

Original Article

Resource Consumption and Costs of Palliative Care Services in Spain: A Multicenter Prospective Study

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Abstract

Patients (n = 395) with terminal-stage cancer receiving attention from palliative care services (PCSs) were recruited over a period of 15 consecutive days from 171 participating PCS units. Resource consumption and costs were evaluated for 16 weeks of follow-up, and the findings were compared with a study conducted in 1992 so as to assess change over time. The most frequent health care interventions were homecare visits, hospital admissions, and patient-consultant phone calls. PCS provided 67% of all services and consultation interventions in 91% of patients. Compared with the historical data, there was a significant shift from the use of conventional hospital beds toward palliative care beds, a reduced hospital stay (25.5–19.2 days; P = 0.002), an increase in the death-at-home option (31%–42%), a lower use of hospital emergency rooms (52%–30.6%; P = 0.001), and an increase in programmed care. Compared to the previous resource consumption and expenditure study in 1992, the current PCS policy implies a cost saving of 61%, with greater efficiency and no compromise of patient care. J Pain Symptom Manage 2006;31:522–532. © 2006 U.S. Cancer Pain Relief Committee. Published by Elsevier Inc. All rights reserved.

Key Words

Palliative care, health resources, health care costs, efficiency

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Introduction

Spain has a publicly-financed National Health Service that includes specialized and community care providing complete health care coverage for a population in which cancer mortality is nearly 100,000 persons/year. In recent years, there has been a rapid increase in palliative care services (PCSs) in Spain, with 206 services having been established by the year 2000.¹ Currently, there is considerable

diversity in the range of PCSs. They include acute bed units in general hospitals, specialist cancer units, nursing homes, hospital support teams, and homecare support teams (either specific for cancer or mixed for geriatric patients) working within a district-based catchment area. Also, there are some district health care facilities offering comprehensive palliative care, either based in hospitals or in Social-Health Care Centers. These latter centers are, perhaps, unique in Spain, in that they are funded by governmental sources to provide specialist medical attention for the terminally ill within their catchment area. These patients are, usually, psycho-geriatric patients and cancer sufferers, or those requiring rehabilitation and long-term care. Of note, there is only one recognized independent hospice project in Spain.

The Spanish Ministry of Health, together with the different autonomous regional governments in the country, decided to establish the National Plan for Palliative Care (*Plan Nacional de Cuidados Paliativos*).² This National Plan takes responsibility for recommendations and basic principles with respect to planning and organization, and promotes the implementation of PCSs throughout the autonomous regions. More recently, the Spanish Society for Palliative Care (SECPAL, see Appendix) has prepared Guidelines for Quality in PSCs (*Guía de Calidad en Servicios de Cuidados Paliativos*),³ which clearly describe the structures, processes, and aspects necessary for improving the quality of the services. Despite general acceptance by the public, PCSs face the challenge of demonstrating efficiency, cost-effectiveness and customer satisfaction, particularly within the scenario of competition for limited public resources and national funding. Several studies have shown PCS efficiency⁴ and cost effectiveness,^{5,6} but there is still a strong need for more, and clearer, supportive evidence for this in our country.

Cost and cost-effectiveness studies suggest that the PCS is a highly efficient service compared with conventional services. This has been seen mainly as a dramatic reduction in the inappropriate use of acute hospital beds and hospital casualty rooms, together with the promotion of home-based care and alternative services. Also, the provision of palliative care beds has a lower unit cost compared with conventional medical beds.⁷⁻¹²

Based on this received wisdom, we designed a descriptive-observational, longitudinal, cohort study. The first aim was to describe the consumption of health care resources by patients with advanced cancer in their last months of life and receiving attention in PCSs in Spain. The resources included all types of services and interventions so as to quantify the mean cost per process of care at the hospital level. The second aim was to evaluate the efficiency of these services by comparing the results with those obtained in a previous study conducted in 1992.¹³ Randomization in our study was considered unethical because of the wide availability of PCSs currently available. With these data, we sought to identify areas for improvement within the PCSs, and to monitor outcomes based on adherence to the National Plan recommendations.

This study was financed, in part, by the Spanish Ministry of Health and constitutes one of the measures-of-outcomes of the National Plan.

