

# Specialist palliative care provision in a major teaching hospital and cancer centre – an eight-year experience

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**ABSTRACT** If hospital patients are to have access to specialist palliative care, specialist palliative medicine must operate successfully in a busy hospital setting. This paper evaluates prospective data from 3,523 patients referred to a hospital specialist palliative care service over eight years (1999–2006). The number, age and frailty (determined by the palliative performance scale) of referred patients increased every year. The median time from referral to death was 27 days. Referrals specifically for symptom control doubled (80% versus 40%). The service responded by providing a shorter, more intensive service: more joint (nurse/doctor) consultations, a 300% increase in medical consultations and more discharges back to the referring team. Co-management between palliative medicine and other consultants has increased, and attention is focused on the management of difficult symptoms. For some patients the referring specialist will lead management, while for others with predominantly palliative care needs, management will be led by palliative medicine specialists. For patients with the most complex needs, intensive symptom control and palliative care may be most effectively delivered in a dedicated hospital unit.

Published online May 2008

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**KEYWORDS** Hospital palliative care team, performance scale, specialist palliative care

**DECLARATION OF INTERESTS** No conflict of interests declared.

## INTRODUCTION

Palliative medicine arose in response to the care of a group of patients who were generally managed in an environment with an inappropriately high degree of technology for their stage of disease and with overly optimistic expectations that glossed over the severity of their illness and prognosis. —M Davis, 2002<sup>1</sup>

The dilemma of how much and how intensively to treat, and how much and how intensively to provide care aimed at comfort, is most pressing in the modern hospital. If patients are to access appropriate specialist palliative care, specialist palliative medicine (the medical component of specialist palliative care) needs to operate successfully within the busy setting of an acute hospital. It needs to support staff, who are managing persisting and difficult problems in advanced illness, as well as struggling with the pressures of waiting times, capacity, and so on. The challenges for us are to identify which patients may benefit from specialist palliative care, and integrate this care into the day-to-day activity of busy hospitals.

In relation to cancer care, increasing numbers of patients start palliative chemotherapy or radiotherapy, or have a palliative surgical procedure in the last month of life.<sup>2</sup> Hence transfer to hospice or community for symptom control and palliative care input is not always appropriate

while active treatments are continuing or being discussed. Even if transfer out of the acute hospital was clinically appropriate and acceptable to the patient, it may not always be possible. Many patients have no fit carer at home, and community resources are limited. Consequently, 55% of patients in the UK die in hospital and, in many cases, reports of their care suggest considerable unmet needs.<sup>3–5</sup>

Historically, palliative care services have focused on cancer patients in the last few weeks or months of life. A number of simple and well-validated prognostic tools are now available, which help identify such patients, including some without cancer.<sup>6–9</sup> However, even well-validated prognostic tools are not precise. Furthermore, some patients with only a short time to live may benefit from interventional or invasive procedures.

The relationship between symptom control and active treatment is complicated. Improvements in antiemesis have increased patients' ability to tolerate chemotherapy, and the use of sedatives in a critical care environment facilitates invasive or non-invasive ventilation. However, in a patient with advanced lung cancer, who is distressed and has a chest infection, it may be difficult to balance the use of antibiotics and the use of sedation to manage distress – and non-palliative medicine physicians and palliative medicine physicians may differ over which they consider to be more important.

New therapeutic advances, such as opioid rotation, multi-modal analgesia and N-methyl-D-aspartate antagonists require close supervision, frequent review and education of non-specialist staff. Patients' decisions about treatments, specifically life-sustaining treatments, add a further layer to decision-making. Patients may opt to die in hospital as a 'fighter', in which case death will appear to be due to 'treatment failure'. Others may choose symptom control and supportive care, and not seek reversal of the underlying disease process.<sup>10</sup>

As palliative medicine expands into areas such as chronic obstructive pulmonary disease, heart failure and renal failure, in which prognosis is more unpredictable than in advanced malignant disease, the timing of palliative care input can be more difficult, and collaboration between palliative medicine and non-palliative medicine specialists becomes even more important.<sup>11</sup>

The first hospital support team was conceived in London at St Thomas' Hospital in 1976,<sup>12</sup> and since then the number of such teams has increased rapidly. In 2006 there were 307 hospital support teams in the UK – 39 of which were in Scotland. They were involved in the care of more than 100,000 patients, 87% of whom had cancer.<sup>13</sup> In other countries the name may be different – mobile hospital support teams (Europe), peripatetic and palliative medicine consulting service (USA) – but they work in a comparable way, alongside the referring medical team in a consultative role, and do not have their own beds.<sup>14,15</sup> Higginson et al. in 2002 concluded a small positive benefit for the involvement of hospital-based palliative care teams in end-of-life care, and subsequent studies have reported improvements in pain control,<sup>16,17</sup> insight into illness,<sup>18</sup> reduced costs<sup>19–21</sup> and an increase in discussion about end-of-life decisions, including Do Not Resuscitate (DNR).<sup>21</sup>

A number of palliative care programmes in major hospitals or cancer centres include dedicated palliative care units. The model of such units differs depending on the hospital, but they usually provide a combination of in-patient beds for symptom control, respite and end-of-life care.<sup>21–6</sup> Most look after patients who would otherwise be in the hospital, although some admit directly from home or hospice. In function they are somewhere between a non-palliative care hospital ward and a hospice. A more intensive short-stay symptom control model exists within a cancer centre in Italy.<sup>27</sup>

This paper reports the experience of a specialist palliative care consultation service in a cancer centre and teaching hospital over eight years. It examines how hospital palliative medicine has developed and suggests one way it may become more integrated into acute hospital practice.

