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Education and Referral Criteria: Impact on Oncology Referrals to Palliative Care

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Abstract

Objective: To describe a quality improvement project involving education and referral criteria to influence oncology provider referrals to a palliative care service.

Methods: A single group post-test only quasi-experimental design was used to evaluate palliative care service (PCS) referrals following an intervention consisting of a didactic presentation, education outreach visits (EOV) to key providers, and referral criteria. Data on patient demographics, cancer types, consult volume, reasons for referral, pre-consult length of stay, overall hospital stay, and discharge disposition were collected pre-intervention, then post-intervention for 7.5 months and compared.

Setting and Sample: Attending oncologists, nurse practitioner, and house staff from the solid tumor division at a 700-bed urban teaching hospital participated in the project. Two geriatricians, a palliative care nurse practitioner, and rotating geriatric fellows staffed the PCS.

Results: The percentage of oncology referrals to PCS increased significantly following the intervention ($\chi^2 = 6.108$, $p = .013$). 24.9% (390) patients were referred in the 4.6 years pre-intervention and 31.5% (106) patients were referred during 7.5 months post-intervention. The proportion of consults for pain management was significantly greater post-intervention ($\chi^2 = 5.378$, $p = .02$), compared to pre-intervention, when most referrals were related to end-of-life issues. Lung, pancreatic, and colon were the most common cancer types at both periods, and there were no significant differences in patient demographics, pre-referral length of hospitalization or overall hospital days. There was a trend toward more patients being discharged alive following the intervention.

Conclusion: A quality improvement project supported the use of education and referral criteria to influence both the frequency and reasons for palliative care referral by oncology providers.

Introduction

THE SUSTAINABILITY of palliative care programs relies on identification of patients with unmet palliative care needs and education of providers regarding referrals.^{1,2} The Center to Advance Palliative Care (CAPC) recommends use of referral criteria in conjunction with education to influence health care professionals' practice and to promote referrals.³ Numerous researchers have advocated combining educational methods such as handouts, didactics, and education outreach visits (EOV).⁴⁻⁶ Hicks and DiStefano reported increased palliative care referrals using provider education and dissemination of referral criteria.⁷

As evidence emerges about the benefits of early palliative care involvement, palliative care programs need guidance on the most effective processes to educate referring providers and promote timely referrals.⁸⁻¹⁰

A review of referrals of hospitalized lung cancer patients to a palliative care consultation service (PCS) suggested that providers considered palliative care consultation at end-of-life and rarely for symptom management.¹¹ In this setting, referrals for end-of-life and hospice discussions occurred a median of six days following admission. Referred patients had higher hospital mortality (31% versus 7%) and hospice enrollment (41% versus 7%) than usual care patients. This report describes a quality improvement project conducted

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using evidence-based interventions to promote more timely and appropriate PCS referrals by oncology providers. The project's scope included all cancer types, because overall PCS consults were below national benchmarks.¹²

Methods

Setting and sample

The project was conducted in a 700-bed urban teaching hospital. Providers who received the study intervention were four attending oncologists, a nurse practitioner, fellows, and housestaff responsible for solid tumor admissions. Palliative care referrals were entered in an electronic ordering system for reasons including advance care planning, goals-of-care discussion, end-of-life issues, psychosocial distress, pain or symptom management, and delirium. PCS staff included a palliative care certified nurse practitioner, two geriatricians (one board certified in palliative medicine), and rotating geriatric fellows.

Design

A single-group, posttest-only, quasi-experimental design was used to compare pre- and post-intervention: number of referrals, patient demographics and cancer types, reasons for referrals, pre-referral length of hospital stay, overall hospital length of stay, and discharge disposition. Approval from the institutional review board was obtained.

