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ASCO SPECIAL ARTICLE

American Society of Clinical Oncology Provisional Clinical Opinion: The Integration of Palliative Care into Standard Oncology Care

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ABSTRACT

Purpose
An American Society of Clinical Oncology (ASCO) provisional clinical opinion (PCO) offers timely clinical direction to ASCO's membership following publication or presentation of potentially practice-changing data from major studies. This PCO addresses the integration of palliative care services into standard oncology practice at the time a person is diagnosed with metastatic or advanced cancer.

Clinical Context
Palliative care is frequently misconstrued as synonymous with end-of-life care. Palliative care is focused on the relief of suffering, in all of its dimensions, throughout the course of a patient's illness. Although the use of hospice and other palliative care services at the end of life has increased, many patients are enrolled in hospice less than 3 weeks before their death, which limits the benefit they may gain from these services. By potentially improving quality of life (QOL), cost of care, and even survival in patients with metastatic cancer, palliative care has increasing relevance for the care of patients with cancer. Until recently, data from randomized controlled trials (RCTs) demonstrating the benefits of palliative care in patients with metastatic cancer who are also receiving standard oncology care have not been available.

Recent Data
Seven published RCTs form the basis of this PCO.

Provisional Clinical Opinion
Based on strong evidence from a phase III RCT, patients with metastatic non–small-cell lung cancer should be offered concurrent palliative care and standard oncologic care at initial diagnosis. While a survival benefit from early involvement of palliative care has not yet been demonstrated in other oncology settings, substantial evidence demonstrates that palliative care—when combined with standard cancer care or as the main focus of care—leads to better patient and caregiver outcomes. These include improvement in symptoms, QOL, and patient satisfaction, with reduced caregiver burden. Earlier involvement of palliative care also leads to more appropriate referral to and use of hospice, and reduced use of futile intensive care. While evidence clarifying optimal delivery of palliative care to improve patient outcomes is evolving, no trials to date have demonstrated harm to patients and caregivers, or excessive costs, from early involvement of palliative care. Therefore, it is the Panel's expert consensus that combined standard oncology care and palliative care should be considered early in the course of illness for any patient with metastatic cancer and/or high symptom burden. Strategies to optimize concurrent palliative care and standard oncology care, with evaluation of its impact on important patient and caregiver outcomes (eg, QOL, survival, health care services utilization, and costs) and on society, should be an area of intense research.

NOTE. ASCO's provisional clinical opinions (PCOs) reflect expert consensus based on clinical evidence and literature available at the time they are written and are intended to assist physicians in clinical decision making and identify questions and settings for further research. Because of the rapid flow of scientific information in oncology, new evidence may have emerged since the time a PCO was submitted for publication. PCOs are not continually updated and may not reflect the most recent evidence. PCOs cannot account for individual variation among patients and cannot be considered inclusive of all proper methods of care or exclusive of other treatments. It is the responsibility of the treating physician or other health care provider, relying on independent experience and knowledge of the patient, to determine the best course of treatment for the patient. Accordingly, adherence to any PCO is voluntary, with the ultimate determination regarding its application to be made by the physician in light of each patient's individual circumstances. ASCO PCOs describe the use of procedures and therapies in clinical trials and cannot be assumed to apply to the use of these interventions in the context of clinical practice. ASCO assumes no responsibility for any injury or damage to persons or property arising out of or related to any use of ASCO's PCOs, or for any errors or omissions.

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INTRODUCTION

The American Society of Clinical Oncology (ASCO) has established a rigorous, evidence-based approach—the provisional clinical opinion (PCO)—to offer a rapid response to emerging data in clinical oncology. The PCO is intended to offer timely clinical direction to ASCO's oncologists after publication or presentation of potentially practice-changing data from major studies (Appendix, online only).

This PCO addresses the integration of palliative care (PC) services into standard oncology care at the time a person is diagnosed with metastatic cancer and/or high symptom burden. For the purpose of this PCO, "Palliative care is specialized medical care for people with serious illnesses. This type of care is focused on providing patients with relief from the symptoms, pain, and stress of a serious illness—whatever the diagnosis. The goal is to improve quality of life for both the patient and the family. Palliative care is provided by a team of doctors, nurses, and other specialists who work with a patient's other physicians to provide an extra layer of support. Palliative care is appropriate at any age and at any stage in a serious illness, and can be provided together with curative treatment."[1]

STATEMENT OF THE CLINICAL ISSUE

The current model of medical care in the United States is unable to meet the needs of many patients with advanced illness. Consequently, both the quality and costs[2,3] of health care, particularly for people with advanced illness[4] are central issues in the debate over health care reform.[5] Patients with cancer make up a significant portion of those people who have a high symptom burden and/or with advanced illness. Of all patients with metastatic cancer, nearly half have incurable disease but they can live for years after initial diagnosis. Palliative management focuses on the care of patients with advanced illness or a significant symptom burden by emphasizing medically appropriate goal setting, honest and open communication with patients and families, and meticulous symptom assessment and control. Seven randomized controlled trials (RCTs) have demonstrated that PC given alongside usual oncologic care in patients with advanced cancer maintains or improves survival and improves quality of life (QOL). Most studies show improved outcomes at a cost lower than that for standard oncologic care alone.