## METHODS

Since 1998, specialist palliative care in Ninewells Hospital, Dundee (a 710-bed university teaching hospital and cancer centre, which also acts as a district general hospital for the Dundee area), has been provided by the hospital palliative care team (HPCT) at the request of the patients' consultant. The HPCT consists of one consultant, 2.6 whole-time equivalent (WTE) nurse specialists and one specialist registrar. The service is an 'in-reach' service provided by the local community health partnership. There has been an increase of 0.6 WTE nurse specialists between 1999 and 2006. Medical input has responded to the increasing requests for consultations that are medically and diagnostically difficult by an increase in clinical sessions from three to six.

All patients referred between 1 January 1999 and 31 December 2006 were included in the study. Data prospectively collected included age, sex, diagnosis, reason for referral (determined by both referring team and HPCT), referring specialty, performance status on referral, presence or absence of a fit carer, number of visits by HPCT, number of days of HPCT involvement and outcome on discharge from HPCT care.

### Reasons for referral

These were classified as pain or symptom control, support (for patient, family or staff), discharge planning, referral for hospice admission or other.

### Performance status

The palliative performance scale (PPS) was used to measure fitness and function of palliative care patients. The PPS was developed within the hospice setting for cancer patients.<sup>28</sup> It has been shown to aid prognostication in hospice<sup>29–31</sup> and the acute hospital setting.<sup>32</sup> Six main areas are considered: ambulation, activity level, evidence of disease, ability to self-care, oral intake and conscious level. Similar to the Karnofsky performance scale (KPS),<sup>33</sup> the score is given in increments of 10%; 0% is dead and 100% is fully ambulatory and healthy (Figure 1). The PPS was determined at first referral by the HPCT clinical nurse specialist or HPCT physician. The core HPCT staff remained the same during the study period. Initially, staff read PPS guidance, instructions for use and a definition of terms.<sup>28</sup> During team meetings PPS was discussed as core assessment data. New staff were introduced to the instrument, and scored PPS with an existing staff member at the initial visit. The PPS was not scored again during an episode of care.

### Outcome

Outcome was recorded at the time of discharge from HPCT care and was categorised as either discharge to home, the carer's home, another hospital, the local specialist palliative care unit or a nursing/residential home. Two other outcomes were recorded: dying in Ninewells during the same admission or return to the referring hospital consultant.

**TABLE 1** Descriptive statistics for the palliative performance scale in relation to referring specialty. Those from medical wards had the lowest mean and median PPS values (significantly lower than oncology and surgery wards,  $p < 0.001$  for both; Mann-Whitney U-test), while those from oncology had the highest mean and median PPS (significantly higher than from surgery wards,  $p = 0.007$ ; Mann-Whitney U-test).

	N	Mean	St D	Min	Median	Max
PPS (oncology)	1,220	48	10	10	50	80
PPS (surgery)	1,305	47	13	10	50	90
PPS (medical)	998	44	12	10	40	70

**Data collection and analysis**

Data were recorded on a dedicated Access® database (Microsoft Corporation). Data concerning outcome, age and PPS were modelled to determine the probability of being discharged home or dying in hospital on that admission, as a function of both PPS and age. Statistical analyses were performed in Minitab Release 14.1 (Minitab Inc.). Survival from the date of referral to the date of death (or date of censor: 1 January 2007) was examined using the Kaplan-Meier method.

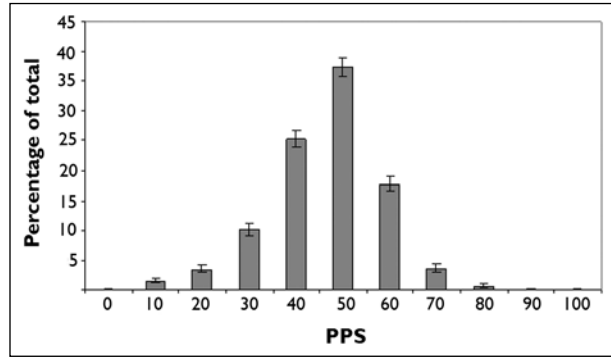
**RESULTS**

**Age and demographics**

Since 1 January 1999, 3,523 patients – 1,683 (48%) male, 1,840 (52%) female – were referred by consultants to the specialist palliative care service. The median age of patients referred was 71 (interquartile range 61–78). Age increased significantly ( $p < 0.05$ ; Mann-Whitney U-test) from the early years of the study (1999 and 2000) to each of the later years – 2004, 2005 and 2006. The percentage of referred patients who lived alone (38%) remained the same over eight years, although this represents an increasing number of patients as the number of referrals increased (see HPCT involvement).

