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Creative Solution for Implementation of Experiential, Competency-Based Palliative Care Training for Internal Medicine Residents

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Abstract

To graduate internal medicine residents with basic competency in palliative care, we employ a two-pronged strategy targeted at both residents and attending physicians as learners. The first prong provides a knowledge foundation using web-based learning programs designed specifically for residents and clinical faculty members. The second prong is assessment of resident competency in key palliative care domains by faculty members using direct observation during clinical rotations. The faculty training program contains Competency Assessment Tools addressing 19 topics distributed amongst four broad palliative care domains designed to assist faculty members in making the clinical competency assessments. Residents are required to complete their web-based training by the end of their internship year; they must demonstrate competency in one skill from each of the four broad palliative care domains prior to graduation. Resident and faculty evaluation of the training programs is favorable. Outcome-based measures are planned to evaluate long-term program effectiveness.

Keywords

Internal medicine residents; Palliative care; Faculty members; Competency Assessment Tools; Faculty training program

Introduction

National studies have shown and continue to show that delivery of quality palliative and end-of-life care is still suboptimal in the USA [1–4]. Indeed, most medical schools still do not include palliative care training as a requirement for graduation [5]. For internal medicine and its subspecialties, there is a documented need for training in palliative care at the postdoctoral level [6–8]. Unfortunately, implementing such training has a number of constraints. Firstly, in ours and many other academic centers, ambulatory clinic schedules and restrictions on resident work hours tend to make postdoctoral physician learning occur primarily during clinical practice and highly dependent on the attending physician as a role model and for direct observation of learner skills. Secondly, reflective of national trends, many attending physicians in our nation's postdoctoral teaching programs have suboptimal skills in palliative and end-of-life care [9, 10]. Hence, how does one meet the goal of graduating internal medicine residents with basic competency in multiple domains of palliative and end-of-life care if both learner and teacher are insufficiently versed in this subject?

Creative Solution

To meet our goal, we designed a two-component training program. The first component provides the learner with a palliative care knowledge base; the second component is designed to assess learner skills in a clinical setting. The first component uses e-learning: all of our internal medicine residents and medical oncology fellows are required to complete a web-based course in palliative care by the end of their first year of training. The second component requires the learners to have their competency assessed in multiple domains of palliative care through direct observation by attending physicians during clinical rotations.

These assessments are facilitated by Competency Assessment Tools (CATs) created for 19 topics, distributed among four broad palliative care domains: pain/symptom management, communication, ethical/legal aspects, and spirituality/psychosocial/hospice issues. Each learner must now be certified in one competency from each of the four palliative care domains as a requirement for graduation. Clinical faculty members are trained to use the CATs to evaluate learner competencies by a web-based training program, the Faculty Palliative Care Educational Resource (FPCER).

Component 1—Web-Based Knowledge Training Program

Course Design—Our research team formulated learning objectives designed for the internal medicine resident and medical oncology fellow as learners. Content was partly adapted (with permission) from a number of sources including the Education in Palliative and End of Life Care (EPEC/EPEC Oncology) curricula [11], the medical faculty course book for “Improving End-of-Life Care: A resource guide for physician education” [12], the “American Society of Clinical Oncology Curriculum on the Importance of Symptom Management” [13], and the UNIPAC Series of self-study programs from the American Academy of Hospice and Palliative Medicine [14].

Web design was implemented by the Instructional Technology Group of the University of Maryland School of Medicine (UM-SOM); the course is housed on a UM-SOM server. The web program contains administrative tools that allow coursemasters to track learner progress and evaluation in an anonymous fashion.

The web-based training course consists of six units encompassing basic topics of palliative and end-of-life care: (1) pain management, (2) management of non-pain symptoms, (3) communication, (4) psychosocial, cultural, and spiritual issues, (5) ethical and legal issues, and (6) hospice care. Each unit includes a ten-item pretest and a ten-item posttest. A passing score of at least 80% on the posttest is considered satisfactory. Presentation formats of the units range from highly interactive case-based decision-tree style in the ethics unit to text or bulleted lists in the other units. The site can be accessed at MedEdPORTAL [15]. We are in the process of producing a version of the training program and administration package that can be installed on other medical centers’ servers and adapted to that specific facility. The website and its evaluation component were reviewed and approved by our institutional review board.

Requirement for Web-Based Training—Beginning July 1, 2004, medical residents and oncology fellows were required to complete the web-based training program by the end of their first year of training. The course is available to learners on any computer with Internet access; a link to the course is found on the University of Maryland Medical Center (UMMC) and Baltimore VA Medical Center (BVAMC) Intranet homepages.