ASCO'S PROVISIONAL CLINICAL OPINION

Based on strong evidence from a phase III RCT, patients with metastatic non–small-cell lung cancer (NSCLC) should be offered concurrent PC and standard oncologic care at initial diagnosis. Although a survival benefit from early involvement of PC has not yet been demonstrated in other oncology settings, substantial evidence demonstrates that PC—when combined with standard cancer care or as the main focus of care—leads to better patient and caregiver outcomes. These include improvement in symptoms, QOL, and patient satisfaction, with reduced caregiver burden. Earlier involvement of PC also leads to more appropriate referral to and use of hospice, and reduced use of futile intensive care. While evidence that would clarify optimal delivery of PC to improve patient outcomes is evolving, no trials to date have demonstrated harm to patients and caregivers, or excessive costs, from early involvement of PC. Therefore, it is the consensus of the expert panel that combined standard oncology care and PC should be considered early in the course of illness for any patient with metastatic cancer and/or high symptom burden. Strategies to optimize concurrent PC and standard oncology care, with evaluation of its impact on important patient and caregiver outcomes (eg, QOL, survival, health care services utilization, and costs) and society, should be an area of intense research.

LITERATURE REVIEW AND ANALYSIS

This PCO addresses the emerging data from seven recently published RCTs that include a standard care group and a concurrent PC plus standard care group. This PCO was triggered by the publication of a study by Temel et al.[6] In addition, ASCO conducted a literature search for RCTs that provided interdisciplinary or team-based care to improve the overall cancer experience and that had usual care as the comparison arm. In addition, directed literature searches were done of all other relevant reviews of the topic, and information was sought about unpublished trials. Conclusions are tempered by the absence of confirmatory trials that use the same methodology or treat the same set of patients. Although PC is a rapidly growing and dynamic field,[7] the evidence base is just being developed because less than 1% of all National Institutes of Health funding is devoted to palliative care.[8]

Overview of the Article by Temel et al

Temel et al[6] conducted a phase III randomized, controlled, single-institution, nonblinded study in 151 patients with newly diagnosed metastatic NSCLC. Patients were randomly assigned to early PC in concert with standard oncology care or to standard oncology care alone. Patients were recruited from a thoracic oncology clinic. The PC intervention consisted of a baseline evaluation and follow-up at least once per month by members of a multidisciplinary PC team comprising seven PC clinicians (six doctors of medicine and one advanced practice nurse). The average initial consultation by a member of the team took 55 minutes, of which 20 minutes was spent on symptom management, 15 on patient and family coping, and 10 on education about the illness.[9] Guidelines for the PC consultations were adapted from the National Consensus Project for Quality Palliative Care[10] but were otherwise unstructured and unscripted to allow the clinician flexibility to individualize the encounter based on the patient's needs. The trial's primary outcome was change in quality of life (QOL) at 12 weeks determined by using the Functional Assessment of Cancer Therapy-Lung Trial Outcome Index (FACT-L TOI). Other outcomes measured included mood and aggressiveness of end-of-life (EOL) care (chemotherapy within 14 days before death, lack of hospice care, or hospice admission $\leq$ 3 days before death).

Patients assigned to the PC intervention had significantly higher QOL scores compared with patients receiving standard oncology care alone ($P = .03$). Temel et al[6] also demonstrated that the palliative intervention group had fewer depressive symptoms ($P = .01$) as well as less aggressive EOL care ($P = .05$). Average hospice stay in the PC intervention group was 11 days versus 4 days in the standard oncology care group ($P = .09$). Despite less aggressive EOL care, patients in the PC intervention group survived 2.7 months longer than those receiving standard oncology care alone ($P = .02$).[6] The patients who had concurrent care understood their ultimate prognosis and incurability more clearly as time went on, and those who understood their prognosis received less chemotherapy near the EOL (9% *v* 50%; $P = .02$), which may account for the longer

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survival.[11] The authors concluded that early PC in patients with metastatic NSCLC significantly improves QOL, mood, and survival despite less aggressive EOL care compared with standard oncology care alone.

The study by Temel et al[6] has notable strengths as well as weaknesses. Strengths include the use of a recruitment approach at the time of diagnosis instead of referrals for participants near the EOL, which attained a more representative sample of patients with NSCLC. Other strengths included a low attrition rate, indicating feasibility of the PC intervention, adequate power to detect changes in QOL and mood, and standardization of the PC intervention. Among the weaknesses are that the study was performed at a single institution in patients with cancer with a single diagnosis and limited racial and ethnic diversity, which limits the generalizability of the results. The study was not blinded and lacked a control group for the palliative intervention (a group receiving similar attention without the specific palliative components). The reported survival benefit was not the primary outcome, and confirmatory studies are warranted. Given the multidimensional nature of the palliative intervention, the study was not powered to determine which specific elements of the intervention led to improved outcomes. Importantly, the PC intervention used in the Temel et al study is not the version of PC routinely available in clinical practice. Currently, most PC services are either inpatient consultative services or hospice, but community-based PC services as described in the Temel et al study are not widely available.