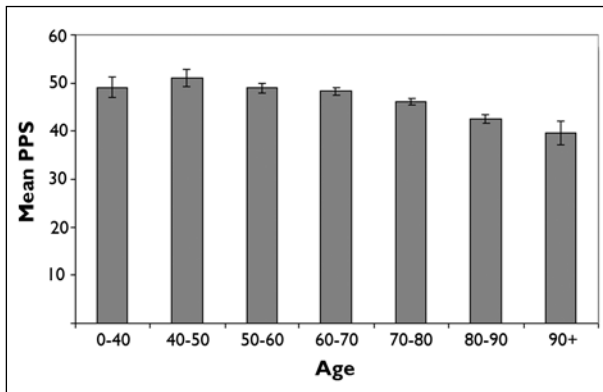
**Underlying illness**

Of all the referrals, 34.6% (1,220) were from oncology wards, 37% (1,305) from surgical wards and 28.3% (998) from medical wards (note that percentages do not sum to 100, due to rounding). The number of patients referred who did and did not have cancer increased year on year from 1999 to 2006: cancer (130–543); non-cancer (1–92). In addition, the increase in the number of patients in the cancer and non-cancer groups expressed as a ratio of their respective 1999 levels shows that while the number of cancer patients has increased more than four fold, there has been a dramatic growth in the number of non-cancer patients – a 92-fold increase. This increase from 1999 levels is significant for both cancer ( $\chi^2 p < 0.001$ ) and non-cancer ( $\chi^2 p < 0.001$ ) groups.

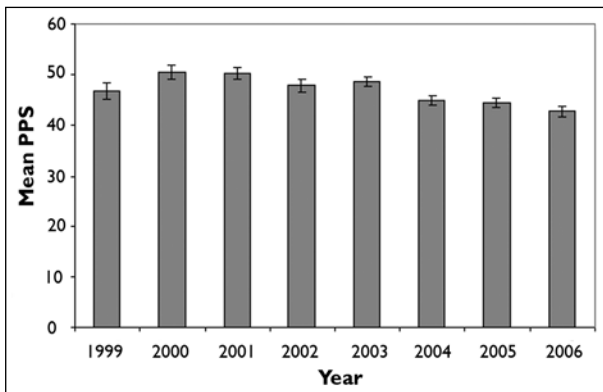


PPS	Ambulation	Activity/evidence of disease	Self-care	Intake	Conscious level
100	Full	Normal activity/work. No evidence of disease	Full	Normal	Full
90	Full	Normal activity/work. Some evidence of disease	Full	Normal	Full
80	Full	Normal activity with effort. Some evidence of disease	Full	Normal or reduced	Full
70	Reduced	Unable to do normal job/work. Significant disease	Full	Normal or reduced	Full
60	Reduced	Unable to do hobby/housework. Significant disease	Occasional assistance necessary	Normal or reduced	Full or confusion
50	Mainly sit/lie	Unable to do any work. Extensive disease	Considerable assistance required	Normal or reduced	Full or confusion
40	Mainly in bed	Unable to do most activity. Extensive disease	Mainly assistance	Normal or reduced	Full or drowsy +/- confusion
30	Totally bed-bound	Unable to do any activity. Extensive disease	Total care	Normal or reduced	Full or drowsy +/- confusion
20	Totally bed-bound	Unable to do any activity. Extensive disease	Total care	Minimal to sips	Full or drowsy +/- confusion
10	Totally bed-bound	Unable to do any activity. Extensive disease	Total care	Mouth care only	Drowsy or coma +/- confusion
0	Death	–	–	–	–

**FIGURE 1** The PPS of referrals to the HPCT for all years ( $n = 3,523$ , 95% CI). As expected, the distribution of patients' PPS values approximates a Gaussian distribution, with more than 80% of patients having PPS scores between 40 and 60. (Table used with permission of Victoria Hospice Society.)



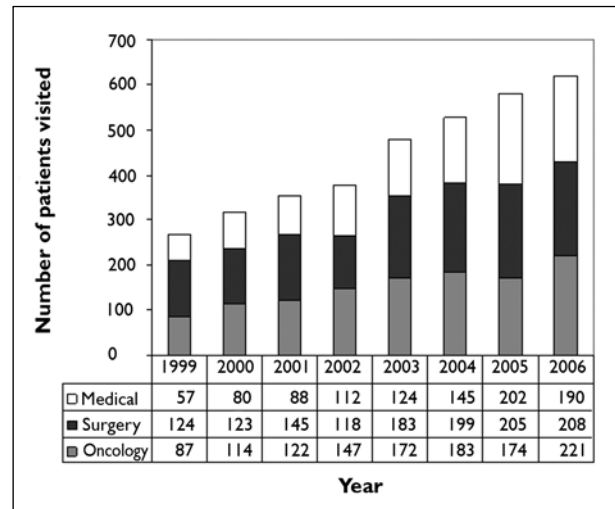
**FIGURE 2** Mean PPS in relation to age (n=3,523) with 95% confidence intervals. Mean PPS for each of the latter age groups (70–80, 80–90 and 90+) was significantly smaller ( $p<0.05$  in each case; Mann-Whitney U-test) than for each of the earlier age groups (0–40, 40–50 and 50–60). Moreover, mean PPS was significantly smaller for the 90+, 80–90 and 70–80 age groups than for each of the previous age groups ( $p<0.05$  in each case; Mann-Whitney U-test).



