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The Interdisciplinary Curriculum for Oncology Palliative Care Education (iCOPE): Meeting the Challenge of Interprofessional Education

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Abstract

Background: Interprofessional education is necessary to prepare students of the health professions for successful practice in today's health care environment. Because of its expertise in interdisciplinary practice and team-based care, palliative care should be leading the way in creating educational opportunities for students to learn the skills for team practice and provision of quality patient-centered care. Multiple barriers exist that can discourage those desiring to create and implement truly interdisciplinary curriculum.
Design: An interdisciplinary faculty team planned and piloted a mandatory interdisciplinary palliative oncology curriculum and responded to formative feedback.
Setting/Subjects: The project took place at a large public metropolitan university. Medical, nursing, and social work students and chaplains completing a clinical pastoral education internship participated in the curriculum.
Measurements: Formative feedback was received via the consultation of an interdisciplinary group of palliative education experts, focus groups from students, and student evaluations of each learning modality.
Results: Multiple barriers were experienced and successfully addressed by the faculty team. Curricular components were redesigned based on formative feedback. Openness to this feedback coupled with flexibility and compromise enabled the faculty team to create an efficient, sustainable, and feasible interdisciplinary palliative oncology curriculum.
Conclusion: Interdisciplinary palliative education can be successful if faculty teams are willing to confront challenges, accept feedback on multiple levels, and compromise while maintaining focus on desired learner outcomes.

Introduction

Interprofessional education (IPE) is essential to prepare students of the health care professions for practice in today's health care environment. However, the challenges of engaging students from various disciplines in shared learning experiences can seem insurmountable and may often discourage those planning and coordinating these endeavors. This article describes how one interdisciplinary faculty team worked together to overcome those challenges.

Background

IPE defined

True IPE involves much more than bringing students of different disciplines together in the classroom or clinical setting. While many entities have defined IPE, the following definition from the Education Task Force of the American Association of Colleges of Pharmacy (AACP) is widely accepted and comprehensive:

> IPE involves educators and learners from two or more health professions and their foundational disciplines who jointly create and foster a collaborative learning environment. The goal of these efforts is to develop knowledge, skills, and attitudes that result in interprofessional team behaviors and competence. Ideally, IPE is incorporated throughout the entire curriculum in a vertically and horizontally integrated fashion.[1(p2)]

Multiple national and international initiatives, including recent health care reform in the United States, have contributed to the current mandate for IPE (Table 1).[2–8]

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Table 1. Timeline of Events Contributing to Mandate for Interprofessional Education

Date	*Source*	*Recommendations/actions*
1972	IOM Report, *Educating for the Health Team*[2]	Encouraged academic health centers to conduct IPE and provide team-based clinical experiences Suggested development of a national clearinghouse to share instructional and practice models
1972–1990s	Funding by Health Resources and Services Administration and Foundations	Developed scattered programs via external funding Created programs were largely elective and targeted small numbers of students Failed to ''mainstream'' IPE
2000	IOM Report, *To Err is Human: Building a Safer Health System*[3]	Called for development of effective teams and equipping a workforce with new skills as means to improve quality and safety
2001	IOM Report, *Crossing the Quality Chasm*[4]	Recommended retraining of current workforce and IPE approaches for preparing health care practitioners
2003	IOM Report, *Health Professions Education: A Bridge to Quality*[5]	Identified ability to work in interdisciplinary teams as core competency central to the education of all health professions Concluded that IPE was not the norm in health professions education
2009	Interprofessional Education Collaborative (IPEC) formed	United the following organizations to promote IPE: American Association of Colleges of Nursing, American Association of Colleges of Pharmacy, American Association of Colleges of Osteopathic Medicine, American Dental Education Association, Association of Schools of Public Health, & Association of American Medical Colleges
2009	Recovery and Reinvestment Act	Stimulation of new approaches such as the medical home, transitional care programs and
2010	Patient Protection and Affordable Care Act	Deemed interprofessional teamwork and team-based care as essential elements of primary care
2010	IOM Report, *Redesigning Continuing Education in the Health Professions*[6]	Recommended that continuing education efforts involving health professionals be interprofessional and bring individuals from various disciplines together in carefully tailored learning environments
2010	WHO report, *Framework for Action on Interprofessional Education and Collaborative Practice*[7]	Offered strategies and ideas to assist health policy makers in implementing the elements of IPE and collaborate practice Viewed interprofessional practice as a means to bolster the global health workforce and address the shortage of health workers
2010	IOM report, The Future of Nursing: Leading Change, Advancing Health[8]	Called for nursing education competencies in teamwork and collaboration

IPE, interprofessional education; IOM, Institute of Medicine.

