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Do specialist palliative care teams improve outcomes for cancer patients? A systematic literature review

Julie Hearn Research Assistant and **Irene J Higginson** Professor and Head of Department of Palliative Care and Policy, King's College School of Medicine and Dentistry and St Christopher's Hospice, London

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The objective of the study was to determine whether teams providing specialist palliative care improve the health outcomes of patients with advanced cancer and their families or carers when compared to conventional services. The study involved a systematic literature review of published research.

The source of the data included studies identified from a systematic search of computerized databases (Medline, psychINFO, CINAHL and BIDS to the end of 1996), hand-searching specialist palliative care journals, and studying bibliographies and reference lists. The inclusion criteria for articles were that the study considered the use of specialist palliative care teams caring for patients with advanced cancer. Articles were assessed and data extracted and synthesized, with studies graded according to design.

A variety of outcomes were considered by the authors. These addressed aspects of symptom control, patient and family or carer satisfaction, health care utilization and cost, place of death, psychosocial indices and quality of life.

Overall, 18 relevant studies were identified, including five randomized controlled trials. Improved outcomes were seen in the amount of time spent at home by patients, satisfaction by both patients and their carers, symptom control, a reduction in the number of inpatient hospital days, a reduction in overall cost, and the patients' likelihood of dying where they wished to for those receiving specialist care from a multiprofessional palliative care team.

It was concluded that all evaluations were of services considered to be leading the field, or were pioneering training and treatments. However, when compared to conventional care, there is evidence that specialist teams in palliative care improve satisfaction and identify and deal with more patient and family needs. Moreover, multiprofessional approaches to palliative care reduce the overall cost of care by reducing the amount of time patients spend in acute hospital settings.

Address for correspondence: Miss J Hearn, Department of Palliative Care and Policy, King's College School of Medicine and Dentistry and St Christopher's Hospice, New Medical School, Bessemer Road, London SE5 9PJ, UK. E-mail: julie.hearn@kcl.ac.uk

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Le but de cette étude est de savoir si les équipes spécialisées en soins palliatifs ont de meilleurs résultats auprès des malades atteints de cancer en phase avancée, de leurs familles ou de leurs proches soignants que les services conventionnels. L'étude consiste en une revue systématique des articles de recherche publiés dans la littérature.

Les données proviennent des études que nous avons identifiées par une recherche systématique sur les bases de données (Medline, PsychINFO, CINHAL et BIDS jusqu'à la fin de 1996), par une recherche manuelle dans les revues spécialisées en soins palliatifs auprès de patients atteints de cancers en phase avancée. Les articles étaient inventories et les données extraites, et synthétisées, les études étant classées selon leur objectif.
Divers résultats ont été pris en compte. Ils comportent les aspects suivants: soulagement des symptômes, satisfaction des malades, des familles et des soignants, utilisation et coût des soins, lieu de décès, indicateurs psychosociaux et qualité de vie.

En tout, 18 études valables ont été identifiées, dont cinq essais randomisés contôlés. De meilleurs résultats sont observés quant au temps passé à leur domicile par les malades, à la satisfaction des malades et de leurs soignants, au soulagement des symptômes, à la réduction du nombre de jours d'hospitalisation, à la diminution du coût d'ensemble, et à une possibilité accrue pour les patients de décèder là où ils le souhaitent quand ils reçoivent les soins spécialisés d'une équipe multiprofessionelle de soins palliatifs.

Pour conclure, il faut préciser que tous les services évaluées sont des services de pointe dans leur domaine ou sont à l'avant-garde dans la formation et thérapeutique. Mais, la comparaison avec les soins conventionnels prouve bien que les équipes spécialisées en soins palliatifs améliorent la satisfaction des patients et des familles et identifient davantage leurs besoins et y font face. De plus, l'approche multiprofessionelle des soins palliatifs réduit le coût d'ensemble des soins en réduisant la durée d'hospitalisation des malades dans des services de soins aigus.

Introduction

Palliative care is a rapidly expanding specialty[1] with a role to play both in dealing effectively with symptom control, and improving the quality of life for patients with progressive disease and their families.[2] Uncontrolled symptoms, or severe patient and family distress while a patient has a progressive illness, severely inhibit the patient's quality of life, and also have an impact on family members' coping and resolution of grief. It has been suggested that a multiprofessional team providing specialist palliative care improves the speed of the referral process, the coordination of care, and the communication from health care professionals to patients and families. The input of a specialist team may facilitate improved patient and family satisfaction, and integration with primary care.