**FIGURE 3** Mean PPS in relation to 1999–2006, with 95% confidence intervals. Mean PPS for each of the latter years (2004–06) was significantly smaller ( $p<0.05$  in each case; Mann-Whitney U-test) than for each of the earlier years (2000–03). Moreover, mean PPS was significantly smaller ( $p<0.05$  in each case; Mann-Whitney U-test) for 2006, 2005 and 2004 than for each of the previous years, with the exception of 2004 versus 2005 and 1999 versus each of 2004 and 2005.

**Example:** A 72-year-old woman with end-stage renal failure and peripheral vascular disease. Following a recent below-knee amputation, she developed pain – stump pain, pain from a pressure sore and pain from a fractured rib due to coughing.

Immediate release hydromorphone helped the pain, but caused hallucinations and drowsiness (due to accumulation of opioid metabolites). This was changed to fentanyl (750 micrograms) + ketamine (50 mg) administered subcutaneously (fentanyl is metabolised to inactive metabolites and is thus better tolerated in renal failure by syringe driver) over 24 hours with good pain relief. Her condition stabilised, and she was switched to a 25 microgram per hour fentanyl patch with 0.5 mg clonazepam in the evening as both night sedation and for its benefit in neuropathic pain. The patient continues



**FIGURE 4** Number of patients visited 1999–2006, detailed by specialty. Overall, the number of individual patients visited has increased to more than double, and oncology and non-oncology specialty visits have also increased to more than double over the study period. The increase in patient visits over 1999 levels is statistically significant overall ( $\chi^2$  for trend=101.039,  $p<0.001$ ) and by specialty: medical ( $\chi^2$  for trend=46.768,  $p<0.001$ ), surgery ( $\chi^2$  for trend=23.733,  $p<0.001$ ) and oncology ( $\chi^2$  for trend=30.664,  $p<0.001$ ).

dialysis and was discharged to a medicine for the elderly ward near to her home.

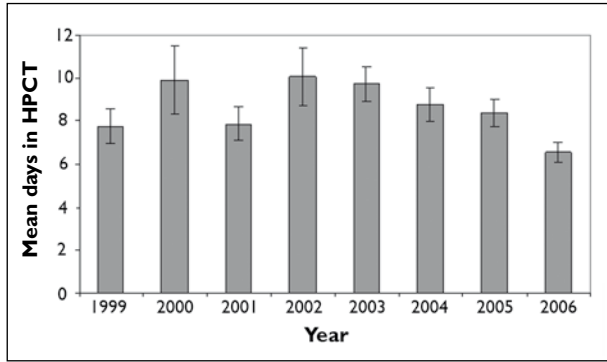
#### Performance status

The median PPS was 50% (range 10–90%); that is, able to transfer from bed to chair and spending most of the time sitting or lying, unable to do any work and needing considerable assistance with self-care. Of the patients, 22% had a PPS of 60 or more; in other words, 78% were not mobile for most of the day (Figure 1). Performance status was significantly different for each of the referring disciplines (Table 1), with  $p<0.01$  in all cases (Mann-Whitney U-test) and was lowest for patients referred from the medical wards.

Performance status was inversely correlated with age, with age groups from 70 and above each being significantly lower ( $p<0.05$ ; Mann-Whitney U-test) than each of the lower age groups (Figure 2). Furthermore, over time, performance status on referral has fallen, with the latter years (2004–06) each being significantly lower ( $p<0.05$ ; Mann-Whitney U-test) than each of the earlier years, 2000–03 (Figure 3).

#### Reason for referral

Most referrals (2,290/3,523; 65%) were for symptom control – mainly pain and debility. This percentage steadily increased from 40% in 1999 to 80% in 2006. A total of 17% referrals were specifically for admission to hospice and 10% for discharge planning.



**FIGURE 5** Mean number of days referred patients are on the HPCT 'books', 1999–2006, with 95% confidence intervals. From 2002 on there is a decrease in the mean number of days that patients remain in HPCT, and the difference between 2002 and each subsequent year is statistically significant ( $p < 0.001$ ; Mann-Whitney U-test), with the exception of 2002 versus 2003, and 2004 versus 2005.

**Time from referral to death**

The median time from referral to the HPCT to death (for all patients, including those discharged) was 27 days (interquartile range 9–82 days). Only one in eight patients (13%) was referred less than five days before they died.

**HPCT involvement**

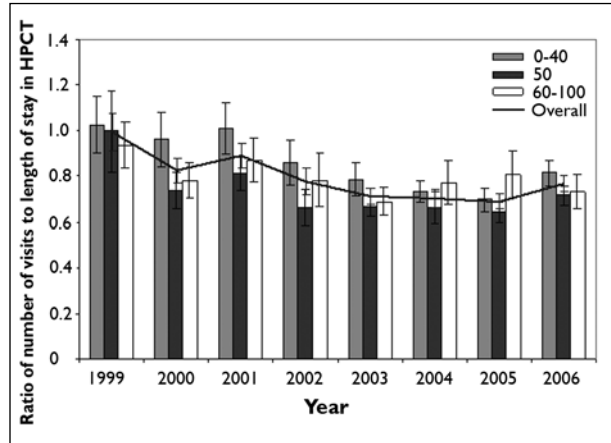
The number of individual patients visited has also increased year on year (Figure 4). The total number of visits carried out by individual team members increased from 1,612 during 1999 to 2,549 in 2006.

