

The Status of Medical Education in End-of-life Care

A National Report

Amy M. Sullivan, EdD, Matthew D. Lakoma, Susan D. Block, MD

OBJECTIVE: To assess the status of medical education in end-of-life care and identify opportunities for improvement.

DESIGN: Telephone survey.

SETTING: U.S. academic medical centers.

PARTICIPANTS: National probability sample of 1,455 students, 296 residents, and 287 faculty (response rates 62%, 56%, and 41%, respectively) affiliated with a random sample of 62 accredited U.S. medical schools.

MEASUREMENTS AND MAIN RESULTS: Measurements assessed attitudes, quantity and quality of education, preparation to provide or teach care, and perceived value of care for dying patients. Ninety percent or more of respondents held positive views about physicians' responsibility and ability to help dying patients. However, fewer than 18% of students and residents received formal end-of-life care education, 39% of students reported being unprepared to address patients' fears, and nearly half felt unprepared to manage their feelings about patients' deaths or help bereaved families. More than 40% of residents felt unprepared to teach end-of-life care. More than 40% of respondents reported that dying patients were not considered good teaching cases, and that meeting psychosocial needs of dying patients was not considered a core competency. Forty-nine percent of students had told patients about the existence of a life-threatening illness, but only half received feedback from residents or attendings; nearly all residents had talked with patients about wishes for end-of-life care, and 33% received no feedback.

CONCLUSIONS: Students and residents in the United States feel unprepared to provide, and faculty and residents unprepared to teach, many key components of good care for the dying. Current educational practices and institutional culture in U.S. medical schools do not support adequate end-of-life care, and attention to both curricular and cultural change are needed to improve end-of-life care education.

KEY WORDS: medical education; end-of-life care; palliative care.

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Received from the Dana-Farber Cancer Institute (AS, ML, SB) and Brigham and Women's Hospital, Harvard Medical School (AS, SB), Boston, Mass.

Address correspondence and reprint requests to Dr. Sullivan: Division of Psychosocial Oncology and Palliative Care, Dana-Farber Cancer Institute, 44 Binney St., Room G420D, Boston, MA 02115 (e-mail: amy_sullivan@dfci.harvard.edu).

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The emerging field of hospice and palliative medicine has experienced tremendous growth in recent years, fueled by deepening public and professional awareness of deficiencies in clinical care of patients at the end of life,¹⁻⁵ recognition of the emotional, ethical, and economic costs of inadequate or overly aggressive care for the dying,⁶⁻⁸ and a vision, rooted in the hospice movement, of the potential for skillful and compassionate end-of-life care for dying patients and their families.^{9,10} Attention to the need for physician education in end-of-life care has generated numerous initiatives to improve education and training at all levels.¹¹⁻¹⁶

Researchers and educators have noted, however, that without attention to the informal or "hidden" curriculum—that is, the values, attitudes, beliefs and behaviors that constitute the culture of medicine—reforms of the formal curriculum are unlikely to succeed.^{17,18} Understanding and addressing the influences of peers, role models, and norms and practices related to end-of-life care are necessary for curricular change to translate into improved skills, attitudes, and practices in caring for dying patients.

The current status of medical education in end-of-life care at the national level is unknown. The purpose of this national survey is to assess medical education and training in end-of-life care and identify opportunities to improve education, training, and practice. The focus of this study is on students, with the smaller samples of residents and faculty providing validation and context for student responses. The study addressed the following research questions: In the population of fourth-year medical students, how do students describe their attitudes and preparation related to care for patients at the end of life, and how do they rate the quality and quantity of end-of-life care education they receive compared with other areas? What are students' perspectives of the attitudes and practices of residents and faculty, and how prepared do residents and faculty themselves feel to teach end-of-life care? We hypothesized that students would report positive attitudes and limited preparation, and would rate end-of-life care education lower in quality and quantity than other areas, even compared with education about rare disorders. We also hypothesized that students would report more positive attitudes than faculty, and that they would perceive that faculty, and to a lesser extent residents, do not demonstrate attitudes and behaviors that are strongly supportive of end-of-life care.