A multiprofessional team has been defined as a group of specialists who work together under appropriate leadership.[3] The members that comprise the team caring for the person with cancer are essentially unlimited.[4] The specialists who may be included in a palliative care team are: doctors, clinical nurse specialists, social workers, chaplains, therapists and psychologists or psychiatrists.[5]

The team aims to:

- achieve accurate and speedy diagnosis;
- plan and implement effective integrated treatment and care;
- communicate effectively with the patient, with all other professionals and agencies involved in the care of the patient, and within itself; and
- audit its activities and outcomes.

Poor communication is cited by the Audit Commission as one of the most common reasons for litigation and complaint in the health service.[6] Sub-optimal communication with cancer patients has most recently been documented by the National Cancer Alliance.[7] Evidence suggests that poor communication results in dissatisfaction and increased co-morbidity of both the cancer patient and their family or carers.[7–9] Effectiveness in palliative care is judged in terms of the quality of life before dying, quality of life at the time of dying, a ‘good death’ and the impact on the family or carers.[1] An effective and communicative team is often espoused as an essential element for achieving these goals by specialists working in the field.[5] However, evidence supporting the role of specialist teams in palliative care is difficult to obtain, partly because of the problems inherent in studying a patient population with advanced illness,[10] and also because of the difficulty in separating out the effect of a team from the effects of input from any specialist.

However, this does not mean that we should not attempt to evaluate the efficacy and cost-effectiveness of palliative care and look at its implications for the provision of services in the UK.[11,12] Although randomized controlled trials (RCTs) are considered the gold standard in assessing effectiveness in this field they are rare, especially in the UK. This is the result of methodological difficulties, such as high rates of withdrawal.[10] Researching the effectiveness of palliative care teams can be accomplished by designing trials using family and carer prospective and retrospective evaluations; comparing the opinions of health care workers about care provided to those of a bereaved carer; asking those patients who are well enough to be involved in evaluations; and, to a lesser extent, carrying out randomized controlled trials.

This systematic review aimed to determine whether there was any evidence that the management of patients with advanced cancer by co-ordinated or multiprofessional teams providing specialist palliative care improves the quality of care of these patients and their families.

Methods

The two stages involved in carrying out the review were literature identification and data extraction.

Literature identification

Computerized databases. The following databases were searched: Medline (1980–96), psychINFO (1984–96), CINAHL (1982–96). The search strategy used for these databases followed that devised by Dickerson *et al*.[13] using the following words either singly or in combination: palliative care or hospice or terminal care; effectiveness; evaluation; assessment; neoplasms. The BIDS (Bath Information and Data Services), EMBASE, SOCIAL SCISEARCH (Social Sciences Citation Index) and IBSS (International Bibliography of the Social Sciences) databases were searched for the period from 1993 to 1996 using the title words palliative care, hospice and terminal care.

Hand searching. The following journals were searched by hand from the date of first issue to the end of 1996: *Palliative Medicine*, *The Journal of Palliative Care* and *Progress in Palliative Care*.

The Internet. Cancer sites on the Internet were also investigated for more up-to-date information on the most recent cancer publications. There are two main sites of use. The first is CancerWEB (www.graylab.ac.uk copyright 1996) compiled by the National Cancer Institute. The second site is OncoLink (www.oncolink.upenn.edu/ copyright 1994–96, The Trustees of the University of Pennsylvania). Both sites provided useful overview information, but neither site provided any additional articles of relevance to the review that had not been identified by the other search mechanisms.

Additional identification of papers. In addition to the above, individual searches on key authors in the field were carried out. Authors who had reported on ongoing trials in conference proceedings were contacted, as were other known key researchers in the field. References and bibliographies from seminal articles were followed up. Collaboration with other researchers performing systematic reviews, including the Cochrane Pain, Palliative and Supportive Care Group (PaPaS) in this, and related fields, took place.

Data extraction

Inclusion criteria. Studies which considered the use of specialist teams caring for advanced cancer patients and their families were included. Those studies focusing on one cancer site, for example, breast cancer, were not included as it was felt that the results of such specific studies would not necessarily be generalizable to patients with other types of cancer. Publications in all languages were considered.

Data collection. From each study relevant to this review, data were extracted directly into tables. Where more than one paper had been published on the same study population, these articles were grouped in the table and subset analyses indicated.

Assessment of studies. Available information was graded according to the rigour of the study design and analysis (see Figure 1 for the grading criteria).[14] The appropriateness of the various outcome measures used was taken into account when allocating a grade to each study.

Grade I (strong evidence)

Randomized controlled trials or review of randomized controlled trials.

- IA Calculation of sample size and accurate and standard definition of appropriate outcome variables.
- IB Accurate and standard definition of appropriate outcome variables.
- IC Neither of the above.

