ORIGINAL RESEARCH

Initiation of a multidisciplinary summer studentship in palliative and supportive care in oncology

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Correspondence: Alysa Fairchild Department of Radiation Oncology, Cross Cancer Institute, 11560 University Avenue, Edmonton, Alberta T6G 1Z2, Canada Tel +1 780 432 8516 Fax +1 780 432 8380 Email alysa@ualberta.ca **Purpose:** The optimal setting for interprofessional education (IPE) for prelicensure health care trainees is unclear, especially in a field as complex and emotionally challenging as oncology. In this article, the authors describe the initiation of the Cross Cancer Institute Multidisciplinary Summer Studentship in Palliative and Supportive Care in Oncology, a 6-week, multidisciplinary team-based clinical placement in supportive care, designed to incorporate features of best practice cooperative learning.

Methods: A steering committee established goals, structure, eligibility criteria, application process, funding, and a consensus approach to instruction and evaluation for the IPE program. Studentship components included mandatory and flexible clinical time, an exploratory investigation, discussion groups, and a presentation. Two senior students per iteration were selected from clinical nutrition, medicine, nursing, occupational therapy, pharmacy, physiotherapy, respiratory therapy, social work, and speech–language pathology applicants. These students completed questionnaires investigating their views of their own and others' professions at baseline, at the end of the rotation, and 6 months after the studentship.

Results: Eight students from medicine, clinical nutrition, occupational therapy, physiotherapy, and speech–language pathology have participated to date. At the elective's end, students have described a more positive view of multidisciplinary team practice, with each participating discipline perceived as both more caring and more subservient than at baseline. In general, changes in attitudes were maintained 6 months after completion of the placement.

Conclusion: This 6-week multidisciplinary placement is feasible, successful, and potentially transferable to other academic settings. The results of this study suggest that even over as short a period as 6 weeks, objective attitudinal and perceptual change is seen.

Keywords: interprofessional education, multidisciplinary team, clinical placement, perceptual change, evaluation

Introduction

Interprofessional education (IPE) is defined as students from two or more professions associated with health care learning with, from, and about each other.¹ IPE empowers practitioners to cope with issues that surpass the scope of any one profession. It aims to improve trust and communication, ultimately leading to improvements in attitudes that members of one discipline may have toward another.¹ Commonly in IPE, teams of students encounter a real-life situation, plan what they are to do as a group, carry out the plan under supervision, gather observations of the outcomes, and create generalizations that reinforce, modify, or change the way they would handle similar cases in the future.²

Many examples of methods for teaching IPE to prelicensure (undergraduate) students have been reported. It is unclear which method is optimal for knowledge transfer, as the literature proving long-term behavioral and attitudinal change is thin.³ Working with illustrative cases is thought to expose "students to problematic situations and challenge them to apply ... knowledge to analyze the issues and formulate workable solutions."² Learning from experience is unplanned learning that takes place in the normal course of real-life encounters. Similarly, in-service learning involves students being immersed in a task-oriented service-provision environment (ie, a work setting similar to the one that will be entered on completion of training).²

Best practice cooperative learning, meanwhile, has five aspects. The first is positive interdependence, which describes students as being interconnected by roles that complement one another.² The second aspect is face-to-face promotive interaction, which means close, purposeful activity such as debate or joint decision making. The third, group processing, involves the student reflecting on his or her own actions and those of the group, determining what contributed to team effectiveness. The fourth aspect is individual accountability, which means that each individual is expected to contribute to the success of the group. The final aspect encompasses the interpersonal and small-group skills required to succeed in such a setting.²

In Canada, the University of Alberta's Interprofessional Initiative offers an undergraduate course that provides practice with team building and is mandatory for undergraduate students of ten different health care disciplines. While an exceptional classroom foundation, this course does not involve experiential learning in clinical placements. There is also no formal mechanism in place to promote IPE at the Cross Cancer Institute (CCI) (Edmonton, Alberta, Canada), the city's tertiary cancer center, at which many University of Alberta health care students are trained. Any IPE that takes place at the CCI is on an ad hoc basis, when students shadow discipline-specific mentors involved in care teams.

In this article, the authors describe the initiation of the CCI Multidisciplinary Summer Studentship in Supportive and Palliative Care in Oncology, an elective clinical placement designed to incorporate each of the five aforementioned features of optimal IPE. At the CCI, psychosocial support, symptom control, and palliative care are delivered largely by multidisciplinary teams (MDTs) whose members practice both discipline-specific and team process skills. These skills, although essential in supporting patients with complex needs via a team approach, have largely been learned "on the job." The studentship has two main aims: (1) to learn what supportive care encompasses and (2) to learn how it is delivered by frontline professionals working within a MDT. To the authors' knowledge, this article describes the first multidisciplinary, prelicensure clinical placement focused on patients with advanced cancer.

IPE program description Faculty

The multidisciplinary Steering Committee (SC) comprised seven department heads or clinical program leads plus representatives from nursing education and patient concerns, all of whom had an interest in IPE, role-specific expertise, a strong academic focus, and past collaborative successes. Most were already involved in training their respective undergraduate and/or postgraduate students. Subsequent to establishment of the SC, general objectives for both students and committee members were formulated (Table 1), and a common vision and logistical framework were described. Subsequently, SC members solicited feedback from colleagues on appropriate timing and length of placement, insurance, course credit, and tuition. SC members investigated possible clinical experiences, funding, and types of exploratory investigation projects.