METHODS

This educational research study was exempted from Institutional Review Board review by the Dana-Farber

Cancer Institute Office for the Protection of Human Subjects per 45 CFR 46.101(b).¹⁹

Sample

The student sample represents the population of fourth-year medical students in the United States. We sampled schools with a probability proportionate to school size, and sampled equal allocations of students at each school. We randomly selected 62 of the 124 accredited 4-year U.S. medical schools and obtained a random sample of students in these schools from the American Medical Association (AMA) database. Student response rate was 62% and refusal rate was 8% (Table 1). The remaining nonresponders were those who agreed to participate but were not interviewed during the data collection period, and those for whom we were unable to find telephone numbers.

The final student sample size of 1,455 provides national estimates with a precision of ± 3 percentage points (95% confidence interval [95% CI]).

The stratified random samples of residents and faculty represent physicians who teach medical students and who are likely to have at least some contact with dying patients. We obtained a listing of all third-year residents in Internal Medicine, Surgery (General and Neurosurgery), and Family Medicine programs from the AMA database. We used the AMA Fellowship and Residency Electronic Interactive Database²⁰ to restrict the list to residents in programs affiliated with the sampled schools. We then stratified by specialty and randomly selected residents from each stratum, oversampling Internal Medicine residents. Residents responded at a rate of 56%, and 13% refused.

We obtained a listing of all full-time physician faculty at the sampled schools from the Association of American

Table 1. Population, Sample Description, Response Rate, and Refusal Rate

Group	Population, N	Description	Interviews, n	Response Rate,* %	Refusal Rate,* %
Fourth-year students	15,500	62 Four-year U.S. medical schools selected with probability proportionate to school size, random sample of approximately 20 students from each school	1,455	62.3	8.2
Third-year residents [†]	10,029 [‡]		296	56.1	13.0
Stratified by specialty group					
Internal Medicine			149	55.2	12.5
Family Medicine			74	57.3	10.6
Surgery (General, Neurosurgery)			73	56.5	16.7
Faculty [†]	28,702 [‡]		287	41.4	41.9
Stratified by specialty exposure to dying					
High exposure:					
Internal Medicine and Family Practice [§]			130	47.6	38.3
High exposure: Surgery			93	33.4	50.5
Moderate/low exposure: Internal Medicine and Family Practice [¶]			64	45.0	32.3

* Response and refusal rates are calculated based on size of eligible sample. The number for the eligible sample was derived as follows: number in original sample (OS) (including refusals) minus number known to be ineligible (INEL) minus an estimate of the number of nonresponders (NR) likely to be ineligible. The proportion of ineligible nonresponders was estimated to be equal to $INEL / (OS - NR)$.

[†] Residents who were graduates of non-U.S. medical schools were ineligible. Faculty who did not teach students or residents and who saw patients less than 5 hours each week were ineligible.

[‡] Population of specialties included in study. Population of all third-year residents, N = 20,042, full-time clinical MD faculty, N = 62,041.

[§] Includes: Internal Medicine subspecialties in diseases with high mortality rates (Medical Oncology, Hematology, Cardiovascular Disease, Pulmonary Disease, Nephrology, Infectious Disease, Geriatric Medicine, Critical Care Medicine), Family Practice-Geriatrics.

^{||} Includes the following surgical specialties: General, General Vascular, Critical Care, Thoracic, Neurosurgery, Colorectal, Gynecological.

[¶] Includes: Family Practice, General Internal Medicine and medical subspecialties with moderate or low exposure to dying patients (Endocrinology, Diabetes and Metabolism, Gastroenterology, Pain Management, Physical Medicine and Rehabilitation, Rheumatology).

Medical Colleges' Faculty Roster, classified physician specialties according to level of exposure to dying patients^{21,22}, and created 3 sampling strata: 1) Internal Medicine and Family Medicine subspecialties with high likelihood of exposure to dying patients; 2) Surgical specialties with high exposure to dying; and 3) General Internal Medicine, Family Medicine, and medical subspecialties with moderate or low exposure (Table 1). We randomly selected faculty within each stratum, oversampling high exposure strata. Faculty response rate was 41%, and 42% refused to participate. Among those who refused participation, the most cited reason was that they were not interested in the study; other reasons given were that they were too busy, did not participate in surveys as a rule, were unwilling to participate without payment, or felt that end-of-life care had no relevance to their work (despite assurances that they were eligible for the study).

Sample sizes for faculty and residents were adequate to estimate overall proportions with a precision of ± 6 percentage points and to detect 11 percentage point differences between student, resident, and faculty groups (95% CI, 2-tailed).