Palliative care and IPE

A core tenet of palliative care is interdisciplinary holistic patient care. Because interdisciplinary practice is central to this work, palliative care practitioners and educators are positioned to lead IPE endeavors. Yet, efforts to develop and implement interprofessional palliative education have been fragmented and few in number. The majority of offerings have been day or weekend workshops, series of training sessions, elective courses, or short seminars. Some offerings have focused on a specific aspect of palliative care such as spiritual assessment[9] or cultural aspects of care.[10] Some institutions have offered interprofessional practice placements.[11] Recently, the use of online learning modalities and standardized patient experiences has broadened opportunities for interprofessional learning. Such IPE endeavors make significant contributions to the knowledge base of health professions students, however, in order for all health care professionals to be capable of providing effective interdisciplinary care, educational activities must be comprehensive and required for all students. In our review of the literature, we did not find any evidence of a permanent mandatory integration of comprehensive interdisciplinary palliative care education involving the core disciplines (medicine, nursing, social work, and chaplaincy) of palliative care teams.

Barriers to interprofessional palliative education

Multiple barriers thwart efforts to develop interprofessional palliative education (Table 2). Most endeavors

Table 2. Common Obstacles to Palliative Interprofessional Education

Common obstacles to palliative IPE
Lack of internal funds for initiating or maintaining such efforts
Challenges related to balancing professional representation in interdisciplinary learning activities
Concerns related to professional boundaries
Educational isolation of the disciplines (both ideological and geographical)
Maintenance of traditional healthcare hierarchy
Integration of interdisciplinary content and educational experiences into already overloaded curricula
Limited research base promoting best practices for teams and interdisciplinary care
Lack of faculty experience in IPE and interdisciplinary, team-based care
Logistical problems including: location of the campuses and clinical sites involved, availability of space, scheduling students from different academic plans to learn together
Few or no advocates within the institution
Absence of comprehensive evaluation of what has been done to guide such initiatives

IPE, interprofessional education.

encounter several, if not all, of these challenges. Therefore, most palliative educational programs have either focused on one discipline or taught interdisciplinary skills in the absence of opportunities for disciplines to learn together. Others have relied on voluntary participation.

Our response

A core group of faculty from four disciplines at the University of Louisville joined forces to create and implement a truly interdisciplinary mandatory palliative education curriculum for senior nursing students in a bachelor of science in nursing program, fourth-year medical students, master's level social work students, and chaplains completing a Clinical Pastoral Education residency. This article illustrates our efforts, successes, and challenges as we embarked on this endeavor. In referring to our project, we use the term interdisciplinary in place of interprofessional, the term most often used in educational circles to refer to this type of education. ''Interdisciplinary'' is most often used in hospice and palliative care to refer to the teams composed of multiple professions or disciplines practicing collaboratively.[12]

Methods

Project aim

Our aims were to: (1) design and implement an innovative interdisciplinary oncology palliative care curriculum that would be effective, efficient, accepted, sustainable, and patient-centric and (2) develop an evaluation system to measure the effectiveness of the curriculum and learner outcomes. The curriculum would focus on empowering learners to work in teams to provide holistic, comprehensive care to people affected by advanced cancer. Table 3 highlights the curriculum vision, goals and objectives.

Grant development/submission/award

An interdisciplinary faculty team at the university had collaborated for over a decade in the planning and implementation of successful palliative care education and research initiatives. From this experienced group, an interdisciplinary team composed of representatives from the schools of medicine, nursing, social work, and chaplaincy education was formed to explore the potential for interdisciplinary palliative care oncology education of students preparing for health care professions. Knowing that such an undertaking would not be possible without significant funds, it was essential that we procure outside funding.