Methods

The study was designed as a descriptive-observational, prospective, longitudinal, multicenter study.

Teams

All PCSs in the Spanish Palliative Care Directory¹ were asked to participate and, if the team was newly inaugurated and not as yet in the Directory of the year 2000 but were known by the regional coordinator, they were invited to participate, regardless.

Patients

Patients were recruited when they solicited medical attention, for the first time in their illness, from any PCS. Patients were enrolled consecutively. The period of recruitment was 15 successive days starting on November 15, 2001. Each patient was scheduled for follow-up for a period of 16 weeks.

Criteria for inclusion were diagnosis of advanced terminal cancer, first visit to any PCS during the course of illness, easy contact (mainly by telephone) with patients and/or carers, and informed consent by patients and primary carers to participate in the study.

Excluded were noncancer patients, those already receiving attention at another PCS, patients or carers with cognitive impairment or active psychiatric disorders, difficult or impossible follow-up for any reason (e.g., lack of telephone), and finally, patients or carers who opted not to participate. Once the patient was enrolled, there followed a structured telephone interview¹⁴ with the primary carer or with the patient every week until the death of the patient or the 16th week of follow-up had been concluded. The professionals conducting the interviews were nurses, social workers, and physicians not directly involved in the care of any specific patient. If any need or requirement for care was identified, access and contact with the carers directly involved with the patient was encouraged.

The study was conducted in accordance with the principals of Good Clinical Practice and within the guidelines of the Declaration of Helsinki. Identity of patients was strictly confidential and guaranteed by alpha-numeric coding. Written informed consent was a prerequisite for recruitment and was obtained from the patients or relatives/carers. The study was approved by the ethical committee of each PCS participating in the study.

Statistical Analyses

The statistical analyses were performed using the Statistical Package Social Science (SPSS version 11.0, Chicago, Illinois) program according to a validated statistical analysis plan. Prior to analysis of the data, clinical criteria and definitions or classifications that were required for descriptions, comparative analysis, and interpretation of the observed results were established. Counting of patients and percentages were used to describe the qualitative variables. Quantitative variables were represented by the mean, median, standard deviation, and range. Statistical dependence between two categorical variables was analyzed using the Chi-squared test except when more than 20% of the cells contained a frequency <5, in which case the Fisher exact test was used. The Mann-Whitney and the Kruskal-Wallis tests were used to compare continuous data (or ordinal data) between different levels of a factor (independent groups). The Wilcoxon and the Friedman tests were used to compare related continuous (or ordinal)

variables. Survival analyses were done with the Kaplan-Meier procedure. The Log Rank test was calculated to compare stratified curves. The alpha value was established as 0.05 for all the statistic tests.

Cost Analysis

The estimation of the cost/day for an inpatient unit was based on the data available from the Spanish Ministry of Health for the year 2001. The mean cost per acute bed in a conventional hospital was estimated as 272 €/day in Spain and 240 €/day in the Autonomous Region of Catalonia.¹⁵ The daily cost for a specialist palliative care bed has been estimated by us at the Catalonian Institute of Oncology¹⁶ as being 132.5 €/day and as 78.3 €/day in the study by Roca¹⁷ for a unit in a Social-Health Care Center. In this present report, we intended that the audit would establish the total health care costs per process and per patient as well as the cost per week and per patient.

The hospital cost data are more easily available since they are more systematically maintained. An assumption was that such costs form only one part of the multiple dimensions of the costs of palliative care.^{18,19} Nonhospital costs are more difficult to obtain, so only an overall estimation can be considered based on data from previous local reports. These costs include cost of attendance in casualty units together with homecare and outpatient clinic visits based on data available from Serra-Prat et al.⁸ Phone-call costs were estimated according to tariffs of the national telephone company (*Telefónica*) at the rate of 0.068 €/minutes and using an average of 10 minutes/phone call.