Grade II (fairly strong evidence)

Prospective study with a comparison group (non-randomized controlled trial, good observational study or retrospective study which controls effectively for confounding variables).

- IIA Calculation of sample size and accurate, standard definition of appropriate outcome variables and adjustment for the effects of important confounding variables.
- IIB One or more of the above.

Grade III (weaker evidence)

Retrospective or observational studies.

- IIIA Comparison group, calculation of sample size, accurate and standard definition of appropriate outcome variables.
- IIIB Two or more of the above.
- IIIC None of these.

Grade IV (weak evidence)

- Cross-sectional study, Delphi exercise, consensus of experts.

Figure 1 Grading criteria for studies[14]

Results

Eighteen relevant studies were identified, including both RCTs and comparative or observational studies (Table 1).[15–50] When specialist multiprofessional care is compared to conventional care, four of the five RCTs and the majority of the comparative studies indicate that the specialist, co-ordinated approach resulted in similar or improved outcomes in terms of patient satisfaction, the patient being cared for where they wished, family satisfaction, family anxiety and patient pain and symptom control. The RCT by McWhinney *et al.*[10] failed to collect sufficient data to make any valid comparison – the problems and pitfalls of carrying out RCTs are discussed constructively by the authors in their paper.

Those studies which examined costs[15,17,23,24,26,35] showed a tendency for a reduction in hospital inpatient days, more time spent at home, and equal or lower costs. There were no worse outcomes associated with a specialist, although the early studies carried out by Parkes[45,46] showed more pain at home compared to hospital or hospice, although specialist multiprofessional teams were operating in both home and hospice.

Only one study attempted to examine the 'team' effect separately from the general effect of a palliative care service[49,50] (see Table 1). In this observational study (grade IIIC) of 207 patients who had died at home, no combination of health care professionals was consistently effective, but a general practitioner alone fared worst overall. In this study, no general practitioner working alone provided financial advice, and the combination of a specialist nurse and general practitioner failed to provide

Table 1 Effectiveness of the multiprofessional team in palliative care

Author, country grade	Aims of the study	Patient population	Study design	Outcome measures	Results
Addington-Hall *et al.*[5] Raftery *et al.*[16] UK IB	To measure the effects on terminally ill cancer patients and their families of co-ordinating the services available within the National Health Service, from local authorities and from the voluntary sector, and to compare the cost-effectiveness of the service.	A total of 203 cancer patients expected to live less than one year and who had at least one follow up interview: I: 54% female, 82% 65 years or older, 46% married C: 54% female, 76% 65 years or older, 56% married. 118 carers: 'Carers characteristics did not differ significantly between groups'.	Randomized controlled trial (RCT); stratified random sampling of patients attending a district hospital or oncology, radiotherapy, general surgery, or urology outpatient clinics between 1987 and 1990, interviewers blind. I(*n* = 104) received routine services plus community based nurse co-ordinators who provided a link between services (*n* = 86 patients for cost analysis, *n* = 56 carers); C(*n* = 99) patients received routinely available services; (*n* = 81 patients for cost analysis, *n* = 62 carers). Follow-up at intervals of between two weeks and six months, until death; plus carers at same time and eight weeks post-bereavement.	Symptoms and control, ADL; shortened Family Apgar scale; satisfaction; HADS; Spitzer QoL Index; service use; sources of income; carers experience and satisfaction; Leeds depression and anxiety scale for carers; extra costs to patients or carers; crude unit costs calculated.	*Intervention group improvements in:* • fewer days were spent in hospital (particularly acute) or hospice; • fewer home visits; • mean total costs- I = £4773 SD £8721, C = £8034 SD £8721; and • less likely to feel angry when they thought of the patient's death. • *No difference in:* • satisfaction with services; • mean number of inpatient days in specialist cancer hospital; • the proportion having unmet needs for help or aids and appliances at home; and • the numbers receiving advice on benefit entitlements or savings.
Hughes *et al.*[17] USA IB	To study the effect of a hospital-based home care programme on terminally ill patients and their caregivers.	A total of 171 terminally ill male patients with prognosis <6 months: I: 73% malignant neoplasms, mean age 65.73 years, 63% married C: 80% malignant neoplasms, mean age 63.26 years, 74% married 171 caregivers: I: mean age 55.5, 58% spouses C: mean age 56.4, 72% spouses.	RCT, method not stated; recruitment 1984–87 to VA Hospital with a home care programme. I(*n* = 86) cared for by a physician-led interdisciplinary team using a goal-oriented care plan developed at team meetings, scheduling visits according to need and involving informal caregivers C(*n* = 85) able to access customary care within or outside the hospital. One and six months follow-up.	Barthels Self-Care Index; SPMSQ; PGCMS; Satisfaction with Care Scale; health care utilization.	*Intervention group improvement in:* • satisfaction with care at one month; • reduction in total hospital days; • mean number of outpatient visits; • for patients dying in hospital, fewer days spent in hospital prior to death; • net per capita health care cost $769.00 per person lower; and • caregiver's satisfaction with care. *No difference in:* • percentage readmitted to the hospital; and • place of death.

