Nursing home-acquired pneumonia: outcomes from a clinical process improvement program

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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
Clinical process improvement programme for patients with nursing home-acquired pneumonia.

Type of intervention
Disease management

Economic study type
Cost-effectiveness analysis.

Study population
Patients with nursing home-acquired pneumonia.

Setting
Hospital, Chicago, USA.

Dates to which data relate
Effectiveness data are still being monitored. Resources related to 1992-93. Price dates were not specified.

Source of effectiveness data
Single study.

Link between effectiveness and cost data
It is not clear whether the costing was undertaken prospectively or retrospectively on the same patient population used in the effectiveness study.

Study sample
225 patients with nursing home-acquired pneumonia hospitalised between October 1991 and March 1992. No power calculations related to the sample size are stated. No details are given on the number of patients included in the study after the introduction of new clinical guidelines on April 1, 1993.

Study design
Single centre study. Retrospective baseline study for the initial 225 patients; case-series for the post April 1, 1993 patients.
Analysis of effectiveness
It is not stated whether the analysis of the clinical study was based on intention to treat or on treatment completers only. The primary health outcomes used in the analysis were: early initiation of antimicrobial therapy in the emergency department, continuity of antimicrobial therapy after transfer to an inpatient-care unit.

Effectiveness results
Since the clinical process improvement program was implemented, antibiotics were initiated more frequently in the emergency department (65% vs 30%) and fewer changes in therapy occurred during hospitalization (2 vs 4).

Clinical conclusions
The introduction of the program for nursing home-acquired pneumonia helped maintain quality patient care, ensuring early antibiotics initiation and fewer changes in therapy.

Modelling
Decision trees were used in producing clinical guidelines for the emergency and in-patient department for nursing home-acquired pneumonia.

Measure of benefits used in the economic analysis
Early initiation of therapy in the emergency department; continuity of therapy after transfer to an inpatient care unit.

Direct costs
Although not clearly stated, direct health service costs were considered (length of stay and charge per patient). No price date was given.

Currency
US dollars ($).

Sensitivity analysis
Not performed.

Estimated benefits used in the economic analysis
Since the programme was implemented, antibiotics were initiated more frequently in the emergency department (65% vs 30%) and fewer changes in therapy occurred during hospitalisation (2 vs 4).

Cost results
Between 1992 and 1993 a charge reduction of $1830 per patient was noticed.

Synthesis of costs and benefits
The programme yielded positive clinical outcomes and cost savings.

Authors’ conclusions
The results of the programme for nursing home-acquired pneumonia suggest that it can have a significant impact in reducing length of stay and charges while maintaining quality patient care.
CRD Commentary
No power calculations related to the sample size were stated. We can only deduce the size of the post-programme group. The change in effectiveness results could be due to the change in sample size. No sensitivity analysis of data was performed. A summary measure of final clinical outcomes would have been useful. The analysis of costs appears not comprehensive since costs of implementation of the programme were not considered.

Bibliographic details

Indexing Status
Subject indexing assigned by NLM

MeSH
Chicago; Clinical Protocols; Cross Infection /diagnosis /drug therapy; Evaluation Studies; Hospital Bed Capacity, 500 and over; Hospitals, Teaching /standards; Humans; Length of Stay; Nursing Homes; Patient Transfer; Pneumonia /diagnosis /drug therapy; Research Design; Total Quality Management

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