Title
The Quality of Supportive Cancer Care in the Veterans Affairs Health System and Targets for Improvement

Permalink
https://escholarship.org/uc/item/5jx740qp

Journal
JAMA Internal Medicine, 173(22)

ISSN
2168-6106

Authors
Walling, Anne M
Tisnado, Diana
Asch, Steven M
et al.

Publication Date
2013-12-09

DOI
10.1001/jamainternmed.2013.10797

Peer reviewed

Original Investigation

The Quality of Supportive Cancer Care in the Veterans Affairs Health System and Targets for Improvement

Anne M. Walling, MD, PhD; Diana Tisnado, PhD; Steven M. Asch, MD, MPH; Jennifer M. Malin, MD, PhD; Philip Pantoja, MA; Sydney M. Dy, MD; Susan L. Ettner, PhD; Ann P. Zisser, RN; Hannah Schreibeis-Baum, MPH; Martin Lee, PhD; Karl A. Lorenz, MD, MSHS

Invited Commentary page 2080

IMPORTANCE Characterizing the quality of supportive cancer care can guide quality improvement.

OBJECTIVE To evaluate nonhospice supportive cancer care comprehensively in a national sample of veterans.

DESIGN, SETTING, AND PARTICIPANTS Using a retrospective cohort study design, we measured evidence-based cancer care processes using previously validated indicators of care quality in patients with advanced cancer, addressing pain, nonpain symptoms, and information and care planning among 719 veterans with a 2008 Veterans Affairs Central Cancer Registry diagnosis of stage IV colorectal (37.0%), pancreatic (29.8%), or lung (33.2%) cancer.

MAIN OUTCOMES AND MEASURES We abstracted medical records from diagnosis for 3 years or until death among eligible veterans (lived ≥30 days following diagnosis with ≥1 Veterans Affairs hospitalization or ≥2 Veterans Affairs outpatient visits). Each indicator identified a clinical scenario and an appropriate action. For each indicator for which a veteran was eligible, we determined whether appropriate care was provided. We also determined patient-level quality overall and by pain, nonpain symptoms, and information and care planning domains.

RESULTS Most veterans were older (mean age, 66.2 years), male (97.2%), and white (74.3%). Eighty-five percent received both inpatient and outpatient care, and 92.5% died. Overall, the 719 veterans triggered a mean of 11.7 quality indicators (range, 1-22) and received a mean 49.5% of appropriate care. Notable gaps in care were that inpatient pain screening was common (96.5%) but lacking for outpatients (58.1%). With opioids, bowel prophylaxis occurred for only 52.2% of outpatients and 70.5% of inpatients. Few patients had a timely dyspnea evaluation (15.8%) or treatment (10.8%). Outpatient assessment of fatigue occurred for 31.3%. Of patients at high risk for diarrhea from chemotherapy, 24.2% were offered appropriate antidiarrheals. Only 17.7% of veterans had goals of care addressed in the month after a diagnosis of advanced cancer, and 63.7% had timely discussion of goals following intensive care unit admission. Most decedents (86.4%) were referred to palliative care or hospice before death. Single- vs multiple-fraction radiotherapy should have been considered in 28 veterans with bone metastasis, but none were offered this option.

CONCLUSIONS AND RELEVANCE These care gaps reflect important targets for improving the patient and family experience of cancer care.

Author Affiliations: Author affiliations are listed at the end of this article.

Corresponding Author: Anne M. Walling, MD, PhD, David Geffen School of Medicine, University of California, Los Angeles, 911 Broxton Ave, Los Angeles, CA 90095 (awalling@mednet.ucla.edu).

JAMA Intern Med. 2013;173(22):2071-2079. doi:10.1001/jamainternmed.2013.10797

Preserving quality of life is an important but often difficult goal for patients and families living with advanced cancer, impaired by their illness as well as its treatment.[1] Strong evidence supports many specific care processes to improve quality of life, and research suggests that such care promotes better patient and family outcomes.[2-7] Recent studies show shortfalls in even the fairly routine areas of cancer pain and clear communication about goals of care.[1,8-11] Given the prevalence of symptomatic and communication concerns and our increasing capacity to address them through intervention, understanding practice shortcomings would highlight opportunities for improvement.[4,12-15]

Veterans Affairs (VA) has gone further than most health care systems in building palliative care and hospice programs[16-18] to address these needs. Critics might worry that this development could come at the expense of standard treatments, but recent studies found that the VA provides at least equivalent cancer care compared with fee-for-service Medicare using the standard metrics of guideline-concordant treatment and survival. Analyses of VA–Surveillance, Epidemiology, and End Results Medicare propensity-matched cohorts with prostate, lung, and colorectal cancer; multiple myeloma; and lymphoma demonstrated that, with few exceptions, the VA provided more appropriate care and equivalent survival.[19-21] Data on supportive care for patients with advanced cancer in the VA are sparser.

The nature of VA financing might influence some dimensions of VA cancer care. For example, VA patients have a lower likelihood of receiving newer modalities of radiotherapy for prostate cancer,[19,22] perhaps from fewer financial incentives for adoption. Conversely, in supportive care, the VA financing structure may incentivize better quality. For example, chemotherapy in the last 14 days and intensive care unit and emergency department visits in the last month of life were less inappropriately aggressive in the VA than in Medicare.[21] Understanding how an integrated system like the VA performs should shed light on trends elsewhere as Medicare increasingly moves away from pure fee-for-service financing. Furthermore, demonstrating the feasibility of patient- and family-centered oncologic measurement would inform the effort of the Centers for Medicare & Medicaid Services to develop cancer care measures.[23]

We therefore conducted a nationwide, representative retrospective cohort study of VA supportive care quality using a recently developed set of process-of-care quality measures.

Methods

Cohort Identification

We selected a national cohort of veterans with stage IV cancer to represent common solid tumors distinguished by varying prognostic and clinical features. We identified a sampling frame of 424 veterans with pancreatic, 3184 with lung, and 628 with colorectal cancers diagnosed in 2008 from the VA Comprehensive Cancer Registry.[24,25] We randomly sampled from each cancer type in equal proportions and confirmed eligibility on the basis of advanced stage and documentation that the veteran was alive for at least 30 days and had at least 1 VA hospitalization of 3 days or more or at least 2 VA encounters of any type (eg, emergency department visit or outpatient visit). Eligibility criteria ensured that veterans had experienced enough VA care to estimate quality. The VA Greater Los Angeles Healthcare System institutional review board approved the study.

Data Sources and Variables

Medical record abstraction from diagnosis in 2008 for up to 3 years or until death was used to obtain the data components required to measure quality using the Cancer Quality–Assessing Symptoms and Side Effects of Supportive Treatment (ASSIST) quality indicators (QIs).[26] We also collected patient characteristics, including demographics (age, sex, race or ethnicity, and marital status), and clinical variables, including comorbidity, as measured by the Adult Comorbidity Evaluation–27 and receipt of hospice or palliative services.[27] We supplemented missing medical record documentation for race or ethnicity with VA administrative data in 7.8% of cases. Urban vs rural residence location was obtained from VA administrative data.