Sample Recruitment

We mailed potential respondents packets including a letter from the lead investigators, endorsements from the Robert Wood Johnson Foundation and the AMA, a brochure describing the study purpose and confidentiality, and a postage-paid postcard for respondents to provide contact information or opt out of the study. Interviewers at the Center for Survey Research at the University of Massachusetts–Boston then contacted potential respondents by telephone and e-mail to schedule interviews. At study midpoint, we sent follow-up mailings to students, residents, and faculty who had not been interviewed, and near the end of the study, the lead investigators telephoned and e-mailed faculty in attempts to improve faculty response rate.

Survey Development and Administration

We developed 25-minute telephone surveys of attitudes and experiences related to end-of-life care for each respondent group^{23,24} (copies of instruments are available upon request). We based survey content on analysis of student and resident focus groups, reviews of literature,^{3,25–31} curricula from model programs,^{16,32} and recommendations from the 1997 National Consensus Conference for Medical Education in End-of-Life Care.^{33–39} Several items were adapted from existing instruments.^{7,40} After pretesting, the Center for Survey Research conducted interviews using a computer-assisted telephone interview system between February and August 2001.

Surveys covered these domains: attitudes about end-of-life care; perceived quantity and quality of end-of-life care education; specific topics taught; how well medical

education prepared respondents to provide and/or teach end-of-life care; clinical experiences; and the “hidden curriculum,” or messages embedded in the hospital culture about care for patients at the end of life. Specific dimensions of end-of-life care covered in the survey include technical and psychosocial aspects of care considered by palliative care experts to be core competencies: pain management; non-pain symptom assessment and management (e.g., dyspnea, nausea); communication with patient and family (delivering bad news, discussing options, referring to hospice); psychosocial support to patient and family; bereavement care; cultural and spiritual issues related to end-of-life care; and self-awareness and self-care. We selected education about systemic lupus erythematosus and sepsis as comparative references for the amount of teaching in end-of-life care: lupus because it is a rare disorder (estimated annual incidence of fewer than 10 per 100,000⁴¹) that we would expect to receive substantially less coverage than end-of-life care, and sepsis because it is a common life-threatening condition that we expect should receive attention equal to or greater than end-of-life care. We chose lumbar puncture as a benchmark to assess the amount of observation and feedback received about end-of-life communication skills: lumbar puncture is similar to end-of-life communication because it is a relatively common clinical practice that requires explicit instruction, close supervision, and feedback; it is distinct from end-of-life communication because it is a technical rather than psychosocial competency.

Statistical Analysis

We conducted descriptive analyses to characterize attitudes, experiences, preparation, and the culture for end-of-life care. We tested for group differences using the likelihood ratio χ^2 test for nominal and Likert-scaled variables, regression analysis for continuous measures, and repeated-measures analysis of variance for within-group mean differences. Because subgroups were sampled with different probabilities of selection, we created sampling weights adjusted for nonresponse so estimates could be generalized back to the population. To account for the student sample clustering by school, and faculty and resident stratification by specialty, we used the Software for the Statistical Analysis of Correlated Data (SUDAAN, version 8.0; Research Triangle Institute, Research Triangle Park, NC) CROSSTAB procedure and SAS SURVEYMEANS and SURVEYREG procedures (SAS/STAT, version 8.2; SAS Institute, Inc., Cary, NC), which adjust for complex sample design in computing estimates.⁴² To reduce the probability of Type I errors from multiple testing, we set a more stringent pre-determined α level of 0.01 (2-tailed). We report findings at the group level except for attitude items, which were similar across groups and are therefore presented as combined results. Specific wording of survey questions and responses are shown in the tables or table footnotes.

RESULTS

Table 2 describes sample characteristics, coursework and clinical training in end-of-life care, and extent of exposure to dying patients.

Attitudes About End-of-life Care

Respondents held consistently positive views about physicians' responsibility and ability to help patients and families at the end of life (Table 3). Students, residents, and faculty were in near-universal agreement that physicians' responsibilities included helping patients prepare for death, and most were optimistic about the possibility of successfully treating depression among the dying and maintaining hope in discussions of a terminal prognosis. Most agreed that physicians should be responsible for bereavement care, and nearly all felt that psychological suffering could equal the severity of physical suffering. Affective responses to working with dying patients and their families were more variable: 44% experienced caring for dying patients as depressing, and 27% dreaded dealing with the distress of families of dying patients. Overall, 68% felt that caring for dying patients was as satisfying, or more so, than their other activities.