The intervention consisted of a didactic presentation to inpatient oncology clinicians, a subsequent EOV to inpatient attending oncologists and the nurse practitioner, and distribution of pocket-sized cards listing referral criteria to all oncology providers (see Appendix A). Referral criteria were adapted from published tools by a board certified palliative medicine physician and the PCS nurse practitioner (PCSNP) that conducted all interventions.^{2,7}

The content for the didactic presentation included the evidence-based rationale for palliative care in oncology, reasons to consult PCS staff and training of PCS professionals, referral process, review of pre-intervention referral patterns at the hospital, and project aims. Subsequently, the PCSNP made individual EOVs to three of four key oncologists and the nurse practitioner.

Data collection

The data on demographics, diagnoses, source and reason for consultation, hospitalization and referral dates, and discharge disposition were exported from a secured Access (Microsoft Corp., 2003) database that included all PCS referrals. Data on referring providers were aggregated in this

dataset, precluding analysis of individual provider referral patterns. Pre-intervention data from 4.6 years of oncology referrals were analyzed and compared to post-intervention data collected for 7.5 months.

Statistical analysis

Analyses comparing pre- and post-intervention data were conducted using SPSS 15.0 (SPSS Inc., Chicago, IL), with $p < 0.05$ indicating significance. Differences in continuous variables such as age and length of stay were assessed using a two-tailed independent-samples *t*-test. Categorical variables such as gender, ethnicity, reasons for referral, and discharge disposition were analyzed using χ^2 .

Results

Oncology providers' referrals to the PCS increased from 24.9% (390) of all PCS referrals pre-intervention to 31.5% (106) post-intervention, resulting in a significant increase of oncology patients ($\chi^2 = 6.108, p = .013$). Major reasons for referral to PCS pre-intervention were end-of-life issues, goals-of-care discussion, and pain management (see Table 1).¹¹ Post-intervention, this order was reversed, with more referrals for pain management ($\chi^2 = 5.378, p = .020$).

Lung, pancreatic, and colon cancer were the most common diagnoses both pre- and post-intervention. Patients referred to PCS were predominantly female in both the pre- (54.1%) and post- (56.6%) intervention periods, and mean age of patients referred to PCS was similar (60.5 versus 58.8 years). There were no significant differences in race or ethnicity before or after the intervention. Caucasians comprised 59.2%-50.9% of the sample, and African Americans, 31.8-44.3%.

Similarly, length of hospitalization (LOH) and pre-referral length of stay (LOS) were not significantly different from pre- to post-intervention. LOH ranged from 1-78 days (median 10) pre-intervention and 1-58 days (median 9) post-intervention. LOS ranged from 0-63 days (median 4) pre-intervention and 0-50 (median 3).

Pre-intervention, 84.1% (328) of cancer patients were discharged alive and 15.9% (62) died in the hospital. Post-intervention, 91.3% (94) of patients left the hospital alive and 8.7% (9) died in the hospital. These findings were not statistically significant ($\chi^2 = 3.388, p = .066$). Referrals to hospice were made for 37.2% (145) of patients pre-intervention and 31.1% (32) of patients post-intervention ($\chi^2 = 1.322, p = .250$).

Discussion

The findings suggest that educational interventions caused a shift in oncology provider referral patterns. In addition to

TABLE 1. REASONS FOR PALLIATIVE CARE REFERRAL BY ONCOLOGY PROVIDERS PRE- AND POST-INTERVENTION

Reasons for referral	Pre-N=390	Post-N=106	% change	Chi-square	P value
End-of-life issues	172 (44.1%)	31 (29.2%)	-15.0%	7.610	.006
Goals-of-care discussion	147 (37.7%)	37 (34.9%)	-2.2%	0.277	.598
Pain management	136 (34.9%)	50 (47.2%)	+12.0%	5.378	.020
Advance care planning	94 (24.1%)	18 (17.0%)	-7.0%	2.418	.120
Symptom management	62 (15.9%)	21 (19.8%)	+4.0%	0.916	.338
Psychosocial distress	18 (4.6%)	8 (7.5%)	+2.9%	1.442	.230
Delirium	5 (1.3%)	4 (3.8%)	+2.7%	2.904	.088

referring more patients, the providers requested PCS involvement for pain management more often than for end-of-life care. When considered along with the trend towards more patients discharged alive, these findings imply fuller integration of palliative care to improve the experience of living with cancer. Further study is warranted to evaluate whether these observations demonstrate earlier involvement of palliative care. Alternatively, the results may be explained by providers' increased experience with the PCS, education among younger oncologists, and recent research showing benefits of early palliative care intervention.⁹