Information regarding age, race or ethnicity, cancer type, and the presence of a hospice referral was collected from the VA Comprehensive Cancer Registry or the medical record for ineligible patients to understand bias related to eligibility criteria.

Medicare-linked files were obtained to conduct sensitivity analyses on how Medicare use affected VA supportive cancer care quality.

The Cancer Quality–ASSIST Indicator Set

Cancer Quality–ASSIST QIs are evidence-based measures of process quality designed to evaluate the supportive care received by patients with cancer, established using the method for QI development, including literature and expert panel review, from RAND Health and the University of California, Los Angeles.[26,28-31] We used 42 indicators covering 3 main domains (pain, nonpain symptoms, and information and care planning) demonstrated as valid, reliable, and feasible for medical record abstraction in approximately 500 patients at 3 diverse academic medical centers, including the VA Greater Los Angeles Healthcare System, Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins, and University of California, Los Angeles.[9,10,32,33]

Medical Record Abstraction

Three experienced oncologic nurse reviewers (A.P.Z. and 2 others) conducted medical record abstractions after a 3-day training session using a detailed abstraction protocol and computer-aided tool to allow data entry, error checks, and secure data storage. The abstraction team had access to real-time consultation with a senior nurse reviewer (A.P.Z.), met biweekly, and used a log to document common questions and answers to facilitate consistency. They accessed each veteran's full electronic medical record from local workstations using VA software that allows secure national access of the clinical patient record system. Each medical record abstraction took a mean 2 hours 15 minutes to complete.

A 5% reabstraction sample was studied for all but 2 QIs (which depended only on laboratory data) to ensure the reliability and validity of our data. Seven QIs were dropped because of reliability and/or validity concerns. Of the 35 unique QIs included in the final analysis, 5 had both inpatient and outpatient versions; therefore, scores for 40 QIs are reported. For the final indicator set, interrater agreement was 91.9% (pooled κ, 0.68) for the numerator and 98.8% (pooled κ, 0.92) for the denominator, suggesting good to excellent agreement.[34]

Statistical Analysis

Quality Indicator Evaluation

If a veteran was eligible for a QI, we scored it as 1 or 0 based on adherence or nonadherence to the recommended process. If a veteran was eligible for a QI several times, then a mean score between 0 and 1 was possible. We calculated both event-level (eg, management of each occurrence of pain) and patient-level (eg, rates of adherence to all occurrences of pain aggregated by patient) quality scores, and because they were similar, we report patient-level scores. If patients had a documented contraindication to the care process or a preference against it, we conservatively considered the veteran to have received appropriate care.

We determined adherence to each QI and then the mean patient-level percent adherence to the Cancer Quality-ASSIST indicators in the entire cohort to ascertain the overall quality of supportive care. For example, if a patient was eligible for 6 QIs and received recommended care for 3, his or her overall score was 50%. The overall score for the cohort is the mean of these patient-level scores. To evaluate relative gaps in performance, we determined domain-level ratings of pain, nonpain symptoms, and information and care planning indicators.

Quality of Supportive Care by Key Demographics and Cancer Type

We stratified overall and domain-level quality scores by age, comorbidity, cancer type, marital status, and whether the veteran lived in an urban or rural location. Because the quality outcome deviated slightly from normality, we used parametric (*t* test or analysis of variance with the Tukey-Kramer method for the multiple-comparisons test) and nonparametric (Wilcoxon rank sum or Kruskal-Wallis) tests to evaluate differences.[35] Because of similar results, we present information derived from using the parametric tests.

Sensitivity Analysis for Veterans With Substantial Medicare Use

We evaluated differences in the quality scores between veterans who were concurrent users and nonusers of Medicare services to ensure that scores based entirely on the VA medical record did not misrepresent the overall quality of care for veterans with substantial Medicare use. We did not consider hospice use in our definition of Medicare use because patients who primarily receive care in the VA may use their Medicare benefit when referred for hospice services by VA providers through the Hospice-Veteran Partnership Program.[36]

We conducted a sensitivity analysis with *t* tests comparing the QI scores for Medicare-enrolled veterans in our sample who had substantial fee-for-service Medicare use (based on the

Table 1. Description of the Cancer Quality–ASSIST Study Cohort

Cohort Characteristic	No.	% or Mean (SD)
Age at diagnosis, y	719	66.2 (10.3)
Sex		
Male	699	97.2
Female	20	2.8
Race or ethnicity		
White (non-Hispanic)	534	74.3
Black (non-Hispanic)	143	19.9
Asian Pacific Islander (non-Hispanic)	12	1.7
Hispanic	30	4.2
Residence location status		
Urban	480	66.8
Rural	229	31.9
Highly rural	10	1.4
Marital status		
Married	321	44.7
Lives with significant other	44	6.1
Single, separated, divorced, or widowed	326	45.3
Missing	28	3.9
Primary cancer		
Colorectal	266	37.0
Lung	239	33.2
Pancreatic	214	29.8
Decedent survival after diagnosis, mo		
Colorectal	223	12.2 (8.8)
Lung	233	7.6 (6.7)
Pancreatic	209	5.0 (4.2)
Metastatic sites		
Lung	21	2.9
Brain	90	12.5
Liver	37	5.2
Treatment		
Chemotherapy alone	328	45.6
Radiotherapy alone	49	6.8
Chemotherapy and radiotherapy	150	20.9
None	192	26.7
Type of care		
Inpatient alone	60	8.3
Outpatient alone	48	6.7
Inpatient and outpatient	611	85.0
ACE-27 score		
None	52	7.2
Mild	284	39.5
Moderate	170	23.6
Severe	213	29.6
Palliative or hospice services		
Palliative care consultation alone	109	15.2
Community hospice alone	221	30.7
Palliative care consultation and community hospice	184	25.6
None	205	28.5
Co-pay exempt for medication		
Yes	468	65.1
No (or no data)	251	34.9

Abbreviations: ACE-27, Adult Comorbidity Evaluation–27; ASSIST, Assessing Symptoms and Side Effects of Supportive Treatment.

Table 2. Domain-Specific Cancer Quality–ASSIST Quality Indicators

	No.		Mean (95% CI)	
Domain	Patients	Quality Indicators Possible	No. of Quality Indicators Triggered	Pass Rate, %
All domains	719	40	11.65 (11.38-11.92)	49.46 (48.17-50.75)
Pain	715	9	3.32 (3.20-3.44)	68.54 (66.67-70.41)
Information and care planning	719	8	3.57 (3.49-3.64)	45.81 (43.73-47.89)
Nonpain symptoms	712	23	4.83 (4.66-5.00)	36.76 (34.74-38.77)

Abbreviation: ASSIST, Assessing Symptoms and Side Effects of Supportive Treatment.