The total number of visits carried out by team members over the eight years was 17,999.

The mean number of visits per patient reduced over the years from a high in 1999 of 6 to a low of 4.1 in 2006, with each of the latter years (2004–06) being significantly smaller than each of the earlier years (1999–2003) ( $p < 0.05$ ; Mann-Whitney U-test). The mean number of visits also decreased by the age of the patient, although on the whole this did not reach statistical significance, and patients with a PPS of 0–40 were visited fewer times than those with a higher PPS score, and this was statistically significant ( $p < 0.001$ ; Mann-Whitney U-test).

As the number of referrals has increased over the years, the length of time patients have remained on the HPCT 'books' has reduced (Figure 5). In the first few years, a small minority (2%) of patients remained on the team 'books' for longer than one month and generated many visits. However, as the team has matured, such practice became the exception (<0.01% all patients).

Visits by doctors (whether alone or with a nurse specialist in palliative care) took up an increasing proportion of all visits, from 26% in 1999 to around the 55–60% level in 2004–06. Visits by unaccompanied doctors increased from a low of 80 in 1999 to a high of



**FIGURE 6** Ratio of the total number of bed-side visits by a doctor and/or nurse to the length of stay in the HPCT (in days), for 1999–2006, with 95% confidence intervals, and detailed by PPS. Overall, the ratio for each of the years 2003–05 is significantly smaller than for each of the years 1999–2001 ( $p < 0.001$ ; Mann-Whitney U-test), indicating that, in general, patients are being visited less frequently by HPCT staff during their stay. For 2006 and 1999–2003, patients having a low PPS score were visited most frequently, while patients with a high PPS score were visited most frequently in 2004 and 2005. Patients with a PPS score of 50 were visited the least in all study years with the exception of 1999. Irrespective of year, patients with low (ratio of 0.82) and high (ratio of 0.79) PPS scores were visited more frequently than patients with a PPS of 50 (ratio of 0.71), and this is statistically significant ( $p < 0.001$  for each case; Mann-Whitney U-test).

598 in 2005 – a 750% increase, while accompanied visits increased by almost 300% from a 1999 low of 333 to a 2004 high of 974.

Consequently the team was involved with each patient for a shorter period of time, but the medical input was more intense. As workload has increased, the average number of visits per patient per day fell from one visit per patient per day in 1999 (Figure 6) to 0.7 in 2005. A comparison of 1999–2001 and each of 2000–05 showed a significant difference ( $p < 0.05$ ; Mann-Whitney U-test).

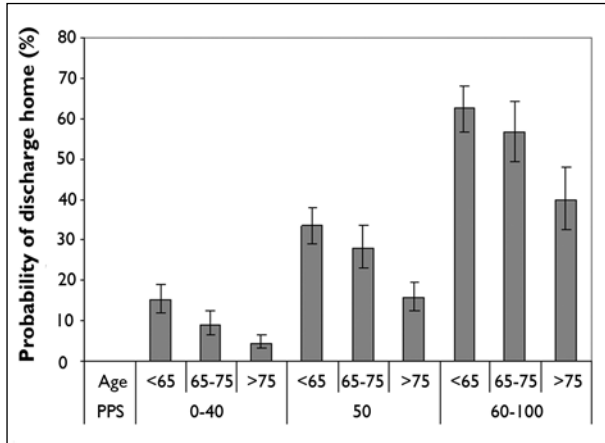
**Outcome**

Of all the patients, 915 (26%) were discharged home directly from HPCT care, 199 (6%) were transferred to another hospital or nursing home, 780 (22%) were transferred to a hospice and 1,040 (30%) died in Ninewells Hospital. A total of 589 (17%) were discharged from HPCT care back to the referring Ninewells team.

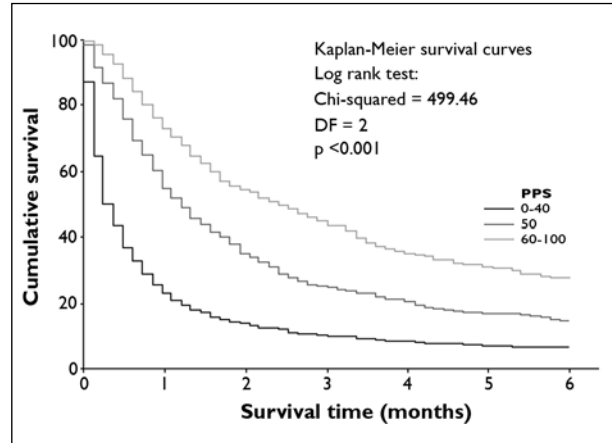
Less than one in four (22%) patients seen by the specialist palliative care service were admitted to a hospice.

Proportional to the total number of annual patients, the number of patients being discharged home directly from HPCT care decreased from around 30–35% of all patients in the early years (1999–2001) to around 20–25% in the latter years (2004–06).