The majority of respondents endorsed end-of-life care education as important; however, trainees perceived this to

be considerably less important to their teachers. Fifty-three percent of students felt it was "very important" that they learn about care for dying patients, but only 25% of students perceived that residents thought it was very important for students, and 28% of students thought that attendings supported this view (F statistic = 169.14, $P < .0001$). The pattern for residents was similar: 57% of residents said that learning end-of-life care was very important to them, but only 40% believed that attendings agreed (F statistic = 23.20, $P < .0001$). Faculty, nonetheless, strongly advocated end-of-life care education: 75% said it was very important for students, and 93% of faculty said the same for residents.

Preparation to Provide or Teach End-of-life Care

Few students and residents received, and few faculty provided, formal end-of-life care education or training. Among students, 18% reported having taken a course in end-of-life care and 9% had completed a clerkship in this area; 16% of residents had done a rotation in hospice or palliative care; and 17% of faculty reported having taught some aspect of end-of-life care in the past year (Table 2).

Students reported that end-of-life care received less attention than either the rare disorder systemic lupus erythematosus or the more-common condition of sepsis.

Table 2. Sample Characteristics, Coursework and Clinical Training in End-of-life Care, and Extent of Exposure to Dying Patients

Characteristics	Students (N = 1,455)	Residents (N = 296)	Faculty (N = 287)
Gender, % female	43	40	19
Mean age, y \pm SD	28.3 \pm 3.6	31.5 \pm 3.8	48.0 \pm 9.4
Ethnicity, %			
White	69	69	82
Asian	16	16	5
African American	5	6	3
Other*	10	9	10
Have taken a course in end-of-life care, [†] %	18	–	–
Completed a rotation in end-of-life care, ^{†,‡} %	9	16	–
Clinical time taught by residents, mean percent \pm SD	54.4 \pm 17.3	–	–
Patients cared for at the end of life in past year, mean n \pm SD	6.2 \pm 8.7		
Inpatients		26.3 \pm 54.0	22.1 \pm 48.9
Outpatients		2.4 \pm 9.7	5.9 \pm 14.4
Academic rank, %, faculty only			
Instructor			5
Assistant professor			37
Associate professor			30
Professor			28

* Includes Hispanic or Latino, American Indian or Alaskan native, Hawaiian or other Pacific Islander, or mixed race/ethnicity.

[†] Students were asked: "In medical school, have you taken a course or had a clinical clerkship that was primarily focused on end-of-life care, that would include hospice care and palliative care but not ICU or oncology? Did you take a course, do a clerkship, or do both?" For all respondents, end-of-life care was defined as follows: "End-of-life care means such things as working with patients who have a terminal illness and managing a patient's care during the last few weeks or days of life, and includes hospice and palliative care."

[‡] Residents were asked: "During your residency, have you done a rotation that was primarily focused on end-of-life care, that would include hospice care and palliative care but not ICU or oncology?" When asked about their residency, residents were asked to include both internship and residency.

Table 3. Attitudes about End-of-life Care. Results Indicate Percent of Respondents Who “Generally” or “Completely” Agreed with Statement. (N = 2,038)

Attitudes Toward End-of-life Care for Patients and Families	All Respondents, %
Physicians have a responsibility to help patients at the end of life prepare for death.	99
Psychological suffering can be as severe as physical suffering.	99
Depression is treatable among patients with terminal illnesses.	94
Physicians have a responsibility to provide bereavement care to the patient's family members after death.	90*
It is possible to tell patients the truth about a terminal prognosis and still maintain hope.	89
Caring for dying patients is depressing.	44
I dread having to deal with the emotional distress of family members of a patient at the end of life.	27
I feel guilty after a death.	18*
Compared with other clinical activities, caring for dying patients is	
More satisfying	22
Less satisfying	32
No difference	46

* Differences across student, residents, and faculty groups, $P < .01$. Differences were small, with students most likely to feel physicians should provide bereavement care (92%), and most likely to feel guilty after a death (19%).