Medicare Provider Analysis and Review, outpatient, and carrier files) with veterans who were enrolled in Medicare but for whom we found little to no Medicare fee-for-service use. We used SAS, version 9.3 (SAS Institute), for all data management and analyses.

Results

Description of the VA National Cancer Quality–ASSIST Cohort

Of 719 veterans with stage IV cancer diagnosed in 2008 included in our final sample, 266 (37.0%) had colorectal cancer, 239 (33.2%) had lung cancer, and 214 (29.8%) had pancreatic cancer (**Table 1**). These 719 veterans were treated at 116 geographically distributed VA facilities with a mean of 6.2 patients per site (range, 1-28). Many were older men (97.2%) with a mean age of 66.2 years. Similar to national veteran demographics,[37] most were white (74.3%), with 19.9% black and 4.2% Hispanic, and many resided in urban locations (66.8%). Half were either married (44.7%) or lived with a significant other (6.1%). Almost all veterans had some comorbidity (29.6% severe, 23.6% moderate, and 39.5% mild), and three-fourths received chemotherapy and/or radiation therapy for their disease. Most veterans obtained both inpatient and outpatient care (85.0%), with 8.3% receiving only inpatient care and 6.7% having only outpatient care. All but 54 patients (7.5%) died before the end of the study period, and nearly three-fourths received some form of hospice or palliative care consultation.

Receipt of Recommended Supportive Care

Quality of Supportive Care

Study patients were eligible for a mean of 11.7 QIs (range, 1-22) and received a mean 49.5% of appropriate care overall, regardless of setting (**Table 2**).

Veterans received appropriate care in the pain domain a mean 68.5% of the time. Inpatient assessment of pain, as well as use of bowel regimens and short-acting pain medications with long-acting medications, had higher adherence compared with similar indicators applied in the outpatient setting. Patients with spinal cord compression received timely treatment only half the time and follow-up 65.0% of the time. Notably, of 28 patients in our sample (all with advanced cancer) who received radiation for painful bone metastases, none received single-fraction treatment or had documentation of a contraindication to this evidence-based treatment of choice.

Veterans received appropriate care in the nonpain symptom domain a mean 36.8% of the time. Similar to patterns found within the pain domain, inpatient QIs measuring nausea or vomiting assessment and pleural effusion treatment and follow-up performed better than their outpatient counterparts. Dyspnea assessment in the outpatient setting (15.8%) and dyspnea treatment (10.8%) scored poorly. Chemotherapy-associated diarrhea had low rates of assessment (12.2%) and treatment (24.2%). Fatigue assessment for patients with advanced cancer was low in the outpatient setting (38.0%) and even lower for patients receiving chemotherapy (31.3%). There was often a lack of assessment for the presence or absence of dysphagia (36.9%), and only 4.3% of veterans who received parenteral or enteral nutrition had documentation regarding indications for such feeding. Depression was diagnosed in 14 patients: 78.6% had a treatment plan documented, and 36.4% had follow-up regarding response to therapy within 6 weeks.

Veterans received appropriate care in the information and care planning domain a mean 45.8% of the time. Timely palliative care was received by most veterans who died in the study (86.4%), and 72.4% had an advance directive or surrogate decision maker documented in the medical record. Sixty percent receiving mechanical ventilation had timely goals of care discussions documented, and 63.7% had them on admission to the intensive care unit. Documentation of a discussion about prognosis and goals of care within 1 month of diagnosis of advanced cancer occurred in 17.7% of patients. This was increased to 35.5% if the patient had brain metastasis. A discussion of the intent of chemotherapy (palliative vs curative) was documented 15.9% of the time. The 1 patient who had an implantable cardioverter defibrillator had its deactivation discussed prior to death (**Table 3**).

Quality of Supportive Care by Key Demographics and Cancer Type

Overall quality scores and quality scores by pain and nonpain symptom domains did not vary between patients 75 years and older and those younger than 75 years, although patients 75 years and older did receive higher-quality information and care planning scores (49.7% vs 44.5%, $P < .05$). A similar pattern was seen among veterans living in urban areas in comparison with their rural-dwelling counterparts. Patients did not have significantly different overall or domain-specific quality scores by level of comorbidity. In general, supportive care quality scores were higher for veterans with pancreatic cancer compared with patients with