National Cancer Institute Physician Data Query Editorial Review Assessment

On request from ASCO, the National Cancer Institute's (NCI's) Physician Data Query (PDQ) Supportive and Palliative Care Editorial Board provided a written assessment of the Temel et al results.[12] They also assessed the trial's strengths and weaknesses. They concluded that the study's strengths were its introduction of PC at diagnosis, an intervention that did not entail "a burdensome number of extra visits," and the intervention incorporated multiple strategies for addressing heterogeneous patient issues and the study's positive outcomes. They appraised the weaknesses as a narrow study population because of the participants' good performance status and tumors that were not responsive to chemotherapy, the study's inability to identify which components of the intervention were responsible for which outcomes, and the few differences in patient outcomes. They also questioned whether the study were replicable. Their biggest concern was that the comparison arm lacked controls for the attention those in the intervention group received.

The report also reviewed six additional studies,[13-18] which this PCO also assesses in the section *Overview of Other Relevant RCTs*. The report stated that the Temel et al study[6] alone should not "direct clinical practice in a heterogeneous cancer population." In addition, even after considering other available studies, they felt that the literature is "in its infancy" and that more research and identification of barriers and solutions for providing PC are needed. They concluded that it was premature to develop a PCO.

Response of PC Ad Hoc Panel

The panel (Appendix Table A1, online only) reviewed the PDQ report, and although they agreed that there are limitations to the literature, they responded that ASCO's PCO mechanism is intended to provide guidance on clinical management based on evidence available to date. In addition, a PCO permits re-evaluation of conclusions when data are published in the future. The ASCO ad hoc panel reviewed all the available studies and included a detailed examination of their strengths and weaknesses in the context of all the available information. The ASCO PCO committee came to a different conclusion than the NCI PDQ committee because it placed more emphasis on the modern trials that used a standardized PC intervention. Common characteristics of those trials included a team approach to honest communication about prognosis and treatment options, setting of medically appropriate goals, and symptom management. The intervention was accepted by nearly all patients when offered, compliance was excellent, and the results are positive in all trials. The panel considered earlier trials with nonstandardized interventions that had minimal acceptance and compliance less important than the modern, well-designed trials with a standardized intervention.

It is not yet possible to define the essential components of highly successful concurrent standard oncologic care and PC, but research is ongoing. It is helpful to remember that the key tenets of PC include open and honest communication, medically appropriate goal setting, and symptom management. In the study of patients with lung cancer, understanding the prognosis and goals of treatment had the strongest impact on subsequent choices of therapy and survival; that is, if patients understood the amount of time they had left to live and the benefits and risks of treatment, they got less aggressive EOL care but they lived longer.[11] With that in mind, a good working list of components might include the following: a description of the diagnosis; a frank discussion of the prognosis (with a reasonable forecast of survival) and curability; explicit discussion of the medically appropriate goals of treatment; use of a standardized symptom assessment tool, such as the Edmonton Symptom Assessment Scale or the Condensed Memorial Symptom Assessment Scale, with symptom management based on the answers; screening for distress with a tool such as the Distress Thermometer; psychosocial assessment and support; and involvement of hospice early in the remaining lifetime of patients with a life-ending illness (for example, an informational visit 3 to 6 months before the person is expected to die). This list will be reviewed as evidence becomes available.

Overview of Other Relevant RCTs

Available RCTs are reviewed in chronologic order of publication because the field of PC has changed over the past 10 years, with more interdisciplinary care teams available. Study details are provided in Tables 1, 2, and 3.

Pantilat et al[16] at the University of California at San Francisco (UCSF) randomly assigned 107 seriously ill inpatients to usual care versus usual care plus daily visits from a palliative medicine physician. Of the 107 patients, 24 (22%) had cancer. Although unstated, the primary outcome is presumed to be symptom severity over time. The intervention group had no additional improvement in pain ($P = .30$), dyspnea ($P = .50$), or anxiety ($P = .08$), possibly because both groups improved. Overall, most patients were satisfied with their care, regardless of whether they received the intervention or not. Only a minority of the intervention group reported discussing their preferences and prognosis. The authors concluded that there were no differences between the two groups and gave the following as possible reasons: ineffectiveness of PC; ineffectiveness of this intervention, particularly given that it was administered by a single physician instead of the current interdisciplinary team (the study was done in 2002-2003 and published in 2010); the types of patients recruited, and the limited uptake of recommendations, as in Rabow et al[17] (the next study cited). The lack of positive impact highlights the need for research that uses

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Table 1. Randomized Trials of Palliative Care: Population, Sample Size, and Intervention