On a 0 to 10 scale, with 0 representing “no teaching” and 10 “a lot of teaching,” students reported a mean \pm SD of 3.9 ± 2.1 classroom coverage in end-of-life care, compared with 6.2 ± 2.1 for lupus and 6.3 ± 2.1 for sepsis (F statistic = 844.5, $P < .0001$). Students reported similar differences for clinical training in managing these conditions (4.9 ± 2.2 , 5.5 ± 2.4 , and 7.3 ± 1.8 , respectively; F statistic = 696.8, $P < .0001$). Residents rated the amount of clinical training in end-of-life care as 4.9 ± 2.2 , considerably less than ratings for care of patients with sepsis (7.9 ± 1.8), and slightly more than training about lupus (4.6 ± 2.3 ; F statistic = 330.8, $P < .0001$).

Students and residents viewed the quality of end-of-life care teaching as lower than the general quality of teaching (student $\chi^2 = 162.09$, $P < .0001$; resident $\chi^2 = 47.25$, $P < .0001$). Eighty percent of students and 84% of residents rated the overall quality of teaching in their schools or residencies as “excellent” or “very good,” whereas only 38% of students and 34% of residents assigned these ratings to end-of-life care education.

Many students and residents reported being “not very well” or “not at all” prepared to address patients' thoughts and fears about dying (39%, 31%, respectively), address cultural issues related to care at the end of life (55%, 59%), address spiritual issues (49%, 54%), manage their own feelings about patients' deaths (47%, 40%), or help families during bereavement (46%, 37%; Table 4). Differences across training level existed in only 3 areas: residents felt more prepared than students to manage pain ($\chi^2 = 31.06$, $P < .0001$), help bereaved families ($\chi^2 = 10.07$, $P < .01$), and discuss end-of-life care decisions with patients ($\chi^2 = 44.00$, $P < .0001$). Specific topics taught in some of these domains are shown in Table 5; responses indicate limited coverage for many of these topics.

Residents were less likely than faculty to feel that their training had prepared them to teach many of these issues

(Table 4). More than half of residents felt unprepared to teach students or junior residents how to manage their own feelings about patients' deaths or help families during bereavement, 46% lacked preparation to teach about addressing patients' fears, and 30% felt unprepared to teach pain management.

Faculty reported having good or moderate preparation in teaching about pain management, discussing patients' wishes for end-of-life care or fears of dying, and providing bereavement care, with 81%, 84%, 78%, and 69%, respectively, feeling “very” or “moderately” well-prepared to teach these areas.

Asked to describe one change that would most improve end-of-life care education, respondents most frequently cited inclusion of a formal curriculum and required rotations in hospice or palliative care, more trainee exposure to dying patients and their families in hospital, home, and hospice settings, direct observation and feedback from attendings and residents, and opportunities to learn from palliative care specialists. Only 2% of faculty and residents and less than 1% of students said that no changes were needed.

The Culture for End-of-life Care in the Hospital

Table 6 shows that students, residents, and faculty perceived mixed messages about end-of-life care from residents and attendings in the hospital. Forty-six percent of students, 55% of residents, and 58% of faculty thought that dying patients were considered good teaching cases “only a little” or “not at all.” Forty-one percent of students, 44% of residents, and 42% of faculty perceived that meeting the psychosocial needs of dying patients was considered a core clinical competency only a little or not at all. Sixty percent of students, 52% of residents, and 56% of faculty reported that residents and attendings in their hospitals considered care for the dying to be only a little or

Table 4. Student, Resident, and Faculty Views of How Well Their Medical Education Has Prepared Them to Provide and Teach End-of-life Care

Aspect of Care or Teaching	Rating of Preparation*			Likelihood Ratio χ^2 Statistic, P Value
	Very Well	Moderately Well	Not Very Well/ Not Well At All	
Preparation to provide care [†]				
Talk to a patient about his or her thoughts and fears about dying				
Student	17	44	39	7.67, <.02
Resident	23	46	31	
Address cultural issues related to a patient's end-of-life care				
Student	13	32	55	3.55, .17
Resident	10	31	59	
Address spiritual issues related to a patient's end-of-life care				
Student	12	38	49	2.22, .53
Resident	12	34	54	
Manage your own feelings about a patient's dying and death				
Student	12	41	47	7.02, .03
Resident	15	45	40	
Help family members during bereavement				
Student	12	42	46	10.07, .01
Resident	14	49	37	
Manage the pain of a dying patient				
Student	19	54	27	31.06, <.0001
Resident	30	54	16	
Discuss end-of-life care decisions with a patient				
Student	21	53	26	44.00, <.0001
Resident	37	48	15	
Preparation to teach [‡]				
Talk to a patient about his or her thoughts and fears about dying				
Resident	11	43	46	45.39, <.0001
Faculty	26	52	22	
Address cultural issues related to a patient's end-of-life care [§]				
Faculty	12	41	47	NA
Address spiritual issues related to a patient's end-of-life care [§]				
Faculty	18	42	39	NA
Manage their own feelings about a patient's dying and death				
Resident	6	31	63	45.18, <.0001
Faculty	19	46	35	
Help family members during bereavement				
Resident	9	38	53	34.68, <.0001
Faculty	24	45	31	
Manage the pain of a dying patient				
Resident	16	54	30	22.73, <.0001
Faculty	33	48	19	
Discuss end-of-life care decisions with a patient [§]				
Faculty	38	46	16	NA