Results

Services

In addition to the 206 PCSs in the Directory, 8 new teams joined the study (5 homecare teams, 1 palliative care unit, and 2 hospital support teams). A total of 171 (80%) of the 214 PCS teams agreed to participate. Of these, 90 of 111 (81%) were Homecare Support Teams, 48 of 61 (80%) were Palliative Care Units, and 33 of 42 (79%) were Hospital Support Teams. There were no significant

differences in the participating teams when comparing the characteristics of the type of participating team. Of the 18 Autonomous Regions in Spain, 14 (78%) provided teams for this study. The distribution by region is shown in Table 1.

Patients

A total number of 400 patients were included, of whom 395 (99%) were assessable for basic outcomes analysis (survival, baseline data) and 372 (93%) were assessable for analysis of resource consumption. The median performance status on the Karnofsky scale was 50%, and 90% of the patients had advanced regional or disseminated disease. Main characteristics of the patients and the recruitment teams are summarized in Table 2. The single most important reason the patient's first visit to the PCS was to solicit symptom control (80% of patients). Other reasons were much less frequent: emotional support (19%), family support (10%), and reassurance/help with impending death (7%). The great majority (81%) of demands for specialized palliative care were for hospital services.

The mean time-of-follow up was 6.9 ± 5.5 weeks and death was the cause of loss to

Table 1
Participating Teams and Regional Location

Region	Total No. (Year 2000)	% Participating	%	%
Andalucía	25	12.1	25	14.6
Aragón	7	3.3	4	2.3
Asturias	3	1.5	0	0
Balears	2	1.0	4 ^a	2.3
Canarias	3	1.5	5 ^a	2.9
Cantabria	3	1.5	0	0
Castilla-La Mancha	5	2.4	2	1.2
Castilla-León	14	6.8	9	5.3
Catalunya	93	45.2	83	48.5
Ceuta/Melilla	0	0	1 ^a	0.6
Euskadi	9	4.4	10 ^a	5.8
Extremadura	1	0.5	2 ^a	1.2
Galicia	8	3.8	7	4.1
La Rioja	1	0.5	0	0
Madrid	20	9.7	12	7.1
Murcia	5	2.4	1	0.6
Navarra	2	1.0	0	0
Valencia	5	2.4	6 ^a	3.5
Total PC home	106	51.4	90	52.6
Total PC embedded facilities	100	48.6	81	47.4
Total	206	100	171	100

PC Home = Home Palliative Care.

^aTeams included but not listed in the Spanish Directory 2000.

Table 2
Patient Characteristics and Team Recruitment

Male/female <i>n</i> (%)	247(62.5)/148 (37.5)	
Mean age Male/female	68.6/70.2	<i>P</i> = 0.236
	years	
Mean age (overall)	69.2 ± 12.4	
	years	
Neoplasm (primary)	No. of patients	%
Gastrointestinal tract	137	34.7
Lung and pleura	68	17.3
Breast and gynecologic	44	10.9
Urologic	42	10.6
Unknown origin	33	8.5
Head and neck	28	7.0
Other	43	11.0
Total	395	100
Recruitment team type	No. of patients	%
Home support team	195	49.4
Hospital support team	82	20.8
Palliative care unit	66	16.7
Outpatient clinic	52	13.1
Total	395	100.0

follow-up in 88% of the cases. The overall median survival time, dating from the first PCS visit, was 6 weeks (mean: 7.8 weeks). As shown in Fig. 1, a quarter of all patients survived more than 12 weeks. Also, as shown in Fig. 1, the median survival was significantly different ($P < 0.001$) when survival data were segregated with respect to site at which the patient first received clinical attention. The median survival was 11 weeks for patients first seen in the outpatient clinic, 7 weeks for attention from the Home Support Teams, 5 from Hospital Support Teams, and 3 from Palliative Care Units. Only 36 (9%) patients were able to complete the 16-week period of follow-up envisaged by our study protocol.

With respect to the place of death, 42% of patients died at home, 41% in a conventional hospital ward, and 17% in a palliative care inpatient center.