To justify such a project, a needs assessment survey using the Readiness for Interprofessional Learning Scale[13] in conjunction with investigator-developed questions was prepared to collect data related to demographics, previous interdisciplinary learning experiences, students' perceptions of the role of other health care disciplines and their own educational preparedness. A total of 228 students completed the survey (82 medical, 66 nursing, 60 social work, and 20 chaplain residents). Results of the survey revealed that more than 71% of the respondents had no previous learning experiences with students of other health care disciplines and more than 80% believed an interdisciplinary learning format would benefit their subsequent practice.

Aware that project success would be dependent on acceptance by the involved academic programs, our team secured project commitment from deans and key faculty from each school. Community partners were recruited as clinical placement sites. Experienced national palliative care educators in each of the four disciplines were secured as expert consultants for the project.

The proposed curriculum would mirror the eight domains for palliative care practice identified by the National Consensus Project for Quality Palliative Care.[14] These domains informed the core palliative care principles taught in the curriculum, with interdisciplinary communication and teamwork as the central component woven throughout the entire curriculum (Fig. 1).

Interdisciplinary learning objectives were developed through systematic review of various palliative care and oncology clinical guidelines as well as professional standards and competencies for the various disciplines. Following creation of the learning objectives, learning activities were identified that would assist the learner in meeting the objectives. A detailed evaluation plan including both formative and summative measures was developed to accompany the grant proposal. The project was funded by the National Cancer Institute (R-25 mechanism) in the fall of 2010 for 5 years.

Following funding notification, work began on iCOPE (Interdisciplinary Curriculum for Oncology Palliative Care Education) by the iCOPE Council, the implementation and research team.

Addressing the challenges of IPE

Although the funding obstacle was resolved, the Council faced many of the other challenges to IPE efforts previously noted. In this section, we describe how we resolved difficulties in order to implement a curriculum congruent with our project goals.

Table 3. iCOPE Curriculum Vision, Goals, and Objectives

Vision: iCOPE will: use both innovative and traditional educational modalities; include strong learner-to-learner interaction; avoid redundancy of established curricular components; be novel, mandatory, centrally driven, portable, and sustainable; reflect best practices; demonstrate palliative care's core principles of holistic care; and integrate interdisciplinary learning and practices.

Overarching goal: After this experience learners will be able to apply general principles of interdisciplinary palliative care to those affected by cancer.

Content area	*Curricular learning objectives*	*Student learning outcomes*
	In the care of patients with advanced cancer, provide students with opportunities to develop knowledge, skills, and attitudes needed to:	*By the end of this curriculum the student will be able to:*
Collaboration	Work effectively with colleagues of multiple professions, across multiple settings.	Initiate an interdisciplinary collaboration in the care of a patient. Distinguish the roles and contributions of disciplines on an IDT in the care of a patient. Demonstrate the ability to work effectively on an IDT. Compare and contrast the range and value of various venues for palliative care. Value the roles and contributions of members of an IDT.
Physical Care	Provide effective physical care to address palliative care needs.	Assess the physical symptoms affecting the patient. Formulate discipline specific interventions addressing physical symptoms. Construct an interdisciplinary plan of care for addressing physical symptoms.
Psychosocial, Spiritual and Cultural Care	Provide patient-/family-centered care that addresses their unique psychological, spiritual, social, and cultural orientation and needs.	Assess the psychosocial, spiritual, and cultural needs and resources of the patient and family. Formulate specific interventions addressing psychosocial, spiritual, and cultural needs of the patient and family. Construct an interdisciplinary plan of care for addressing psychosocial, spiritual, and cultural needs of the patient and family.
Ethical/Legal	Identify and address ethical and legal issues impacting patients and families dealing with advanced cancer.	Apply ethical and legal principles to the practice of palliative care. Recognize how one's own values, beliefs, and feelings influence practice.
Communication	Communicate effectively with patients, families, and colleagues.	Demonstrate effective communication skills in interactions with patients, families, and colleagues.

