Do hospital-based palliative teams improve care for patients or families at the end of life?


Authors' objectives
To assess the effectiveness of hospital-based palliative care on the process and outcomes of care for patients and families at the end of life.

Searching
The databases searched were: MEDLINE from 1977 to 1999; CINAHL from 1982 to 1998; Cancerlit from 1983 to 1999; PsycINFO from 1979 to 1999; EMBASE from 1979 to 1999; PallCare Index (1998); and the Cochrane EPOC Register of trials. The keywords were ‘palliative’, ‘hospice’, ‘terminal care’, ‘terminally ill’, ‘dying’, ‘end-of-life’ and associated terms. These were combined with ‘effective’, ‘evaluate’, ‘random’, ‘methods’, ‘economics’, ‘statistics’, ‘trends’, ‘organization’, ‘utilization’, and ‘service’ or ‘team’. ASSIA, the Social Sciences Citation Index and the Science Citation Index were searched using key authors from the databases. SIGLE was also searched.

Additional studies were identified by handsearching specific journals (Palliative Medicine, Progress in Palliative Care, and the Journal of Palliative Care from 1997 onwards), contacting authors, and examining the reference lists of all the retrieved papers. Experts in the field and organisations involved in cancer and palliative care were also contacted. Studies published in languages other than English were translated.

Study selection
Study designs of evaluations included in the review
Comparative studies with either a present or historical control group were eligible. The included studies were controlled trials and nonexperimental studies. Studies without any evidence of effects were excluded.

Specific interventions included in the review
Comparisons of palliative care teams working in hospitals with usual care delivery were eligible. Care teams were defined as two or more health care workers, at least one of whom had specialist training or worked principally in palliative care. Usual care included routine community and general hospital or oncology services, and isolated general practitioners who have undertaken limited training in palliative care. Care teams working outside the hospital setting, and procedures that were not usually considered part of palliative care, were excluded. Interventions in developing countries were also excluded. Most studies were based in large teaching hospitals and all but two studies were conducted in cities.

Participants included in the review
Patients with a progressive life-threatening illness and their families, carers and close friends were eligible. Studies in which not all patients were suffering from progressive life-threatening disease were excluded.

Outcomes assessed in the review
Studies that assessed the following outcomes and process measures were eligible: pain; control of other specific symptoms; quality of life and quality of death; patient satisfaction and carer satisfaction pre-bereavement; and carer morbidity pre- and post-bereavement. The actual outcomes assessed also included: the time spent in hospital or palliative care; the number of referrals; changes in prescribing opioids and other drugs; adherence to prescribing; home death; and costs. The outcomes were measured using standardised assessment schedules recorded by patients or professionals, or quality of life measurements using standardised scales or scales developed by the authors.

How were decisions on the relevance of primary studies made?
The relevance of the publications was rated using a 'Signal' score for UK palliative care services. This was based on study relevance, study implementation, and the value of the study to UK palliative care services. The Steering Group piloted the method of grading.
The full list of the papers was divided between two reviewers for grading. Results were then crosschecked between the reviewers and a random selection from each half was assessed by another author.

Assessment of study quality
The studies were graded using two independent hierarchies of evidence: one was based on study design (see Other Publications of Related Interest nos.1-3), while the other was based on a 'Method' score (see Other Publications of Related Interest nos.4-5). The study design was grade I if it was a randomised controlled trial (RCT) or a RCT review; grade II if it was a prospective study with a comparison group or a retrospective study, which controls effectively for confounding variables; and grade III if it was a retrospective, observational or cross-sectional study. A 'Method' score was allocated on the basis of 10 items: definition of the aims or outcomes; sample formation; description of the inclusion and exclusion criteria; description of the study characteristics; use of power calculations; objectivity of outcomes measures; adequacy of follow-up; adequacy of analysis; adjustment for baseline differences between the groups; and appropriate unit of allocation to groups randomisation method. The Steering Group piloted the grading procedure. The full list of papers was divided between two reviewers for grading. The results were then crosschecked between the reviewers and a random selection from each half was assessed by another author.

Data extraction
The Steering Group piloted the data extraction procedure. The full list of papers was divided between two reviewers for data extraction. The results were crosschecked between the reviewers and a random selection from each half was assessed by another author. The data extracted were: author and country of origin; study design; patient group; the type and content of the intervention; mode of delivery; professional group delivering the intervention; and outcomes. Where the data were available, the standardised mean difference between the treatment outcomes was calculated for each study.

