Published in final edited form as:

Palliat Med. 2009 October ; 23(7): 608–615. doi:10.1177/0269216309106315.

Physician Factors Associated with Outpatient Palliative Care Referral

Sangeeta C. Ahluwalia, PhD [Post-Doctoral Research Fellow]¹ and Terri R. Fried, MD [Professor]^{1,2}

¹Department of Medicine, Section on Geriatrics, Yale School of Medicine

²Clinical Epidemiology Research Center, VA Connecticut Healthcare System

Abstract

Background—Outpatient palliative care can provide significant benefits to seriously ill patients, but several barriers to appropriate referrals remain. No study has examined the physician factors associated with referral to outpatient palliative care.

Objective—To determine physician factors, with a focus on physician beliefs, associated with referral to palliative care.

Design—Cross-sectional study of 170 primary care physicians at Kaiser Permanente (KP), a large nonprofit health maintenance organization (HMO), using a self-administered questionnaire.

Results—Of the 145 respondents, 100 (70%) reported referring any patients to the palliative care program in the prior year, with a median of 3 referrals (interquartile range 2, 6). Factors associated with referral included working at KP between 10 and 20 years as compared to <10 years [Odds ratio [OR] 6.29 (95% confidence interval [CI] 1.38, 28.6)] and having personal experience with palliative care [OR 2.13 (95% CI 0.95, 4.976)]. None of the beliefs scales was associated with referral.

Conclusions—Physician characteristics other than their beliefs about palliative care played a significant role in determining referral. Palliative care programs should aim to increase their visibility in the outpatient setting to increase referrals by primary care physicians. Tools that help physicians identify seriously ill patients who could benefit from palliative care may also serve to increase appropriate referrals.

INTRODUCTION

Several gaps in end of life care have been documented in the literature, including poor symptom management,[1–3] inadequate communication around care preferences,[4–6] discordance between patients and clinicians about care goals,[7,8] and inadequate social and psychological support.[9,10] Studies have shown palliative care to be effective at addressing these issues, with improvements in symptom distress,[11–13] increased patient and provider adherence to care plans,[14] reductions in unwanted therapies,[15,16] and higher patient/family satisfaction with end of life care.[13,17]

Palliative care has traditionally been offered in the hospice setting, which is restricted in its use to a 6-month patient life expectancy and discontinuation of curative care, and is often

Corresponding author: Sangeeta C. Ahluwalia, PhD, Yale University School of Medicine, Section of Geriatrics, 20 York Street, New Haven, CT 06510, Tel: (203) 688-7077 Fax: (203) 688-4209 sangeeta.ahluwalia@yale.edu.

AUTHOR DISCLOSURE STATEMENT: No competing financial interests exist.

only utilized in the last month prior to death.[18] This can be too little time for patients and families to derive the full benefit of the palliative care approach. On the other hand, providing palliative care in the outpatient clinic setting enables patients and families to access its services earlier in the disease course, and can be beneficial as complementary to, rather than exclusive of, usual curative care.[19,20] It facilitates greater communication between primary care physicians and patients/families and provides care continuity throughout the progression of illness. By identifying problems before they spiral into emergencies, outpatient palliative care can also help reduce the risk of unnecessary rehospitalizations and emergency visits.[21]

Research has shown that several barriers to timely access and appropriate utilization of outpatient palliative care exist.[22–24] Little is known about physician-level barriers to outpatient palliative care use, particularly around their role in providing access to palliative care through referrals. In one exploratory study that surveyed palliative care providers on perceived barriers to palliative care utilization, respondents rated physician reluctance to refer as the top barrier.[25] However, no study has identified the specific physician characteristics associated with outpatient palliative care referral. In addition, only one study to date has described the actual frequency of physician referrals to outpatient palliative care; however, this was in the context of a controlled trial rather than an observational study.[26] Thus, the purpose of this study is to 1) describe physician referral patterns to an outpatient palliative care program and 2) determine the role that physician characteristics, including their beliefs about palliative care, play in influencing palliative care referral.

METHODS

Setting and Participants

The study was conducted at two hospital-based medical centers within the Northern California Region of Kaiser Permanente (KP), the largest not-for-profit Health Maintenance Organization (HMO) in the United States. KP in Northern California is an integrated health care delivery system providing comprehensive medical care to a diverse population of approximately 3.2 million members at 17 hospital-based medical centers and 14 additional outpatient medical centers. Both of the study sites have established palliative care programs that accept both outpatient and inpatient referrals. While the programs do not utilize any formal referral criteria in the outpatient setting, their goal is to provide assistance with symptom management, advance care planning, care coordination and psychosocial and spiritual support. The study was approved by the Kaiser Permanente (KP) Northern California Institutional Review Board with a waiver of signed consent.

