

Preliminary Report of a Palliative Care and Case Management Project in an Emergency Department for Chronically Ill Elderly Patients

Sean O' Mahony, Arthur Blank, Janice Simpson, Judy Persaud, Bernadette Huvane, Susan McAllen, Michelle Davitt, Marlene McHugh, Allen Hutcheson, Serife Karakas, Philip Higgins, and Peter Selwyn

ABSTRACT *The Palliative Care Service at Montefiore Medical Center (MMC) established a pilot project in the emergency department (ED) to identify chronically ill older adults in need of palliative care, homecare, and hospice services and to link such patients with these services. Two advance practice nurses conducted consultations on elderly patients who were found to have one or more "palliative care triggers" on initial screening. A standardized medical record abstraction form was developed. Service utilization and survival were evaluated using the Clinical Information Systems of MMC. Activity of daily living items were developed from the Outcome and Assessment Information Set and the Palliative Care Performance Scale (PPS). Risk factors for hospitalization and use of the ED were taken from the SIGNET model risk screening tool. Physical and emotional symptoms were evaluated using the 28-item Memorial Symptom Assessment Scale short form. Preliminary outcomes and characteristics are presented for 291 patients who completed the intake needs assessment questionnaire. Almost one third (30.9%) of the study cohort died during the project period. Most of the deaths occurred beyond the medical center (7.7% died in the medical center and 23.3% outside the medical center). Thirty percent of patients who died were enrolled on a hospice. Survival time was predicted by the presence of dyspnea, clinician prediction of death on the current hospitalization, psychosocial distress, and PPS scores. Chronically ill patients visiting an urban community ED had complex medical and psychosocial problems with limited support systems and homecare services. Significant proportions of such patients can be expected to have limited likelihood of survival. The presence of palliative homecare and hospice outreach services in the ED in urban community hospitals may provide an effective strategy for linkage of elderly patients at the end of life with otherwise underutilized services.*

KEYWORDS *Case management project, Chronically ill elderly patients, Palliative care.*

O' Mahony, Simpson, Huvane, Hutcheson, Karakas, McHugh, and Higgins are with the Palliative Care Service, Department of Family and Social Medicine, Montefiore Medical Center, Albert Einstein College of Medicine, Bronx, NY, USA; Blank and Selwyn are with the Department of Family and Social Medicine, Montefiore Medical Center, Albert Einstein College of Medicine, New York, NY, USA; Persaud is with the Memorial Sloan Kettering Cancer Center, New York, NY, USA; McAllen and Davitt are with the Emergency Department, Montefiore Medical Center, Albert Einstein College of Medicine, New York, NY, USA.

Correspondence: Sean O' Mahony, MB BCH BAO, Palliative Care Service, Department of Family and Social Medicine, Montefiore Medical Center, Albert Einstein College of Medicine, 3335 Steuben Avenue, Bronx, NY 10467, USA. (E-mail: somahony@montefiore.org)

INTRODUCTION

With the aging of the population and decrease in the length of hospitalizations, greater numbers of older adults are managing multiple chronic conditions in the community with increasing levels of disability.¹⁻³ They are particularly vulnerable because of strained caregiver systems, limited decisional capacity, and financial resources.

Older adults with chronic progressive illnesses often lack coordination of care. Their utilization of the healthcare system may be episodic and unplanned with the emergency department (ED) being an important source of medical care. The physician's evaluation in the ED, and acute care in general, is often time limited. Their evaluation focuses on individual diseases as opposed to a function-based assessment and often does not give a complete picture of the older patient. Older patients with progressive illnesses may be at greater risk of polypharmacy, falls, functional decline, and institutionalization as a consequence of uncoordinated care. Other consequences of chronic medical conditions such as pain and other untreated symptoms may also result in utilization of the ED.⁴⁻⁶

Case management is defined as a healthcare delivery process that provides quality healthcare, decreases fragmentation, enhances the client's quality of life, and contains costs. Case managers provide coordination of medical care and social services. Elders who receive case management services, including risk assessment and follow-up health education, experience fewer hospitalizations and have lower healthcare costs.⁷⁻¹³

For older adults who are within several months of death, hospice may offer an opportunity for coordination of care and homecare services that would otherwise be unavailable. This is because of decreased eligibility for homecare since the Balanced Budget Act. The Medicare hospice benefit, however, is markedly underutilized by low income and minority persons living in urban settings. Of patients who died at Montefiore Medical Center (MMC), for example, between 2000 and 2003, only 7.7% were identified in the Dartmouth Atlas project as having accessed hospice (www.Dartmouthatlas.org).