Methods of synthesis
How were the studies combined?
A narrative synthesis was undertaken and, where sufficient numbers were available, studies were combined in a quantitative meta-analysis. The pooled effect size for each outcome was calculated, weighting by the square root of the sample size.

How were differences between studies investigated?
Differences between the studies were discussed in the text of the review.

Results of the review
Nine studies examined the intervention of a hospital-based palliative care team or service: one non-randomised comparative study (97 patients) and eight observational or retrospective studies (2,200 patients). Four studies examined interventions that included a component of hospital support or care: one RCT (203 patients) and three retrospective or observational studies (466 patients).

The nature of the interventions varied greatly, from an individual nurse with unclear training to multi-professional teams. There were insufficient data on the intensity of the interventions, the time periods of care, and whether the services operated at night as well as in working hours.

Most studies scored 8 out of a possible 16 for 'Methods'. Methodological flaws included attrition rates and small sample sizes. The 'Signal' scores, indicating study relevance, ranged from 10 to 15 out of a possible 15.

Intervention by the hospital team (9 studies).

The one controlled study (grade II) suggested that patients receiving a hospital-based team intervention (one specialist nurse with support from a surgeon and others) spent less time in hospital than those receiving usual care. The time spent in hospital was 3 and 10 days, respectively. The other studies (grade II) showed some improvement in symptom
management. Potential biases and confounding factors were not accounted for.

Hospital-based intervention as one component of the intervention (4 studies).

The one RCT (grade I) suggested a reduced time in hospital for patients receiving a coordinated service intervention, compared with a control group. The other studies (grade III) found some areas of improved outcomes including symptoms, satisfaction and pain, but breathlessness deteriorated in one study.

Effect sizes (10 studies). The effect sizes were standardised before pooling. The authors considered an effect of less than 0.2 as small and one of greater than 0.6 as large. The effect sizes were all positive, though small, with the exception of one study (a grade III multi-component study) that showed a deterioration in the patients’ symptoms. The weighted average effect sizes for outcomes reported in more than one study were as follows.

- Pain (7 studies): 0.60 (range: 0.03 to 2.04).
- Quality of life (4 studies): 0.34 (range: 0.04 to 0.53).
- Other symptoms (4 studies): 0.66 (range: -0.05 to 1.76).
- Home death (2 studies): 0.20 (0.16 and 0.27).
- Service-related (3 studies): 0.22 (range: 0.11 to 0.31).

**Authors' conclusions**

The review suggested that hospital-based palliative care teams offer some benefits, although this finding should be interpreted with caution. The study designs need to be improved, and comparisons of different models of providing support at the end of life in hospital are required.

**CRD commentary**

The aims were clearly stated, and the inclusion criteria were defined in terms of the study design, intervention, participants and outcomes. The literature search was thorough: many databases were searched and additional material was sought from other sources. Attempts were made to locate unpublished material, and no language restrictions were applied. Study validity was assessed using defined criteria, the methods used to assess validity were described, and the results of the validity assessment were reported.

Relevant data were extracted and tabulated clearly, and the methods used to extract the data were described. A narrative synthesis was undertaken in which attention was drawn to evidence from studies with a higher quality of design, although few interventions or results were described. Where more than one study reported the specified outcome, the studies were combined in a meta-analysis. However, it is unclear how such results can be interpreted when based on different measures. Also, the authors' addition of calculating effect sizes for different outcomes is not recommended. Statistical heterogeneity was not assessed for the meta-analyses though some differences between the studies were commented upon.

The evidence presented supports the authors' conclusions.

**Implications of the review for practice and research**

Practice: The authors did not state any implications for practice.

Research: The authors state that evaluations are needed to compare different models of hospital-based palliative care teams. Future research should use standardised outcome measures assessing the patients’ pain, symptoms, career outcomes and, where possible, the effect on professionals or the overall hospital service. The authors also state that cost-effectiveness evaluations of hospital-based teams covering both rural and suburban areas are required.
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Bibliographic details

PubMedID
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Other publications of related interest

This additional publication may also be of interest: Finlay I, Fowell A. A good death: care pathways in Wales aims to improve care of dying patients. BMJ 2000;320:1250.

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.