Reference	Sample Size		Study Population	Intervention
	Usual Care	Palliative Care		
Bakitas et al, 2009[18]	161	161	Advanced-stage cancer patients enrolled in rural NCI comprehensive center	A multicomponent psychoeducational intervention conducted by APNs: four weekly educational sessions, then monthly follow-up; medical visits with palliative care clinicians.
Brumley et al, 2007[13]	152	145	Homebound terminally ill patients (life expectancy < 1 year) who had one or more visits to the ER or hospitalization in the last year; 47% had cancer	Interdisciplinary home-based care health care program designed to enhance comfort and improve QOL (hospice model). Team of MD, RN, and social worker.
Gade et al, 2008[14]	237	275	Patients hospitalized with life-limiting illnesses (27% in palliative care arm had cancer)	Interdisciplinary palliative care team (palliative care MD and nurse, hospital social worker, and chaplain) that provides consultative service; home service continued with local resources.
Meyers et al, 2011[15]	128	348	Cancer patients and caregiver dyads enrolled in phase I, II, or III clinical trials at comprehensive cancer centers (City of Hope, University of California at Davis, The Johns Hopkins University)	Simultaneous Care Educational Intervention: Linking Palliation and Clinical Trials. Educational sessions by trained educators with the patient and caregiver that included the COPE problem-solving model.
Pantilat et al, 2010[16]	53	54	Chronically ill, hospitalized elderly patients (22% had cancer)	Palliative medicine consultation with MD visits daily and recommendations made to primary attending MD.
Rabow et al, 2004[17]	40	50	Patients in outpatient clinics with diagnosis of advanced CHF, COPD, or cancer (33%)	Comprehensive care team of interdisciplinary palliative care experts (social worker, nurse, chaplain, pharmacist, psychologist, art therapist, volunteer coordinator, and three MDs). Seven-component interventions (including assessment, social work, caregiver training, medication review, spiritual/psychological support, home visits, phone calls).
Temel et al, 2010[6]	74	77	Patients with newly diagnosed metastatic NSCLC enrolled within 8 weeks of diagnosis	Met with outpatient palliative care team (six MDs, one APN) within 3 weeks, then at least monthly. EMR documentation of care provided.

Abbreviations: APN, advanced practice nurse; CHF, congestive heart failure; COPD, chronic obstructive pulmonary disease; COPE, Creativity, Optimism, Planning, and Expert Information; EMR, electronic medical record ER, emergency room; MD, doctor of medicine; NCI, National Cancer Institute; NSCLC, non–small-cell lung cancer; QOL, quality of life; RN, registered nurse.

well-defined state-of-the-art interventions and the need to use rigorous measures to track intervention use and assess outcomes.

Rabow et al[17] at UCSF randomly assigned 90 outpatients with cancer, emphysema, or congestive heart failure who had an expected life span of 1 to 5 years and who were not yet ready for hospice to usual care or usual care plus a comprehensive PC team. The study group enrolled approximately 40% of eligible approached patients; 30 (33%) had cancer. The comprehensive care team (CCT) consisted of a social worker, nurse, chaplain, pharmacist, psychologist, art therapist, volunteer coordinator, and three physicians. The CCT addressed physical, emotional, and spiritual issues with the patient and the patient's family and made recommendations to the primary medical team. The intervention included classes, support groups, weekly telephone calls, and monthly visits. For the primary symptom outcomes, only dyspnea was improved ($P = .01$). For pain, there was no difference between groups, but the primary care provider prescribed the recommended opioid only one in 13 times (8%). Anxiety and depression were unchanged, but the primary care physician prescribed recommended antidepressants for only three (17%) of 18 patients. Spiritual well-being was improved in the CCT group; advance directives (ADs) were completed by 12 (55%) of 22 patients receiving the intervention and five (28%) of 18 patients in the control arm. There were no differences in emergency department visits, hospitalizations, or site of death. No harm was observed. The CCT improved some patient outcomes, but the impact seemed limited by primary care providers' limited uptake of recommendations. This study highlights a need to improve care coordination and communication when specialized PC teams are involved and to better understand the barriers to integrating PC.

Brumley et al[13] randomly assigned 238 homebound terminally ill outpatients (138 [47%] had cancer) to usual care or usual care plus an in-home palliative care (IHPC) service. Each patient on the IHPC arm was assigned an intervention team consisting of a physician, a nurse, and a social worker. The team was responsible for coordinating and managing care and discussing the goals of care, expected course of the disease, expected outcomes, and success of treatment options. The primary outcomes were satisfaction with care, use of medical services, site of death, and costs of care. There was no difference between the study arms in the number of patients who were highly satisfied at 60 days, but the IHPC group had greater improvement in satisfaction with care at 30 and 90 days after enrollment ($P < .05$). IHPC reduced emergency department visits by 35% ($P = .02$; $R^2 = 0.04$) and hospital days by 4.36 ($P < .001$; $R^2 = 0.14$). Hospice use did not differ (25% of intervention group *v* 36% of usual care group; $P = .15$) nor did length of stay in hospice. Patients in the IHPC arm were 2.2 times as likely to die at home as those receiving usual care (odds ratio, 2.20; $P < .001$). The mean cost for patients in the IHPC arm was \$12,670 ± \$12,523 versus \$20,222 ± \$30,026 in the usual care arm ($P = .03$), and the cost per day was \$95.30 lower than that for usual care (\$212.80; $P = .02$). There was no difference in outcomes between patients with cancer and outcomes of patients with other disease types. No harm was observed, and survival was the same in the usual care and usual care plus IHPC groups.