The target respondent population was all family practice and internal medicine physicians practicing at these two sites. Respondents were reached through regularly scheduled department meetings between September 2006 and February 2007. Of the 345 full-time physicians at these facilities, 170 physicians were present at these meetings.

Data Collection

Data were collected via a self-administered, 7-page, confidential survey instrument given to the 170 physicians present at the department meetings. Participation was voluntary. The completion rate was 85%, with a final sample of 145 completed surveys. The survey was developed based on existing literature on physician referral patterns, palliative care beliefs, and barriers to end of life care.[27–30] The survey elicited information on palliative care referral, physician demographics, and physician beliefs around their ability to deliver palliative care, the perceived benefits of palliative care, and the importance of practice autonomy.

Survey Measures

Referral—The dependent binary variable measured whether or not the respondent referred any of their patients to the outpatient palliative care program at their facility in the prior year. Two follow-up questions were included - the number of patients referred in the prior year, and among those who did not refer, the reasons for not referring patients to the program.

Physician socio-demographics—Physician variables included age, gender, race/ethnicity, religiosity, date M.D. was conferred, length of time at Kaiser Permanente and whether the respondent had any prior personal experience with palliative care (yes/no).

Patient Characteristics—To adjust for patient characteristics that may influence palliative care referral, two questions – number of patients in the respondent's panel with less than 1 year to live, and percentage of patients in the respondent's panel with 2 or more chronic conditions – were included. These questions were used as proxy measures of the burden of illness across the patient panel.

Beliefs—To measure physician beliefs, a 20-item scale was developed. Three primary constructs expected to be related to palliative care were included: beliefs about physician practice autonomy (“Autonomy”), beliefs about the benefits of palliative care (“Benefits”), and beliefs about physician ability to provide palliative care services on their own (“Ability”). The 4 items in the scale representing “Autonomy” were derived from a previously validated questionnaire on professional roles by Robert Hall.[31] No existing, validated scales were found that specifically measured the other 2 constructs – “Benefits” and “Ability”. Therefore, items were newly created for these constructs, based on existing provider surveys on end of life care practices.[27,28]

A factor analysis was conducted on these new items to identify the sets that measured the two hypothesized constructs, and a Cronbach's alpha was calculated to determine the reliability of each set. The results showed the loading of 4 items onto the “Benefits” subscale ($\alpha = 0.81$) and 6 items onto the “Ability” subscale ($\alpha = 0.67$). Two remaining items loaded only with each other, and, on re-examination, seemed to hold a greater similarity to items from Hall's scale measuring “Autonomy”. To avoid a small subscale and to strengthen the reliability of the “Autonomy” subscale, these two items were combined with the “Autonomy” subscale. A second factor analysis confirmed the common loading of these 6 items ($\alpha = 0.65$) (Table 1).

Each item was answered on a 4-point Likert scale ranging from “Strongly Disagree to Strongly Agree.” Subscale scores were calculated by summing responses for each of the items. The final “Benefits” scale (4 items) ranged from a possible 4 to 16 points, and the final “Role” and “Ability” scales ranged from a possible 6 to 24 points (6 items each). For descriptive purposes, the total range of points for each subscale was then divided by the total number of items in the subscale, such that the final range for each scale was 1 to 4 points. For the analytic component of the study, raw scores were collapsed into quartiles.

Analysis

Descriptive statistics were generated to summarize the characteristics of physician respondents and their survey responses. Bivariate associations were calculated using Pearson chi-squared tests. Independent variables significant in the bivariate analysis ($P < 0.05$) were entered into a multivariable logistic regression model. Polychoric correlation matrices that support categorical data were run to identify possible multicollinearity between variables. Age, Kaiser tenure, and physician tenure were highly correlated (> 0.85); however, only

Kaiser tenure was significant in the bivariate analysis and was thus included in the final model. Statistical analyses were conducted using STATA for Windows (Version 9.0, Stata Co., College Station, TC).