Table 1 Effectiveness of the multiprofessional team in palliative care (continued)

Kane *et al.*[18–21] Wales *et al.*[22] USA IB	To assess the effect of hospice care on the emotional status of patients and their caregivers and to assess satisfaction.	A total of 247 cancer patients with a prognosis of two weeks to six months. I: 2.2% female, mean age 63.3 years, 59.1% white; C: 2.8% female, mean age 64 years, 63.6% white. 152 caregivers: I: mean age 58 years, 53% spouses C: mean age 56 years, 43% spouses.	RCT, full method not stated; sampling portion weighted to favour hospice care. I (*n* = 137 patients, 83 care-givers) hospital based hospice, a home care programme, and a consultation service-assessment conducted at referral and a treatment plan developed. C(*n* = 110 patients, 69 care-givers) conventional care in a university-affiliated teaching hospital, continued to receive pre-study treatment plan. Interviews held at regular intervals, caregivers had four bereavement interviews, the first six weeks after death.	McGill/Melzack pain scale; a symptom scale; CESDS; Anxiety Subscale of Ware Measure; anger from NCI Hospice Study; SICS; SPECS; FIVPCS NCI Hospice Study; ADL; several scales of NHIS; PSAS; CFRS; number/type of interventions; number of days at home; place of death.	*Intervention group improvements in:* • satisfaction with interpersonal care; and • involvement in care. *No difference in:* • proportion of patients with pain; • satisfaction with the environment; • symptom, activities daily living, anxiety or depression scores; and • mean total number of inpatient days (C, longer average stays in nursing homes). *For caregivers:* • inital decrease in anxiety at 18 months no difference in anxiety/depression; • increased satisfaction with involvement; and • no differences in health care utilization.
Zimmer *et al.*[23, 24] USA IB	To study the effectiveness and acceptability of a home health care team.	A total of 158 home-bound patients. I: 20.7% cancer diagnosis, 61% female, mean age 73.8 years, 73.2% white C: 17.1% cancer diagnosis, 76.3% female, mean age 77.4 years, 85.5% white. Subgroup of 33 who died and received at least two weeks of home care.	RCT, full method not stated; stratified random sampling by prognosis, ability to respond to questionnaires, and being a member of a couple both of whom wished to participate, 1979–82, interviewer blinded to test. I (*n* = 82) cared for by an interdisciplinary home health care team, (HHCT) (subgroup *n* = 21). C(*n* = 76) not cared for by the HHCT (subgroup *n* = 12). Three and six months follow-up.	Initial base-line questionnaire based on National Hospice Survey; Health Service utilization diary and billing forms; SIP; PGCMS; satisfaction; mortality; place of death.	*Intervention group improvements in:* • fewer days spent in out of home services; • mean utilization rates per patient; • fewer hospital and nursing home days; • average cost per day for days at risk; • lower out of home and total day costs for patients dying within three months; • satisfaction and mortality at six months; and • satisfaction of caregivers. *No difference in:* • mean scores for morale; and • functional abilities. *For subgroup, improvements in:* • number of patients dying at home; • those dying at home spent on average half the number of days in hospital; and • cost-weighted average total costs.

Table 1 Effectiveness of the multiprofessional team in palliative care (continued)

McWhinney *et al.*[10] Canada IC	To evaluate a home care team based on an inpatient unit – a discussion of the problems and pitfalls.	A total of 146 adult patients being cared for at home with a prognosis of two months – 53 lost to follow-up before one month. In all, 74 caregivers.	RCT, method not stated; researcher blinded. I – care from the palliative care home support team, consulting/supporting service. C – waited four weeks for assessment followed by team intervention. Follow-up at one and two months.	McGill pain questionnaire; Melzack nausea questionnaire; FLIC; CESDS.	*No difference in:* • any of the measures between groups at one month.
Higginson *et al.*[25] UK IIB	To investigate the current needs and problems of terminally ill cancer patients and their families and to find out their views on the services they have used.	A total of 65 cancer patients with a member of family/carer. Patients: mean age 66 years, median time from first interview to death six weeks. Family members: mean age 60 years, 48% wives, 26% husbands, 28% other specified family.	Prospective study of patients receiving care from two multiprofessional support teams consisting of doctors, specialist nurses, a social worker, an administrator and volunteers, both liaising with other professionals to assist and advise on patient care. First interview between two and four weeks after entry into care of support team, follow-up for 12 of the patients between four and six weeks after the first interview.	Interview at home on current problems and ratings for eight items of care; comments and ratings on health services received from hospital doctors and nurses, general practitioners (GPs) and district nurses (DNs), and support team staff.	*Assessment of health services:* • the support team staff received no poor or very bad ratings and had excellent ratings over the hospital doctors/hospital nurses/ GPs or DNs. *Negative comments on:* • hospital services communication co-ordination and staff overworked; • GP's attitude, GP delays in diagnosis or treatment, getting home visits and out-of-hours care.