**FIGURE 7** Probability of discharge home in relation to age and performance status, with 95% confidence intervals. The probability of discharge home increases with PPS, but decreases with age. In the absence of PPS, age is a poor predictor of the probability of discharge home – a patient that is under 65 has a 15%, 35% or 60% chance of discharge, depending on PPS score. Conversely, when coupled with PPS, age provides a useful perturbation in the probability of discharge home.



**FIGURE 8** Kaplan-Meier survival analysis of survival by PPS. When grouped as 0–40, 50 and 60–100, PPS is a significant indicator of survival time, with the lower PPS scores registering a significantly lower probability of survival (at the same survival time points) than higher PPS scores. For example, the chances of a patient with a PPS score of 60 surviving for one month (from referral to the HPCT) is approximately 75%, whereas for a patient with a PPS score of 40, the chances are around 20%.

### Palliative performance scale in relation to outcome

The PPS was predictive of overall survival ( $p < 0.001$ , log-rank). Patients with a PPS of 0–40 had a significantly shorter survival than patients with a PPS of 50 and a PPS of 60–100 (Figure 8).

The PPS was predictive of outcome ( $p < 0.001$ ). Patients discharged home had a better PPS than those transferred to another hospital, a nursing home or a hospice. The probability of getting home increased with PPS (Figure 7). The probability of getting home with a PPS of 60 or more was greater than one in two (458/817; 56.1%), but as the PPS fell to 40 or less, the probability of getting home fell to less than one in ten (8.8%; 134/1,523). The probability of dying in the regional acute hospital when the HPCT was involved (29.3%; 1,032/3,523) was dependent almost entirely on PPS rather than on age.

## DISCUSSION

Palliative care has evolved over the past few decades to include the care of patients with palliative care needs whether in hospital, at home or in the community (hospice, nursing home or community hospital). More drugs and treatments are available, and more patients are surviving cancer and other life-threatening illness. At the same time there is more debate about when symptom control becomes a major focus of care. Society has higher expectations of cure and higher expectations of good symptom control and care.

The eight-year experience of the specialist palliative care service described in this paper highlights the issues faced by all staff working at the demanding and complex interface between intensive palliative treatment (medical

or surgical) and intensive symptom and supportive care. One of the limitations of the study is that outcome data in terms of the benefits of specialist palliative care intervention is limited. Quantitative improvement in symptom or pain control using the Edmonton symptom assessment scale<sup>34,35</sup> is now being routinely recorded on referral and 48 hours later. This tool involves the assessment by the patient of nine symptoms (including pain, nausea and well-being) in addition to one other issue that the patient has identified as being a problem. Patient, nurse and carer satisfaction tools are also being trialled.

The number of patients referred increased year on year. This was due partly to the increasing number of patients referred with advanced non-malignant disease and partly to the development of good working relationships with clinicians of all specialties.

Patients are significantly older and frailer than when the service began. Services differ, depending on patient population and hospital culture – a recent publication reported a median PPS of 20.<sup>19</sup> Therefore patients who wish to spend time at home, either after their treatment is finished or alongside their active treatment, will need considerable community resources to be arranged – often at short notice. Bearing in mind the number of patients who lived alone (38%) in the study, the number with no fit carer and the relationship of PPS to likelihood of getting home, the current emphasis on patient choice with regard to place of care may not be realistic in dependent, ill patients with no or unfit carers.

The majority of referrals were for symptom control, but most also involved discussions with patients, family and staff about the goals of care. End of life usually refers to the last

2–3 days. The team saw a minority of patients who were actually dying: the median time before death of the patients referred was 27 days, and a minority were seen within a few days of dying. The service has therefore moved away from being viewed as dealing only with ‘end-of-life’ and ‘brink-of-death’ care and become involved in a more complex and uncertain area, where active disease management and palliative care can work effectively together. Patients do not therefore have to choose between disease management and comfort – they can have both.

### Working at the interface

In response to increasing demand and increasing numbers of referrals for symptom control, the working practice of the specialist palliative care service has changed. Input has become more intense and more focused on complex cases, a finding that is consistent with other services that include a palliative medicine physician.<sup>36</sup> Input has been of shorter duration, but with more medical consultation time and more joint (specialist palliative care doctor and nurse) consulting. An increased proportion of patients were returned to the referring team, which increased from a low of 3% in 1999 to 24% in 2006 – more than 700%. This was, in part, due to a deliberate decision by the HPCT to concentrate on complex symptom management and discussions with families, patients and staff about goals of care and less on discharge planning. As the composition of the team has stayed much the same, such changes are likely to be a response to demand.

Team nurses operate at specialist level, managing rapidly changing episodes of care and, on occasion, crisis intervention. Such work demands well-developed communication and negotiation skills, persistence and attention to detail. In common with other teams’ experiences,<sup>37</sup> a proportion of the team’s contribution is ‘hidden’ – quiet discussion of ethical issues, clarification of management plans to enable patient choice, anticipatory prescribing, discussion with relatives and the supporting and encouraging of colleagues.

The increased workload has resulted in less time for formal teaching of doctors and nurses, a recommendation by the European Commission for the development and integration of palliative care teams<sup>38</sup> and for joint clinics. Much education is by example – achieving difficult symptom control, dealing with difficult family issues or exploring patients’ goals. Hence clinical exchanges have been established with renal, oncology and haematology registrars in addition to senior hospital and community staff nurses.