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Table 2. Randomized Trials of Palliative Care: Primary and Secondary Outcomes

	Outcomes							
Reference	Symptoms	Quality of Life	Mood	Satisfaction	Resource Use	Advance Care Planning	Survival	Other
Bakitas et al, 2009[18]	**Modified ESAS**	**FACIT-Palliative**	*CES-D*	—	**Chart review**		OS	
Brumley et al, 2007[13]	—	—	—	Reid-Gundlach instrument; interview	HMO database	—	—	Site of death; enrollment in hospice
Gade et al, 2008[14]	**MCOHPQ**	MCOHPQ	MCOHPQ, Emotional/ Relationship	**MCOHPQ**	*Hospice use;* **Costs 6 months post discharge**	*No. of advance directives at discharge*	OS	MCOHPQ, Spiritual
Meyers et al, 2011[15]		**COH QOL Instrument, Cancer Patient/ Cancer Survivor Version**	*Social Problem-Solving Inventory–Revised*	—	—	—	—	—
Pantilat et al, 2010[16]	Select-pain, dyspnea, anxiety	—	Geriatric Depression Scale (GDS-15)	—	—	Yes	—	—
Rabow et al, 2004[17]	Disability rating; Dyspnea Brief Pain Inventory	MQOLS-CA	CES-D Profile of Mood States	Group Health Association of America's Consumer Satisfaction Survey	Chart review	Yes	—	Spiritual well-being and sleep quality
Temel et al, 2010[6]	**FACT-L, LCS**	FACT-L	HADS Patient Health Questionnaire 9	—	Yes	Yes	Yes	—

NOTE. As stated by study authors, primary outcomes are shown in bold and secondary outcomes in italics; post hoc or not stated outcomes are in regular font. Abbreviations: CES-D, Center for Epidemiological Studies-Depression Scale; COH QOL, City of Hope Quality of Care; ESAS, Edmonton Symptom Assessment Scale; FACIT, Functional Assessment of Chronic Illness Therapy; FACT-L, Functional Assessment of Cancer Therapy–Lung; HADS, Hospital Anxiety and Depression Scale; HMO, health maintenance organization; LCS, Lung Cancer Subscale; MCOHPQ, Modified City of Hope Patient Questionnaires; MQOLS-CA, Multidimensional Quality of Life Scale-Cancer Version; OS, overall survival.

Gade et al[14] at Kaiser Permanente randomly assigned seriously ill inpatients to usual care or usual care plus an interdisciplinary palliative care service (IPCS) comprising a palliative care physician, nurse, hospital social worker, and chaplain. The study was done at three sites in three cities. Patients were enrolled on their index hospitalization and seen by the IPCS; the IPCS then formulated a plan for the outpatient setting for the primary care physician. Of the 512 patients, 159 (31%) had advanced cancer. The primary outcomes included patient satisfaction, clinical outcomes, and cost of care for 6 months after hospital discharge. Patients in the IPCS arm reported greater satisfaction with their care experience ($P = .04$) and providers' communication ($P < .001$). There was no difference in clinical outcomes between groups, including survival, symptoms, emotional support, spiritual support, and QOL. Total mean health costs were lower in the IPCS group by $6,766 (IPCS: $14,486; usual care: $21,252; $P < .001$) with a net cost savings of $4,855 per patient ($P < .001$). IPCS patients completed significantly more ADs at hospital discharge than did usual care patients (91.1% *v* 77.8%; $P < .001$). Patients with the IPCS used hospice at the same rate as usual care but had longer median hospice stays (24 *v* 12 days; $P = .04$). The groups had no differences in subsequent hospital days or admissions, but IPCS patients had significantly fewer intensive care unit stays on readmission (IPCS: 12; usual care: 21; $P = .04$.) No harm was observed in the patients randomly assigned to the IPCS group, and after the study, Kaiser Permanente expanded the program to most of their hospitals (D. Connor, personal communication, May 2011).

Bakitas et al[18] randomly assigned 312 patients with cancer at three practices to usual care versus usual care plus a nursing intervention. The intervention was a "multicomponent, psychoeducational intervention (Project ENABLE [Educate, Nurture, Advise, Before Life Ends]) conducted by advanced practice nurses consisting of four weekly educational sessions and monthly follow-up sessions." The primary outcome measures were QOL, as measured by the Functional Assessment of Chronic Illness Therapy for Palliative Care, symptom intensity, and resource use; secondary outcomes included mood. In the ENABLE group, there was a significant improvement in QOL ($P = .02$), lower symptom intensity ($P = .06$), and a reduction in depressed mood ($P = .02$). The effects were slightly larger in the group of patients who died. Resource use did not differ by group.