Table 1 Effectiveness of the multiprofessional team in palliative care (continued)

Mor *et al.*[26,32]; Greer and Mor[27]; Greer *et al.*[28]; Morris *et al.*[29,30]; Goldberg *et al.*[31]; Mor and Masterson-Allen[33,34] USA IIB	To evaluate inpatient and home care hospice programmes against conventional oncology care.	A total of 1754 hospice and non-hospice patients. Ranges for demographic variables between three groups were: 15–32% aged 75 years and over; 51–53% female; 5–8% non-white; 7–17% patient lived alone.	Prospective study of patients and carers attending 40 hospice and 14 conventional care services who met eligibility criteria. I Group 1 (n = 833) hospice home-based care. I Group 2 (n = 624) hospital-based hospice care. C(n = 297) conventional oncology care settings 'selected by the evaluators for their willingness to co-operate and their ability to provide quality oncological care'. Twenty per cent survived less than two weeks in the hospice; interviews with patients and primary care person at entry, seven days, and every 14 days; post-bereavement interview at 90–120 days.	• Pattern of care and treatments given; • patient outcomes, overall quality of life; • family outcome – perceived anxiety and burden, post-bereavement emotional distress and morbidity; and • cost-based and utilization-based on health service use	*Intervention groups improvements in:* • pain control and analgesic prescription use for I Group 2; • less likely to receive intensive interventions and diagnostic tests; • higher hours of direct care; • satisfaction of primary care person for I Group 2 compared to C; • I Group 1 more likely than C/I Group 2 to say patient died where wanted; • more likely to die at home, (Group 1 62%, Group 2 27%, C 13%); and • lower costs total costs per study day (Group1 $101, Group 2 $146, C $149). *No difference in*: • quality of life, patient satisfaction with care, family outcomes after death.
Ventafridda *et al.*[35] Italy IIB	To evaluate costs and effectiveness of home care compared to hospital care for advanced cancer patients.	A total of 60 cancer patients with pain. I: 43.3% female, mean age 59.1 years, 90% married. C: 30% females, mean age 59.7 years, 76.7% married.	Prospective study of sequential admissions of patients with terminal cancer with pain, no longer receiving specific oncological treatment to home care or hospital in Milan. I(n = 30) cared for by home care team. C(n = 30) in various wards of one hospital cared for by the Pain Therapy and Palliative Care Service. Results presented for patients who received two weeks of care.	Daily recordings by patient on pain intensity and duration, hours of sleep/standing/sitting/lying, performance status, presence of side-effects and therapies; weekly Spitzer QoL; record of patients' living conditions; costs from 1987 expense data and socio-medical statistics for Milan in 1986.	*Intervention group improvements in:* • performance status and overall Quality of Life Index; • fewer patients feeling 'very ill' (I = 23%, C = 56%); • less care received judged as insufficient; • degree of awareness of cancer; and • lower costs estimates (I = $37.4 per day, C = $261.4 per day). *No difference in:* • pain intensity, time spent standing, sitting or lying down; • symptoms; • patients living conditions, need for health support, or economic health; and • relationship with GP.

Table 1 Effectiveness of the multiprofessional team in palliative care (continued)