The Palliative Care Service at MMC in collaboration with Jacob Perlow Hospice, with support from the Fan Fox and Samuels Foundation, set up a pilot palliative care program for elderly patients visiting the ED in 2005. The primary aims of this project were to identify chronically ill older patients in need of palliative care, homecare, and hospice services and to increase linkage with these services. Secondary aims were twofold: achieve increased and earlier linkage with hospital-based palliative care resources and impact subsequent utilization of acute care and the ED by older adults who are at the end of life. The authors are unaware of any other reports of ED-based palliative care programs in the literature. This paper will present the preliminary analysis and results of this project.

Project Background

MMC is a 1,062 bed, urban community teaching hospital, in the Bronx. It serves predominantly low income and minority communities. Before this project, we conducted a needs assessment analysis including charge data obtained from the medical center's information systems for older adults who used the ED in 2002.

In 2002, there were 3,297 older patients who visited the ED with chronic illnesses. Of these, 79.5% were admitted to an acute care bed. The average length of hospital stay was 7.9 days. Chart reviews were conducted for 125 randomly selected adults older than 70, with the above diagnoses, who visited the ED in 2003. The

standardized chart abstraction form was developed by the palliative care team. Patient characteristics are presented in Table 1. Before the initiation of this project, only four patients per month were admitted to the Palliative Care Unit from the ED. The median time from hospital admission to palliative care consultation was 5 days, and the median time from consultation to discharge was 5 days.

Project Process

The project began in April 2005 and is ongoing. Two palliative care nurse practitioners (NPs) work in the ED from 11 A.M. to 9 P.M. Monday through Friday. The NPs round with ED physicians and nurses to identify patients that may be appropriate for palliative care services. If there is clinician agreement, the NP approaches the patient and, if accepted, conducts a clinical consultation.

A patient was considered eligible for palliative care services and inclusion in the study if they were older than 65, and had, in the NPs' judgment:

- a. Uncontrolled chronic pain
- b. Multiple organ failure that have been rejected for ICU admission
- c. Hospice eligible, requiring relief from symptoms
- d. A chronic incurable illness requiring access to community resources.

A palliative care trigger tool was then used by the NP to determine whether the patient was eligible for the study. The triggers are as follows, (1) "Does this patient have a progressive incurable illness that is in its later stages?" (2) "Do you know if the patient is expected to die on this hospital admission?" (3) "Would you be surprised if this patient were to die in the next year?" This was followed by a series of questions to screen for medical necessity for a palliative care evaluation including physical symptoms, psychosocial issues, and the need for advance care planning and palliative care. If the NP indicated a positive response to any of the triggers, the

TABLE 1 Baseline chart review patient characteristics

| Patient characteristics | |
|--|-----|
| Patient came from home | 67% |
| Family member's home | 10% |
| Long-term care facility | 23% |
| Average number of comorbidities | 4.6 |
| Patients who had presenting complaint for more than 24 h | 59% |
| Pain at presentation to the ED | 24% |
| Analgesic medications as a proportion of all medications in use at presentation to the ED | 9% |
| Patients with homecare services at presentation to the ED | 27% |
| Patients with hospice services at presentation to the ED | 2% |
| Mean number of medications in place | 6.4 |
| Patients with "do not resuscitate" directive | 24% |
| Patients who died within 12 months of presentation to the ED | 30% |
| Patients with impairment in at least one ADL | 69% |
| Percentage of patients who had not visited their primary care provider in preceding 3 months | 75% |
| Patients who visited the ED in the 12 months before index visit | 59% |
| Patients who visited the ED in the 12 months subsequent to index visit | 45% |

patient was considered eligible for the study, and a needs assessment questionnaire was completed by the NP with the patient or caregiver.

After completion of the needs assessment form, a consultation would be conducted.