### Direction

The model of care, a small team with a mix of specialist nurses and palliative medicine doctors, remains the standard approach in most UK hospitals.<sup>13,14</sup> Our own practice has changed throughout the period described in this paper. Initially it operated in an advisory capacity with consultation as necessary. There has been a significant increase in medical consultations, providing a

more active style of co-management in a general ward environment. Co-management has the potential to cause confusion regarding the responsibility for care,<sup>12</sup> but the balance of curative intent treatments and palliative treatments often drives who leads this collaborative approach. For those who require in-hospital care but predominately have symptom control needs, proactive and intense symptom management may be best provided under the direct responsibility of the hospital palliative care team. However, it is important to establish clearly defined responsibility.

This approach of focused and proactive symptom control, ethical discussion and psychosocial interventions may translate well to a dedicated ‘intensive supportive care unit’ (ISCU). Interventional pain techniques,<sup>39,40</sup> rapid titration of opioids<sup>40,41</sup> and invasive palliative procedures<sup>42</sup> could be provided within such a unit, with the clinical infrastructure of the acute setting remaining available (diagnostic, treatment and emergency care). Furthermore, patients undergoing active oncological treatments with major symptom issues may benefit from greater focus on supportive care between administrations of treatments.

Patients admitted into an ISCU may be discharged home or, if further care is required, referred to hospice or continuing care facilities. It would be expected that such discharge planning would also be proactive.

Such a unit would be envisaged to improve education through cross-specialty involvement.<sup>22–25</sup> In this centre, trainees within oncology and palliative medicine already rotate between specialties. As palliative medicine becomes further involved in the care of patients with non-malignant disease, this could be extended to other specialties. Nursing secondment posts could be used to cross-fertilise skills and knowledge between palliative medicine sectors (hospital, hospice and community) and other specialties. Direct cross-specialty involvement would provide valuable educational and clinical experience and improve the awareness and management of supportive care needs within the hospital environment.

Hospital palliative medicine is a young, evolving component of palliative care. It operates within the changing acute setting alongside hospice and community palliative care. Research and service evaluation is growing within palliative care, and a dedicated supportive care unit would enhance the evaluation of palliative medicine interventions within the acute setting itself and in the interface from hospital to home or hospice.

## CONCLUSION

This paper describes an evolving service within a regional cancer centre and teaching hospital. The traditional model of consultative and advisory palliative care is successful for many patients, but if family, social

and emotional issues are to be addressed adequately, such teams need sufficient resources or care will become increasingly focused on the most obvious problem, usually pain. For a selected group of patients the balance between supportive care needs and disease-modifying treatments may be such that the lead specialty

should be specialist palliative care. A dedicated ISCU may provide specific and rapid interventions to treat symptoms, improve function and achieve patients' goals. It would also provide a vehicle to further research and education to raise the awareness and evidence base of hospital palliative medicine.

