

RESEARCH LETTERS

HEALTH CARE REFORM

Outpatient Palliative Care Practices

The field of palliative care has grown rapidly in the United States, with most of the focus on the development of inpatient palliative care consultation services.¹ However, the number of outpatient palliative care programs is increasing, with evidence of improved patient and family clinical outcomes.²⁻⁴ Little is known about the structures and processes of existing outpatient palliative care services, including those serving patients with cancer. Learning about existing outpatient palliative care practices may be useful to palliative care programs hoping to expand into the outpatient arena.⁵ This project was designed to learn the structural components of a national sample of leading outpatient palliative care practices.

Methods. Faculty from the Palliative Care Leadership Center (PCLC) Initiative of the Center to Advance Palliative Care sent surveys to 12 leading outpatient palliative care practices in 2008. The 12 practices were selected on the basis of reputation, geographic diversity, and sustainability. We collected information regarding clinics' physical location, census, primary illnesses seen, referral sources, staffing, funding sources, and data tracking. Our project was exempted from institutional review board review.

Results. Of the 12 practices, 11 responded to the survey with data representing the prior year of clinical operation. These practices were part of the following medical centers: Dartmouth-Hitchcock Medical Center, Lebanon, New Hampshire; Fairview Health Services & the University of Minnesota Medical Center, Minneapolis; Massachusetts General Hospital, Boston; Medical College of Wisconsin/Froedtert Hospital, Milwaukee; Palliative Care Center of the Bluegrass, Lexington, Kentucky; University of Pittsburgh Medical Center, Pittsburgh, Pennsylvania; M. D. Anderson Cancer Center, Houston, Texas; Northwestern University Medical Center, Chicago, Illinois; University of California, San Diego John Moores Cancer Center, San Diego; University of California, San Francisco Helen Diller Family Comprehensive Cancer Center, San Francisco; and VCU Massey Cancer Center, Richmond, Virginia.

The aggregate results are listed in the **Table**. Surveyed outpatient palliative care practices are generally small in scope, seeing approximately 500 patients annually over a 3-day-per-week practice. These practices primarily see patients with cancer and are typically affiliated with cancer practices. While outpatient palliative care practices have a great variety of staffing models,

Table. Characteristics of 11 Outpatient Palliative Care Comparison Practices

Practice Characteristic	Mean (Range)	Programs, No. (%)
Utilization and size		
Total No. of patients seen annually	501 (90-1400)	
New patients seen annually, No.	250 (48-840)	
Patients with cancer, %	80 (20-100)	
Visits per patient, No.	3 (2-4)	
Clinical operation, d/wk	3 (1-5)	
No. of examination rooms available each clinical session	2 (1-8)	
Referral sources		
Oncologists, %	76 (0-95)	
Inpatient palliative care consult service, %	23 (0-56)	
Primary care physicians, %	10 (0-44)	
Source of funding		
Billing, %	49 (0-100)	
Institutional support, %	45 (0-100)	
Philanthropy, %	6 (0-67)	
Affiliation		
Hospital based		10 (91)
Within an oncology division/cancer center		10 (91)
Hospice based		1 (9)
Staffing		
Physician		
Physician FTE among programs with physician staffing	0.6 (0.1-2)	10 (91)
APN/NP		
APN FTE among programs with APN staffing	0.9 (0.2-2)	6 (55)
Social worker		
Social worker FTE among programs with social worker staffing	0.7 (0.25-1)	5 (45)
RN		
RN FTE among programs with RN staffing	1.6 (0.2-4.6)	4 (36)
Patient data collected routinely		
Demographics		10 (91)
Symptoms		8 (73)
Hospital admissions		5 (45)

Abbreviations: APN/NP, advance practice nurse/nurse practitioner; FTE, full-time equivalent per week; RN, registered nurse.

most practices include physicians and advance practice nurses. Palliative care practices are supported primarily through an even mix of billing revenues and institutional support.

Comment. These data provide a description of a select group of nationally prominent outpatient palliative care practices. Our results are limited by selection bias; the practices surveyed are primarily from large, academic medical centers. Other than a description of the proportion of patients with cancer, our data do not include other patient demographic or disease-specific information (including disease severity and prognosis), which may be

important when considering how to structure and staff an outpatient practice. Notably, nearly one-half of the funding for these comparison practices was provided by the institution with which they were affiliated.

Despite its limitations, we believe our survey to be the first of its kind, offering developing palliative care programs a glimpse of existing outpatient practice structures, operations, and finances. This may be especially useful for oncology programs and cancer centers, as palliative care is increasingly recognized as vital to comprehensive cancer care.⁶ Additional research is needed that expands on this work to measure the clinical impact of outpatient palliative care practices, financial viability, and health system outcomes, including hospital and hospice admission rates.