Viney *et al.*[36] Australia IIB	To compare the quality of life of cancer patients dying in palliative care units and in hospital	A total of 183 patients dying of cancer I group 1: 36% female, 54% 61 years and over I group 2: 52% female, 50% 61 years and over C: 54% 61 years and over	Prospective comparison study, each group was selected randomly to represent their setting, content analysis blinded I Group 1 (n = 62) cared for by specialist 10-bed palliaitve care unit in a general hospital I Group 2 (n = 60) cared for in fully staffed hospice C(n = 61) cared for in the small general hospital where I Group 1 was based.	Content analysis of standardized interview transcripts of nine psychological states, measured using the Cognitive anxiety scale, the total anxiety scale, a depression scale, hostility scales, the pawn and origin scales the sociality scale, the positive affect scale	*Intervention groups improvement in:* • expressed more good feelings; • less indirectly expressed anger; • expressed less separation and diffuse anxiety; and • expressed more death anxiety but with fewer fears of isolation. *No difference in:* • overall quality of life between the two intervention groups. *Difference between the two I groups*: • I Group 1 showed more frustration than Group 2 by more frequent passive expression of anger and of helplessness.
Wakefield and Ashby[37] Australia IIB	To determine the levels of satisfaction of relatives with terminal care and the extent of service use by patients.	A total of 100 relatives (56%) who were posted letters about their deceased relative 58% of the patients were male, 71% were Australian born.	Retrospective random sample of relatives of adult patients who had died from cancer 12–15 months earlier, study not blinded. Public hospital (n = 27) Hospice (n = 22) Private hospital (n = 19) Nursing home (n = 14) Home (n = 18).	Telephone interview: patient's condition, awareness patient symptoms, treatment effectiveness, satisfaction.	• Improved access to doctors and satisfaction with care from a hospice, and feeling informed by hospice care; • 56% of the patients who died at home had spent all of the final month at home; • 41% of the patients who died in institutions had spent no time at home in the last month; and • hospice care rated excellent more often than other institutional settings. *No difference in:* • access and satisfaction with nurses; • caregivers of patients in nursing homes less likely to be aware patient was dying; and • caregivers of those dying in hospital were less likely to consider that this site was the right place for the death.

Table 1 Effectiveness of the multiprofessional team in palliative care (continued)

Cartwright and Seale[38]; Seale[39] UK IIIA	To compare the experiences of hospice service cancer patients compared to other cancer patients.	A total of 171 relatives and others who knew the person who had died from cancer; subset analysis of 26 matched pairs dying as inpatients.	Eight hundred deaths registered in 10/1987 and 11/1987 selected from 10 randomly chosen areas of England, stratified by availability of hospice services. I(n = 45) patient had received hospice care. C(n = 126) patient had received conventional care.	Questionnaire administered by interviewers on symptoms and symptom relief, services used, information, whether relatives and friends had taken part in the care, information about medical procedures.	*Intervention group improvement in:* • provision and frequency of visits by a nurse at home; • time spent talking rather than providing practical care; • rating of care provided by nurses; • all hospice patients suffering pain had it relieved compared to 68% of controls; • all respondents for hospice patients said they had been treated very kindly by staff during visits for the final admission comapred to 77% of controls; and • quality of care from doctors and nurses at the time of death • likelihood of being visited by a nurse at home after the death.
Lunt and Neale[40] UK IIIA	To compare the care goals of doctors and nurses working in hospices and district general hospital wards, to describe staff's perceptions of the extent to which these goals were met, and to compare the goals set by staff with the concerns expressed by patients.	Random subset of 86 patients out of a total 175 patients recruited to a larger study: 'the samples were similar with respect to age, sex, marital status, site of cancer, prevalence of secondaries, previous treatment and survival after inclusion'. All nurses and doctors involved with patients, and all patients well enough were interviewed.	Quasi-experimental prospective comparative study, intervention groups were from two NHS hospices, controls from three general medical and two general surgical wards in a district general hospital (DGH), all eligible patients were selected from the DGH, a one in three random sample was used in the hospices. I(n = 57 staff, 28 patients) cared for in two purpose built hospices in the South of England. C(n = 29 staff, 10 patients) cared for in the DGH. Initial interviews with staff followed up one week later.	Interviews carried out with a doctor and a nurse based on Kiresuk's goal attainment scaling technique to describe the ward team's aims based on a checklist of concerns – outcomes were rated at the end of the week and at the review stage; interviews were conducted with patients about one week after admission.	*Differences between hospital and hospices:* • hospice doctors set more rehabilitation goals than DGH doctors; and • hospice doctors set more goals for patient's physical comfort in weeks 1 and 2 and emotional state in week 1. *Differences between staff and patients':* • no overall difference between settings in the proportion of patient concerns covered by staff goals; • the DGH covered more concerns about physical symptoms; • the hospices covered more concerns about emotional state; and • all patients had concerns they thought the staff did not know about which they preferred to keep private/did not want to trouble the staff with.