Consumption of Health Care Resources

Resource consumption was assessable in 372 patients, in whom 4927 health care interventions (HCIs) were recorded. The distribution is shown in Table 3. Costs for the last 6 weeks are shown in Table 4. The mean HCI per patient was 13.3. The mean number of interventions per patient per week was 2.1 and the median was 2.1 (range 1.5–2.5). During the study, there were no significant differences in

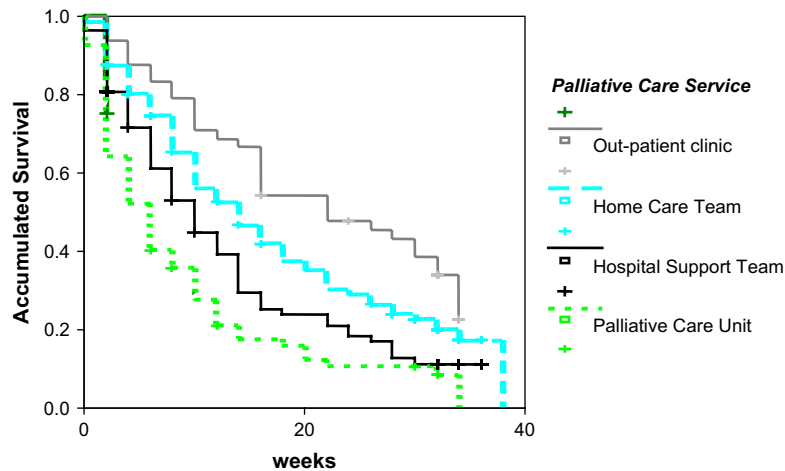


Fig. 1. Patient survival segregated with type of service involved in the initial contact with patient. Log Rank test $P < 0.001$.

the use of resources on a week-by-week basis, i.e., no statistical differences were found between weekly resource consumption over the study period ($P > 0.05$).

The numbers and the types of HCIs performed during the study period, as well as the numbers of patients involved, are summarized in Table 3. Overall, 67% of the HCIs were performed by specialist palliative care teams and 77% of them were scheduled in advance.

Within the hospital admissions (see Table 3), 30.5% of the patients admitted in units other than a palliative care unit were, nevertheless, attended by a palliative care support team as well. In the course of hospitalization, 84% of the patients died. The overall median length of stay was 11 days, with mean of 19.9 days (range 1–119 days). Median length of

stay for patients attended to in acute hospitals was 19.2 days, with 10.7 for patients in palliative care units in acute hospitals, and 29.8 days for patients in palliative care units in health care centers. The mean number of admissions per patient was 3.0. The main reasons for seeking assistance from the Casualty Department were symptom control (69%) and terminal stage disease (13%).

Approximately 98% of patients used the telephone to report on their condition, or to get information or support. With an average of 3.5 calls/patient, this gives an estimated cost of 23.6€/patient/6 weeks. This cost approximates 1% of all expenditures.

Historical Comparison

As a second part of our study, we compared our data with those from a population-based study conducted in 1992, the *Morir de Cancer* (Dying from Cancer) study¹³ (Table 4, Figs. 2 and 3). This study was chosen because at the time of the 1992 study, the PCS system had been in its infancy in Spain and had been implemented mainly in Catalonia. Hence, since Catalonia has a similar health service organization as the rest of Spain, it is the only Spanish study for valid comparison. The study was retrospective, and information was collected from the surviving relatives of 388 patients who had died from cancer in four different districts of Catalonia. It was found that 72% of patients were admitted to hospital and had a mean length-of-stay (for 4 weeks of

Table 3
Number of Patients and HCIs Received

HCIs	No. of HCIs	%	No. of Patients	%
Home visit	1659	33.7	236	63.4
Hospital admission	703	14.2	215	57.8
Palliative Care Units	489	69.5	—	—
Oncology ward	77	11	—	—
Other services	137	19.5	—	—
Visit GP clinic	675	13.7	173	46.5
Scheduled phone call	660	13.4	175	47
Nonscheduled phone call	644	13.1	192	51.6
PC outpatient clinic	419	8.5	110	29.8
Casualty room	167	3.4	114	30.6
Total	4927	100		

Table 4
Cost per 100 Patients Cared for in 1992^a and 2001 for the Last 6 Weeks of Life