RESULTS

The characteristics of the physician respondents and their survey responses are shown in Table 2. The majority of patients they cared for had two or more chronic conditions, with 84.1% of physicians reporting that more than a third of their panel comprised these patients. Seventy percent of physicians (n=100) reported referring any patients to the palliative care program in the prior year. Out of these physicians, the median number of referrals was three, with an interquartile range between two and six patients referred in the prior year. Among physicians who did not refer any patients in the prior year, the most common reason for non-referral was the belief that palliative care was not appropriate for any of the patients in the respondent's panel (33.3%). The second most common reason for not referring was that the respondent referred their patient to hospice instead (26.2%) (Table 3).

Physician responses to the beliefs scales are shown in Table 4. The majority of physicians agreed that palliative care was a beneficial care model (50.4%), and they disagreed that they were able to provide palliative care services to their patients on their own (54.5%), and that physician practice autonomy was important (61.4%).

Results of the bivariate analysis showed that personal experience with palliative care and Kaiser tenure were significantly associated with referral to palliative care (Table 5). None of the beliefs scales was significantly associated with referral.

Results of the multivariate logistic regression analysis are shown in Table 6. Physicians who had been working at Kaiser for more than 10 years had three times higher odds [Adjusted odds ratio [OR] 3.09 (95% confidence interval [CI] 1.16, 8.24)], of referring a patient to the program than physicians who had been employed by Kaiser less than 10 years. Physicians who had personal experience with palliative care had twice the odds of referring a patient to the program than those physicians with no personal experience [OR 2.16 (95% CI 0.97, 4.81)], although this result did not reach statistical significance.

DISCUSSION

In this study of primary care physician referral practices within a managed care organization, the majority of physicians in this study reported referring at least one patient to the palliative care program in the prior year, and some reported referring multiple patients. Although physician beliefs were hypothesized to be associated with referral, we found instead that other physician characteristics - length of time with Kaiser and prior personal experience with palliative care - were associated with palliative care referral, although the latter did not reach statistical significance.

Only one other study has described primary care physician referral practices to outpatient palliative care, and also found that a majority of physicians (61%) made referrals.[26] However, this study was a controlled trial of an outpatient palliative care consultation service and participating physicians were proactively encouraged to enroll eligible patients. In contrast, physicians in the current study were asked to report on their usual referral practices. Although social desirability pressures may bias self-report of practice patterns, [32] the anonymity of the survey helped to minimize this bias.

Our findings suggest that there may have been more patients than were referred who could have benefitted from the palliative care program. Most physicians in this study reported that

over 60% of their patient panel was comprised of patients with 2 or more chronic conditions but also reported referring only between one and four patients to the palliative care program. Although the presence of more than 2 chronic conditions is not by itself an absolute indicator of the need for palliative care, patients with multiple morbidities often face considerable physical and emotional symptom distress, increased functional dependence, and intense psychosocial support needs.[33] This group of patients can benefit significantly from palliative care services such as targeted symptom management, social support and advance care planning. Although not all patients with multiple morbidities require palliative care, the large discrepancy between the number of referrals made and the number of patients with more than 2 chronic conditions suggests that physicians may need help in understanding and acknowledging the potential relevance of palliative care for this group of patients. Indeed, the primary reason reported by physicians for not referring any patients was the belief that they had no patients who were appropriate for palliative care. Because palliative care services have traditionally been provided in the hospice setting, physicians may be more likely to link the need for palliative care to limited life expectancy and perceive it as more appropriate for patients who are imminently dying, rather than the broader population of seriously ill patients who could benefit from palliative care services. This is supported by the finding that almost a third of the physicians who did not refer any patients to palliative care reported referring patients to hospice instead. Disentangling palliative care from the prevalent notion that it is appropriate only for imminently dying patients may serve to increase appropriate palliative care referrals in the outpatient setting.

The majority of physicians in this study held attitudes about palliative care that would seem to predispose them to refer patients to the program. Consistent with findings from other studies, a majority of physicians believed that palliative care was a valuable model[28,34,35] but did not feel they had the ability to provide palliative care for their patients on their own.[36–38] Additionally, the majority of physicians in this study did not believe that they held an exclusive caregiving role with their patients, suggesting they would be open to collaborating with and receiving help from the palliative care program in providing end of life care for their patients.