Evaluation—Field testing of the course during its development has been published previously [16]. The final course has built-in evaluation instruments including Likert-style and open-ended questions the learner completes after finishing the training. Since rollout of the final version of the training program in 2004, 318 learners have completed the course and evaluation (293 medicine residents+25 medical oncology fellows). Of the medicine residents who completed the course and evaluation, 237 were University of Maryland residents and 56 were from nearby Good Samaritan Hospital in Baltimore. The mean scores of the pretests ranged from 53% to 84%. The pretests for the pain management, non-pain symptom management, and hospice care units were the most challenging (units 1, 2, and 6), with mean scores generally well below the posttest passing grade of 80%.

After finishing the last unit, and prior to issuing certification, the learners complete an anonymous evaluation questionnaire. The evaluation of the overall course was quite favorable (Table 1), with mean Likert scores at the level of “agree” or higher for many items. Ninety percent or greater of the respondents agreed or strongly agreed that “the course was applicable to my clinical practice,” “the topics were adequately covered,” “I liked working at my own pace,” and “the course was valuable to my education/training as a physician” (Table 1). Eighty percent or greater of the respondents agreed or strongly agreed with the statements “the course will be a resource for me,” and “the Website was easy to use.” The individual units also received quite favorable ratings (Table 2), with mean Likert scores for each unit and the course as a whole generally at the level of 4.0, or “good.” The majority of the 318 respondents (83% or greater) rated the units or overall course at the level of “good” or “excellent” (Table 2).

The 318 participants were also asked two open-ended questions: (1) what did you like the best about this course? and (2) do you have any suggestions for improvement? For the first question, 303 participants (95%) provided an answer to the question (Table 3). Two hundred ninety-three of the 303 respondents (97%) described something they liked; only 10 (3%) had negative comments. The most common recurring themes of responses to the first question were that they liked the unit on pain management and that the course was relevant to patient care. Course design, the self-paced nature of the course, the learning tools, comprehensiveness, and the units on hospice and ethics were the next most common themes. Twenty-two respondents specifically commented that they learned something new: that the material is not taught in medical school or on clinical rounds. One learner stated: “Opened my eyes to hospice;” another commented “I did not get much training on these topics in medical school and think it will be very useful for residency. I like that I will be able to access the material as needed throughout my training.” To the question requesting suggestions for improvement, 120 of the 302 (40%) who provided answers to the question stated that they had no suggestions or said keep the course as it is. The remaining 182 learners made suggestions for improvement; the most common theme was to make the course shorter or more concise. Other common suggestions for course improvement concerned modifying course design, modifying specific content areas, and issues with website navigation (Table 3). The themes identified in this analysis are given in Supplementary Table 1; the complete list of responses to each question and theme assignments are provided in Supplementary Table 2.

Component 2: Competency Assessments

Competency Assessment Tools. CATs were created to correspond to 19 topics in palliative care, distributed into four broad domains (Table 4). The format for each CAT was uniform and had the following components:

- a. An introduction for the learner and evaluator that describes how to do the competency assessment;
- b. Learning objectives, with each objective identified in terms of its fulfillment of the six core competencies specified by the Accreditation Council for Graduate Medical Education (ACGME) [17];
- c. A brief teaching outline summarizing content and expected behaviors based on learning objectives. Content was in some cases developed by our educational team or adapted (with permission) from sources such as EPEC [11] or “Improving end-of-life care: A resource guide for physician education” [12].
- d. An evaluation checklist that enables the evaluator to note whether the desired behaviors based on learning objectives were observed.

- e. User satisfaction surveys (questionnaire and open-ended questions) for both learner and evaluator to aid in formative evaluation.

The CATs are housed in a web-based format as a menu of the items shown in Table 4. This website is readily available to all learners on the UMMC and BVAMC Intranet homepages. Each CAT can be accessed as a .pdf file from the CAT menu page and printed on local hospital printers. Pilot testing the CATs during the past year by volunteer residents and educational team members revealed that making the evaluations was feasible, did not consume an inordinate amount of extra time, and the evaluations were valued by the residents. The CATs and their evaluation components were reviewed and approved by our institutional review board.

Requirement for Competency Assessments

As of this writing, our medical residents and oncology fellows are required to demonstrate competency in one topic from each of four broad palliative care domains (Table 4) prior to graduation.