* Not all percentages total 100% because of rounding.

[†] Student question: "Sometimes students learn from being explicitly taught and sometimes by learning skills on their own. I'd like to ask about what you've been explicitly taught in your medical school courses and clerkships, including what you have been taught in one-on-one sessions with residents and attendings. How well has your medical education prepared you to..." Resident question: "Sometimes people learn from being explicitly taught and sometimes by learning skills on their own. I'd like to ask you about what you've been explicitly taught in your medical education, including medical school, residency, and what you have been taught in one-on-one sessions with attendings. How well has your medical education prepared you to..."

[‡] Resident question: "How well has your medical education prepared you to teach others to..." Faculty question: "How well has your training and experience prepared you to teach others to..."

[§] Residents were not asked about these items.

Table 5. Specific End-of-life Care Topics Taught to Student and Residents, or Taught by Faculty

Topics Taught: How to...	Respondent group, %			Likelihood Ratio χ^2 Statistic, P Value †
	Students* (N = 1,455)	Residents* (N = 296)	Faculty† (N = 287)	
Treat neuropathic versus somatic pain	71	79	62	8.47, <.01
Determine when to refer patients to hospice	70	82	69	20.37, <.0001
Recognize tolerance to opioids	69	64	53	1.90, .17
Assess and manage depression at the end of life	65	64	49	0.12, .73
Discuss treatment withdrawal with patients or families	60	78	74	40.40, <.0001
Tell a patient that she or he is dying	57	64	67	5.63, .02
Help patients and their families with reconciliation and saying goodbye	29	36	50	5.28, .02
Respond to a patient's request for physician-assisted suicide	25	17	18	9.99, <.01
Teach families to provide home care for a dying patient	21	24	41	1.56, .21

* Student question: "Thinking again only about your medical school coursework and clerkships, have you been explicitly taught how to..."
Resident question: "In your residency, have you been explicitly taught how to..."

† Faculty question: "Thinking about the teaching you have done, both in informal and formal settings, have you taught any of the following to medical students or residents in the past year? How to..."

‡ Comparison of resident and student responses.

not at all rewarding. A minority said that patient death was equated with medical failure.

We asked residents if they had ever not assigned a patient to a student because the patient was dying: 37% said yes. Asked to choose 1 or more reasons why, 61% included protecting the family, 46% cited too few learning opportunities, 44% felt it was too complicated an illness, and 15% wanted to protect students from an upsetting experience.

Feedback

Trainees also reported differences in opportunities to perform and receive feedback on several clinical tasks. Among students, 71% had performed lumbar punctures, and of these, only 2% had received no feedback on their performance. Forty-nine percent of students said they had told a patient about the existence or recurrence of a life-threatening illness at least once, and of these, 48% never received feedback from a resident or attending. Fifty-eight percent had spoken with a patient with life-threatening illness about their wishes and values for end-of-life care; of these, 53% received no feedback on this discussion. Among residents, nearly all had talked with patients about wishes for end-of-life care, and 33% had received no feedback on the strengths and weaknesses of these discussions.

DISCUSSION

Despite clear endorsement of the importance of learning end-of-life care and nearly universal agreement that physicians have a responsibility to help patients prepare for death, students and residents in the United States feel unprepared to provide, and many faculty and

residents unprepared to teach, key components of good care for the dying. Even basic pain management is not being taught to 30% of students and more than 20% of residents. Educational deficiencies appear to be particularly pronounced in psychological aspects of end-of-life care, including treatment of depression, bereavement care, and attention to the fears and concerns of dying patients.