Table 3. Overview of the Cancer Quality–ASSIST Quality Indicators

Quality Indicator	Setting	Quality Indicator Statement	Patients Triggered, No.	Pass Rate, %
Pain				
1	Outpatient	IF a cancer patient has a cancer-related outpatient visit or is admitted to a hospital…THEN there should be screening for the presence or absence and intensity of pain	657	58.1
	Inpatient	IF a cancer patient has a cancer-related outpatient visit or is admitted to a hospital…THEN there should be screening for the presence or absence of pain	449	96.5
5	Outpatient	IF a patient with cancer pain is started on a long-acting opioid formulation…THEN a short-acting opioid formulation for breakthrough pain should be provided	267	86.5
	Inpatient	IF a patient with cancer pain is started on a long-acting opioid formulation…THEN a short-acting opioid formulation for breakthrough pain should be provided	157	89.2
6	Outpatient	IF a patient with cancer pain is started on long-term opioid treatment…THEN patient should be offered prescription or nonprescription bowel regimen within 24 h or there should be documented contraindication	472	52.2
	Inpatient	IF a patient with cancer pain is started on long-term opioid treatment…THEN patient should be offered prescription or nonprescription bowel regimen within 24 h or there should be documented contraindication	303	70.5
11	Outpatient	IF a patient has advanced cancer and receives radiation treatment for painful bone metastases…THEN he or she should be offered single-fraction radiation or there should be documentation of a contraindication to single-fraction treatment	28	0
14	Inpatient	IF a cancer patient has confirmation of spinal cord compression on radiologic examination…THEN radiotherapy or surgical decompression should be initiated within 24 h or a contraindication for such therapy should be documented	20	50.0
15	Inpatient	IF a cancer patient is treated for spinal cord compression…THEN there should be follow-up of neurologic symptoms and signs within 1 wk after treatment is completed	20	65.0
Depression and Psychosocial Distress				
18	Outpatient	IF depression is diagnosed in a cancer patien…THEN a treatment plan for depression should be documented	14	78.6
19	Outpatient	IF a patient with cancer is treated for depression…THEN response to therapy should be documented within 6 wk	11	36.4
Nausea and Vomiting				
21	Outpatient	IF a patient with cancer undergoing moderately or highly emetogenic chemotherapy or with advanced cancer affecting the gastrointestinal tract or abdomen is seen for a visit in a cancer-related outpatient setting…THEN the presence or absence of nausea or vomiting should be assessed at every visit	107	53.5
22	Inpatient	IF a patient with cancer undergoing moderately or highly emetic chemotherapy or with advanced cancer affecting the gastrointestinal tract or abdomen is admitted to a hospital…THEN the presence or absence of nausea or vomiting should be assessed within 24 h	51	85.5
30	Inpatient	IF a patient with cancer not receiving chemotherapy or radiation reports nausea or vomiting on admission to the hospital…THEN within 24 h, potential underlying causes should be assessed	153	72.2
31	Inpatient	IF an inpatient with cancer not receiving chemotherapy or radiation has nausea or vomiting…THEN within 24 h of the initial report of nausea and vomiting, the patient should be offered a change in therapy	162	72.3
32	Outpatient	IF an outpatient with cancer not receiving chemotherapy or radiation is treated for nausea or vomiting with an antiemetic medication…THEN the effectiveness of treatment should be evaluated before or on the next visit to the same outpatient site	92	40.1
Fatigue and Anemia				
36	Outpatient	IF a cancer patient is seen for any visit while undergoing chemotherapy at a cancer-related outpatient site…THEN there should be an assessment of the presence or absence of fatigue	234	31.3
37	Outpatient	IF a known cancer patient is newly diagnosed with advanced cancer and had 2 or more outpatient visits within 1 month of the date of metastases…THEN there should be an assessment of the presence or absence of fatigue within 1 mo	263	38.0
40	All	IF a patient with cancer has anemia with a hemoglobin level less than 10 g/dL…THEN the presence of anemia-related symptoms (eg, fatigue, dyspnea, and light-headedness) should be evaluated	394	55.1
41	All	IF a patient with cancer has severe, symptomatic anemia (hemoglobin <8 g/dL)…THEN transfusion with packed red blood cells should be offered to the patient within 24 h	5	80.0
43	Outpatient	IF a patient presents for an initial visit for cancer affecting the oropharynx or gastrointestinal tract or advanced cancer at a cancer-related outpatient site…THEN there should be an assessment for the presence or absence of anorexia or dysphagia	659	36.9
48	Inpatient	IF a cancer patient is treated with enteral or parenteral nutrition…THEN there should be an assessment prior to starting nutrition that there was difficulty maintaining nutrition due to significant gastrointestinal issues and that expected life expectancy was at least 1 mo	47	4.3
Dyspnea				
49	Outpatient	IF a patient with cancer reports dyspnea…THEN there should be documentation of cause or investigation of at least 1 of the following: hypoxia, anemia, bronchospasm or chronic obstructive pulmonary disease, pleural effusion, tumor obstruction of bronchi or the trachea, pneumonia, or pulmonary embolism	463	15.8
50	Outpatient	IF a patient with cancer reports dyspnea…THEN he or she should be offered symptomatic management or treatment directed at an underlying cause within 1 mo	463	10.8

(continued)

Table 3. Overview of the Cancer Quality–ASSIST Quality Indicators (continued)

Quality Indicator	Setting	Quality Indicator Statement	Patients Triggered, No.	Pass Rate, %
54	Outpatient	IF a cancer patient has dyspnea and a malignant pleural effusion…THEN he or she should be offered thoracentesis within 1 mo of the initial diagnosis of the effusion, or other treatment (eg, diuresis) should result in a reduction in the effusion or symptomatic dyspnea	17	52.9
	Inpatient	IF a cancer patient has dyspnea and a malignant pleural effusion…THEN he or she should be offered thoracentesis during the hospitalization, or other treatment (eg, diuresis) should result in a reduction in the effusion or symptomatic dyspnea	24	79.2
55	Outpatient	IF a cancer patient with a malignant pleural effusion undergoes thoracentesis…THEN there should be a repeat assessment of dyspnea within 1 wk	7	42.9
	Inpatient	IF a cancer patient with a malignant pleural effusion undergoes thoracentesis…THEN there should be a repeat assessment of dyspnea during the hospitalization	17	98.0
Treatment-Associated Toxic Side Effect: Diarrhea				
66	Outpatient	IF a patient with cancer is undergoing chemotherapy and has diarrhea…THEN to classify the diarrhea as complicated or uncomplicated, all of the following should be assessed: history of onset and duration, number of stools and stool composition, and at least 1 of the associated symptoms (fever, dizziness, abdominal pain or cramping, nausea or vomiting, decreased performance status, sepsis, bleeding, or dehydration)	49	12.2
67	Outpatient	IF a patient with cancer is undergoing chemotherapy with a high risk (>10%) of chemotherapy-induced diarrhea…THEN an antidiarrheal agent should be prescribed on or before treatment is initiated	101	24.2
Treatment-Associated Toxic Side Effect: Delirium				
70	Inpatient	IF a hospitalized patient with cancer older than 65 y or with advanced cancer has delirium…THEN there should be an assessment for the presence or absence of at least 1 of the following potential causes and their association with delirium: medication effects, central nervous system disease, infection, or metabolic processes	87	70.5
Treatment-Associated Toxic Side Effect: Rash				
79	Outpatient	IF a patient with cancer is being treated with agents that block epidermal growth factor receptors (cetuximab and/or panitumumab)…THEN the presence or absence of a rash should be evaluated at each visit	19	59.0
Information and Care Planning				
80	All	IF a patient is newly known to have advanced cancer after a surgery, diagnostic test, or physical examination…THEN a discussion including prognosis and advance care planning should be documented within 1 mo or a reason why such a discussion did not occur	719	17.7
81	Outpatient	IF a patient with advanced cancer dies an expected death…THEN there should be documentation of an advanced directive or a surrogate decision maker in the medical record	583	72.4
83	All	IF an outpatient dies an expected death…THEN he or she should have been referred to palliative care within 6 mo prior to death (hospital-based or community hospice) or there should be documentation why there was no referral	583	86.4
84	Outpatient	IF a patient with advanced cancer is enrolled in a hospice or dies an expected death and has an ICD in place at death…THEN the ICD should have been deactivated before death or the medical record should document why it was not	1	100.0
85	Inpatient	IF a patient with advanced cancer is admitted to the ICU and survives 48 h…THEN within 48 h of ICU admission, the medical record should document the patient's preferences for care or attempt to identify them	150	63.7
86	Inpatient	IF a patient with advanced cancer is mechanically ventilated in the ICU…THEN within 48 h of admission to the ICU, the medical record should document the patient's preference for mechanical ventilation or why this information is unavailable	20	60.0
87	All	IF a patient with advanced cancer is newly known to have central nervous system metastases…THEN a discussion including prognosis and advance care planning should be documented within 1 mo unless there is a known prior preference to emphasize comfort-oriented care	31	35.5
92	Outpatient	IF a patient with cancer undergoes chemotherapy…THEN prior to chemotherapy, he or she should be informed about the risks and benefits of treatment, including likely symptoms and adverse effects, and whether treatment intent is curative or palliative	478	15.9

Abbreviations: ASSIST, Assessing Symptoms and Side Effects of Supportive Treatment; ICD, implantable cardioverter defibrillator; ICU, intensive care unit.