	Cost/day (€)	1992 ^a				2001			
		n	Mean Stay (days)	No. of Stays	Overall Cost (€)	n	Mean Stay (days)	No. of Stays	Overall Cost (€)
Hospitalizations		72				57.8	19.9		
Hospital; acute bed	272.0	72	25.5	1836	499,392.0	19.3	19.2	370.5	100,776.0
PC bed in acute hospital	132.5	0	0	0	—	27.0	10.7	288.9	38,279.2
PCS bed	78.3	0	0	0	—	11.6	29.8	345.7	27,068.3
Emergency	64.8 ^b	52	1.2 ^c	62.4	4,043.5	30.6	1.5 ^c	45.9	2,974.3
Total hospitalization cost					503,435.5				169,097.8
Homecare	37.5 ^b	28	0.8 ^c	22.4	840.0	63.4	7.0 ^c	443.8	16,642.5
PC outpatient clinic	35.8 ^b	0	0	0	—	29.8	3.8 ^c	113.2	4,052.6
GP clinic	35.8 ^b	87	0.8 ^c	69.6	2,491.7	46.5	3.9 ^c	181.3	6,490.5
Total extra-hospital cost					3,331.7				27,185.6
Total cost (overall)					506,767.2				196,283.4
Cost/patient (rounded)					5,068				1,963

^aMorir de Cáncer study.

^bCost per consultation visit.

^cMean number of consultation visits.

follow-up) of 17 days. The deaths had occurred mainly (69%) in conventional hospital wards. The great majority of homecare visits were conducted under “crisis” conditions rather than on scheduled visits and, as such, 52% of the patients accessed the Casualty Department of the local hospital.

In contrast to the historical study,¹³ there were significantly fewer hospital admissions in the present study (72% vs. 57.8%; $P < 0.001$). After adjustments for a 6-week period, the mean hospital stay per patient per process

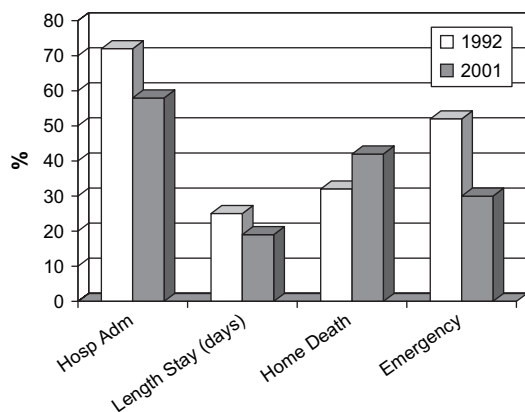


Fig. 2. Comparison of consumption of resources: 1992–2001. Hosp. Adm. = percentage of hospital admissions ($P < 0.0001$). Length Stay = mean of duration of hospitalization in days ($P = 0.0022$). Emergency = percentage of patients attending emergency services/casualty rooms ($P = 0.001$). Home Death = percentage of patients choosing the dying-at-home option (NS, not significant).

was 25.5 days in the previous study and 19.9 days in the present study ($P = 0.002$). The current mean and median length-of-stay were significantly lower than the previous study; this reduction was evidence of the increasing efficiency of the PCS.^{20,21} The resolution of the problem of overuse of hospital emergency wards is one of the principal, and recurrent, topics in the care for patients with advanced (terminal) cancer. Our study demonstrated a substantial reduction in the use of this resource: 52% in the current vs. 30.6% in the previous study ($P < 0.001$).

In the *Morir de Cáncer* study, there were 388 patients, of whom 72% had been admitted to hospital. The adjusted mean length of stay was 25.5 days, and the total number of

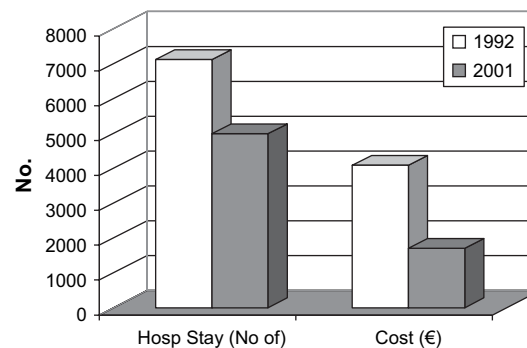


Fig. 3. Comparison of number of hospitalizations and cost: 1992–2001. Hosp. Stay = number of hospitalizations: 7114 vs. 4085. Cost = cost in € per process: 5034 vs. 1690.

adjusted hospital stays was 7114. It is of note that the admissions were, largely, to oncology or surgical wards. At the present costs of these facilities, the cost per patient would have been 4987 €.