We did not find our hypothesized association between physician beliefs about palliative care and referral to the palliative care program. Although our study was only powered to find large associations (i.e., OR $\geq$ 2.0) between beliefs and referrals, there was no evidence of any trend toward association, suggesting that such an association was truly absent. A likely explanation for this finding is that simply holding beliefs about palliative care is not enough to motivate referral. We found that instead, an important determinant of referral was exposure to palliative care, through both personal experience and length of time at Kaiser. Gaining exposure to palliative care through personal experience may make it more likely for physicians to consider it for their own patients. Moreover, the finding that tenure at Kaiser was significantly associated with referral also suggests that longer exposure to the palliative care programs may increase physician awareness of and familiarity with palliative care, making them more likely to refer their patients to the program. An earlier study of 236 palliative care professionals reported similar findings, demonstrating that one of the main barriers to hospice referrals reported by respondents was physician lack of familiarity with hospice.[25] Because outpatient palliative care programs are a relatively new and growing concept that physicians are only recently becoming familiar with,[21] increased exposure to the programs may help motivate primary care physicians to consider it for their patients and thus increase referrals. One way to increase physician exposure to palliative care might be to increase the presence and visibility of the palliative care program in the outpatient setting, so that physicians are regularly reminded of the availability of palliative care services for their patients.

The association between Kaiser tenure and referral also suggests there may be an organizational environmental component related to referral practice. An early study of physician utilization behavior within prepaid group practices argued that the setting in which physicians work are a significant determinant of their use of clinical resources.[39] In a more recent study evaluating the efficiency of healthcare providers with California, Wennberg, et al (2005) found striking variation in patterns of care across geographic regions and hospital systems, highlighting the potential influence of the work environment on physician practice.[40] The organizational structure of an integrated health delivery system such as Kaiser Permanente emphasizes care coordination across settings and may facilitate greater collaboration between primary and specialty or ancillary service providers.[41] More time spent working within that system may acclimatize physicians to refer their patients to services outside primary care. Although our findings suggest that it may take time to acclimatize physicians to collaborate with other services, there may be other more immediate ways to increase palliative care referral within any health delivery system. For example, implementing systems or processes that prompt physicians to consider palliative care in certain clinical situations may help to increase appropriate referrals in two ways: by reminding physicians of the availability of palliative care, and helping them to identify the broader population of multimorbid seriously ill patients for whom palliative care is beneficial. A prior randomized controlled trial of an interview tool aimed at helping physicians identify nursing home residents who might be eligible for hospice care based on their palliative care needs rather than their life expectancy significantly increased appropriate hospice referrals.[42] A similar tool based on patient needs rather than on specific clinical characteristics is particularly relevant in the outpatient setting, where patients might not be imminently dying but could still benefit from palliative care services.

This study has several limitations. First, our sampling approach may have resulted in a selection bias. Out of the 345 primary care physicians working at the two medical centers, 170 were present at the meetings where the survey was administered. Attendance was limited largely by clinic schedules and physician vacation time. However, of the physicians who attended the meetings, 83% completed surveys, resulting in a total 42% response rate. This is consistent with other studies of physician attitudes on end of life care utilizing alternate sampling methods.[43,44]

A second limitation was our inability to collect information on patient characteristics that may be associated with physician referral. Although we included proxy measures for burden of illness in lieu of chart data, these measures are subject to bias as they are based on the respondent's ability to accurately recall and assess patient characteristics. Specifically, physician recognition of patient life expectancy is influenced by various personal and professional factors and may not reflect an objective assessment. However, these measures were used as control variables, and neither was significantly associated with the outcome.

A third limitation of this study is that we asked physicians to report any palliative care referrals made within the prior year, which may be subject to recall bias. A recall period of one year was used because given the historically low numbers of outpatient palliative care referrals, we concluded that respondents would be able to accurately recall and estimate any referrals made.

A final limitation is the potential lack of generalizability to other settings because of Kaiser's unique integrated care delivery system which may facilitate collaboration between physicians and departments. KP physicians may be more likely to access the palliative care program than physicians in other healthcare organizations. Conclusions from this study may be more pronounced in non-HMO settings.

Despite these limitations, our quantitative study of the predictors of palliative care referral serves as a foundation for future research in this area. While beliefs about palliative care may still play a role in influencing physician practice, evidence from this study suggests that exposure to and familiarity with palliative care play an important role in influencing physician referral. Future efforts to increase appropriate referrals to outpatient palliative care should focus on reminding physicians about the availability of palliative care services and its relevance to seriously ill patients in the outpatient setting.

Acknowledgments

Supported by the John P. Dowdle Endowment and the Russell M. Grossman Medical Research Fund and T32 AG19134-09 from the National Institute on Aging. The second author is supported by K24 AG028443 from the National Institute on Aging.