SI conversion factor: To convert hemoglobin to grams per liter, multiply by 10.0.

colorectal cancer (52.9% vs 46.4%, $P < .05$). This was largely explained by the fact that patients with pancreatic cancer received higher-quality information and care planning (52.4% vs 40.5%, $P < .05$). Pain and nonpain symptom management quality was similar across cancer types. Patients who were married or lived with a significant other vs those who did not had lower overall palliative care quality (47.1% vs 51.9%, $P < .05$), and this was consistent across all domains (**Table 4**).

Does Medicare Use Influence VA Quality Scores?

We found no significant difference in overall QI scores comparing patients with substantial Medicare fee-for-service use (47.0%) with those having little or no Medicare use (50.2%) ($P = .21$).

Ineligible Patients

The 360 patients who were sampled but ineligible had no statistically significant difference in terms of race but were older (69.6 vs 66.2 years, $P < .001$), and almost half (46.9%) were re-

Table 4. Scores by Age, Comorbidity, and Cancer Type

Patient Characteristic	No.	Mean, % Overall	Pain[a]	Information and Care Planning	Nonpain Symptoms[b]
Age at diagnosis, y					
<75	536	49.1	69.4	44.5[c]	35.9
≥75	183	50.5	66.1	49.7[c]	39.4
ACE-27 score					
None	52	49.7	71.8	42.8	37.5
Mild	284	48.5	68.4	45.0	34.2
Moderate	170	52.0	71.2	48.7	40.4
Severe	213	48.7	65.7	45.4	37.1
Cancer type					
Colorectal	266	46.4[d]	68.9	40.5[d]	34.8
Lung	239	49.8	66.2	45.9[e]	38.5
Pancreatic	214	52.9[d]	70.6	52.4	37.2
Marital status					
Married/lives with significant other	365	47.1[c]	66.2[c]	43.4[c]	34.5[c]
Other	354	51.9[c]	71.0[c]	48.3[c]	39.1[c]
Residence location status					
Urban	480	50.1	68.0	48.1[c]	37.0
Rural/highly rural	239	48.2	69.7	41.3[c]	36.3

Abbreviation: ACE-27, Adult Comorbidity Evaluation–27.

[a] In total, 715 patients were available for analysis since 4 did not trigger any of the quality indicators used to calculate the overall pain score.

[b] In total, 712 patients were available for analysis since 7 did not trigger any of the quality indicators used to calculate the overall nonpain symptoms score.

[c] *P* < .05.

[d] *P* < .05 for comparison between pancreatic and colorectal cancer.

[e] *P* < .05 for comparison between pancreatic and lung cancer.

ferred directly to a hospice. Among ineligible patients, those who were older (71.2 vs 68.3 years, *P* = .01) and patients with pancreatic cancer (47.3%) compared with those with lung (32.5%) and colorectal (20.1%) cancer were more likely to have a hospice referral documented (*P* = .03).

Discussion

Overall, veterans received only about half of recommended care as measured by Cancer Quality-ASSIST QIs. Performance gaps of this magnitude are unfortunately common.[8,10,38] Moreover, the observed deficits in this VA population may underestimate those found in the wider health care system because the VA has emphasized palliative and supportive care. Our findings agree with our more limited previous estimates of supportive care quality.[9,10,33] A recent study of lung cancer showed low rates of cancer pain screening in some VA facilities[39] similar in magnitude to our results. In addition, estimates of the suboptimal rates of bowel prophylaxis with long-term opioid use and inpatient pain assessments from a national academic collaborative outside the VA were similar to our findings.[40]

Our study has important strengths and identified many actionable gaps for improving care using clinically detailed quality measures. We found low rates of detection of certain symptoms and lower adherence to follow-up than initial management, suggesting that ensuring screening and follow-up for common symptoms among patients with advanced cancer, such as fatigue, depression, and nausea or vomiting, may need to be targeted much like pain has been (ie, pain as the fifth vital sign). The fact that the Cancer Quality-ASSIST inpatient pain screening QI had almost perfect adherence suggests that such efforts have been successful in changing practices around pain assessment. Such efforts for other high-impact symptoms may be considered.

We found low rates of discussion of goals and preferences for patients with advanced cancer during the month following diagnosis. Patients with pancreatic cancer, the cancer with the shortest expected survival duration, received higher quality care in the information and care planning domain compared with patients with lung and colorectal cancer. This is consistent with previous literature that shows that physicians are more likely to wait to discuss end-of-life issues until late in the disease trajectory, when patients have significant symptom burden and/or no more treatment options.[41,42] This may also explain why older patients received higher-quality information and care planning. Our findings support a need for more proactive incorporation of palliative care services in cancer care.[4]

Urban veterans also received higher-quality care in the information and care planning domain. We know that rural patients have to travel farther to receive care at VA facilities and may have a higher threshold for seeking care, which may lead to fewer opportunities to engage in care planning. Being married or living with a significant other was associated with receiving lower-quality palliative care across all measured domains. This unexpected association warrants further study and may reflect the challenges of broadening patient-centered supportive care to the family unit.

We used robust methods to develop the Cancer Quality-ASSIST QIs published previously.[9,10,26,28-33] Our current study had complete ascertainment of medical records from a representative sample drawn from a national cancer registry. We evaluated a large health care system recently shown in comparison with fee-for-service Medicare to deliver better guideline-concordant cancer care, with similar mortality but less aggressive use in the last month of life,[19-21] and high-quality medical care in many other chronic conditions.[43,44]

Limitations of our study include the possibility of overestimating VA performance if non-VA care affects it favorably (eg, prognostic communication outside the VA could facilitate transition to hospice care within the VA); however, most of our indicators (eg, symptom related) directly reflect the process at the point of care. We also limited eligibility to veterans who met a minimum threshold of VA use and confirmed the similarity of ineligible patients in terms of age, race, and hospice use. Next, a sensitivity analysis comparing veterans with and without fee-for-service Medicare use found no statistically significant difference in overall QI scores. Last, because our remote medical record retrieval system did not allow us to review actual advance directives, we relied on clinical note documentation and possibly underestimated quality in that area.

The VA is moving to meet the challenges outlined in our findings, including development and implementation of a practice toolkit to support improvement in symptomatic cancer care and a palliative care national clinical template.[45] What are the implications of our findings for the rest of the health care system? One important implication is that tools are available to assess the extent to which supportive care quality might be better or worse outside the VA. Given the National Quality Forum endorsement of Cancer Quality–ASSIST indicators as well as other similar measures, such as those from the Quality Oncology Practice Initiative in recent standards, our results support the application of the Cancer Quality–ASSIST indicators more widely.[46-48]

ARTICLE INFORMATION

Accepted for Publication: July 21, 2013.