The NPs provide educational in-services to the ED's staff every 3 to 4 months. In-services focus on indications for referral to palliative care, hospice eligibility guidelines, and how to access services.

The NP confirmed that linkage with homecare and hospice had occurred with follow-up of patients who were admitted to the medical center and phone calls to patients and their families once discharged from MMC.

METHODS

Needs Assessment Activities of daily living (ADLs) were evaluated with items from the Outcome and Assessment Information Set (OASIS).¹⁴ Functional status was also evaluated with the Palliative Care Performance Scale (PPS).¹⁵ A score of 60% or less on the domains of this scale correlates with a physician estimate of survival of 180 days or less. The scale is reported to function well as a predictor of prognosis in hospice and nursing home populations.¹⁵

Information on race, age, living arrangements, prior and post hospital admission, and use of the ED up to 180 days pre- and post-index visit to the ED and discharge disposition was accessed from MMC's Clinical Information Systems. We used a component of the information systems, called Clinical Looking Glass (CLG), which matches with the Social Security Death Index to capture patient deaths that occurred outside MMC.

Risk factors for hospitalization were taken from the SIGNET model risk screening tool.¹⁰ Evidence of supplemental insurance was evaluated with items from the Medical Expenditure Panel Survey.¹⁶ Physical and emotional symptoms were evaluated using the 28-item Memorial Symptom Assessment Scale short form.¹⁷ Patient quality of life was evaluated with the Missoula Vitas Quality of Life Index (MVQoLI) post-ED discharge.¹⁸ The project was reviewed and approved by the medical center's institutional review board and the quality improvement committee.

RESULTS

The NPs screened the charts of more than 950 patients between April 21, 2005 and June 5, 2006 of whom 670 patients met the study criteria (approximately 18% of the expected number of chronically ill older adults based on the pre-project analysis). The NPs conducted 894 consultations, and 224 of these patients were younger than 65 years. Descriptive characteristics and preliminary outcomes for 291 patients who completed the intake needs assessment questionnaire at the time of preparation of this report are presented.

Patient Characteristics

Patient characteristics are presented in Table 2; 52% lived in their own residence, 38.9% lived in a skilled nursing facility, and 7.9% lived in the home of a family member. Of the study cohort, 24.2% lived alone, and 33.7% of the cases had caregivers. Only 30% had supplemental insurance, 90.1% had Medicare as their primary insurance, and 3.7% had Medicaid.

TABLE 2 Baseline characteristics and service utilization of the ED palliative care/case management study patients from April 21, 2005 to May 5, 2006

| Characteristics | N=291 |
|--|----------|
| Gender: females | 64% |
| Age | |
| Mean | 79 years |
| Standard deviation | 8.4 |
| Race | |
| African American/black | 35.4% |
| Hispanic | 29.5% |
| Caucasian | 28.5% |
| Other/unknown | 6.6% |
| Leading diagnoses | |
| CHF | 38.1% |
| Dementia | 25.8% |
| Cancer | 20.9% |
| COPD | 26.0% |
| Myocardial infarction | 8.9% |
| Cerebrovascular disease | 8.3% |
| Chronic liver disease | 3.1% |
| Had advance directives in place at time of visit | 37% |
| Had home care services in place at time of visit | 28.5% |
| Patient uses five or more medications | 91% |
| Presence of cognitive impairment | 43% |
| Had history of falls | 45% |
| Mean number of symptoms | 5.9 |

For patients with paid caregivers, two thirds were receiving care three times a week or less. Most did not have advance directives in place: 30.7% had a health care proxy, 15.4% had a “Do Not Resuscitate” order, and 7% had a “Do Not Intubate” order at the time of presentation to the ED. Forty-seven percent visited the ED at least once in the preceding month or were hospitalized in the preceding 3 months, and 37.8% were identified in the clinical information systems as having had two or more visits to the ED in 9 months before the index visit.

The study patients had a mean of 3.8 illnesses recorded by the NP. Table 3 summarizes the most commonly reported symptoms: 45% percent reported themselves as “somewhat” to “very much” affected by pain in the week before the ED visit; 70% had PPS scores of 60% or less in regard to oral intake, and 78.8% had impaired ambulation; 71.3% of the sample was identified to have difficulty managing oral medications with the OASIS measure; and only 28.5% of patients had any homecare services.

