

## Impact of Combined Hospice Care on Terminal Cancer Patients

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### Abstract

**Background:** Many patients with advanced cancer will develop physical and psychological symptoms related to their disease. These symptoms are infrequently treated by conventional care. Palliative care programs have been developed to fill this gap in care. However, there are limited beds in hospice units. To allow more terminal cancer patients to receive care from a hospice team, a combined hospice care system was recently developed in Taiwan. This study is a report of our experiences with this system.

**Patients and Methods:** From January to December 2009, terminal cancer patients who accepted consultation from a hospice team for combined hospice care were enrolled in the study. Demographic data, clinical symptoms, referring department, type of cancer, and outcome were analyzed.

**Results:** A total of 354 terminal cancer patients in acute wards were referred to a hospice consulting team. The mean patient age was 61 years, and the proportion of males was 63.28%. After combined hospice care, there was a significant improvement in the sign rate of do-not-resuscitate (DNR) orders from 41.53% to 71.47% ( $p < 0.0001$ ), and awareness of disease prognosis from 46.05% to 57.69% ( $p = 0.0006$ ). Combined hospice care also enabled 64.21% of terminal cancer patients who were not transferred to hospice ward to receive combined care by a hospice consulting team while in acute wards, thus increasing the hospice utilization of terminal cancer patients. The major symptoms presented by the patients were pain (58%), dyspnea (52%), constipation (45%), and fatigue (23%).

**Conclusions:** Through the hospice consulting system, hospice combined care has a positive effect on the utilization of hospice care, rate of DNR signing and quality of end-of-life care for terminal cancer patients.

### Introduction

CANCER HAS been the leading cause of death worldwide for more than two decades.<sup>1</sup> Although improvements in cancer diagnosis and treatment mean that patients with cancer will live longer today than in the past, many patients with cancer are in the terminal stage when they are diagnosed. Many patients with advanced cancer will develop physical and psychological symptoms related to their disease, treatments, or comorbidities.<sup>2,3</sup> These symptoms, which can significantly impair the patient's quality of life and family dynamics, are infrequently treated in conventional care. Palliative care programs have been developed to fill this gap in care. In many cases, these patients will benefit from specialized palliative care because many hospital-based integrated palliative care programs for patients with terminal cancer have been shown to improve symptom management and quality of life for patients and their families.<sup>4</sup>

As stated by Earle et al.,<sup>5</sup> cardiopulmonary resuscitation (CPR), lack of hospice services during the last year of life, and dying in a hospital were some indicators of poor-quality end-of-life care for terminal cancer patients. In Taiwan, there were only 20 dedicated hospice units with 294 available beds.<sup>6</sup> Given the limited number of hospice beds and the limited time available to most patients, some patients may not be able to wait for hospice care. Furthermore, because of the cultural tradition in Taiwan, certain Taiwanese consider death a taboo subject and view hospice wards as places to wait for death. A hospice consulting system has recently been developed in Taiwan to benefit terminal cancer patients who are waiting for hospice care in acute wards or who are hesitant to be transferred to a hospice ward. This enables terminal cancer patients to receive combined care by a hospice consulting team while they are still in acute cancer wards. In addition to helping with pain and symptom management, other aims of care are improving the quality of end-of-life care for terminal cancer

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patients through this combined hospice care. This study describes the initial results of our experiences with this program.

## Methods

Terminal cancer patients who were admitted to a tertiary medical center located in southern Taiwan, from January to December 2009, and who accepted consultation from a hospice consultation system for combined hospice care in acute care wards were enrolled in the study. Questionnaire answers regarding demographics, symptoms and psychosocial needs, with a modified Chinese questionnaire similar to the Memorial Symptom Assessment Scale<sup>4</sup> were evaluated and recorded. Ethical approval was obtained from the Institutional Review Board of Kaohsiung Chang Gung Memorial Hospital.

When terminal cancer patients in acute care wards are referred by the primary cancer physician, the members of the hospice consultation team evaluate the patient's general condition, provide suggestions for symptom control, psychosocial and family support, and identify and communicate goals of care. This process includes a meeting between the hospice team, primary cancer physician, and patient and family members. The hospice consultation team also helps the patient with dispositional planning, which includes evaluating possibilities such as transfer to a hospice ward for hospice care, discharge with hospice home care or other facility care, or combined care with a primary cancer physician in an acute ward. The hospice consultation team consists of palliative care physicians who are in charge of the hospice ward, hospice-qualified nurses, social workers, and a chaplain. Statistical analyses were performed using statistical software SAS (SAS 9.2 for Windows, SAS Institute, Cary, NC). The proportion of differences were analyzed using  $\chi^2$  goodness-of-fit analysis. A *p* value of <0.05 was considered statistically significant.

