the study. The control group included 123 patients who were hospitalised from March 1995 to January 1996, while the intervention group included 101 patients who were hospitalised from February 1996 to October 1996. The mean age in the control group was 54 years (range: 18 - 90) and 54 of the patients were women. The mean age in the intervention group was 54 years (range: 21 - 85) and 46 of the patients were women.
Study design
This was a prospective case-control study that was carried out in a single centre. The length of follow-up was not reported. No patient was lost to follow-up.

Analysis of effectiveness
All patients included in the study were accounted for in the analysis. Several outcomes were assessed in the study, but most of them were closer to resources than health outcomes. The primary health outcomes were length of hospital stay and patient satisfaction. The latter was measured using a visual analogue scale to assess the ratings for:

the overall treatment,
the information supplied pre-operatively,
the pre-operative treatment,
the operation,
the post-hospital treatment, and

the percentage of patients who would have repeated the intervention.

The study groups were comparable at baseline in terms of their demographics and clinical characteristics.

Effectiveness results
The average length of hospital stay was 2.2 days (range: 1 - 8) in the intervention group and 3.2 days (range: 1 - 9) in the control group, (p<0.001).

The patient ratings were:

for the overall treatment, satisfactory in both study groups, (p=0.10);
for the information supplied pre-operatively, satisfactory in both study groups, (p=0.14);
for the pre-operative treatment, very satisfactory in the intervention group and satisfactory in the control group, (p=0.0094);
for the operation, very satisfactory in the intervention group and satisfactory in the control group, (p=0.034); and
for the post-hospital treatment, very satisfactory in the intervention group and satisfactory in the control group, (p=0.0001).

The percentage of patients who would have repeated the intervention was 92.9% in the intervention group and 82.6% in the control group, (p=0.037).

Clinical conclusions
The intervention resulted in a statistically significant reduction in the length of hospital stay, and it improved patient satisfaction.

Measure of benefits used in the economic analysis
The health outcomes were left disaggregated and no summary benefit measure was used. A cost-consequences analysis was therefore carried out.
Direct costs
Discounting was irrelevant since the costs were incurred over less than two years. The unit costs and the quantity of resources were reported separately. The cost/quantity boundary adopted was that of the community. The costs included in the analysis were for nursing salaries, imaging, pathology, ward costs, operating theatre costs, domiciliary care, allied and other costs. The costs were estimated using actual data derived from the Prince of Wales Business Information Service, using Australian National Diagnosis Related Groups. The resources used were estimated using actual data derived from the study, and measured from March 1995 to October 1996. The price year was not reported.

Statistical analysis of costs
Statistical analyses of the costs were not carried out.

Indirect Costs
The indirect costs were not included in the analysis, although some resources used at home were reported, such as patient and carer days off work. However, these items were not significantly different between the study groups.

Currency
Australian dollars (Aus$).

Sensitivity analysis
No sensitivity analyses were conducted.

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

Cost results
For patients undergoing laparoscopic cholecystectomy, the total cost per patient was Aus$2,887 in the intervention group and Aus$3,282 in the control group. The cost-saving was Aus$265 in favour of the intervention.

For patients undergoing herniorrhaphy, the total cost per patient was Aus$2,082 in the intervention group and Aus$2,321 in the control group. The cost-saving was Aus$239 in favour of the intervention.

Synthesis of costs and benefits
Not relevant.

Authors' conclusions
The new programme of early discharge was safe and effective in improving patient satisfaction. It was also less costly than the standard management for patients undergoing herniorrhaphy or laparoscopic cholecystectomy. Finally, the early discharge did not lead to an increased burden on the patients and carers.

CRD COMMENTARY - Selection of comparators
The rationale for the choice of the comparator was clear. The approach previously used at the authors' institution was selected as it represented the routine intervention for patients undergoing herniorrhaphy or laparoscopic cholecystectomy. You should assess whether it represents a valid comparator in your own setting.
Validity of estimate of measure of effectiveness
The analysis of the effectiveness used a prospective case-control study, which appears to have been appropriate for the study question. Although the patient groups were comparable at baseline, the effectiveness evidence was collected in two different time periods for the two different groups of patients, and the impact of possible confounding and bias was not accounted for in the analysis. In addition, the length of follow-up was not reported.

Validity of estimate of measure of benefit
No benefit measure was used in the economic analysis and a cost-consequences analysis was carried out. Since the patients' preferences were measured, it would have been interesting to have adopted a benefit measure reflecting patient ratings.

Validity of estimate of costs
The unit costs and the resources used were reported separately. The perspective of the analysis was not explicitly stated, but it appears to have been that of the hospital. The indirect costs were excluded, although the resources related to patient and carer days off work were estimated. The price year was not reported. Statistical analyses were carried out for the quantities of resources used, but not for the overall costs. The cost estimates appear to be somewhat specific to the study setting.

Other issues
The authors made several comparisons of their findings with those from other studies. The issue of the generalisability of the study results to other settings was not addressed and sensitivity analyses were not carried out. Therefore, the external validity of the study was quite limited. A number of related studies address some of the issues raised in this abstract (see "Other Publications of Related Interest" below).

Implications of the study
The authors suggest that reforms aimed at improving care provision, without imposing a burden on patients or carers, should be implemented in the health system.

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Other publications of related interest


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