Meyers et al[15] randomly assigned 476 patients and caregiver dyads undergoing phase I, II, or III cancer treatment at three cancer centers to usual care or usual care plus Creativity, Optimism, Planning and Expert Information (COPE), a simultaneous care educational intervention. The primary end point of the trial was global QOL measured with the City of Hope QOL Instruments for Patients or Caregivers; a secondary end point was problem-solving abilities. The intervention included educational sessions by trained educators with the patient and caregiver; these sessions included the COPE problem-solving model and began by addressing one problem. Each dyad received *The Home Care Guide for Cancer*. There was no difference in the rate of change of QOL between the usual care and intervention groups. Caregiver QOL scores also declined but at a lesser rate in the intervention group, which was a statistically significant difference ($P = .02$). In planned secondary analyses, the caregivers in the simultaneous care educational intervention group had significantly less decline in the psychological, social, and spiritual QOL scores. The impact of COPE increased over time. The COPE intervention allowed the caregiver to maintain stable QOL over time.

Integrative Discussion and Analysis

Seven published randomized trials demonstrate the feasibility of providing various components of PC alongside usual oncology care. There is, however, a dearth of data evaluating the integration of modern PC practices into standard oncology care, especially in concert with ongoing antitumor therapy. Overall, the addition of PC interventions to standard oncology care delivered via different models to patients with cancer provided evidence of benefit. No harm to any patient was observed in any

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Table 3. Randomized Trials of Palliative Care: Outcomes Improved With Palliative Care

	Outcomes						
Reference	Symptoms	Quality of Life	Mood	Satisfaction	Resource Use	Advance Care Planning	Survival
Bakitas et al, 2009[18]	Improved ($P = .06$)	Improved ($P = .02$)	Improved ($P = .02$)	Not measured	No difference	No difference	No difference
Brumley et al, 2007[13]	Not measured	Not measured	Not measured	Improved ($P < .05$)	Cost $12,670 *v* $20,222 ($P = .03$); home death more likely (OR, 2.20; $P < .001$). Hospital days reduced by 4.36 ($P < .001$). ED visits reduced by 0.35 ($P = .02$)	Not measured	No difference
Gade et al, 2008[14]	No difference	No difference	No difference	IPCS patients reported greater satisfaction with their care experience ($P = .04$) and providers' communication ($P < .001$)	Total mean health costs $6,766 lower (IPCS: $14,486; UC: $21,252; $P < .001$). Net cost savings of $4,855 (staffing costs) per patient ($P < .001$). Longer median hospice stays (24 days *v* 12 days; $P = .04$).	IPCS patients had more ADs at discharge than UC patients (91.1% *v* 77.8%; $P < .001$)	No difference
Meyers et al, 2011[15]	Not measured	Patients: no difference. Caregivers: declined at less than half the rate of controls ($P = .02$)	No difference	Not measured	Not measured	Not measured	Not measured
Pantilat et al, 2010[16]	No difference*	Not measured	Depression not reported; anxiety no difference	Not measured	Not measured	No difference	Not measured
Rabow et al, 2004[17]	Less dyspnea ($P = .01$); no change in pain†	No difference	Less anxiety ($P = .05$); no change in depression ($P = .28$)	No difference	No difference	55% *v* 28% ($P = .12$)	Not measured
Temel et al, 2010[6]	Improved ($P = .04$)	Improved ($P = .03$)	Less depression ($P = .01$)	Not measured	Less aggressive care ($P = .05$)	More ADs documented in PC group ($P = .05$)	11.6 *v* 8.9 months ($P = .02$)

Abbreviations: AD, advance directive; ED, emergency department; IPCS, interdisciplinary palliative care service; OR, odds ratio; PC, palliative care; UC, usual care.
*The consultant team did not track whether the primary inpatient team followed the recommendations. In a concurrent study done at the same institution,[15] the primary team followed recommendations only 8% to 17% of the time. This may partly explain the lack of effect (S. Pantilat, personal communication, May 2011).
†The primary care provider followed recommendations for opioid prescription in 8% of cases and for antidepressant prescription in only 17% of cases.

trial, even with discussions of EOL planning, such as hospice and ADs. Two of five trials measuring change in symptoms, two of five studies measuring QOL, two of three studies measuring patient/caregiver satisfaction, and one of three studies measuring survival found statistically significant improvements with PC. Three of six studies measuring mood, two of five studies measuring resource use, and one of four studies measuring outcomes of advance care planning found statistically significant differences, and one outcome of borderline significance was also found in each of these three areas, Therefore, most trials showed benefits ranging from equal to improved overall survival, reduced depression, improved caregiver and/or patient QOL, and overall lower resource use and cost because EOL hospitalizations were avoided.