iCOPE, Interdisciplinary Curriculum for Oncology Palliative Care Education; IDT, interdisciplinary team;

Ensuring equal representation of the disciplines

In order to address the learning interests and concerns of each discipline, the iCOPE Council membership mirrored representation of disciplines in the clinical setting. While the project's principal investigator was a physician, there were multiple co-investigators representing social work, nursing, chaplaincy, and medicine. In many ways, the iCOPE Council functioned as an interdisciplinary team. Conflict and hierarchical issues were dealt with openly and honestly, and the team experienced cycles of ''storming'' and ''norming'' as do most functioning teams. Fortunately, the strong commitment of council members led to mutual understanding and respect for each other's roles, which was also an intended outcome for our students.

FIG. 1. The Interdisciplinary Curriculum for Oncology Palliative Care Education (iCOPE) curriculum content diagram.

Because the number of learners in each school was extremely disparate (approximately 40% from medicine, 40% from nursing, 10% from social work, and 10% from chaplaincy), equal student numerical representation in curricular learning activities was not feasible. However, these numbers do represent reality in practice and the curriculum highlighted the unique importance of each team member; learners were encouraged to share leadership roles and allow equal participation. In the majority of face-to-face learning activities, at least one member representative of each discipline participated in each team.

Adding new components to already crowded curricula

Accreditation demands, the explosion of knowledge in health care, and the need to cover content included in licensure tests are only some of the factors contributing to crowded curricula. Therefore, it was important that the iCOPE curriculum avoid duplication of knowledge and skills already taught in existing courses required by each school. Council members reviewed current palliative care learning objectives for their discipline, evaluated existing content and made recommendations for the new curriculum. This exercise also contributed to council members' understanding of the educational process and curricular content of the other disciplines.

Building curriculum on best practices

Because we were embarking on developing a novel interdisciplinary curriculum, there was no established model for us to emulate. Intending to build on best practices of similar endeavors, we recruited an expert panel of national interdisciplinary palliative care educators, all of whom had designed and executed successful palliative education projects in their specialty areas, to assist us in our work. One recommendation of the expert panel was that clear, measurable objectives be specified and used to structure the learning experiences (Table 3). Outcomes were matched to learning activities.

Improving faculty expertise in IPE

All iCOPE council members realized the importance of IPE in palliative care. Yet, none of the members had actual experience in designing and implementing similar efforts. The expert panel was able to provide mentoring, but many of the ''nuts and bolts'' of designing a curriculum with equal representation of the interests of four disciplines were worked out through trial and error. Council members had to both teach and learn; negotiation and flexibility were essential to the process.

For specific teaching methods in which faculty members had limited expertise, faculty development sessions were

held. For example, a session focusing on using critical reflective writing as a teaching modality[15] was conducted to enable faculty to respond to student's writing and facilitate small interdisciplinary group discussions.

Managing logistics

Perhaps the biggest obstacle for iCOPE was the logistical ''nightmare'' that ensued when academic calendars, geographical locations, and diverse schedules of students from four different schools were meshed to accomplish true interdisciplinary learning. Funding supported the position of a program coordinator who, serving as the ''air traffic controller'' for the project, was instrumental to project implementation. Early in the planning, it also became obvious that face-to-face time in which learners from all four disciplines would come together would be a ''sacred'' commodity. This realization resulted in the development of content that could be delivered online and accessed at the student's convenience.

Ensuring comprehensive evaluation

Knowing that lack of comprehensive evaluation has hampered the advancement of knowledge related to IPE, the council was committed to designing an evaluation plan that would measure our efforts and provide direction for future efforts. The expert panel also emphasized the need to establish desired outcomes and means for measuring such outcomes, both of which would direct curriculum activities.

A pretest/posttest design was envisioned to evaluate overall learner outcomes. Two validated instruments were selected.