In our present study, there were 215 patients admitted to hospital. The overall mean length-of-stay in embedded facilities was 19.9 days, and the total number of stays was 4085. Of note is that there was a shift in the place of admission: 70% of cases being cared for in specific palliative care beds, 30% in health care centers, and 70% in hospital-based palliative-care beds. Hence, in the present study, the total cost per patient or process was 1963 euros. This implies an estimated saving for the hospital of 5068 €/patient.

Discussion

This multicenter, prospective, observational study evaluated the consumption of resources by patients with terminal-stage cancer attended to by specialist health care professionals in nationwide PCSs in Spain. The sample of participating centers accurately represents the real situation of palliative care in Spain because the teams that participated in the study represent 80% of the total number of PCS units registered in our country. The PCSs registered in the Directory that chose not to participate were in the autonomous regions of Asturias (3 teams), Cantabria (3 teams), La Rioja (1 team), and Navarra (2 teams). The reasons indicated for nonparticipation were pressure of work and/or, being new, still in the process of resolving organizational difficulties. However, the analysis of differences, or specific aspects between regions, was not an aim of the present study.

With respect to patient sampling, there could have been a bias against those who lack a fixed-line telephone. However, in our country (as in most other developed countries), there is almost always a mobile telephone available for one or another member of the family to be contacted in case of medical or social need. Also, the consecutive method of sampling minimizes this bias.

The Karnofsky index reveals the advanced nature of the illness in those patients seeking medical attention; the vast majority of patients had clinical evidence of disseminated or loco-

regionally advanced disease. As such, sampling of services and patients can be considered globally representative. Each team enrolled an average of 2.3 patients, which could seem a low recruitment ratio. However, since the PCS is a pan-Iberian network, the number of "treatment naïve" patients per individual PCS team would not be high. The median survival was 6 weeks (mean: 7.8), with 25% of the patients surviving for >12 weeks. This result is similar to that found in other series, especially in the context of the Mediterranean countries.^{22,23}

The significant difference in survival with respect to the site of initial recruitment was of considerable interest because it may help define the relationship between the organization and distribution of resources, the types of patients, and measurable outcomes.²⁴ Hospital-based services with active outpatient clinics may recruit patients earlier, while those having only an inpatient unit or whose work focus is in the community would tend to be called upon in the later stages of the disease. Hence, introducing more outpatient clinics or day-care hospitals could be a good recommendation for services seeking earlier intervention together with a more flexible approach in the care of patients with advanced cancer. Our findings regarding homecare teams were similar to other published studies,²⁵ and probably reflect the difficulties involved in modifying health care procedures and practices in isolated teams working exclusively in the community. Overall, intervention by palliative care teams in Spain, is still based too much on the later stages of disease, although the tendency toward earlier involvement is increasing, especially in relation to acute-bed hospitals with outpatient clinics and day-care facilities, and particularly when oncology services are readily accessible.¹⁶

One finding of particular interest in our study is the pattern of referral and the place-of-origin of the request for medical attention. The main reason for patient referral to a specialized palliative care team for hospital-based services is, usually, symptom control.^{26,27} This could reflect the standard cycle of patients being diagnosed and treated in hospitals, where the PCS is directly identified with experts in symptom control at the expense of other needs of the patient.

With respect to the consumption of resources, the number of activities per week in our study sample was consistent with a high-need pattern of care. This number could be even higher if we consider that all hospital admissions were registered as a single episode. The mean number of interventions per patient per week of 2.1 remained relatively constant over the course of illness, probably for the same reasons, i.e., most patients with complex stage of the disease were already admitted to hospitals or specialist units, particularly over the last week of life.²⁶

Homecare visits were the most frequent interventions, and had been solicited by two-thirds of patients at any one stage of their illness. This could be related to the high emphasis placed on homecare teams in our country, which, in our cultural context, works very well in combination with the active and devoted support by family members. Besides homecare visits, the telephone plays a very common, and distinctive, role. It is used by almost all patients, and links between the patient's home and the specialist teams are usually scheduled and contact is maintained. This was a frequently used resource in our study, probably because the telephone is seen as a major source of support for patients and families. Clinical advice and emotional support requires good training and experience, and the telephone is a very heavily used support mechanism. Unfortunately, the use of this resource is seldom recorded and is rarely taken into account when calculating palliative care expenditure, and when soliciting funding.