In the clinical arena, students are systematically protected from, or deprived of, opportunities to learn from caring for dying patients. When they do participate in this care, they lack role models with expertise to learn from, as well as feedback and support that facilitate clinical growth. Although faculty profess that end-of-life care is an important learning domain for trainees, students and residents perceive a much lower level of faculty support for learning about care of the dying. Less than one fifth of students have taken a course in end-of-life care, and one third of students and residents rate the quality of their education in this area as fair or poor. Although students and residents regularly break bad news to patients and talk with them about their wishes and values about end-of-life care, 39% of students and 31% of residents feel ill-prepared to address patients' fears about dying, about half feel poorly prepared to address cultural and spiritual issues, and almost half feel ill-equipped to manage their own feelings about their patients' deaths. While preparation is likely to improve with clinical experience, these levels of preparation are unacceptably low and not likely to improve without focused teaching. Our finding that students who conduct complex end-of-life discussions with patients receive feedback only half the time—a stark contrast to the performance of lumbar punctures, another common clinical task, for which only 2% fail to receive feedback—demonstrates educational

Table 6. The “Hidden Curriculum”: Mixed Messages About End-of-life Care from Residents and Attendings in the Hospital (Student N = 1,455, Resident N = 296, Faculty N = 287)

To What Extent Do Residents and Attendings in Your Hospital... †	Extent Message is Conveyed, %*			Likelihood Ratio χ^2 Statistic, P Value
	A Lot	A Moderate Amount	Only a Little/ Not At All	
Convey the idea that having patients die is a medical failure				
Students	4	18	78	37.04, <.0001
Residents	1	14	85	
Faculty	5	31	65	
Consider dying patients to be good teaching cases for students				
Students	15	40	46	20.25, <.001
Residents	10	35	55	
Faculty	9	33	58	
Convey that treating the psychosocial needs of dying patients is a core clinical competency				
Students	19	40	41	3.66, .45
Residents	22	34	44	
Faculty	21	37	42	
Convey the idea that it’s okay to express your feelings about the death of a patient				
Students	16	32	52	29.90, <.0001
Residents	22	38	40	
Faculty	23	40	37	
Convey the idea that working with dying patients is a rewarding experience				
Students	10	30	60	10.71, <.03
Residents	14	34	52	
Faculty	8	36	56	
Convey the idea that in order to provide the best end-of-life care, a physician should be emotionally uninvolved with their patient				
Students	5	18	77	9.46, .05
Residents	4	18	78	
Faculty	4	27	69	

* Not all percentages total 100% because of rounding.

† Student question: “Often some of the lessons students learn in their clerkships aren’t explicitly taught. Now I’d like to ask you about some of the messages about end-of-life care you may have received from residents and attendings. During your clerkships, to what extent do you think residents and attendings...” Resident question: “Often some of the lessons residents learn in their residency programs aren’t explicitly taught. Now I’d like to ask you about some of the messages about end-of-life care you may have received from attendings and other residents. In your residency program, to what extent do you think attendings and other residents...” Faculty question: “Often some of the lessons medical students or residents learn in their clinical work aren’t explicitly taught. Now I’d like to ask you about some of the messages about end-of-life care trainees may have received from other attendings or residents.”

neglect by residents and attendings of these critical communication tasks.

Residents, who oversee more than half of students’ clinical training (Table 2), feel unprepared to teach students about many aspects of care. It is hardly surprising, then, that many residents fail to provide feedback about end-of-life communication and decide not to assign dying patients to students, in part with the intention of protecting families or students, as well as because they judge these cases to possess too few learning opportunities or, at the other extreme, too many complexities. But goals of protecting families and students might be better served by providing students and residents adequate training in how to interact with and adequately care for dying patients and their families, sufficient exposure to good teaching,

appropriate learning opportunities, and excellent role models for end-of-life care.

The hidden curriculum in end-of-life care emerges from this study as a potential major, and modifiable, contributor to inadequacies in physician education. The cultural milieu in which formal education about end-of-life care takes place is characterized by:

- a paucity of teaching about end-of-life care,
- lack of exposure to care of dying patients at home and to models of care for the dying such as hospice,
- perceived communications by teachers that end-of-life care is less important than other aspects of clinical care,

- tolerance of lack of preparation for clinically ubiquitous psychosocial and communication tasks related to end-of-life care, and
- perceived mixed messages about end-of-life care.