Selected Additional Research

Researchers have recently conducted reviews of the existing literature on PC. El-Jawahri et al[20] reviewed published RCTs on PC, including three discussed here,[6,13,17] and found that five of seven well-designed studies with patient QOL as a primary end point found statistically significant improvements, as did five of six studies on family caregiver outcomes, seven of 10 studies with patient and/or caregiver satisfaction, and nine of 13 studies on health services use and EOL outcomes favoring the intervention arms. Two of 12 studies on physical symptoms found statistically significant improvements in outcome as did six of 12 studies for psychological symptoms.

The authors discuss methodologic limitations in many of the studies, particularly in the measurement systems. Methodologic limitations included underpowering and problems in recruitment, contamination, and crossover. However, because of findings of statistically significant benefits in QOL, caregiver outcomes, satisfaction, health services use, and EOL care, the authors conclude that these benefits are clear, although more research is needed to validate recent findings.

Higginson and Evans[21] conducted a systematic review on specialist PC teams. To be included in the review, the team had to include two or more clinicians. All studies must have included a comparison of a specialist PC team and usual care. Eight RCTs (and 32 observational or quasi-experimental studies) were identified, including two discussed in this PCO.[6,18] Three of eight studies found significant benefits in QOL outcomes, two of eight in family/caregiver outcomes, two of eight in satisfaction, three in symptoms, and one of borderline significance in EOL outcomes. These authors also found no negative outcomes. After evaluating the RCTs plus observational studies, the authors concluded that there were improvements in pain and other symptom relief, and some measures of health services use, caregiver outcomes, satisfaction, and mood. Fewer differences in QOL were observed. These authors also discuss limitations in study methodology and recommend routine data collection by PC providers.

Zimmermann et al[22] performed a systematic review of randomized trials of PC interventions performed before 2007. Only 22 of 396 studies met the quality standards for inclusion. Family satisfaction was increased in seven of 10 studies, four of 13 showed improvement in QOL, one in 14 showed improvements in symptoms, and only one in seven showed cost savings. Most studies had significant methodologic shortcomings. This

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systematic review was itself criticized for methodologic limitations, such as including nine of 22 trials that did not meet any current definitions of PC,[23] including studies in which the control group had specialized PC,[24] and overlooking one of the most important studies that documented a 50% cost savings for a palliative intervention.[25] Zimmermann et al concluded "The evidence for benefit from specialized palliative care is sparse and limited by methodological shortcomings. Carefully planned trials, using a standardized palliative care intervention and measures constructed specifically for this population, are needed." Since that review, the carefully controlled trials of more modern comprehensive PC interventions (Temel et al[6], Bakitas et al[18], Meyers et al[15], Gade et al[14], and Brumley et al[13]) have shown modest benefit, a stabilization or decrease in costs, and no harm.

Molassiotis et al[26] randomly assigned 164 patients with colorectal or breast cancer (32% with stage IV) receiving capecitabine to standard care (drug education) versus a home care nursing (HCN) program. The HCN program included symptom assessment, education, home visits, and phone calls. The primary outcome was toxicity (composite score), and secondary outcomes included mood, QOL, and health services use. There were statistically significant differences in the toxicity composite score in favor of the HCN program, and a trend favored the mood outcomes. Differences were not seen in QOL, with the exception of financial problems, which did benefit from the intervention. Some measures of health services use were significantly improved. This study demonstrated a benefit from the HCN program for patients taking oral chemotherapy in either the adjuvant or metastatic setting, primarily with regard to toxicity. The study highlights the methodologic importance of evaluating which component of a PC intervention has an impact on the measured outcomes.

Meyers et al[19] enrolled 44 patients onto a nonrandomized trial to evaluate the clinical impact of assigning both a nurse trained in chemotherapy and PC and a social worker to a patient in addition to usual oncology care (simultaneous care group). The rate of QOL decline was less, although not statistically significant, in the simultaneous care group. Compared with usual care, the use of hospice was increased in the simultaneous care group (92% *v* 53%; $P = .034$); the mean days in hospice were the same. There was no difference in the number of chemotherapy cycles patients received.

RESEARCH PRIORITIES

Future studies are needed to:

- Evaluate the optimal timing and venue for provision of PC (inpatient, outpatient/community)
- Evaluate evidence-based reimbursement models to support PC provision
- Evaluate which components of PC have an impact
- Evaluate interventions in other diseases besides lung cancer
- Evaluate the impact of PC across the continuum of care, especially during the delivery of antitumor therapy.

PRACTICAL ISSUES OF PROVIDING PALLIATIVE CARE

Despite the growing evidence base supporting the important role of PC concurrent with standard oncologic care, health policy and reimbursement mechanisms to facilitate efficient implementation early in the disease trajectory are not widely available except in the hospice setting. Inpatient consultative PC services are becoming more prevalent, but clinic-based PC and community-based non-hospice PC services are only now becoming available as clinical and business models support their use.[27] Further, more PC physicians and multidisciplinary providers will be required to meet the anticipated growing demand. Future priorities include developing aligned health policy and reimbursement mechanisms to facilitate implementation of evidence-based PC models as described in this PCO, demonstration programs, and workforce development.