REFERENCES

1. Nelson JE, Meier DE, Oei EJ, Nierman DM, Senzel RS, Manfredi PL, et al. Self-reported symptom experience of critically ill cancer patients receiving intensive care. *Crit Care Med* 2001 Feb;29(2):277–282. [PubMed: 11246306]
2. Stein-Parbury J, McKinley S. Patients' experiences of being in an intensive care unit: a select literature review. *Am J Crit Care* 2000 Jan;9(1):20–27. [PubMed: 10631387]
3. Desbiens NA, Mueller-Rizner N, Connors AF Jr, Wenger NS, Lynn J. The symptom burden of seriously ill hospitalized patients. SUPPORT Investigators. Study to Understand Prognoses and Preferences for Outcome and Risks of Treatment. *J Pain Symptom Manage* 1999 Apr;17(4):248–255. [PubMed: 10203877]
4. Cherlin EJ, Fried TR, Prigerson HG, Schulman-Green D, Johnson-Hurzeler R, Bradley EH. Communication between Physicians and Family Caregivers about Care at the End of Life: When do Discussions Occur and What Is Said? *Journal of Palliative Medicine* 2005;8(6):10. [PubMed: 15662167]
5. Azoulay E, Chevret S, Leleu G, Pochard F, Barboteu M, Adrie C, et al. Half the families of intensive care unit patients experience inadequate communication with physicians. *Crit Care Med* 2000 Aug;28(8):3044–3049. [PubMed: 10966293]
6. Bradley EH, Peiris V, Wetle T. Discussions about end-of-life care in nursing homes. *J Am Geriatr Soc* 1998 Oct;46(10):1235–1241. [PubMed: 9777905]
7. Covinsky KE, Fuller JD, Yaffe K, Johnston CB, Hamel MB, Lynn J, et al. Communication and decision-making in seriously ill patients: findings of the SUPPORT project. The Study to Understand Prognoses and Preferences for Outcomes and Risks of Treatments. *J Am Geriatr Soc* 2000 May;48(5 Suppl):S187–S193. [PubMed: 10809474]
8. Fried TR, Bradley EH, O'Leary J. Prognosis communication in serious illness: perceptions of older patients, caregivers, and clinicians. *J Am Geriatr Soc* 2003 Oct;51(10):1398–1403. [PubMed: 14511159]
9. Schroepfer TA. Critical events in the dying process: the potential for physical and psychosocial suffering. *J Palliat Med* 2007 Feb;10(1):136–147. [PubMed: 17298262]
10. Block SD. Psychological issues in end-of-life care. *J Palliat Med* 2006 Jun;9(3):751–772. [PubMed: 16752981]
11. Aiken LS, Butner J, Lockhart CA, Volk-Craft BE, Hamilton G, Williams FG. Outcome evaluation of a randomized trial of the PhoenixCare intervention: program of case management and coordinated care for the seriously chronically ill. *J Palliat Med* 2006 Feb;9(1):111–126. [PubMed: 16430351]
12. Twaddle ML, Maxwell TL, Cassel JB, Liao S, Coyne PJ, Usher BM, et al. Palliative care benchmarks from academic medical centers. *J Palliat Med* 2007 Feb;10(1):86–98. [PubMed: 17298257]
13. O'Mahony S, Blank AE, Zallman L, Selwyn PA. The benefits of a hospital-based inpatient palliative care consultation service: preliminary outcome data. *J Palliat Med* 2005 Oct;8(5):1033–1039. [PubMed: 16238516]