Patient and Family Satisfaction with the Project

For patients who completed the MVQoL Scale ($n=20$) post-discharge from the ED, a clear majority, 69%, expressed satisfaction with control of their physical symptoms and ability to communicate with people close to them (64%). However, similar proportions of patients described a “loss of ability to do many of the things that I like” (60%) and a general sense of loss of life’s value (57%).

TABLE 3 Symptom burden: Memorial Symptom Assessment Scale of the ED palliative care/ case management study patients from April 21, 2005 to May 5, 2006

| Symptoms during the last week | No. with symptoms (N=291) | Percentage with Symptoms (%) | Of those with symptoms, percentage who reported "Somewhat" to "Very Much" (%) |
|-------------------------------|---------------------------|------------------------------|---|
| Lack of energy | 236 | 81.1 | 83.9 |
| Pain | 193 | 66.3 | 67.8 |
| Shortness of breath | 172 | 59.1 | 81.9 |
| Lack of appetite | 158 | 54.3 | 77.8 |
| Cough | 104 | 35.7 | 64.4 |
| Swelling of arms and legs | 104 | 35.7 | 67.3 |
| Difficulty concentrating | 98 | 33.6 | 49.9 |
| Constipation | 86 | 29.6 | 70.9 |
| Weight loss | 63 | 21.6 | 77.8 |
| Dry mouth | 62 | 21.3 | 46.8 |

Top ten symptoms were reported if $n \geq 30$ patients exhibited that specific symptom.

Data was extracted from the Memorial Symptom Assessment Scale from the Palliative Care's Needs Assessment Form

Service Utilization, Linkage with Palliative Care, Disposition, and Survival

The NPs referred 263 patients (from the 894 consultations) to homecare organizations and 287 patients to hospice organizations, of whom 83 received homecare and 91 received hospice services. Ninety percent of patients were admitted to the medical center. Of patients admitted to acute care, 41.9% were subsequently discharged to skilled nursing facilities, 24.2% to home with homecare, and 19.1% were discharged without homecare.

The project did not impact on rates of subsequent use of the ED. Twenty-four percent of patients returned within 1 month and 59% within 6 months of their initial contact with the NPs. There were small reductions in the length of hospital stay compared with the baseline pre-project chart review from 7.9 to 7 days.

Linkage with hospital-based palliative care services was enhanced. The median time from admission to MMC for a consultation by the palliative care service decreased to 3 days, and the median time from consultation to discharge decreased to 4 days. The number of admissions to the palliative care unit from the ED increased to between 10 and 15 patients per month during the project.

Almost one third (30.9%) died within a median of 50 days; 67.8% within 180 days. Most occurred beyond the medical center (7.7% died in MMC and 23.3% outside MMC, $p < 0.001$). Patients who were enrolled on hospice were more likely to die in their own home (skilled nursing facility or community) than in the hospital (fisher's exact test = 0.023).

Patients who were referred to hospice were also significantly more likely to expire than patients who were not referred to hospice ($p < 0.001$). Patients who were enrolled on homecare were more likely to reside with families or friends than to live alone ($p = 0.023$). Enrollment on hospice was not predicted by race, symptom burden, number of illnesses, living alone, or gender. Enrollment on homecare was associated with symptom burden (Spearman's correlation coefficient = 0.22, $p = 0.04$) but not the number of illnesses.

Acceptance onto homecare or hospice was not associated with insurance status. Enrollment on hospice was also not associated with decreased utilization of the ED at 3 or 9 months.

There were significant correlations between referral to ($r_s=0.49, p<0.001$) and enrollment on hospice ($r_s=0.48, p<0.000$) and reduced functioning (total PPS scores). Patients who enrolled on homecare had higher levels of functioning ($r_s=-0.25, p<0.001$). The prognostic estimates of the ED physicians and nurses and project NPs however were not correlated with acceptance on either homecare or hospice. Death during the project period was significantly correlated with reduced levels of ambulation ($r=0.32, p<0.001$), activity ($r=0.33, p<0.001$), intake ($r=0.36, p<0.001$), consciousness ($r=0.29, p<0.001$), and self-care ($r=0.32, p<0.001$). There were weak correlations between clinicians estimate of death on the current hospitalization ($r_s=0.14, p=0.014$) and weak inverse correlations with the 1-year estimate of survival ($r_s=-0.12, p=0.05$) and death during the study period. None of the items on the PPS or total scale scores were significantly correlated with death in less than 180 days. Items on the PPS measure correlated poorly with the mean number of illnesses and individual primary diagnoses with the exception of dementia. PPS scores were significantly correlated with the mean number of symptoms ($r=0.17, p=0.003$).