This communicates that competency in state-of-the-art end-of-life care is not expected of our trainees and faculty in academic health centers. Would medical schools and residency training programs tolerate 21st century students and residents learning about management of myocardial infarction outside of a coronary care unit as they do students' learning about end-of-life care with no exposure to hospice care? Would we accept students' performing lumbar punctures without supervision or feedback?

There are several limitations to this study. Other research has shown that self-reports tend to overestimate knowledge and skills,⁴³⁻⁴⁵ which suggests that our findings may overestimate actual preparation. In addition, the survey instruments have not been validated; however, we reviewed the research and education literature in end-of-life care to ensure content validity of the instrument, submitted the surveys for extensive review by physicians from a range of specialties and training levels, and have evidence for convergent validity in similarities of responses across groups in attitudes and perception of the culture for end-of-life care, and for discriminant validity in expected differences such as greater reported preparation in providing or teaching end-of-life care among physicians at higher training levels.

The high faculty refusal rate is both a limitation and an important finding. In part, it suggests that faculty responses reported here may not adequately represent the views of U.S. medical faculty and that findings may overestimate actual faculty support and experience in this area. However, we also believe that this reflects a fundamental obstacle to end-of-life care education, i.e., a distinct lack of interest among a large portion of faculty. Despite intensive recruitment efforts—which in our prior experience have yielded response rates of over 75% among the same population (but on a different topic)⁴⁶—a large portion of faculty remained uninterested in the study. This lack of response is consistent with students' and residents' perceptions that medical faculty consider end-of-life care a low priority. In contrast, rates of refusal among residents and students were very low, and response rates in these groups were limited only by difficulties obtaining telephone contact information.

Our data suggest that current educational practices in the United States are not adequate to ensure excellent physician education and patient care at the end of life. The causes that underlie and perpetuate these deficits are likely to be found at multiple levels: medical culture is focused on cure, acute care, and high technology, and therefore often views death as a failure and dying as a time when there is "nothing more to be done"; medical schools have been shown to socialize students to value the technological and

devalue the psychosocial aspects of care⁴⁷ that are essential in providing care for dying patients and their families; institutions are often lacking in faculty role models and expertise needed to provide the needed teaching and leadership in this area³; and at the individual level, unresolved or unacknowledged feelings about death and loss may compel physicians to avoid the emotional discomfort of addressing patients' and families' needs at the end of life. The adoption of curricular objectives and clinical training requirements related to end-of-life care by the American Board of Internal Medicine,⁴⁸ the Association of American Medical Schools Medical Objectives Project,⁴⁹ and the Liaison Committee in Medical Education⁵⁰ are important steps toward validating and improving competencies in end-of-life care among students and internal medicine residents, but major efforts that address this problem at the institutional, cultural, and individual level are still needed to bring the standard of care to an acceptable level.

We believe that improving physician education in end-of-life care requires implementation of structured, system-wide plans for education of students, residents, and faculty. Optimally, this would include more required teaching for undergraduates integrated throughout the curriculum, with systematic attention to teaching about end-of-life care during clinical clerkships. Clinical training for students and residents also should include required rotations in palliative care, with hospice and home care experience requisite for all physicians-in-training. Attention to both technical and psychosocial dimensions should be addressed whenever possible. Physicians should be able to experience firsthand the possibility of excellent end-of-life care, the great benefit it can offer to patients and families, and the professional and personal rewards it can bring to physicians. Whether or not their long-term practice involves caring for patients at the end of life, the skills acquired in communication, psychosocial care, ethical decision making, and pain and symptom management can enhance later clinical practice in a wide range of settings.

Finally, educational leaders need to take seriously the impact and pervasiveness of the hidden curriculum, which in its current form appears to undermine end-of-life care education nationwide. Explicit mission or policy statements supporting care for the dying, better integration of palliative care services in academic health centers, continuing medical education for attending physicians, and sustained attention to observation and feedback on clinical skills related to end-of-life care would send unambiguous messages about the value of education and practice in caring for dying patients. The clinical competencies required to provide excellent end-of-life care are well defined, model curricula are available for education of students, residents, and faculty, and students and residents have affirmed, on a national level, their interest and willingness to develop expertise in this area. The resources exist for realizing the vision of skilled and compassionate care for patients at the end of life and their families; it is now up to academic health center

faculty and leaders to take on the task of translating good intentions into action.

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