Published Online: October 14, 2013. doi:10.1001/jamainternmed.2013.10797.

Author Affiliations: VA Greater Los Angeles Healthcare System, Los Angeles, California (Walling, Tisnado, Malin, Pantoja, Ettner, Zisser, Schreibeis-Baum, Lee, Lorenz); Division of General Internal Medicine and Health Services Research, David Geffen School of Medicine at the University of California, Los Angeles (Walling, Tisnado, Lorenz); RAND Health, Santa Monica, California (Walling, Lorenz); VA Palo Alto Healthcare System, Palo Alto, California (Asch); Stanford University School of Medicine, Stanford, California (Asch); Jonsson Comprehensive Cancer Center, University of California, Los Angeles (Malin); Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins, Baltimore, Maryland (Dy); Department of Health Policy and Management, Jonathan and Karin Fielding School of Public Health, University of California, Los Angeles (Ettner).

Author Contributions: Drs Walling and Lorenz and Mr Pantoja had full access to all the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis.
Study concept and design: Walling, Tisnado, Malin, Dy, Lorenz.
Acquisition of data: Walling, Tisnado, Asch, Malin, Pantoja, Zisser, Schreibeis-Baum, Lorenz.
Analysis and interpretation of data: Walling, Tisnado, Pantoja, Dy, Ettner, Lee, Lorenz.
Drafting of the manuscript: Walling, Tisnado, Schreibeis-Baum, Lorenz.
Critical revision of the manuscript for important intellectual content: Walling, Tisnado, Asch, Malin, Pantoja, Dy, Ettner, Zisser, Lee, Lorenz.
Statistical Analysis: Walling, Tisnado, Pantoja, Ettner, Lee, Lorenz.
Obtained funding: Lorenz.
Administrative, technical, and material support: Walling, Tisnado, Asch, Pantoja, Schreibeis-Baum, Lorenz.
Study supervision: Walling, Tisnado, Dy, Zisser, Lorenz.

Conflict of Interest Disclosures: Dr Malin reported being employed by and having stock ownership with WellPoint. Dr Lorenz reported serving as a consultant to Otsuka Pharmaceuticals for data monitoring and safety in the evaluation of a phase II trial of Sativex, a novel cannabinoid analgesic. No other disclosures were reported.

Funding/Support: This study is based on work supported by the US Department of Veterans Affairs, Veterans Health Administration, Office of Research and Development, Health Services Research & Development Service (project IIR 09-097).

Role of the Sponsors: The funding sources had no role in the design and conduct of the study; in the collection, analysis, and interpretation of the data; or in the preparation, review, or approval of the manuscript.

Disclaimer: The views expressed in this article are those of the authors and do not necessarily reflect the position or policy of the US Department of Veterans Affairs or the US government.

Previous Presentation: The results of this study were presented at the American Society of Clinical Oncology Quality Symposium; December 1, 2012; San Diego, California.

Additional Contributions: We thank our medical record abstraction team, including Anna Dickey and Jennifer Larkin, for their contributions to the VA Cancer Quality–ASSIST national study.

Correction: This article was corrected online September 10, 2014, to fix a quality indicator statement in Table 3.

REFERENCES

1. Teno JM, Clarridge BR, Casey V, et al. Family perspectives on end-of-life care at the last place of care. *JAMA*. 2004;291(1):88-.

2. Steinhauser KE, Christakis NA, Clipp EC, McNeilly M, McIntyre L, Tulsky JA. Factors considered important at the end of life by patients, family, physicians, and other care providers. *JAMA*. 2000; 284(19):2476-.

3. Steinhauser KE, Christakis NA, Clipp EC, et al. Preparing for the end of life: preferences of patients, families, physicians, and other care providers. *J Pain Symptom Manage*. 2001;22(3):727-.

4. Temel JS, Greer JA, Muzikansky A, et al. Early palliative care for patients with metastatic non–small-cell lung cancer. *N Engl J Med*. 2010;363 (8):733-.

5. Wright AA, Keating NL, Balboni TA, Matulonis UA, Block SD, Prigerson HG. Place of death: correlations with quality of life of patients with cancer and predictors of bereaved caregivers' mental health. *J Clin Oncol*. 2010;28(29):4457-4464.

6. Lautrette A, Darmon M, Megarbane B, et al. A communication strategy and brochure for relatives of patients dying in the ICU. *N Engl J Med*. 2007;356(5):469-478.

7. Wright AA, Zhang B, Ray A, et al. Associations between end-of-life discussions, patient mental health, medical care near death, and caregiver bereavement adjustment. *JAMA*. 2008;300(14):1665-1673.

8. Walling AM, Asch SM, Lorenz KA, et al. The quality of care provided to hospitalized patients at the end of life. *Arch Intern Med*. 2010;170(12):1057-1063.

9. Walling AM, Asch SM, Lorenz KA, et al. The quality of supportive care among inpatients dying with advanced cancer. *Support Care Cancer*. 2012;20(9):2189-2194.

10. Malin JL, O'Neill SM, Asch SM, et al. Quality of supportive care for patients with advanced cancer in a VA medical center. *J Palliat Med*. 2011;14(5):573-577.

11. Weeks JC, Catalano PJ, Cronin A, et al. Patients' expectations about effects of chemotherapy for advanced cancer. *N Engl J Med*. 2012;367(17):1616-1625.

12. Sikorskii A, Given CW, Given B, et al. Symptom management for cancer patients: a trial comparing two multimodal interventions. *J Pain Symptom Manage*. 2007;34(3):253-264.

13. Given CW, Bradley C, You M, Sikorskii A, Given B. Costs of novel symptom management interventions and their impact on hospitalizations. *J Pain Symptom Manage*. 2010;39(4):663-672.

14. Head BA, Keeney C, Studts JL, Khayat M, Bumpous J, Pfeifer M. Feasibility and acceptance of a telehealth intervention to promote symptom management during treatment for head and neck cancer. *J Support Oncol*. 2011;9(1):e1-e11.

15. Gilbert JE, Howell D, King S, et al. Quality improvement in cancer symptom assessment and control: the Provincial Palliative Care Integration Project (PPCIP). *J Pain Symptom Manage*. 2012;43(4):663-678.

16. Lu H, Trancik E, Bailey FA, et al. Families' perceptions of end-of-life care in Veterans Affairs

versus non–Veterans Affairs facilities. *J Palliat Med*. 2010;13(8):991-996.

17. Casarett D, Pickard A, Amos Bailey F, et al. Important aspects of end-of-life care among veterans: implications for measurement and quality improvement. *J Pain Symptom Manage*. 2008;35(2):115-125.