Table 1 Effectiveness of the multiprofessional team in palliative care (continued)

McCusker and Stoddard[41] USA IIIA	To compare the utilization patterns of home care during the last month of life, before and after the development of a home–hospice programme.	A total of 1874 cancer patients who died one month or more after diagnosis and aged <65 years. I: 56% female, 56% aged 55–64 years; C: 49% female, 55% aged 55–64 years.	Quasi-experimental time series study. Three time periods considered: 1976–77 for pre-home–hospice programme; 1978–80 programme introduced; 1981–82 fully implemented home–hospice. I(n = 857) used home care in the six months before death. C(n = 1017) did not use home care.	Cost of the service; utilization of acute hospital services, long-term care and home care.	*Intervention group improvement in:* • number of hospital days and daily hospital cost – but longer use of home care due to cancer type. *No difference in:* • average time between first admission to home care and death • mean total costs for non-users.
Parkes[42–44] UK IIIA	To evaluate the St Christopher's Hospice inpatient service against other hospitals for patients who had died from cancer.	A total of 34 cases and 34 matched controls who died of cancer either in hospital or hospice in two London boroughs – sample was taken from 267 spouses <65 years of age who had been interviewed in an earlier study. They were 65% male, mean age 55 years, 25% social class I/II.	Retrospective analysis of views of bereaved spouses 13 (± 2) months after the death. I(n = 34) patient died in St Christopher's Hospice (small autonomous with a medical director in palliative care, a high nurse–patient ratio, and which uses volunteers). C(n = 34) patients who died in other hospitals in area.	'Semi-structured interview' with surviving spouses on the: • effects of service on the patient-physical and psycho-social; and • effects of service on spouse.	*Intervention group improvements in:* • severity of patient's pain; • patient's mobility; • spouses spent more time talking to staff spouses spent more time with patient; • spouses less worried about physical pain and its relief, revealing fears to patient, others hurting/harming spouse; and • feeling unit is a family, and nothing is too much trouble.
Parkes[45,46] UK IIIA	To evaluate the St Christopher's Hospice Advisory Domiciliary Service.	A total of 51 cases and 51 matched controls who died from cancer in two London boroughs All under age of 70 years, 65% male, mean age 55 years, 25% social class I or II.	Retrospective analysis of views of bereaved spouses 13 (± 2) months after the death. I(n = 51) received team of senior nurses who are advisory and are supported by a multidisciplinary team – subanalysis of 31 patients who had two or more visits. C(n = 51) received conventional services and spent some time at home. Control sample taken from death registrations and matched. Further comparison of 23 matched pairs who died in hospital.	Views of home care service, services required, communication, spouses welfare, advice received, symptoms, patient contentment, patient unhappiness, talking about illness, time spent at home, length of admission, costs.	*Intervention group improvement in:* • time in hospital reduced; and • costs. *No difference in:* • symptoms; • percent who died at home; • serious failings in nursing needs; and • whether talked about illness. *Worse outcomes for intervention group in:* • greater 'tension'; and • 'greater' anxiety while patient was at home worry about separation.

Table 1 Effectiveness of the multiprofessional team in palliative care (continued)

Higginson *et al.*[47] UK IIIC	To assess the effectiveness of two palliative support teams.	A total 227 patients who were in care for two or more weeks; 47% female, mean age 67 years.	Prospective observational study of all referrals to two teams over 17 months and eight months, respectively. Group 1 ($n = 192$) cared for by a health service funded team. Group 2 ($n = 126$) in the care of a voluntary and health authority funded team. Weekly follow-up until death.	The Support Team Assessment Schedule (STAS).	*Improvements for both groups in:* • the proportion of patients with severe problems for all items was reduced; • the proportion of patients with no problems increased; and • scores for 15 out of the 17 items improved. *No difference in:* • family anxiety or spiritual scores.
Hinton[48] UK IIIC	To compare the care in hospital radiotherapy wards, a Foundation home for cancer patients and a hospice.	Eighty patients with cancer who had a prognosis of less than three month and did not have physical distress; 63% female, mean age 58.2 years, all married.	Prospective comparison study of patients. Interviews took place after care had been consistent for at least two weeks with patients, their spouses and the nurses. Comparisons were made between patients matched on age, sex, diagnosis, religion, strength of faith, and the time between assessment and death from the following: Group 1 ($n = 20$) acute hospital inpatients on 12–20 bed radiotherapy wards, or side wards; Group 2 ($n = 20$) Foundation Home inpatients – visited by two GPs; Group 3 ($n = 20$) Hospice inpatients on 4–6 bed wards, and a multiprofessional approach; and Group 4 ($n = 20$) Hospice outpatients attending clinic or visited at home by nurses.	Between 20-min and 40-min interviews using their comments to provide scaled ratings on emotional state, attitude to their illness, and opinions of their care; ratings were made on a visual analogue scale and then scored from 1 = best to 9 = worst.	*Differences between groups in:* • hospice inpatient had significantly better ratings for depression and anxiety; • hospice outpatients rated significantly better than other groups for anger; • hospice patients were more aware of their diagnosis than patients at the home (hospital patients not asked); and • hospice patients expressed greatest praise, with outpatients expressing the highest. *No difference in:* • opinions on medical treatment.