## REFERENCES

- Davis MP, Walsh D, LeGrand SB et al. End-of-life care: the death of palliative medicine? *J Palliat Med* 2002; 5(6):813–4.
- Earle CC, Neville BA, Landrum MB et al. Trends in the aggressiveness of cancer care near the end of life. *J Clin Oncol* 2004; 22(2):315–21.
- Edmonds P, Rogers A. 'If only someone had told me...' A review of the care of patients dying in hospital. *Clin Med* 2003; 3(2):149–52.
- SUPPORT principal investigators. A controlled trial to improve care for seriously ill hospitalised patients: The study to understand prognoses and preferences for outcomes and risks of treatments (SUPPORT). *JAMA* 1995; 274(20):1591–8. Erratum in: *JAMA* 1996; 275(16):1232.
- Rogers A, Karlens S, Addington-Hall J. 'All the services were excellent. It is when the human element comes in that things go wrong': dissatisfaction with hospital care in the last year of life. *J Adv Nurs* 2000; 31(4):768–74.
- Glare P, Virik K, Jones M et al. A systematic review of physicians' survival predictions in terminally ill cancer patients. *BMJ* 2003; 327:195–201.
- Vigano A, Dorgan M, Buckingham J et al. Survival prediction in terminal cancer patients: a systematic review of the medical literature. *Palliat Med* 2000; 14:363–74.
- Vigano A, Donaldson N, Higginson IJ et al. Quality of life and survival prediction in terminal cancer patients. A multicenter study. *Cancer* 2004; 101:1090–8.
- Maltoni M, Caraceni A, Brunelli C et al. Prognostic factors in advanced cancer patients: evidence-based clinical recommendations – a study by the steering committee of the European Association for Palliative Care. *J Clin Oncol* 2005; 23(25):6240–8.
- Matsuyama R, Reddy S, Smith TJ. Why do patients choose chemotherapy near the end of life? A review of the perspective of those facing death from cancer. *J Clin Oncol* 2006; 24(21):3490–6.
- Meyers FJ, Linder J, Beckett L et al. Simultaneous care: a model approach to the perceived conflict between investigational therapy and palliative care. *J Pain Symptom Manage* 2004; 28(6):548–56.
- Bates T, Clarke D, Hoy A et al. The St Thomas Hospital terminal care support team: a new concept of hospice care. *Lancet* 1981; 317:1201–3.
- Hospice and Palliative Care Directory*. London: United Kingdom and Ireland Hospice Information; 2007. Available from: <http://search.hospiceinformation.info/FrontPage.aspx>
- Hockley J. Specialist palliative care within the acute hospital setting. *Acta Oncol* 1999; 38(4):491–4.
- Higginson IJ, Goodwin DM, Finlay IG et al. Do hospital-based palliative teams improve care for patients or families at the end of life? *J Pain Symptom Manage* 2002; 23(2):96–106.
- Jack B, Hillier V, Williams A et al. Improving cancer patients' pain: the impact of the hospital specialist palliative care team. *Eur J Cancer Care* 2006; 15(5):476–80.
- O'Mahony S, Blank AE, Zallman L et al. The benefits of a hospital-based inpatient palliative care consultation service: preliminary outcome data. *J Palliat Med* 2005; 8:1033–109.
- Jack B, Hillier V, Williams A et al. Hospital-based palliative care teams improve the insight of cancer patients into their disease. *Palliat Med* 2004; 18(1):46–52.
- Hanson LC, Usher B, Spragens L et al. Clinical and economic impact of palliative care consultation. *J Pain Symptom Manage* 2008; 35(4):340–6.
- Gade G, Venohr I, Connor D et al. Impact of the palliative care team: a randomized control trial. *J Palliat Med* 2008; 11(2):180–90.
- Smith TJ, Coyne P, Cassel B et al. A high volume specialist palliative care unit and team may reduce in-hospital end-of-life care costs. *J Palliat Med* 2003; 6(5):699–705.
- Gomez-Batiste X, Porta-Sales J, Pascual A et al. Catalonia WHO Palliative Care Demonstration Project at 15 years (2005). *J Pain Symptom Manage* 2007; 33(5):584–90.
- Zhukovsky DS. A model of palliative care: the palliative medicine program of the Cleveland Clinic Foundation. *Support Care Cancer* 2000; 8:268–77.
- Von Gunten CF. Secondary and tertiary palliative care in US hospitals. *JAMA* 2002; 287(7):875–81.
- Zimmerman C, Seccareccia D, Clarke A et al. Bringing palliative care to a Canadian cancer centre: the palliative care program at Princess Margaret Hospital. *Support Care Cancer* 2006; 14:982–7.
- Elsayem A, Swint K, Fisch MJ et al. Palliative care inpatient service in a comprehensive cancer centre: clinical and financial outcomes. *Am Soc Clin Oncol* 2004; 22(10):2008–14.
- Mercadante S, Villari P, Ferrera P. A model of acute symptom control unit: pain relief and palliative care unit of La Maddalena Cancer Centre. *Support Care Cancer* 2003; 11:114–9.
- Anderson F, Downing GM, Hill J et al. Palliative performance scale (PPS): a new tool. *J Palliat Care* 1996; 12(1):5–11.
- Glare PA, Virik K. Validation of the palliative performance scale for inpatients admitted to a palliative care unit in Sydney, Australia. *J Pain Symptom Manage* 2002; 23:455–7.
- Lau F, Downing M, Lesperance M et al. Use of palliative performance scale in end-of-life. *J Palliat Med* 2006; 9(5):1066–75.
- Downing M, Lau F, Lesperance M et al. Meta-analysis of survival prediction with palliative performance scale. *J Palliat Care* 2007; 23(4):245–303.
- Olajide O, Hanson L, Usher B et al. Validation of the palliative performance scale in the acute tertiary care hospital setting. *J Palliat Med* 2007; 10(1):111–7.
- Evans C, McCarthy M. Prognostic uncertainty in terminal care: Can Karnofsky help? *Lancet* 1985; 325:1204–6.
- Bruera E, Kuehn N, Miller MJ et al. The Edmonton Symptom Assessment System (ESAS): A simple method of the assessment of palliative care patients. *J Palliat Care* 1991; 7:6–9.
- Rees E, Hardy J, Ling J et al. The use of the Edmonton Symptom Assessment System within a palliative care unit in the UK. *Palliat Med* 1998; 12:75–82.
- Dunlop R, Hockley JM. *Palliative care teams – the hospital–hospice interface*. 2nd ed. Oxford: Oxford University Press; 1998.
- Ahmedzai SH, Costa A, Blengini C et al. A new international framework for palliative care. *Eur J Cancer* 2004; 40(15):2192–200.
- European Commission. *Promoting the development and integration of palliative care mobile support teams in the hospital – research findings and recommendations*. Luxembourg: Office for Official Publications of the European Communities; 2003.
- Simpson KH. Interventional techniques for pain management in palliative care. *Medicine* 2008; 36(2):72–4.
- Walsh D, Rivera N, Davis M et al. Strategies for pain management: Cleveland Clinic Foundation guidelines for opioid dosing for cancer pain. *Supportive Cancer Care* 2004; 1(3):157–64.
- Soares L, Martins M, Uchoa R. Intravenous fentanyl for cancer pain: a 'fast titration' protocol for the emergency room. *J Pain Symptom Manage* 2003; 26(3):876–81.
- McNamara P. Paracetamol – an effective method of symptom control in the palliative care setting? *Palliat Med* 2000; 14(1):62–4.