Comparison of results between different countries with diverse cultural contexts and health care systems is difficult, and may even be inappropriate. For this reason, we selected several local experiences for analysis. In Spain, there have been several descriptive studies that have identified patterns in the use of resources, especially of hospital admissions for cancer, chronic pain, and geriatric patients in terminal stages of life. A very early study conducted in 1984²⁸ included 44 patients in a homecare program. The study showed that, apart from a satisfactory relief from pain, there was a significant shift toward the preference of death-at-home compared to the previous population-based registry (from 31% to 76%) and a low need for hospital admission (32%).

In another study performed in Majorca in 2000^{29,30} and in which palliative care had been implemented in only one center, the data on 200 patients indicated that 75% of the deaths occurred in hospital. In a more recent study⁸ performed in Mataró (Barcelona) comparing palliative homecare with conventional care, the data indicated significant decrease in hospital stay, in hospital emergency services consumption, in the probability of dying in hospital, and in overall cost of patient care. Other studies conducted in geriatric patient care³¹ and patients with advanced respiratory disorders³² show the same cost-effectiveness patterns in the use of resources.

Other interesting findings in our study, a detailed analysis of which is beyond the remit of this article, were the low occupancy-rate of casualty room facilities. The central role of the palliative care teams in the care and follow-up of the patient and the active involvement of nonhospital primary care centers with their resident oncologists and other specialists, could explain the significant increase in the preference for the death-at-home option rather than the in-hospital option. The change of pattern from unplanned care based on hospital emergency units toward properly-scheduled care induces a striking qualitative change in patients with high needs and demands. The place of death as an "outcome" is difficult to evaluate because of the differences in geographical distributions, resource allocation,^{33,34} social context,³⁵ and patient preferences.³⁶

Cost is considered one of the most relevant aspects of palliative care provision.³⁷⁻⁴⁰ This present study highlights radical changes in the use of hospital resources. Due mainly to a combination of reducing the mean length-of-stay and a change in the type of beds used from the "conventional acute" to the "palliative care" beds in hospitals and other sites such as Social-Health Care Centers, these changes have resulted in a substantial reduction of costs to the National Health Service of approximately 61% for care of the patient in the last 6 weeks of life. In an environment of limited resources, this is of considerable importance. For example, in a region like Catalonia, in which 67% of patients with advanced or terminal-stage cancer are cared for by specialist PCSs,⁴¹ the estimated overall financial

saving for this concept alone could be around 33.5 million € per year. This, in turn, represents more than the total costs of the whole palliative care network in the region. Nevertheless, our evidence of the overall cost-efficiency of a palliative care network needs to be confirmed by other studies.

One of the main limitations of our study is the comparison with historical data obtained 11 years ago. As such, some of the costs can only be estimated indirectly. Since PCS had not been widely implemented at that time, there is a paucity of data with which to compare our current findings. We believe that it is reasonable to hypothesize that had the services not been in place, the patients would have been obliged to use conventional services of the classical hospital- and emergency-based pattern. Accordingly, even though our results are estimations, they could be regarded as internally consistent and robust.

The present study represents the first comprehensive attempt to evaluate PCS in Spain. The results should be of help in setting up targets for the standardization and comparison of services and outcomes. It would be of interest to apply detailed analyses to all types of services to establish their own standards. Further studies are needed to address the areas of clinical effectiveness and patient satisfaction with the system of palliative care as currently established in our country.

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Castilla-La Mancha: AECC, Ciudad Real.

Castilla-León: H. Prov, Avila; H. San Juan de Dios, Burgos; ESAD, Burgos; AECC-Ter, Sanidad y Bienestar Social, ESAD León; H. San Juan de Dios, León; H. Clínico U. Salamanca; H. Río Hortega.

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Appendix

Grupo de Evaluación-SECPAL (GE-SECPAL)

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