Michael W. Rabow, MD
Alexander K. Smith, MD, MS, MPH
Janet L. Braun, RN, MSPH
David E. Weissman, MD

Author Affiliations: Department of Medicine, University of California, San Francisco (Dr Rabow); Department of Medicine, University of California, San Francisco and Veterans Affairs Medical Center, San Francisco (Dr Smith); Palliative Care Center of the Bluegrass, Hospice of the Bluegrass, Lexington, Kentucky (Ms Braun); and Department of Medicine, Medical College of Wisconsin, Froedtert Hospital, Milwaukee (Dr Weissman).
Correspondence: Dr Rabow, Department of Medicine, UCSF Medical Center at Mount Zion, 1701 Divisadero St, Ste 500, San Francisco, CA 94143-1732 (mrabow@medicine.ucsf.edu).

Author Contributions: Dr Rabow had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.
Study concept and design: Rabow, Braun, and Weissman.
Acquisition of data: Rabow, Smith, Braun, and Weissman.
Analysis and interpretation of data: Rabow, Smith, and Weissman.
Drafting of the manuscript: Rabow and Smith.
Critical revision of the manuscript for important intellectual content: Rabow, Braun, and Weissman.
Statistical analysis: Rabow, Smith, Braun, and Weissman.
Administrative, technical, and material support: Rabow, Braun, and Weissman.
Study supervision: Rabow and Weissman.

Financial Disclosure: None reported.

Funding/Support: Drs Rabow and Weissman and Ms Braun have received support from the Center to Advance Palliative Care. No funding was sought or received for this research.

1. Morrison RS, Maroney-Galin C, Kralovec PD, Meier DE. The growth of palliative care programs in United States hospitals. *J Palliat Med.* 2005;8(6):1127-1134.
2. Meier DE, Beresford L. Outpatient clinics are a new frontier for palliative care. *J Palliat Med.* 2008;11(6):823-828.
3. Follwell M, Burman D, Le LW, et al. Phase II study of an outpatient palliative care intervention in patients with metastatic cancer. *J Clin Oncol.* 2009;27(2):206-213.
4. Rabow MW, Dibble SL, Pantilat SZ, McPhee SJ. The comprehensive care team: a controlled trial of outpatient palliative medicine consultation. *Arch Intern Med.* 2004;164(1):83-91.
5. Twaddle ML, Maxwell TL, Cassel JB, et al. Palliative care benchmarks from academic medical centers. *J Palliat Med.* 2007;10(1):86-98.
6. Ferris FD, Bruera E, Cherny N, et al. Palliative cancer care a decade later: accomplishments, the need, next steps—from the American Society of Clinical Oncology. *J Clin Oncol.* 2009;27(18):3052-3058.

HEALTH CARE REFORM

Electronic Medical Records and Upper Extremity Symptoms: Pain With the Gain?

Upper extremity musculoskeletal symptoms (UEMSs) lead workplace injuries nationwide,¹ incur the longest absence among service sector workplace injuries (28 days median, exceeding fractures and amputations),^{2,3} and can foster multiple spells of lost work time, so that work loss per episode underestimates the impact of UEMSs (by approximately 32% at 5 years).⁴ Numerous studies link computer use to UEMSs.^{3,5-8} However, to our knowledge, whether such symptoms affect physicians practicing at facilities using integrated electronic medical records (EMRs) has not been assessed. We evaluated the prevalence of UEMSs attributed to computer workstation use in 2 medical facilities with different EMR systems.

Methods. A cross-sectional survey assessed work-related computer use and symptoms in primary care clinics at 2 academically affiliated centers in San Diego, California, with distinct EMRs. The US Department of Veterans Affairs (VA) San Diego Healthcare System group converted to the VA CPRS/VISTA EMR⁹ 8 years prior to the survey, and the University of California, San Diego (UCSD) Medical group practice adopted the EpicCare EMR 1 year prior to the survey. Both systems require extensive physician keyboarding and/or mouse clicks. Fifty-nine physicians (87% of those targeted) completed the 20-minute survey. A visual analog scale (VAS) assessed UEMSs attributed to computer use (scale, 0-100), validated against the *QuickDash* measure of UEMSs, not specific to computer use.¹⁰ Demographic variables reported to predict UEMSs (age, sex, and body mass index [BMI] components [weight and height])¹¹ and computer use (EMR-using clinical sessions per week and hours per week of computer use) were elicited, as were institution, years of computer use, and years of EMR use. Bivariable relations of dichotomized VAS scores to categorical variables were assessed by χ^2 analysis. Multivariable regression evaluated prediction of UEMSs (continuous VAS) by computer variables, adjusted for UEM predictors of age, sex, and BMI.¹¹ A 2-sided α level of .05 was used to indicate statistical significance. This project was approved by the UCSD Human Research Protection Program & San Diego VA Research Compliance office.

Results. Moderate or severe reported UEMSs attributed to computer use were common: 48% (29 of 59) reported VAS scores of 25 or higher. Mean (SD) VAS was 29 (25) (range, 0-100). The correlation of VAS to *QuickDASH* was 0.61 ($P < .001$), supporting convergent and construct validity for VAS.

Electronic medical record-using clinic sessions per week (defined as half-days in clinic) ranged from 1 to 9. A total of 18 clinicians (30%) had 5 or fewer clinic sessions per week, 8 of whom (44%) worked full time.