Faculty Training Program

The FPCER is a web-based training program available on the UMMC and BVAMC Intranet homepages. The FPCER consists of a registration or login page, followed by a ten-item pretest randomly selected from a bank of 79 questions based on the content of the CATs. After completing the pretest, the learner is directed to the CATs menu page and instructed to read the CATs. When the faculty learners believe they are sufficiently familiar with the content of the CATs to be able to assess learner competencies in a clinical setting, they can certify this statement on the website. Following certification, the faculty learner is given a ten-item posttest (same questions are used as on the pretest) then asked to complete a user satisfaction questionnaire containing Likert-type and open-ended questions. The FPCER and its evaluation component were reviewed and approved by our institutional review board.

Requirement for Faculty Certification

FPCER certification is currently required for all Core Faculty of the residency program, Cancer Center clinical faculty, palliative care physicians at UMMC and the BVAMC, the medicine and medical oncology training program directors, and all Associate Program Directors. Clinical faculty members are required to recertify on a yearly basis.

Attending physician “buy-in” of the competency assessment proposals was aided by a clinical faculty focus group, presentations by educational team members to clinical faculty meetings, and a presentation on the educational plans by author DDR to our Cancer Center’s Grand Rounds. Furthermore, completing the FPCER training and certification can earn the learner up to 5 h in Continuing Medical Education credit.

Evaluation

To date, 18 clinical faculty members have completed the FPCER and certified that they are sufficiently familiar with the content of the CATs to be able to assess learner competencies in a clinical setting. The median pretest score was 80% (range, 50% to 90%), and the median posttest score was 90% (range, 60% to 100%). The Wilcoxon paired rank test shows that the score increased significantly from pretest to posttest (p value=0.0292). Compared to their pretest score, faculty members’ posttest scores increased for 12 individuals, remained the same for 3, and decreased for 3.

Seventeen faculty members completed the user satisfaction survey (Table 5). The users spent an average of 2 h to complete the course. The response to date is favorable: users

generally agreed that the FPCER was easy to access, easy to navigate, and the directions to complete the certification process were clear and easy to use. Users generally disagreed with statements that the certification process was burdensome or took too much time. Importantly, faculty members generally agreed that they will use the FPCER in the future as a resource, that it will be helpful to them in assessing learner competencies, and that they learned useful new information relevant to clinical practice (Table 5).

Discussion

In an earlier report, we described a two-pronged strategy for effective palliative care training of internal medicine residents and medical oncology fellows using a required web-based training program to establish a knowledge foundation as the first prong and specific training sessions during clinical rotations to build skills as the second prong [16]. Such skill-building exercises were envisioned to be integrated into required clinical rotations such as the cancer center, critical care, geriatrics, and general medicine, and in elective rotations such as the palliative care service. The sessions were intended to follow the small group training models of EPEC/EPEC-O [11] or “Improving end-of-life care: A resource guide for physician education” [12], to cover a broad range of topics in multiple domains of palliative care, and were envisioned to take place in the clinical team rooms during the afternoons after clinical and work rounds were complete. We found that these sessions were very difficult to implement. At our academic center, as in most other centers, it is virtually impossible to assemble the entire medical team on any given afternoon because key team members may be post-call or attending to continuity clinic responsibilities. Another drawback of that strategy’s second prong is that palliative care teaching was done independently of direct patient contact and clinical attending rounds—a prime area where residents learn and perfect new skills. Given these shortcomings, a new strategy for the second prong—translating knowledge into skills—was clearly needed.

Our solution for translating a knowledge base into skills was to require the learners to demonstrate competency in essential palliative care domains to their attending physician—during clinical rotations. The residents’ requirement to demonstrate palliative care competency necessitates that attending physicians be given basic training in palliative care and how to assess resident competency in this area. We believe that our clinical faculty members will comply with the training and competency assessments as part of their professional responsibility as teaching physicians. Hence, our new strategy addresses what may be the “final frontier” in graduating medical residents with competency in palliative care, namely, end-of-life/palliative care education for clinical faculty members. Requiring attending physician assessment of resident competency in palliative care domains will also increase the instances of palliative care discussions occurring during clinical teaching rounds.

Our educational strategy is useful in a number of ways: Firstly, the program is portable. Being web-based, the knowledge training course, CATs and FPCER can be utilized by other internal medicine training programs with little modification. The program in present form can also be used for the medical oncology fellow as learner. Furthermore, the training course and CATs can serve as an online reference for graduates and faculty. The structural framework of the program can be applied to other learners such as surgical, pediatrics, or Ob-Gyn residents, although this would require adaptation of content to meet these learners’ needs.

