Failure of information as an intervention to modify clinical management: a time-series trial in patients with acute chest pain


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 non-coercive, low-intensity intervention comprising risk information and triage recommendations being communicated without person-to-person contact for the management of acute chest pain.

Type of intervention
Disease management.

Economic study type
Cost-effectiveness analysis.

Study population
Patients aged 30 years or older who presented to an emergency department between July 1990 and February 1992 with chest pain unexplained by local trauma or chest radiograph were eligible for the study.

Setting
Acute sector hospital. The economic study was carried out in the United States.

Dates to which data relate
Effectiveness and resource usage data were collected during the period July 1990 and February 1992. Costs were presented in 1992 US dollars.

Source of effectiveness data
Derived from a single case study.

Link between effectiveness and cost data
Costing was undertaken retrospectively on the same patient sample as that used in the effectiveness study.

Study sample
924 and 997 patients constituted the intervention and control groups respectively. The sample size had an 80% power for detecting a decrease in hospital admission rates to 45%, coronary care unit admission rates to 6%, and average length of stay to 3.9 days.

Study design
Single centre, time series trial. Data were insufficient for prediction of probability of myocardial infarction using the
multivariate algorithm for 78 patients in the control group and 79 patients in the intervention group. Outcomes were classified by reviewers blinded to clinical data from admission.

**Analysis of effectiveness**
The analysis of the clinical study was based on intention to treat. Main outcomes were the rates of admission to the hospital and coronary care unit. Other efficacy outcomes were proxied by the use of resources, such as length of stay. The intervention and control groups were similar in demographic and clinical characteristics. The only statistically significant difference was that the control group had a slightly higher prevalence of co-morbid medical conditions as measured using the Charlson co-morbidity index.

**Effectiveness results**
Rates of admission to the hospital and to the coronary care unit were nearly identical (51% versus 52% in the intervention and control groups respectively; 10% in both groups), as were total lengths of stay. There was a non-statistically significant trend toward shorter lengths of stay in the coronary care unit for the 131 patients in the intervention group compared with the 126 controls admitted to the coronary care unit. In addition, no differences were detected in management for patients at 'low risk' (<7% risk) of acute myocardial infarction between the intervention and control periods.

**Clinical conclusions**
The use of information alone, without direct human contact, did not affect the management of patients with acute chest pain.

**Measure of benefits used in the economic analysis**
Since the clinical study did not show difference in clinical outcomes, the economic analysis was based on difference in costs only.

**Direct costs**
Some costs and quantities were reported separately. Resource utilisation data for all hospitalised patients were retrieved from the hospital’s fiscal database. These data included length of stay and costs as estimated from charges using cost-centre specific ratios of charges to costs. Costs were expressed in 1992 dollars.

**Statistical analysis of costs**
Values were expressed as the mean +/- the standard deviation. Statistically significant p-values were reported.

**Currency**
US dollars ($).

**Sensitivity analysis**
No sensitivity analysis was carried out.

**Estimated benefits used in the economic analysis**
Not applicable.

**Cost results**
Estimated costs for patients hospitalised were nearly identical: $7,955 +/- $13,400 versus $7,822 +/- $13,217 for the
intervention and comparator groups respectively. In the 'low risk' patients only, estimated total costs were $5,092 and $5,820, (not significant).

Synthesis of costs and benefits
Not applicable.

Authors' conclusions
The use of information alone, without direct human contact, did not affect admission rates and resource utilisation for patients with acute chest pain at this one hospital. Although such a low-intensity intervention might be more effective for other conditions and in other settings, the data support the use of other strategies to affect physician decision-making.

CRD Commentary
No details of intermediate or final health outcomes are provided. The description of the costing exercise was limited. There is little externally valid information that can be drawn from this study.

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