1. End-of-Life Professional Caregiver Survey (EPCS): This 28-item survey evaluates palliative care-specific educational needs related to all eight domains of the Consensus Guidelines.[16] The scale was tested and validity was supported by researchers at the Yale University School of Nursing.
2. Self-Efficacy for Interprofessional Experiential Learning Scale (SEIEL): Developed by researchers in Canada, this 16 item scale measures student self-efficacy perceptions related to learning collaboratively in interprofessional teams.[17]

Because no instrument to measure interdisciplinary palliative care knowledge was found in the literature, a pretest/posttest to measure core knowledge required by palliative care practitioners of all disciplines was developed.

Additionally, students provided feedback on the overall curriculum and each learning activity on separate evaluations designed to capture both quantitative and qualitative feedback. Finally, at the end of each semester, focus groups were held to capture additional feedback.

Results

Curricular components

This section briefly describes the curricular components that resulted from our year of planning. For each component, a work group composed of at least one representative from each discipline was formed. These work groups had the responsibility to develop the component and present it to the iCOPE council for feedback and subsequent revisions. The development process of each component reflected application of the principles and dynamics of interdisciplinary teamwork.

Didactic online modules

Initially, 16 topic-based modules were developed by the interdisciplinary work group. Through a collaborative revision process, the group incorporated key content into three case-based didactic modules and one module that introduced the role of the interdisciplinary team in palliative care using cases as examples.

The case-based modules present learners with three unique patients and their families: a 65-year-old upper middle class Caucasian male who is diagnosed with advanced colon cancer and receives concurrent palliative care and curative treatment; a 45-year-old Iraqi American Muslim woman diagnosed with metastatic lung cancer while being treated for injuries from a motor vehicle accident; and a 51-year-old Hispanic man, recently diagnosed with pancreatic cancer, who quickly progresses from outpatient clinic palliative care to inpatient hospice care. The module on the role of the interdisciplinary team in palliative care introduces learners in a systematic way to interdisciplinary assessment and interventions for all eight domains of quality palliative care. Embedded in the modules are videos and interactive learning tools such as quizzes and sorting exercises, which are designed to help learners self-monitor their educational progress and enhance retention and application of the presented information. Softchalk© (SoftChalk LLC, Richmond, VA) was used as the platform to create the on line modules.

All learners would complete these modules prior to the interdisciplinary case management experience and clinical rotation. In addition to providing a solution to the logistical difficulties of scheduling interdisciplinary face-to-face sessions, Internet-based learning has been shown in many cases to enhance learning outcomes through feedback and interactive learning strategies.[18]

Clinical rotation and critical reflective writing

Students' exposure to clinical practice of palliative care varied by discipline both prior to and during this IPE project. Palliative care had previously been integrated into medical education with all third-year students doing a 1-week rotation in a palliative care setting; this clinical experience continued for medical students.

Nursing students had not previously rotated through a palliative care setting; therefore, a supervised clinical experience with a palliative care nurse was added to their final semester of the bachelor of science in nursing program. A variety of community palliative care sites (inpatient unit, hospice, consult team) were recruited to accommodate the students.

Social work students preparing for health care practice often worked with palliative care patients in their field placement agency. In the absence of such exposure, they could arrange to spend the day with a palliative social worker or watch a documentary depicting team care of three patients at the end of life.

Chaplain residents routinely encountered seriously ill patients and their families at their assigned hospital. Added to this was a 64-hour rotation (completed over the course of 4 weeks) with the chaplain on a palliative consult team as well as viewing the documentary.

Following their clinical experience, students completed a critical reflective writing assignment describing one palliative care patient they had observed or treated and evaluating that patient's palliative care and the role of the interdisciplinary team. Their reflection included their emotional/personal/professional reactions to the experience. Assignments were read by an iCOPE faculty member who provided written feedback to encourage further critical thinking related to the experience. This faculty member met with interdisciplinary groups of students to facilitate sharing of their reflections and perspectives.