A stepwise linear regression model was created to identify predictors of survival time. Variables were entered at the 0.10 significance level. The variables included primary diagnoses, the palliative care trigger items, mean number of symptoms, PPS scores, and patient age. Clinician's agreement with the likelihood of death on that hospitalization ($\beta=-126.88, p=0.033$), dyspnea ($\beta=-90.02, p=0.002$), patient or family psychosocial issues ($\beta=-79.65, p=0.030$), and PPS scores ($\beta=-3.01, p=0.019$) were predictive of reduced survival time.

DISCUSSION

The underutilization of available resources before presentation to the ED such as skilled home care occurred in patients with marked impairment in ability to manage medications and reduced ADLs.

Almost one third of patients who died during the project period were referred to hospice. This represents a substantial increase when compared with the patients described in "Introduction" and "Project Background." Hospice and palliative care services may offer a number of benefits to such patients. Patients are served by a multidisciplinary team that is skilled in the management of symptoms that often accompany advanced disease.

This study identified differences in functional status with regard to referral and enrollment on hospice and homecare. Levels of functioning were lower for patients who were referred to hospice. Enrollment on hospice was not associated with race, gender, or insurance status contrary to the national experience described in the literature, which suggests that minority patients and persons with low income are less likely to access hospice.

The low rate of coverage of patients by Medicaid may account for the low rate of enrollment on hospice for patients who resided outside of nursing homes. In this study population, less than a third had any form of supplemental insurance; this is a potential barrier to the access of hospice benefit. For primarily low income patients discharged to the community, the time taken to qualify for Medicaid may also limit access to home health aide services. Typically, hospice will provide four home health

aide hours five times a week; patients who already have Medicaid in place may receive more home aide support through the hospice benefit.

The relative uncommon formalization of advance directives at the time of presentation to the ED is similar to reports in other predominantly minority and low income populations.^{19,20} The requirement for advance directives as a threshold for referral to hospice could also represent an additional obstacle to the uptake of the hospice benefit for such patients.

The PPS measure had utility in this heterogeneous population in predicting 1-year survival but not 6-month survival. This measure has been validated and primarily used in populations of patients with more limited short-term survival who are already enrolled on hospice. Its utility may have been enhanced if used longitudinally, as many of the patients reported on in this study can be expected to have had prolonged periods of stable but reduced functioning, such as dementia patients, whereas patients with congestive heart failure (CHF), chronic obstructive pulmonary disease (COPD), and chronic renal failure may have had entry-reentry patterns of functional decline with return to baseline levels of functioning after hospital discharge.²¹

The disparities in survival time between patients referred to hospice and those referred to homecare were reflective of the potential utility of incorporation of prognostic tools and physical performance measures into the assessment of older patients with chronic progressive illness who present to the ED in augmenting clinicians estimates of prognosis given the difficulties of precise prognostication in patients with multiple medical problems.

Although enrollment on hospice did not lessen utilization of the ED, it did increase the likelihood of patients dying in their place of residence, shorter length of hospital stay, and increased use of hospital-based palliative care services.

CONCLUSION

Significant proportions of older patients who visit the ED for complaints related to chronic illnesses can be expected to have limited likelihood of survival. Clinicians' assessment of limited prognosis and simple prognostic screening tools such as the PPS appear to have utility in older adults who use the ED. There was some evidence to suggest that the provision of palliative care and case management services in an urban ED was associated with increased patient and family satisfaction with symptom relief and increased uptake of hospital-based palliative care services and hospice. There was limited impact on utilization of acute care for the patients enrolled in this pilot study. Future reports will evaluate predictors of utilization of acute care.

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