Post-acute care for older people in community hospitals: a cost-effectiveness analysis within a multi-centre randomised controlled trial

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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
The objective was to assess the cost-effectiveness of post-acute care for older people in community hospitals compared with in general hospitals. The authors concluded that the cost-effectiveness of rehabilitation was similar in both community and general hospitals. The quality of the methodology was good and both the methods and results from the cost-utility analysis were adequately reported. Given the scope of the study, the authors’ conclusions appear to be valid.

Type of economic evaluation
Cost-utility analysis

Study objective
The objective was to assess the cost-effectiveness of post-acute care for older people in community hospitals compared with in general hospitals.

Interventions
This study investigated post-acute care for older patients, who, once medically stable, were either transferred to a community hospital or remained in the general hospital for rehabilitation.

Location/setting
UK/secondary care.

Methods
Analytical approach:
This economic analysis was based on data derived from a single trial (Green, et al. 2006, see 'Other Publications of Related Interest' below for bibliographic details). The time horizon was six months. The authors reported that the perspective was that of the National Health Service (NHS) and social services.

Effectiveness data:
The effectiveness data were derived from a single randomised controlled trial (Green, et al. 2006). Of the 490 patients recruited, 280 were randomised to a community hospital, and 210 to a general hospital. The authors reported that the characteristics of both patient groups were similar at baseline. The patients were followed-up for six months and the main outcome measure was patient independence.

Monetary benefit and utility valuations:
Quality of life was derived using the European Quality of life (EQ-5D) questionnaire, which was administered by a researcher at one week after hospital discharge, and at three and six months after recruitment.

Measure of benefit:
Quality-adjusted life-years (QALYs) gained were the measure of benefit.

Cost data:
The direct costs were those associated with: hospital admissions, such as visits to accident and emergency departments, day hospitals, day centres, general practitioners, and hospital out-patient departments; and the use of out-of-hours services, such as, home visits by health or social care staff, residential and nursing care homes and, aids and adaptations.
The data on in-patient hospital care and hospital out-patient visits for each patient were derived from the Patient Administration System within each trust. Other resource use data were derived through the patient questionnaire which was administered at one week after hospital discharge, and at three and six months after recruitment. The unit costs were derived from both national and local data. The price year was 2001 to 2002 and all costs were reported in UK pounds sterling (£).

Analysis of uncertainty:
Non-parametric bootstrapping was used to estimate the distribution of the incremental costs and benefits associated with the two interventions. In addition, the uncertainty in the incremental cost-utility ratios was assessed using a cost-effectiveness acceptability curve, which was derived using a non-parametric bootstrap method, on the basis of 10,000 replications. A cost-effectiveness acceptability curve indicates the probability that an intervention was cost-effective at different willingness to pay thresholds, for a QALY gained. A series of one-way sensitivity analyses was also performed by varying the unit costs and the contribution made by patients to pay for institutional care.

Results
There was a non-significant difference in QALYs from baseline to six months between the two interventions, with a mean QALY gain of 0.048 (95% confidence interval, CI: -0.028 to 0.123, p=0.214) in favour of the community hospital group.

The mean cost per patient was £8,946 (standard deviation, SD: 6,514) for the community hospital group compared with £8,226 (SD: 7,453) for the general hospital group, which was an additional cost of £720 (95% CI: -523 to 1,964) for the community hospital group.

The costs and benefits were combined using an incremental cost-utility ratio (i.e. the additional cost per QALY gained). Compared with care in a general hospital, community hospital care was associated with an additional cost of £16,324 per QALY gained.

The results from the cost-effectiveness acceptability curve showed that at a willingness to pay of £30,000 per QALY, there was a 50% probability that community hospital care was cost-effective.

Authors' conclusions
The authors concluded that the cost-effectiveness of post-acute rehabilitation for older people was similar in both community and general hospitals.

CRD commentary
Interventions:
The two interventions were well and clearly reported. Although no explicit justification was given for using general hospital care as the comparator, it was clear that this represented the contemporary practice for a proportion of patients in the authors’ settings.

Effectiveness/benefits:
The effectiveness data were derived from a randomised controlled trial which, if well conducted, is considered to be the gold-standard study design for comparing health care interventions. The authors did not report many details of the trial as these were published elsewhere. As a result, the validity of the effectiveness estimate is difficult to judge.

Costs:
The perspective was clearly and appropriately reported. All the major relevant resource use categories, for the NHS and social care perspective, would appear to have been included. Appropriate details on how the resource use was measured and obtained were reported, as were all the sources from which the unit costs were derived. The authors adequately reported the resource use separately from total costs, and also reported the time horizon and the price year.

Analysis and results:
The costs and benefits were appropriately combined using an incremental cost-utility ratio. All the mean estimates of resource use were reported alongside their SDs, with mean differences reported alongside 95% CIs. In addition, the
uncertainty surrounding the cost-utility ratios was investigated using a cost-effectiveness acceptability curve. The results were clearly and fully reported. In their discussion the authors highlighted the limitations of their study.

**Concluding remarks:**
The quality of the methodology was good. Both the methods and results from the cost-utility analysis were adequately reported. Given the scope of the study, the authors’ conclusions appear to be valid.

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