Others have documented the influence of education on referral patterns. For example, Hicks and DiStefano led a year long education initiative that included introduction of referral criteria and yielded increased palliative care referrals in the medical intensive care unit.¹⁴ The findings reported here also suggest that it may be feasible to influence practice patterns even when time and resources are limited.

Translational research is needed in palliative care in order to change practice.¹³ Quasi-experimental designs are practical when control of variables such as provider characteristics, admission rates of cancer patients, or fluctuations in case mix is impossible.¹⁵ Inherent weaknesses of this design were addressed by incorporating preliminary data about the dependent variables, limiting the provider group and patient population, and using multiple educational methods. In future studies a prospective cohort control group design is warranted to evaluate effects of provider education on referral patterns and clinical outcomes.

Limitations

The project had several limitations that may have biased its outcomes. The four-year interval between pre-and post-intervention data collection allowed time for effects of history. Lower consults volumes in the inception years of the PCS relative to the year just prior to the intervention may have lowered pre-intervention consult averages. Given the wide disparity in both the sample sizes and data collection periods, a longer post-intervention data collection period is warranted, with accrual of a sample large enough to achieve statistical power, permit control of discrepant sample characteristics, and perform relevant subgroup analyses. The project's focus on oncology providers was intended to limit differences in palliative care knowledge and experience compared to non-oncology referrers and to control new referral volume. However, the convenience sampling method introduced selection bias and limits the external validity of the findings.

The actual dose of EOVS required to effect a change in provider referrals is unknown. A single didactic session and EOVS may have limited the educational impact when compared to multiple interactions. As a quality improvement project, control over the consistency of the intervention was only partially achieved. While the content of both didactic and referral criteria components was controlled, uniformity of individual provider EOVS was not. The findings do not permit analysis of change in referral patterns by individual providers that might inform next steps in education or marketing efforts, as well as suggest other barriers to consultation.

This project's focus on education to overcome barriers to palliative care referral limits its potential to address provider attributes that are not amenable to education alone, such as

cultural beliefs or satisfaction with palliative care services. It also was not designed to assess the impact of PCS consultation on patient-sensitive outcomes. All of the aforementioned factors are essential to evaluate the impact of a palliative care program and therefore should be the focus of further research.^{1,13}

Conclusion

The primary aim of this quality improvement project was to introduce education and referral criteria to improve the utilization of a palliative care service by oncology providers. Despite a short post-intervention data collection period, results showed promising trends that can be used to inform further study in non-oncology provider and patient populations.

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Author Disclosure Statement

No competing financial interests exist.

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APPENDIX A. REFERRAL CRITERIA FOR PALLIATIVE CARE CONSULTATION^{2,7}

Disease factors

- Metastatic or locally advanced cancer progressing despite systemic treatments
- Brain metastases
- Progressive pleural/peritoneal or pericardial effusions
- Acute clinical deterioration within previous 24 hours, e.g., Rapid Response Team called or considering ICU transfer

Patient factors

- Marked decrease in functional status/Activities of Daily Living (ADLs) in last 60 days
- Unacceptable pain or other symptoms for >24 hours
- Uncontrolled psychosocial or spiritual issues for >24 hours
- Team/patient/family needs help with complex decision making and determination of goals of care

Hospitalization utilization factors

- Two or more hospitalizations for illness within three months
- Prolonged length of stay (>5 days) or transferred from ICU without evidence of progress
- Patient, family, or team uncertain about hospice eligibility