## Results

From January to December 2009, 354 terminal cancer patients were referred to the hospice consulting team in acute

TABLE 1. CHARACTERISTICS OF PATIENTS IN COMBINED HOSPICE CARE

	Number (n = 354)	%
Age (years)	61	
Gender (M/F)	224/130	63.28/36.72
Mean days from consultation to termination of combined care	16.45	
Referring service:		
Hematology and Oncology	171	48.31
Gastroenterology and Hepatology	56	15.82
Pulmonology	35	9.89
Proctology	33	9.32
General surgery	12	3.39
Urology	11	3.11
Gynecology	10	2.82
Neurosurgery	7	1.98
General internal medicine	6	1.69
Neurology	3	0.85
Others	10	2.82

TABLE 2. PRIMARY CANCER

Cancer type	Number (n = 354)	%
Hepatoma	61	17.23
Lung, bronchus	54	15.25
Colorectal	47	13.28
Tongue, oropharynx	24	6.78
Breast	20	5.65
Renal, bladder	20	5.65
Stomach	18	5.08
Cervical, ovary	16	4.52
Pancreas	15	4.24
Esophagus	14	3.95
Biliary	13	3.67
Brain	7	1.98
Lymphoma	7	1.98
Nasopharynx	5	1.41
Others	33	9.32

care cancer wards. The mean patient age was 61 years, and the proportion of males was 63.28%. Approximately half of the terminal cancer patients (48.31%) were referred by the hematology and oncology department, followed by the gastroenterology department (15.82%), and the chest department (9.89%) (Table 1). The most common type of cancer was hepatoma (17.23%), followed by lung cancer (15.25%) and colorectal cancer (13.28%) (Table 2). After combined hospice care, improvement was observed in the do-not-resuscitate (DNR) sign rate from 41.53% to 71.47% (*p* < 0.0001), awareness of disease prognosis from 46.05% to 57.69% (*p* = 0.0006), and awareness of disease status or diagnosis from 71.75% to 76.63% (*p* = 0.549). After consultation, 64.21% of the patients remained in the acute care cancer ward and received combined hospice care by his/her physician and the hospice consultation team. Only 20.12% of the patients were transferred to the hospice ward for palliative care only, and 15.67% were discharged (2.96% went home with hospice home care, 2.12% went home without hospice home care, and 10.59% went elsewhere). The average length of stay in the acute cancer ward with combined care by a hospice care team was 16.45 days. Of those patients receiving combined hospice care, 26.04% died in the acute care ward, 21.30% were discharged in predying status to die at home according to their wishes, and 16.87% were discharged for follow-up at their primary cancer physician outpatient clinic. The major symptoms presented to the hospice consultation team were pain (58%), dyspnea (52%), constipation (45%), and fatigue (23%) (Table 3). The psychosocial problems identified by the hospice consultation team are shown in Table 4. The most common problem was emotional disturbance.

## Discussion

The overall rate of hospice utilization during the last year of life among terminal cancer patients in Taiwan is approximately 10%–17%.<sup>7,8</sup> This is much lower than statistics from other countries. The prevalence of hospice utilization has been reported as 65% in the United States,<sup>9</sup> 19% (inpatient hospice) to 68% (hospice home care) in the United Kingdom,<sup>10</sup> 65%–68% in Australia,<sup>11,12</sup> and 67% in Hong Kong.<sup>13</sup> In order to increase the utilization rate of hospice care in Taiwan, a new hospice consulting system with combined hospice care for cancer

TABLE 3. MOST COMMON PHYSICAL SYMPTOMS

Symptom	%
Pain	58
Dyspnea	52
Constipation	45
Fatigue	23
Confusion	6
Poor appetite	17
Oral ulcer	1
Flatulence	9
Ascites	6
Edema	8
Jaundice	3
Anorexia	14
Delirium	11
Insomnia	2
Predying status	4
Dysphagia	4
Itching	2
Fever	2

patients was recently propagated. This study showed that with combined hospice care, more than half of the patients who remained in acute wards could be served by the hospice consulting team and only approximately one quarter were transferred to the hospice ward for total hospice care. This indicates that combined hospice care will give more patients with cancer the opportunity to receive care from a hospice team while remaining under the treatment of their primary cancer physician. Combined hospice care is additionally beneficial because the philosophy of hospice care does not appear to be widely accepted by cancer patients, family members, and even health care professionals, especially in Taiwan.

A DNR order is an end-of-life issue that is discussed with terminal cancer patients and their families. This study showed that the quality of end-of-life care was improved after combined hospice care, including a lower cardiopulmonary resuscitation rate, because there was a significant increase in the DNR sign rate for terminal cancer patients after receiving consultation from the hospice consulting system with combined hospice care. However, some terminal cancer patients did not sign a DNR because of late referral, predying status during consultation, or a hesitance to accept the hospice care philosophy. Lin et al.<sup>14</sup> showed that terminal cancer patients who did not receive resuscitation cost significantly less than those who received resuscitation. Therefore, the hospice consulting team may have saved our facility unnecessary expenditure. Unfortunately, the design of our study did not allow us to quantitate these savings.