14. Manfredi PL, Morrison RS, Morris J, Goldhirsch SL, Carter JM, Meier DE. Palliative care consultations: how do they impact the care of hospitalized patients? *J Pain Symptom Manage* 2000 Sep;20(3):166–173. [PubMed: 11018334]
15. Smith TJ, Coyne P, Cassel B, Penberthy L, Hopson A, Hager MA. A high-volume specialist palliative care unit and team may reduce in-hospital end-of-life care costs. *J Palliat Med* 2003 Oct; 6(5):699–705. [PubMed: 14622449]
16. Campbell ML, Field BE. Management of the patient with do not resuscitate status: compassion and cost containment. *Heart Lung* 1991 Jul;20(4):345–348. [PubMed: 1906444]
17. Brumley RD, Enguidanos S, Cherin DA. Effectiveness of a home-based palliative care program for end-of-life. *J Palliat Med* 2003 Oct;6(5):715–724. [PubMed: 14622451]
18. NHPCO Facts and Figures: Hospice Care in America: National Hospice and Palliative Care Organization. 2007
19. Clinical Practice Guidelines for Quality Palliative Care. Brooklyn, New York: National Consensus Project for Quality Palliative Care; 2004 May.
20. A Policy Framework for Commissioning Cancer Services. London: Her Majesty's Stationary Office; 1994.
21. Meier DE, Beresford L. Outpatient clinics are a new frontier for palliative care. *J Palliat Med* 2008 Jul;11(6):823–828. [PubMed: 18715171]
22. McNeilly D, Hillary K. The hospice decision: psychological facilitators and barriers. *Omega* 1997;35:193–217. [PubMed: 11660418]
23. Weggel JM. Barriers to the physician decision to offer hospice as an option for terminal care. *Wmj* 1999 May–Jun;98(3):49–53. [PubMed: 10414220]
24. Prigerson HG. Determinants of hospice utilization among terminally ill geriatric patients. *Home Health Care Services Quarterly* 1991;12(4):81–112. [PubMed: 10117496]
25. Feeg VD, Elebiary H. Exploratory study on end-of-life issues: barriers to palliative care and advance directives. *Am J Hosp Palliat Care* 2005 Mar–Apr;22(2):119–124. [PubMed: 15853089]
26. Rabow MW, Dibble SL, Pantilat SZ, McPhee SJ. The comprehensive care team: a controlled trial of outpatient palliative medicine consultation. *Arch Intern Med* 2004 Jan 12;164(1):83–91. [PubMed: 14718327]
27. Brickner L, Scannell K, Marquet S, Ackerson L. Barriers to hospice care and referrals: survey of physicians' knowledge, attitudes, and perceptions in a health maintenance organization. *J Palliat Med* 2004 Jun;7(3):411–418. [PubMed: 15265350]
28. Ogle KS, Mavis B, Wyatt GK. Physicians and hospice care: attitudes, knowledge, and referrals. *J Palliat Med* 2002 Feb;5(1):85–92. [PubMed: 11839230]
29. Bradley EH, Cramer LD, Bogardus ST Jr, Kasl SV, Johnson-Hurzeler R, Horwitz SM. Physicians' ratings of their knowledge, attitudes, and end-of-life-care practices. *Acad Med* 2002 Apr;77(4): 305–311. [PubMed: 11953295]
30. Meier DE, Emmons CA, Litke A, Wallenstein S, Morrison RS. Characteristics of patients requesting and receiving physician-assisted death. *Arch Intern Med* 2003 Jul 14;163(13):1537–1542. [PubMed: 12860575]
31. Hall RH. Professionalization and bureaucratization. *American Sociological Review* 1968;33:92–104.
32. Hebert JR, Ma Y, Clemow L, Ockene IS, Saperia G, Stanek EJ 3rd, et al. Gender differences in social desirability and social approval bias in dietary self-report. *Am J Epidemiol* 1997 Dec 15;146(12):1046–1055. [PubMed: 9420529]
33. Morrison RS. Health care system factors affecting end-of-life care. *Journal of Palliative Medicine* 2005;8 Supplement 1:S79–S87. [PubMed: 16499472]
34. Iwashyna TJ, Christakis NA. Attitude and self-reported practice regarding hospice referral in a national sample of internists. *J Palliat Med* 1998 Fall;1(3):241–248. [PubMed: 15859834]
35. Miller KE, Miller MM, Single N. Barriers to hospice care: family physicians' perceptions. *Hosp J* 1997;12(4):29–41. [PubMed: 9305023]