18. Edes T, Shreve S, Casarett D. Increasing access and quality in Department of Veterans Affairs care at the end of life: a lesson in change. *J Am Geriatr Soc*. 2007;55(10):1645-1649.

19. Keating NL, Landrum MB, Lamont EB, et al. Quality of care for older patients with cancer in the Veterans Health Administration versus the private sector: a cohort study. *Ann Intern Med*. 2011;154(11):727-736.

20. Landrum MB, Keating NL, Lamont EB, et al. Survival of older patients with cancer in the Veterans Health Administration versus fee-for-service Medicare. *J Clin Oncol*. 2012;30(10):1072-1079.

21. Keating NL, Landrum MB, Lamont EB, Earle CC, Bozeman SR, McNeil BJ. End-of-life care for older cancer patients in the Veterans Health Administration versus the private sector. *Cancer*. 2010;116(15):3732-3739.

22. Nambudiri VE, Landrum MB, Lamont EB, et al. Understanding variation in primary prostate cancer treatment within the Veterans Health Administration. *Urology*. 2012;79(3):537-545.

23. PPS-Exempt Cancer Hospital Quality Reporting (PCHQR). www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1228772356060. Accessed February 11, 2013.

24. Arrigo RT, Boakye M, Skirboll SL. Patterns of care and survival for glioblastoma patients in the Veterans population. *J Neurooncol*. 2012;106(3):627-635.

25. Zullig LL, Jackson GL, Dorn RA, et al. Cancer incidence among patients of the US Veterans Affairs Health Care System. *Mil Med*. 2012;177(6):693-701.

26. Lorenz KA, Dy SM, Naeim A, et al. Quality measures for supportive cancer care: the Cancer Quality–ASSIST Project. *J Pain Symptom Manage*. 2009;37(6):943-964.

27. Paleri V, Wight RG. Applicability of the Adult Comorbidity Evaluation–27 and the Charlson indexes to assess comorbidity by notes extraction in a cohort of United Kingdom patients with head and neck cancer: a retrospective study. *J Laryngol Otol*. 2002;116(3):200-205.

28. Walling A, Lorenz KA, Dy SM, et al. Evidence-based recommendations for information and care planning in cancer care. *J Clin Oncol*. 2008;26(23):3896-3902.

29. Naeim A, Dy SM, Lorenz KA, Sanati H, Walling A, Asch SM. Evidence-based recommendations for cancer nausea and vomiting. *J Clin Oncol*. 2008;26(23):3903-3910.

30. Dy SM, Lorenz KA, Naeim A, Sanati H, Walling A, Asch SM. Evidence-based recommendations for cancer fatigue, anorexia, depression, and dyspnea. *J Clin Oncol*. 2008;26(23):3886-3895.

31. Dy SM, Asch SM, Naeim A, Sanati H, Walling A, Lorenz KA. Evidence-based standards for cancer pain management. *J Clin Oncol*. 2008;26(23):3879-3885.

32. Dy SM, Lorenz KA, O'Neill SM, et al. Cancer Quality–ASSIST supportive oncology quality indicator set: feasibility, reliability, and validity testing. *Cancer*. 2010;116(13):3267-3275.

33. Dy SM, Asch SM, Lorenz KA, et al. Quality of end-of-life care for patients with advanced cancer in an academic medical center. *J Palliat Med*. 2011;14(4):451-457.

34. Fleiss JL. *Statistical Methods for Rates and Proportions.* New York, NY: John Wiley; 1981.

35. Rosner B. *Fundamentals of Biostatistics.* 7th ed. Boston, MA: Brooks/Cole; 2011.

36. We Honor Veterans. www.wehonorveterans.org. Accessed February 11, 2013.

37. Profile of Veterans. 2011. www.va.gov/vetdata/docs/SpecialReports/Profile_of_Veterans_2011.pdf. Accessed June 24, 2013.

38. McGlynn EA, Kerr EA, Adams J, Keesey J, Asch SM. Quality of health care for women: a demonstration of the Quality Assessment Tools system. *Med Care*. 2003;41(5):616-625.

39. Quality Improvement Toolkit: lung cancer care. www.hsrd.research.va.gov/for_researchers/cyber_seminars/archives/tti-010611.pdf. Accessed February 11, 2013.

40. Twaddle ML, Maxwell TL, Cassel JB, et al. Palliative care benchmarks from academic medical centers. *J Palliat Med*. 2007;10(1):86-98.

41. Keating NL, Landrum MB, Rogers SO Jr, et al. Physician factors associated with discussions about end-of-life care. *Cancer*. 2010;116(4):998-1006.

42. Ahluwalia SC, Chuang FL, Antonio AL, et al. Documentation and discussion of preferences for care among patients with advanced cancer. *J Oncol Pract*. 2011;7(6):361-366.

43. Trivedi AN, Matula S, Miake-Lye I, Glassman PA, Shekelle P, Asch S. Systematic review: comparison of the quality of medical care in Veterans Affairs and non–Veterans Affairs settings. *Med Care*. 2011;49(1):76-88.

44. Trivedi AN, Grebla RC. Quality and equity of care in the Veterans Affairs health-care system and in Medicare advantage health plans. *Med Care*. 2011;49(6):560-568.

45. Joint HSR/SR Projects: The Cancer Care Toolkit example. www.queri.research.va.gov/meetings/verc/Asch_Toolkits.pdf. Accessed February 11, 2013.

46. National Quality Forum. Palliative and end-of-life care. www.qualityforum.org/Projects/Palliative_Care_and_End-of-Life_Care.aspx. Accessed February 11, 2013.

47. Campion FX, Larson LR, Kadlubek PJ, Earle CC, Neuss MN. Advancing performance measurement in oncology: Quality Oncology Practice Initiative participation and quality outcomes. *J Oncol Pract*. 2011;7(3)(suppl):31s-35s.

48. McNiff KK, Neuss MN, Jacobson JO, Eisenberg PD, Kadlubek P, Simone JV. Measuring supportive care in medical oncology practice: lessons learned from the Quality Oncology Practice Initiative. *J Clin Oncol*. 2008;26(23):3832-3837.

Invited Commentary

It Is Possible

Quality Measurement During Serious Illness

Melissa D. Aldridge, PhD; Diane E. Meier, MD

Palliative care is specialized medical care for people with serious illnesses. It is focused on giving patients relief from the symptoms, pain, stress, and treatments of a serious illness—whatever the diagnosis. The goal is to provide the best possible quality of life for the patient and the family.[1] Although 66% of large hospitals have a palliative care program,[2] there is significant variation in the types of programs and services offered, giving rise to concern regarding variation in the quality of care provided by these programs.