TABLE 4. MOST COMMON PSYCHOSOCIAL SYMPTOMS

Symptom	%
Emotional disturbance	53.29
Disease awareness and accommodation disturbance	34.29
Family support and accommodation problem	18.77
Lack of financial support	3.75
Unfinished business	3.25

Many studies have shown that hospice and palliative care are cost-effective programs that reduce hospital admissions and improve the quality of life of terminally ill patients.<sup>15-20</sup> The adequate utilization of hospice services requires timely referral of terminally ill patients to hospice programs.<sup>21,22</sup> Hospice care remains underutilized and patients are often referred to hospice very late in the course of their disease.<sup>21-26</sup> This may be because some terminal cancer patients want to continue cancer treatment options until they are too weak to tolerate them or because some patients think that hospice wards are places to go to die. In addition to combined hospice care, the hospice consulting team also offers psychosocial and emotional support, because the majority of terminal cancer patients, their family members, and the other caregivers will experience tremendous stress and psychosocial issues. For these reasons, the length of stay is expected to be shorter for patients receiving combined hospice care than for patients in the acute wards without hospice care. In this study, the average length of combined hospice care in acute cancer wards after consultation was 16.5 days, whereas a study by Ciemins et al.<sup>27</sup> showed that there was a reduction in average length of stay following a palliative care consultation from 24 days to 13 days. The average length of stay of terminal cancer patients varied according to cancer type, disease trajectory, and treatment options.<sup>28</sup> A short length of stay does not necessarily mean poor quality of care because patients may prefer to remain at home as long as possible. In fact, many patients express a wish to be at home during the last day of life.<sup>29</sup> As noted by Cobbs<sup>30</sup> and Grand et al.,<sup>31</sup> home-based end-of-life care and dying at home is a gold standard of quality care. Our study also showed that with the support of the combined hospice team offered by consulting system, 21.3% of the patients preferred to be discharged in predying status to die at home, and 2.96% were discharged and continued care by a hospice home team.

There is some indication that the primary cancer physicians in acute care wards do not adequately educate their patients about their illnesses. In an earlier study by Low et al.<sup>32</sup> only 69.7% of patients knew their diagnosis at the time of referral. In this study, only 71.75% knew their diagnosis at the time of referral. Doctors may be reluctant to reveal information to patients because of the families' wishes or feeling that they are inadequately trained to discuss such issues.<sup>33</sup> After consultation and combined hospice care, there were no significant changes the patient's knowledge of their diagnosis or awareness of their disease status ( $p=0.549$ ). This may be because most families prefer not to inform the patients of their diagnosis.

Many studies have reported the incidence of cancer-related symptoms in patients referred to palliative care.<sup>34-41</sup> According to two analyses of patients with terminal cancer in varied palliative care settings, fatigue was the most frequently reported symptom, and pain, depression, and anxiety were the most distressing symptoms.<sup>2,42</sup> In this study, the most frequently reported symptoms were pain (58%), dyspnea (52%), constipation (45%), and fatigue (23%). The incidence of presented symptoms could be related to the cancer type and site of metastasis. For example, a patient with lung cancer might have dyspnea as a main symptom, whereas a patient with bone metastasis might mainly complain of pain. In this study, lung cancer was the second most common cancer and bone metastasis was the most common site of metastasis (data

not shown). A limitation of this study is that the modified Chinese questionnaire similar to the Memorial Symptom Assessment Scale that we used for initial evaluation was not used for all symptom follow-up assessment; therefore, several important variables, especially change of symptom frequency and severity, were not assessed after the patients received palliative consultation and combined care. This limitation, and because more than half of the terminal cancer patients in the study were in a confused, or preying state or had died during the combined hospice care, made follow-up assessment of symptoms difficult.

Another limitation of this study design is that it did not allow us to document whether there is a reduction in the average length of stay in the acute ward without combined hospice care, because all of the terminal cancer patients in our study received combined hospice care in the acute care ward. In the future, a large prospective study is needed to compare these interventions and their impact on length of stay and potential cost saving between terminal cancer patients who received consultation with combined hospice care and those without combined hospice care.

Braiteh et al.<sup>43</sup> reported that palliative care consultation services in a comprehensive cancer center have a positive effect on patient care. We similarly report that palliative care consultation services with combined hospice care have improved the quality of end-of-life care for terminal cancer patients. Our findings should assist clinicians and administrators in the process of establishing palliative care consultation services with combined hospice care, especially for other developing countries that lack adequate hospice resource, or do not have inpatient hospice ward, so that more terminal cancer patients can get help from hospice care.

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### Author Disclosure Statement

No competing financial interests exist.

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