36. Holley JL, Carmody SS, Moss AH, Sullivan AM, Cohen LM, Block SD, et al. The need for end-of-life care training in nephrology: national survey results of nephrology fellows. *Am J Kidney Dis* 2003 Oct;42(4):813–820. [PubMed: 14520633]
37. Morrison, MF. Obstacles to doctor-patient communication at the end of life. In: Steinberg, MD.; Youngner, SJ., editors. *End of life decisions: A psychosocial perspective*. Washington, D.C.: American Psychiatric Press; 1998. p. 109-136.
38. Sheetz MJ, Bowman MA. Pediatric palliative care: an assessment of physicians' confidence in skills, desire for training, and willingness to refer for end-of-life care. *Am J Hosp Palliat Care* 2008 Apr–May;25(2):100–105. [PubMed: 18445861]
39. Pineault R. The effect of prepaid group practice on physicians' utilization behavior. *Med Care* 1976 Feb;14(2):121–136. [PubMed: 1256105]
40. Wennberg JE, Fisher ES, Baker L, Sharp SM, Bronner KK. Evaluating the efficiency of california providers in caring for patients with chronic illnesses. *Health Aff (Millwood)*. 2005 Jul–Dec; Suppl Web Exclusives:W5-526-43.
41. Robinson JC, Casalino LP. Vertical integration and organizational networks in health care. *Health Aff (Millwood)* 1996 Spring;15(1):7–22. [PubMed: 8920566]
42. Casarett D, Karlawish J, Morales K, Crowley R, Mirsch T, Asch DA. Improving the use of hospice services in nursing homes: a randomized controlled trial. *Jama* 2005 Jul 13;294(2):211–217. [PubMed: 16014595]
43. Kaldjian LC, Jekel JF, Bernene JL, Rosenthal GE, Vaughan-Sarrazin M, Duffy TP. Internists' attitudes towards terminal sedation in end of life care. *J Med Ethics* 2004 Oct;30(5):499–503. [PubMed: 15467087]
44. Emanuel EJ, Fairclough D, Clarridge BC, Blum D, Bruera E, Penley WC, et al. Attitudes and practices of U.S. oncologists regarding euthanasia and physician-assisted suicide. *Ann Intern Med* 2000 Oct 3;133(7):527–532. [PubMed: 11015165]

Table 1

Results of Factor Analysis and Internal Consistency Reliability Testing for Physician Beliefs Scales

Factor Name	Included Items	Loading
Beliefs in the Benefits of Palliative Care ($\alpha = 0.81$)	Palliative care is a valuable alternative to aggressive disease modifying treatment of terminal illnesses	0.816
	Palliative care services are appropriate for patients with chronic conditions like COPD or CHF	0.738
	I believe spiritual and psychosocial counseling is an integral aspect of end of life care	0.766
	Having a specialist palliative care program can help me manage and address my patients' care needs better	0.786
Beliefs about Physician Autonomy ($\alpha = 0.65$)	A physician should be allowed to make appropriate medical decisions without the interference of external parties (e.g., regulatory or administrative bodies, other professionals, etc)	0.574
	A physician should take responsibility for all medical decisions made during the course of a patient's care	0.564
	The medical decisions I make in my practice are often unnecessarily reviewed by other people (e.g., other professionals, administration, etc)	0.635
	I often feel that processes such as <i>utilization review</i> or the use of <i>clinical guidelines</i> restricts my ability to practice medicine as I see fit.	0.694
	A patient's primary care physician should approve all changes to their care plan	0.575
	Physicians are better equipped to make the right care decisions than patients are	0.554
Beliefs about Ability to Provide Palliative Care ($\alpha = 0.67$)	I can manage my patients' symptoms, such as pain and dyspnea, as well or better than a palliative care specialist.	0.628
	I am comfortable discussing the withdrawal of treatment with patients and families when appropriate	0.662
	I have some difficulties discussing emotional, psychological or spiritual concerns about death with my patients	0.534
	I am able to adequately address my patients' end of life care needs on my own	0.610
	I believe it is my responsibility to coordinate the end of life care my dying patients receive	0.644
	A physician is the most appropriate person to discuss palliative care with patients and families	0.572

Table 2**Baseline Characteristics of Respondents (n=145)**

Variable*	
Age (%)	
30–39 years	43.5
40–49 years	27.0
>= 50 years	24.8
Gender (%)	
Female	58.0
Male	36.5
Race (%)	
White	46.2
Asian/Pacific Islander	33.7
Other	12.4
Religiosity (%)	
Not religious	26.2
Somewhat religious	31.0
Very religious	38.6
Personal Experience with Palliative Care (%)	
No	48.3
Yes	45.5
Tenure at Kaiser (%)	
< 10 years	63.4
> 10 years	29.7
Tenure as Physician (%)	
< 15 years	53.7
> 15 years	42.0
No. of patients with 1 year or less to live (%)	
1–10 patients	37.2
11–20 patients	28.2
21–30 patients	10.3
> 30 patients	5.5
Don't Know	15.8
% of patients with 2+ chronic conditions (%)	
1–30% of patient panel	10.3
31–60% of patient panel	44.8
61–90% of patient panel	32.4
> 90% of patient panel	6.9
Don't Know	4.8
Referred any patients in prior year (%)	
No	29.0
Yes	69.0

