Home chemotherapy for cancer patients: cost analysis and safety
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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
Home treatment (including chemotherapy) for cancer patients.

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
Cancer patients from one hospital whose home circumstances were satisfactory and who were receiving other than platinum-based chemotherapy.

Setting
Community setting. The economic study was carried out in Australia.

Dates to which data relate
Effectiveness data were collected during a five-year period (1989-94); cost data were based on a 12 month period (November 1993-November 1994). The price date was explicitly stated.

Source of effectiveness data
The evidence for effectiveness was based partly on a single study, but also involved authors’ opinions.

Link between effectiveness and cost data
Costing was undertaken prospectively on those patients undergoing treatment during a 12 month period of the 5 year study.

Study sample
424 patients receiving home treatment during the 5 year study period.

Study design
Case series from one hospital.

Analysis of effectiveness
The primary outcome was the number of major complications, defined on the basis of need for hospital admission.

**Effectiveness results**
5,444 home visits were made in the five year period; 1,688 visits being for administration of chemotherapy. Complications were rare and mostly minor with only one serious complication (dystonic reaction to metoclopramide). Patients who chose home treatment overwhelmingly supported the programme; only 2 of the 424 decided against continuing once the programme had started.

**Clinical conclusions**
Home treatment for cancer patients has been welcomed by patients and has proved to be quite safe. The low complication rate was the result of the programme being administered by an experienced oncology nurse who provided patients and family with education and counselling regarding action which could be taken to decrease risks.

**Methods used to derive estimates of effectiveness**
Authors’ opinion.

**Estimates of effectiveness and key assumptions**
The negligible rate of complications self-evidently establishes home treatment as being at least as safe as hospital treatment.

**Measure of benefits used in the economic analysis**
The effectiveness (safety) of the two treatment modalities was assumed to be equal, and hence the economic analysis was based on the difference in costs only.

**Direct costs**
Essential cost factors were identified as labour, travel, use of hospital resources and pharmaceuticals. As the drugs were the same regardless of treatment location, their cost was disregarded. The home-treatment nurse estimated the time taken for each chemotherapy treatment, and the cost of labour was then calculated based on the nurse’s salary costs. Details of car expenses were provided by the hospital's Transport Department. The average distance taken for travel to and from patients' homes was calculated by dividing the total distance travelled over the study period by the number of visits, including visits for purposes other than administering chemotherapy. The running costs for the day ward were determined for the period 1 July to 31 December 1994 and extrapolated to the 12-month period of the analysis. Overheads were calculated using the COSMOS costing software, and included components for administration, cleaning, engineering, pay and personnel. Both average costs and marginal costs of the hospital based therapy were analysed. Only costs occurring to the hospital were included. No discounting was used since the study period was only 12 months.

**Currency**
Australian dollars (Aus$).

**Sensitivity analysis**
No sensitivity analysis was performed.

**Estimated benefits used in the economic analysis**
No benefits were included in the economic analysis.
Cost results
During the 12 month period, 65 patients were treated at home and 119 were treated at the hospital day ward. The total cost per treatment for home visits was Aus$49.93 (comprising Aus$36.39 for salary, Aus$9.11 for special equipment and Aus$4.43 for car expenses). The average cost for each ‘short stay’ patient on the day ward was Aus$165.71 but, as the day ward staff divided their time between short stay admissions (70%) and drop-in patients requiring brief services such as blood tests (30%), the actual cost per treatment was Aus$116.00. Assuming that the basic service already exists then the total marginal cost of administering the home programme in hospital would be Aus$38,207. By comparison, the total annual cost of operating the service at home was approximately Aus$45,767. The total cost per treatment on the day ward was Aus$66.09 more than the cost of home treatment. The marginal cost of the home treatment programme was Aus$7,560 more than the marginal in-hospital cost, a difference of Aus$5.09 per home visit.

Synthesis of costs and benefits
Costs and benefits were not combined.

Authors’ conclusions
This study has shown that a home chemotherapy programme was efficient, safe and potentially cost-effective in comparison with the same treatment administered in the day ward of a hospital. Efforts should be made to increase the availability of home treatment services for cancer patients.

CRD COMMENTARY - Selection of comparators
A justification was given for the comparators used. Chemotherapy administration in the hospital's day treatment ward is the “traditional” form of therapy. Home therapy is an alternative, which had received clear subjective indications from staff and patients of its success during the trial period. You, as a user of this database, should consider whether these therapy schemes are relevant in your own setting.

Validity of estimate of measure of benefit
The evidence for health outcomes was based on non-randomised uncontrolled series of observations. No outcomes data were collected for the in-hospital alternative. Outcomes used were defined in terms of hospital admission, and the authors assumed that the efficacy of the therapy was the same irrespective of the setting in which it is administered.

Validity of estimate of costs
The nursing time used and salary rates were reported separately. Cost of drugs were disregarded, since they were assumed to be equal in both alternatives. In costing the home therapy, no allowance was made for hospital infrastructure support other than direct salary overheads. No adequate details of cost estimation for hospital ward care were given.

Other issues
The authors’ conclusions are not fully justified. Since they provided no evidence of improvements on any health outcomes, the conclusion about cost-effectiveness of more expensive home therapy cannot be justified. The authors implied that home therapy improves quality of life, but they did not provide any quantitative evidence on these benefits. As the authors noted, the dissimilarity between the costing methods (‘bottom up ’ for the home treatment and ‘top down’ for the hospital treatment) limits the extent to which the results may usefully be compared. Moreover, no sensitivity analysis was performed on the key cost items (e.g. nurse's salary) to demonstrate the stability of costing results. The potential difference in the case mix of the home therapy group and the hospital day ward was not satisfactorily addressed, even though it is likely to be a crucial factor in determining the costs of therapy in each group. It is therefore not possible to generalise the costing results to any other settings.

Source of funding
None stated.
Bibliographic details

PubMedID
8773645

Other publications of related interest

Indexing Status
Subject indexing assigned by NLM

MeSH
Ambulatory Care /economics; Antineoplastic Agents /economics /therapeutic use; Australia; Cost-Benefit Analysis; Costs and Cost Analysis; Home Care Services /economics /standards; Humans; Neoplasms /drug therapy /economics; Retrospective Studies

AccessionNumber
21996000855

Date bibliographic record published
30/11/1998

Date abstract record published
30/11/1998