Interdisciplinary case management experience

An interdisciplinary case management experience (ICME) component was designed to bring students of the four disciplines together ''face-to-face'' to observe and practice the skills needed for interdisciplinary team-based care. Students were assigned to interdisciplinary ''teams'' composed of students from the four disciplines. Students observed videoed vignettes of interactions between professionals and patients, including a family meeting, with the dual purposes of providing role models and teaching them about the patient. Student activities included developing profession specific documentation related to the observed vignettes, sharing their observations with the interdisciplinary student team, critiquing the vignettes, and, most importantly, working together to develop an interdisciplinary plan of care for the patient. A faculty facilitator was assigned to each team to observe and provide feedback.

The biggest challenges to the ICME experience were: developing a simulated experience that would be ''transportable'' to other educational venues; providing a valuable yet time efficient experience; and bringing all disciplines together in the same physical space for the experience. Use of standardized patients and high-fidelity patient simulators to interact directly with the students was explored as a teaching option but determined to be too expensive and not available to all institutions wanting to do similar projects.

Evaluation

Because a lack of intensive evaluation of initiatives has limited the ability to design successful projects based on best practices, we developed an aggressive evaluation plan

Table 4. Reponses to Formative Feedback from Student Evaluations and Focus Groups

Student feedback	*Response*
Online didactic modules were too long and contained too much information	Modules were modified and shortened
Too much medical information for social work and chaplaincy students	Purely medical content made optional for social work and chaplaincy
Students skimmed the modules	Better directions about quizzes and scoring were added at key spots in the modules
Need for increased student accountability, tracking of their progress through modules	Scores and completion time sent to instructors
Technical difficulties navigating the modules	Directions for troubleshooting technical issues added
Two days of observation at the same palliative care site did not provide adequate understanding of interdisciplinary palliative care for nursing students	Clinical rotation for nurses was shortened to one day with a palliative care team
	Documentary depicting the end of life care of three patients shown to all nursing students to supplement clinical rotation
Students identified the importance of representation from each discipline in small ICME groups	Participants from underrepresented disciplines were recruited from community partners and faculty members
Requiring three sessions of face-to-face activities on three different days was burdensome for students	All three face-to-face activities were combined and scheduled for one larger block of time requiring only one visit to campus
Supervisors of the chaplaincy students lacked details about the program and how to matriculate students contributing to student frustration	Orientation session for chaplain supervisors was conducted
Chaplaincy students experienced difficulty in understanding the curriculum and their involvement	Student orientation for chaplaincy students was held at the beginning of the semester
More time desired for student teams to develop their interdisciplinary plan of care during interactive session	More time allowed for team interactions
	Content covered online not repeated during face-to-face sessions
Students disappointed when faculty did not provide written feedback to their reflective writing exercise	Facilitator guide for faculty rewritten to emphasis requirement to respond to each student's exercise in writing
Students confused by multiple evaluations of the curriculum	Tests and some evaluations were combined
	A checklist was created for student tracking of evaluation completion

ICME, interdisciplinary case management experience.

including both formative and summative efforts. Prior to the pilot year, formative feedback was received from the expert panel and resulted in a substantial redesign.

Formative evaluation during the pilot year came in the form of student and faculty feedback solicited informally and from evaluations, focus groups, and council meetings. Changes made based on formative feedback are outlined in Table 4.

Preliminary results of the summative evaluation via the standardized instruments and the pre-/post-knowledge test have been encouraging. Pilot results on both of the standardized instruments have shown statistically significant improvement when comparing pretests and posttests. Results will be published when project piloting is complete.

Conclusion

This article outlines our IPE efforts in creating and implementing iCOPE. The logistical realities tempered our initial idealism. Recentering on our ultimate goal of an efficient, sustainable, accepted curriculum was critical.

Major lessons learned by iCOPE faculty include:

- Release discipline-specific ownership and pride;
- Success depends upon compromise and flexibility;
- Maintain focus on the learner;
- Emphasize stream-lined learning objectives;
- Balance content and structure;
- Avoid overlap and redundancy;
- Solicit expert panel input to ensure objectivity; and
- Acknowledge the critical role of a program coordinator in managing complex schedules and logistics.

Our next steps include: securing permanent integration of the curriculum at our institution independent of extramural support; analyzing our results; further refining of our curriculum; and extending iCOPE to other national sites.

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