A second usefulness of our program is that resident palliative care competency is observed within the framework of the six core competencies stipulated by the ACGME. We have carefully crafted the CATs to indicate how the learning objectives and evaluation checklist

items comply with the ACGME guidelines. A third advantage of the program is that the palliative care competency assessments will not add to the workload of the attending or clinical team since the tasks covered by the CATs (e.g., demonstrate good pain/symptom management, good communication techniques, appropriate referrals to hospice) are those required in day-to-day patient care. Further, the requirement for competency assessments can be an incentive for residents to enroll in the palliative care service electives now available to them at UMMC and the BVAMC. By taking the 2-week elective, it may be possible to complete most, if not all, of the four required competency assessments. We have intentionally not made a rotation on the palliative care service mandatory because we believe that discussions of palliative care should be a routine part of general internal medicine and oncology rotations and not limited to a subspecialty rotation. Finally, the program provides a vehicle to enhance faculty skills in direct observation while both faculty and residents gain clinical skills.

A key factor to success in disseminating our training program is buy-in from residency and/or fellowship program directors, department chairs, cancer center clinical directors, and educational leadership of the school and institution. For the training strategy to be effective, program directors must be willing to make the training a requirement for graduation and to enforce this requirement. An incentive for program directors to adapt this training scheme is its compliance with delineating the ACGME core competencies in the CAT evaluation checklists and developing a core group of faculty skilled in direct observation.

Despite advantages, our educational strategy could have a number of drawbacks. Firstly, its success is dependent on program directors' seriously embracing palliative care education as a priority for their residency or fellowship training. The stimulus of NCI grant funding was helpful in our case, but this may not apply to other training programs who wish to adapt our methods. Another concern is assuring that clinical faculty members are adequately trained to assess the requested domains of palliative care through direct observation with accuracy. Will faculty members take the assignment seriously or will they simply check off "acceptable" without reading the objectives and content of the CATs or following its guidelines? We believe that, over time, most of our teaching clinical faculty members will attain the expected benchmarks as a manifestation of professionalism. Furthermore, we plan initially for educational team members to observe the competency assessments to assure accuracy of the assessments.

In terms of sustainability, the web-based knowledge training program component has now been in place for more than 6 years, with learner evaluations continuing to be very positive, substantiating the pilot test data from our 2004 report [16]. Residents value and accept this course as a routine part of their training. Learner evaluations of the knowledge program over the past 6 years have been very favorable. We believe that the full program as outlined will likewise be sustainable.

As was the case in one recent study in patients with metastatic non-small cell lung cancer, the institution of palliative care practices early in the treatment plan led to a significant improvement in both quality of life and overall survival [18]. We anticipate that the training program we describe will lead to an increase in practicing internists and medical oncologists who are competent in the practice of palliative and end-of-life care. Competent practitioners will lead to quality delivery of palliative care to cancer patients and other patients with chronic, debilitating, or terminal illnesses and thus diminish suffering by these patients.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table 1
Evaluation of web-based palliative care training program; general questions using a five-point Likert scale, *N*=318

Question	Strongly disagree (1)	Disagree (2)	Uncertain (3)	Agree (4)	Strongly agree (5)	Average Likert score	Agree+strongly agree (%)
1. Information from this course is applicable to my clinical practice.	4	3	13	166	132	4.3	94%
2. The topics were adequately covered.	4	2	15	184	113	4.3	93%
3. The web course will be a resource for me.	6	13	37	171	91	4.0	82%
4. The website was easy to use.	12	24	17	177	88	4.0	83%
5. I liked being able to work through the course at my own pace.	4	4	11	165	134	4.3	94%
6. The individual units were too long.	5	65	75	127	46	3.5	55%
7. The websites in the module were useful in my understanding of the content.	4	18	50	184	62	3.9	77%
8. The course was valuable to my education/training as a physician.	5	5	23	183	102	4.2	90%
9. I would recommend this course to a colleague.	10	8	54	153	93	4.0	77%

Evaluation of web-based palliative care training program; unit evaluation: overall educational value rated on a five-point Likert scale, $N=318$