Table 1 Effectiveness of the multiprofessional team in palliative care (continued)

Jones[48]; Jones *et al.*[49] UK IIIC	To identify aspects of care where deficiencies exist and to investigate the level of support by the visiting health care 'teams'.	A total of 207 carers of people who had died at home and had not been admitted to a hospital or hospice seven days or more before death Carers: 73% female, 57% aged 60 years and over, 43% male carers were husbands, 90% female carers were wives, all but eight were closely related to the patient,' the distribution of cancer types in the sample matched national figures'.	Observational study with retrospective data collection by interview, carried out in general practices in three health districts in the South of England during 1987–89 on 207 households receiving professional support from either: 1 (*n* = 19) GP alone; 2 (*n* = 61) DN and GP; 3 (*n* = 14) specialist nurse and GP; 4 (*n* = 42) specialist nurse, DN and GP; 5 (*n* = 40) nurses, GP and other health professionals; 6 (*n* = 25) nurses, GP, other health professionals plus a social worker. Interviews conducted between two and four months after death.	Semi-structured interview about sources of support, satisfaction with support, coping with caring in the four weeks before the patient's death.	• Overall services were judged as excellent by 73% and poor by <1%; and • 96% thought the health and social work professionals had had time to listen, 92% thought they were caring. *Problems with:* • no team being consistently effective, but the GP alone fared worst overall; • 8% had difficulty getting urgent help; • 11% were unaware of domestic help; • 14% would have liked night time help; • 17% mentioned the need for equipment; • 60% were not given financial advice; and • 23% didn't have either sleep problems, weight loss, nervousness or anxiety.

I, intervention group; C, control group.

advice about other local sources of support. This study reported that for those carers needing training with simple nursing tasks, teams which contained a district nurse provided such training more often than those which did not, and for symptom control the specialist nurse, general practitioner and district nurse combined appeared to provide the highest relief.

Discussion

When considering the available evidence, it is important to note the differences in the systems of health care provision for advanced cancer patients between the USA and UK. In the UK, health care for all patients is centred around the family doctor who provides the key to accessing additional services – no such mechanism operates in the USA. The provision of care in the UK is more disparate, with nursing, consultant and social support available from a variety of sources.[1] In the USA, as a result of health care insurance contracts and payment, all aspects of health care for advanced cancer patients are provided by one service alone. Access to specialist palliative care services under certain US health care plans is dependent on prognosis, and hospice care is centred on care taking place in the home.

Not all the studies have shown an improvement in outcomes as a result of a co-ordinated approach, although none showed adverse outcomes. The limitations and difficulties associated with carrying out research in the field of palliative care need to be taken into consideration when reviewing this evidence.[51] Although RCTs are considered the gold standard in assessing effectiveness, they are rare in this field. Because of the difficulties in prospective studies identifying and then collecting information from patients close to death, as illustrated in the study by McWhinney *et al.*,[10] observational studies or retrospective studies of carers are carried out more often. Hence, the categorization (A–C) within the grading system may be more important than the actual grade when considering the validity of studies in palliative care. Work is under way to develop a grading system for qualitative research. In addition, a consistent problem with many of the studies is the use of outcome measures which are not responsive to change, not validated or not appropriate in this population.

Nevertheless, there is strong evidence from the few RCTs and good observational studies that conventional care alone is inadequate for patients with advanced cancer. The review indicates that in hospital, hospice and community settings a multiprofessional approach with specialist input is beneficial. The results presented from the successful studies support the use of specialist multiprofessional teams in palliative care to improve satisfaction of both the patient with advanced cancer and their family or carers. The evidence suggests that such teams were more able to identify and deal with patient and family needs, and to provide access to other services. There is also evidence of improved pain control and symptom management as a result of the specialist approach. Specialist palliative care teams can effect cost by reducing the number of hospital inpatient days and time spent in out-of-home services.

The evidence now exists to support the views of organizations such as the National Council for Hospice and Specialist Palliative Care Services[52] and Macmillan Cancer Relief,[53] and experts in the field[54–57] who advocate a multiprofessional approach. This review builds on the analysis of the literature carried out by Mor and Masterson-Allen.[33]

There were an estimated 6.6 million deaths due to cancer last year worldwide,[58] with cancer now responsible for more deaths in developing countries than in the developed world.[59] Therefore, it is important that the palliative care approach, involving both symptom control and attention to the psychological, social and spiritual well-being of the patient and their family/carers is provided throughout the course of the illness.[5,59–61] Frequently, the only care available to people in developing countries will be palliative.[59] Multiprofessional specialist palliative care teams should be available to provide complete care for patients with cancer and their relatives and carers.

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