* Percentages may not sum to 100 because of missing data

Table 3

Reasons for Non-Referral (n=42)

	Yes (%)
Not appropriate for any of my patients	14 (33.3)
Referred to hospice instead	11 (26.2)
Unaware of the program	6 (14.2)
Provided service myself	5 (12.0)
Thought program was inpatient only	4 (9.5)
Patient refused referral	2 (4.7)
Would not benefit my patients	2 (4.7)
Have no time to make the referral	2 (4.7)
Have been dissatisfied with program	2 (4.7)
I did not discuss palliative care	1 (2.3)
Other	1 (2.3)
Patient not ready	0
Too much referral paperwork	0

Table 4**Physician Responses to Beliefs Scales (n=145)**

Beliefs Scales *	
Belief in the Benefits of Palliative Care, median (IQR) [†]	2 (2–3)
<i>Strongly Agree</i> (%)	23.5
<i>Agree</i> (%)	26.9
<i>Disagree</i> (%)	40.0
<i>Strongly Disagree</i> (%)	4.8
Belief in Physician Practice Autonomy, median (IQR) [†]	3 (2–4)
<i>Strongly Agree</i> (%)	12.4
<i>Agree</i> (%)	18.6
<i>Disagree</i> (%)	29.7
<i>Strongly Disagree</i> (%)	31.7
Belief in Ability to Provide Palliative Care, median (IQR) [†]	3 (2–3)
<i>Strongly Agree</i> (%)	9.0
<i>Agree</i> (%)	27.6
<i>Disagree</i> (%)	35.2
<i>Strongly Disagree</i> (%)	19.3

* Percentages may not sum to 100 because of missing data

[†] Strongly Agree: ≤ 1.5; Agree: >1.5 and ≤ 2.5; Disagree: >2.5 and ≤ 3.5; Strongly Disagree: >3.5 and ≤ 4

Table 5

Referral to palliative care program by physician characteristics and beliefs

Characteristic	Referred (%)	p-value
Age		0.49
30–39 (n=62)	66.1	
40–49 (n=39)	69.2	
50–59 (n=30)	80.0	
60–69 (n=6)	83.3	
Gender		0.48
Female (n=53)	68.0	
Male (n=83)	73.5	
Race		0.46
White (n=66)	65.2	
Asian-Pacific Islander (n=49)	71.4	
Other (n=18)	83.3	
Did not answer (n=9)	77.7	
Religiosity		0.85
Not Religious (n=37)	67.6	
Somewhat Religious (n=45)	73.3	
Very Religious (n=56)	71.4	
Personal Experience with Palliative Care		0.02
Yes (n=65)	80.0	
No (n=70)	61.4	
Tenure at Kaiser		0.00
< 10 years (n=91)	63.7	
> 10 years (n=43)	86.0	
Tenure as Physician		0.07
< 15 years (n=77)	65.0	
> 15 years (n=61)	78.6	
Knowledge of number of patients with ≤ 1 year to live		0.26
1–10 patients (n=54)	76.0	
11–20 patients (n=41)	68.3	
21–30 patients (n=15)	80.0	
Over 30 patients (n=8)	75.0	
Don't Know (n=23)	52.2	
Percent of patients in panel with 2+ chronic conditions		0.68
1–30% (n=15)	60.0	
31–60% (n=63)	70.0	
61–90% (n=47)	74.5	
> 90% (n=10)	80.0	
Don't know (n=7)	57.1	

Characteristic	Referred (%)	<i>p</i> -value
Belief in the Benefits of Palliative Care		0.23
1 st quartile (n=33)	69.6	
2 nd quartile (n=39)	79.5	
3 rd quartile (n=57)	68.4	
4 th quartile (n=7)	42.8	
Belief in Physician Practice Autonomy		0.53
1 st quartile (n=18)	61.1	
2 nd quartile (n=27)	63.0	
3 rd quartile (n=43)	76.7	
4 th quartile (n=45)	68.8	
Belief in Ability to Provide Palliative Care		0.94
1 st quartile (n=13)	61.5	
2 nd quartile (n=39)	69.2	
3 rd quartile (n=51)	70.5	
4 th quartile (n=28)	67.8	

Table 6

Physician Factors Associated with Palliative Care Referral

Factor	Adjusted Odds Ratio (95% Confidence Interval)
Personal Experience with Palliative Care	2.16 (0.97, 4.80)
Kaiser Tenure	3.09 (1.16, 8.24)