Table 2

Question	Poor (1)	Fair (2)	Average (3)	Good (4)	Excellent (5)	Average Likert score	Good+excellent (%)
1. Unit 1, pain management	2	13	27	122	154	4.3	87%
2. Unit 2, management of symptoms other than pain	5	15	35	146	117	4.1	83%
3. Unit 3, communication techniques	4	13	61	150	90	4.0	76%
4. Unit 4, psychosocial, spiritual and cultural issues	14	25	66	137	76	3.7	67%
5. Unit 5, ethical and legal issues	4	15	55	138	106	4.0	77%
6. Unit 6, hospice	2	14	29	154	119	4.2	86%
7. The course as a whole	3	13	38	171	93	4.1	83%

Table 3

Evaluation of webbased palliative care training program; occurrence of themes of responses to open-ended questions ($N=318$)

Question recurring theme	Percent recurrence
What did you like best?	
Answered the question ($N=303$)	95%
Negative comments—did not like the course ($N=10$)	3%
Described something they liked ($N=293$):	97%
Unit on pain management ($N=71$)	24%
Relevant to patient care ($N=67$)	23%
Course design ($N=54$)	18%
Self-paced ($N=50$)	17%
Learning tools ($N=41$)	14%
Comprehensive ($N=33$)	11%
Unit on hospice care and referrals ($N=28$)	10%
Ethics unit with Interactive case ($N=25$)	9%
Learned something new—not taught in medical school or on rounds ($N=22$)	8%
Did not comment or answer the question ($N=15$)	5%
Suggestions for improvement?	
Answered the question ($N=302$)	95%
Specifically had no suggestions; keep course as it is ($N=120$)	40%
Made suggestions for improvement ($N=182$):	60%
Make the course shorter, more concise ($N=74$)	41%
Modify course design—e.g., videos, case-based learning ($N=50$)	27%
Modify specific content areas ($N=41$)	23%
Website navigation issues ($N=33$)	18%
Did not comment or answer the question ($N=16$)	5%

Qualitative data analysis: three independent analysts (authors DWS, HBF, and DDR) reviewed the responses to each question and identified common themes amongst the answers to each question. A theme was defined as two or more recurrences of a similar comment. These themes were then compared, condensed, and discussed by the three analysts until consensus of the major themes was reached among the analysts. Then, all three analysts reviewed each response together and assigned one or more themes to each response. The major themes identified are given in Supplemental Table 1. The results of theme assignment for all of the learner responses are given in Supplemental Table 2

Table 4**Resident/Fellow palliative care Competency Assessment Tools (CATs)**

Domain	Topic
1. Communication	1A. Delivering bad or sad news 1B. Establishing treatment goals for patients near the end of life: the DNR discussion 1C. Establishing treatment goals: conducting a family conference
2. Pain and symptom management	2A. Pain assessment and management 2B. Dyspnea: assessment and management 2C. Delirium: assessment and management 2D. Nausea: assessment and management 2E. Constipation: assessment and management 2F. Mucositis and mouth care
3. Ethical and legal aspects of care	3A. Establishing treatment goals: advance directives and advance care planning 3B. Withdrawal of life-sustaining medical treatments 3C. Artificial nutrition and hydration in terminally ill patients 3D. Conflict resolution: managing requests for medically ineffective treatments
4. Psychosocial/cultural/spiritual aspects of care; hospice care and referrals	4A. Personal awareness and self-care 4B. Working with the hospice team when one of your patients is in hospice 4C. Hospice care and referrals 4D. Crosscultural encounters in end-of-life care 4E. Discussing and assessing spiritual issues; maintaining hope 4F. Care of the actively dying patient

Table 5

Evaluation of FPCER: user satisfaction survey; general questions using a five-point Likert scale, $N=17$

Question	Strongly disagree (1)	Disagree (2)	Uncertain (3)	Agree (4)	Strongly agree (5)	Average Likert score	Agree+strongly agree (%)
1. The FPCER was easy to access on the hospital intranet or from a remote site.	0	0	0	7	10	4.6	100%
2. The process of certifying to assess Resident/Fellow's competencies is burdensome.	4	7	3	3	0	2.3	18%
3. The FPCER was easy to navigate.	0	0	0	11	6	4.4	100%
4. Directions to complete the certification process were clear and easy to use.	0	0	0	8	9	4.6	100%
5. I will use the FPCER in the future as a resource.	0	1	2	8	6	4.1	82%
6. The process of working through the FPCER takes too much time.	1	8	1	5	2	2.9	41%
7. Completing the FPCER will be helpful to me in assessing Resident/Fellow's competence in selected palliative care domains.	0	0	2	10	4	4.1	82%
8. I learned new information which I can take to the clinical setting.	0	0	1	12	4	4.2	94%