Related article page 2071

The article by Walling and colleagues[3] in this issue of *JAMA Internal Medicine* has important implications for the field of palliative medicine that reach beyond the specific findings of the study. Veterans Affairs (VA) has exemplified the type of quality improvement initiatives that need to occur across a broad range of health care settings and populations to expand access to supportive cancer care. The study also found that despite systemwide efforts to improve access and quality, a significant amount of work remains to elevate the quality of supportive cancer care provided in the VA, which underscores the need for quality initiatives to be iterative and ongoing.

One of the most significant findings of the study is that 86.4% of the veterans who died an expected death during the study period were referred to either palliative or hospice care, reflecting their deep penetration within the VA system. Although the study evaluated only a cohort of veterans with common solid tumors (as opposed to other noncancer diagnoses), the cohort had varying prognostic and clinical features. The Veterans' Health Care Eligibility Reform Act of 1996 (Title 38 Code of Federal Regulations §17.38) standardized the provision of hospice and palliative care to eligible veterans who need these services. It established that hospice and palliative care are covered services, having equal priority with any other medical care service provided by the VA. This standardization of access systemwide created a culture in the VA where palliative and hospice care are integrated into the continuum of cancer care. The results of this study support the use of new standards for access to quality hospice and palliative care as a potential policy lever for the Centers for Medicare & Medicaid Services and accreditation bodies to scale palliative care delivery across health care settings outside the VA.

A second important implication of this study for the field of palliative medicine is that it serves as a proof of concept that quality of care can be measured in an older and medically complex patient population. This is a pivotal finding, since discussions regarding improving the quality of palliative care are premised on the notion that we can systematically measure quality. This study demonstrates that such measurement is possible and should be replicated across systems and settings. The study used the Cancer Quality–Assessing Symptoms and Side Effects of Supportive Treatment (ASSIST) measures, which span multiple domains of care from symptom management to spiritual support. The VA has demonstrated that quality can be measured in the veteran population using this tool. The study also highlights, however, that the assessment of meaningful and person-centric measures is costly. Specifically, data abstraction for the Cancer Quality–ASSIST measures required 3 days of training for experienced oncologic nurses, access to a real-time consultation with a senior nurse reviewer, and the use of the VA's information technology infrastructure, which is more comprehensive than that of most other integrated systems or health care providers. On average, complete medical record abstraction required more than 2 hours for each patient. As such, a significant barrier to other health care systems or providers in carrying out similar quality improvement initiatives is the potentially high cost of the measurement process.

The study by Walling et al[3] also demonstrates the significant gap between the evidence base for supportive care processes that improve quality of life for patients with cancer and the variable implementation of such care processes in standard oncologic practice. This implementation "gap" represents a significant challenge for the field of palliative medicine and is the focus of 2 recent articles[4,5] regarding the need for investigators to write about their implementation experiences within a scientific framework and with a common language to maximize learning from current and past initiatives. Although we know what works for improving care in a population of older veterans, we need more information regarding how and why some processes of care are more consistently and successfully implemented than others. Why was the VA more successful in improving quality indicators in the inpatient setting? A greater focus on implementation research would enable innovative approaches to overcoming barriers in adopting evidence-based interventions to be more widely understood and disseminated.

Last, the study by Walling et al[3] highlights the unique aspects of the VA system that both facilitate the assessment of quality and may have led to the relatively high quality scores in some domains. Despite the fact that, on average, veterans received only about half of recommended care, significant variation occurred across measures and settings, and there is reason to believe that the VA may be on the higher end of success in terms of these outcomes compared with other settings.[6-8] As an integrated health care system functioning under a global budget with a fully employed clinical staff, the incentives promoting supportive care services are likely stronger than in nonintegrated systems in which the quality improvements and efficiencies generated from greater supportive care services may not be enjoyed or even recognized by the provider of such services. The extent to which those system design factors and incentives influenced the care provided in the VA is unclear but worthy of further study. Similarly, the extent to which the VA links clinician incentives, training, and electronic medical record processes to make quality measurement and assessment more visible and actionable at the point of care is unknown. Does the electronic medical record prompt clinicians to assess shortness of breath? Does the VA reward or penalize movement on the Cancer Quality-ASSIST measures? What were the specific actionable steps taken by the VA to address the results of this study? More information about these issues would facilitate widespread adoption of these care processes and support efforts for ongoing improvement in the quality of palliative care in the VA and nationally.

ARTICLE INFORMATION

Author Affiliations: Department of Geriatrics and Palliative Medicine, Mount Sinai School of Medicine, New York, New York (Aldridge, Meier); Center to Advance Palliative Care, New York, New York (Meier).

Corresponding Author: Melissa D. Aldridge, PhD, Department of Geriatrics and Palliative Medicine, Mount Sinai School of Medicine, One Gustave L. Levy Pl, PO Box 1070, New York, NY 10029 (melissa.aldridge@mssm.edu).

Published Online: October 14, 2013. doi:10.1001/jamainternmed.2013.9469.

Conflict of Interest Disclosures: None reported.

Funding/Support: This study was supported by the John A. Hartford Foundation, Cambia Health Foundation, Donaghue Foundation, California Health Care Foundation, Ho Chiang Foundation, Stavros Niarchos Foundation, and Milbank Rehabilitation Foundation.

Role of the Sponsor: The funding sources had no role in the design and conduct of the study; collection, management, analysis, and interpretation of the data; preparation, review, or approval of the manuscript; and decision to submit the manuscript for publication.

REFERENCES

1. Center to Advance Palliative Care. Defining palliative care. http://www.capc.org/building-a-hospital-based-palliative-care-program/case/definingpc. Accessed August 19, 2013.

2. Center to Advance Palliative Care. Growth of palliative care in U.S. hospitals: 2012 snapshot. http://www.capc.org/capc-growth-analysis-snapshot-2011.pdf. Accessed August 19, 2013.

3. Walling AM, Tisnado D, Asch SM, et al. The quality of supportive cancer care in the Veterans Affairs health system and targets for improvement [published online October 14, 2013]. *JAMA Intern Med*. doi:10.1001/jamainternmed.2013.10797.

4. Aldridge Carlson MD. Research methods priorities in geriatric palliative medicine. *J Palliat Med*. 2013;16(8):838-842.

5. Kutner JS. A significant milestone for palliative care: imperative for dissemination and implementation research. *J Palliat Med*. 2011;14(11):1194-1195.

6. Lu H, Trancik E, Bailey FA, et al. Families' perceptions of end-of-life care in Veterans Affairs versus non–Veterans Affairs facilities. *J Palliat Med*. 2010;13(8):991-996.

7. Keating NL, Landrum MB, Lamont EB, Earle CC, Bozeman SR, McNeil BJ. End-of-life care for older cancer patients in the Veterans Health Administration versus the private sector. *Cancer*. 2010;116(15):3732-3739.

8. Finlay E, Shreve S, Casarett D. Nationwide Veterans Affairs quality measure for cancer: the family assessment of treatment at end of life. *J Clin Oncol*. 2008;26(23):3838-3844.