OTHER RELEVANT CLINICAL PRACTICE GUIDELINES

The European Society for Medical Oncology

The European Society for Medical Oncology (ESMO) stated in 2003[28] that "Since most cancer patients receive their cancer care in dedicated clinics or hospitals, it is imperative that these facilities provide an adequate supportive and palliative care infrastructure as part of the global service. Key tasks of supportive and palliative care provision in the cancer center include the screening of cancer patients to identify patients with specific needs, and the provision of realtime supportive and palliative care interventions as part of routine cancer care."

The National Consensus Project

The National Consensus Project published the second edition of their guidelines in 2009 with the goal to "assure consistency and high quality of care" in palliative care.[10]

Society for Surgical Oncology

The Society for Surgical Oncology has endorsed palliative and supportive care for more than 10 years: "Supportive care services and effective symptom management are essential to promoting the quality of life for people diagnosed with cancer. Patients must have access to these services and therapies as part of their comprehensive cancer care."[29]

WHO Definition of Palliative Care

"Palliative care is an approach that improves the quality of life of patients and their families facing the problems associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual. Palliative care . . . is applicable early in the course of illness, in conjunction with other therapies that are intended to prolong life, such as chemotherapy or radiation therapy."[30]

AUTHORS' DISCLOSURES OF POTENTIAL CONFLICTS OF INTEREST

The author(s) indicated no potential conflicts of interest.

AUTHOR CONTRIBUTIONS

Administrative support: Sarah Temin, Mark Somerfield
Manuscript writing: All authors
Final approval of manuscript: All authors

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Appendix

Overview of the Provisional Clinical Opinion Development Process

Provisional clinical opinion (PCO) topic selection. The American Society of Clinical Oncology (ASCO) Clinical Practice Guidelines Committee (CPGC) leadership is responsible for accepting, reviewing, and approving proposed PCO topics on behalf of the ASCO Board of Directors. The selection of this PCO topic was guided by the Topic Selection Algorithm that is used by the CPGC to guide selection of topics for ASCO's clinical practice guidelines (www.asco.org/guidelines/manual).

PCO Evidentiary Basis

PCOs are informed by expeditious methodologic assessments of the data in question. To this end, ASCO has established a relationship with the National Cancer Institute's Physician Data Query (PDQ) Editorial Boards. The PDQ's Editorial Boards comprise content experts in oncology and related specialties. On request from ASCO, the relevant PDQ Editorial Board will provide a written assessment of the new data from Temel et al.[6]

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Ad Hoc PCO Panel

The ASCO PDQ Assessment was forwarded to an ad hoc panel that was selected and charged by the CPGC to draft the PCO. The ad hoc panel includes 11 content experts and a patient representative. The membership of the ad hoc panel was chosen in accordance with ASCO's Conflict of Interest Management Procedures for Clinical Practice Guidelines (www.asco.org/guidelinescoi). The Conflict of Interest Procedures call for the majority of ad hoc panel members to have no relationships with companies potentially affected by the PCO and generally require ad hoc panel co-chairs to be free from relationships with affected companies. The ad hoc panel met by telephone, and the opinion and manuscript were developed by expert consensus of the ad hoc panel with ASCO staff support.

Literature Search and Inclusion/Exclusion Criteria

To provide the most expeditious guidance, a systematic review of the literature is not conducted for PCOs. For this PCO, however, literature suggested by panel members and the PDQ Editorial Board was supplemented by a targeted literature search conducted in March and June of 2011 by ASCO. Search terms included "Palliative Care," "Home Care Services," "Hospitalization," "Hospices," "Terminal Care," "Quality of Life," and cancer terms. Studies were included if they were randomized clinical trials published between January 1966 and March 2011.

PCO Review and Approval

The PCO was approved by a unanimous vote of the ad hoc panel members, the CPGC leadership (Past Chair, Chair, Chair-Elect, and Board Liaison) and selected content experts drawn from the CPGC membership, and a subset of the ASCO Board (Past President, President, and President-Elect) and selected content experts drawn from the Board membership and appointed at the discretion of the President.

Table A1. Ad Hoc Expert Panel Members

Name	Affiliation/Institution
Jamie H. Von Roenn, MD, co-chair	Northwestern University
Thomas J. Smith, MD, co-chair	Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins Medicine
Amy P. Abernethy, MD	Duke University Medical Center
Erin R. Alesi, MD	Virginia Commonwealth University Health System
Tracy A. Balboni, MD, MPH	Dana-Farber Cancer Institute
Ethan M. Basch, MD	Memorial Sloan-Kettering Cancer Center
Betty R. Ferrell, RN, PhD, MA, FAAN, FPCN	City of Hope Medical Center
Matt Loscalzo, LCSW	City of Hope Medical Center
Diane E. Meier, FACP, MD	Center to Advance Palliative Care/Mt. Sinai School of Medicine
Judith A. Paice, PhD, RN, FAAN (past president of Pain Society and current board member of the International Society for the Study of Pain)	Northwestern University
Jeffrey M. Peppercorn, MD, MPH	Duke University Medical Center
Ellen Stovall	National Coalition for Cancer Survivorship

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