Table I Studentship goals and objectives

Goals and objectives: students

To introduce the importance of supportive care for patients and family members

To provide a humane, person-centered understanding of issues encountered by patients and their families following a cancer diagnosis To provide opportunities to practice broadly applicable skills such as empathetic listening and interprofessional communication To provide experience with MDT practice, its advantages and challenges, and the roles and responsibilities of other team members To complete an exploratory investigation and an end-of-rotation presentation on a topic of the students' choosing **Goals and objectives: steering committee** To advocate for students to be exposed to, and practice, supportive care To mentor students of various health disciplines within MDT To stimulate interest in oncology and palliative and supportive care Specifically, steering committee mentors will: Encourage students to develop team process skills and provide feedback related to team process and communication skills

Encourage students to actively pursue patient-related experiences Facilitate weekly reflective tutorials

Assist students to develop a learning plan for their exploratory project and presentation

Liaise with respective faculty contacts

Assist with securing funding

Abbreviation: MDT, multidisciplinary team.

Eligibility criteria and application procedure

As the principle of mutual interdependence suggests that students must have some background in their own disciplines before coming together as team members,² eligible trainees were required to have completed at least one previous clinical placement. For example, medical (MD) students completing their second year, and registered nursing (RN) students completing their third year were invited to apply. Training programs of disciplines involved in MDT care provision at the CCI were approached for participation, including clinical nutrition (CN), MD, RN, occupational therapy (OT), pharmacy (pharm), physiotherapy (PT), social work, speechlanguage pathology (SLP), and respiratory therapy. Advertising methods included email, posting information on websites, notices in classrooms, short presentations to students, and brochures. Applicants were asked to provide a curriculum vitae, a one-page cover letter describing their interest, and one letter of reference. SC members and one community representative vetted the completed application packages. A shortlisted group of students was interviewed either in person or by teleconference. Two successful candidates from different disciplines per iteration were identified and placed concurrently to encourage cooperation and teamwork.

Structure

Although preceptor vacation did complicate scheduling, a summer placement was chosen for several reasons: there are few other students present at the CCI, and staff have few other academic commitments at this time; participants are largely free from classes; and an honorarium can be provided if it is considered an "extra" experience.

The vision of the studentship was twofold: (1) to view the cancer experience through a patient's eyes and (2) to view health care collaboration and service provision from the perspective of multiple health care disciplines. To accomplish this, the studentship has five main components (Table 2).

The students form a "team within a team" and are mentored in the art of patient and family support by the entire spectrum of disciplines in their mandatory clinical time, sometimes separately and sometimes concurrently. Even in the setting of clinical preceptors mentoring trainees from other disciplines, passive observation was avoided in favor of graded responsibility during integration into care teams as clinical skills allowed. A wide variety of experiences in many departments and settings, and with different MDTs, were scheduled. This included support groups, case conferences,

Table 2 Summary of studentship structure

Goal	To expose students to the full spectrum of oncology from diagnosis to end of life, across a broad range of tumor sites and in a variety of care settings
Oversight	Multidisciplinary steering committee
Duration	6 weeks in summer
Educational components	Mandatory clinical time Flexible clinical time Weekly facilitated reflective discussions Exploratory investigation (research project) Presentation on the research project and clinical experiences
Timing of evaluation	Baseline (first day) Completion of studentship (final day) 6 months later
Method of evaluation of students	General surveys Attitudes to Health Professions Questionnaire Interdisciplinary Education Perception Scale
Successful completion	Students must achieve the objectives (Table I), participate in the five educational components, and demonstrate satisfactory conduct, professionalism, engagement, commitment, and attitude
Financial support	Honorarium provided for each student

tumor boards, in-hospital (acute care) consultation services, ambulatory clinics, the city's tertiary palliative care unit, educational rounds, hospice visits, and home care. For areas in which it may have been inappropriate to allow students to observe actual patient interactions – such as psychology, chaplaincy, clinical ethics, or patient concerns – alternative activities such as role-playing were scheduled. Additionally, flexible clinical time could be used for pursuing preexisting clinical interests or the exploratory investigation.

The exploratory investigation was intended to be beneficial to or of educational value for patients, the department, or the institution. It had to be suitable for completion in a 6-week period, incorporate a literature review, and preferably be suitable for publication.^{4,5}

Both students per iteration and one clinical mentor met for weekly discussion groups (fireside chats) to explore common professional knowledge, reflect on specific patient encounters, and discuss issues related to collaborative practice. Facilitators were given a list of small-group teaching tips and examples of leading questions (eg, "When do you think the group was working at its best?").⁶ The students were encouraged to reflect on group actions, MDT and discipline roles, and their own actions and feelings. Constructive feedback on the placement was elicited.

Finally, the end-of-placement presentation was an opportunity to practice speaking to a multidisciplinary audience.

Evaluation

Educational research must help define practice, necessitating an evaluation component.3 General surveys were completed exploring the students' personal objectives and background clinical and MDT experience. Validated questionnaires were completed to determine what changes in attitude, if any, occurred (Figures 1-5). The Interdisciplinary Education Perception Scale (IEPS)⁷ has 18 response items that measure competency within one's own profession, perceived need for interdisciplinary cooperation, the experience of actual cooperation, and willingness to understand the contributions of other professionals. Each item is scored on a Likert scale, where 1 indicates "strongly disagree" and 6 indicates "strongly agree." Larger scores indicate that the respondent thinks more highly of their own profession. The Attitudes to Health Professions Questionnaire (AHPQ)⁸ measures attitudes toward other health professionals to assist in understanding differences between disciplines. It is a 20-item, 10 cm visual analogue scale with caring and subservient subscales. Smaller absolute scores indicate that the respondent thinks more highly of other health professions. Successful completion of the studentship was determined as outlined in Table 2. Students were contacted 6 months after completion of the studentship (with their permission) and the same questionnaires were readministered. Finally, feedback was invited from the SC to determine whether or not the committee's objectives had been met.

IPE program evaluation

Eight students from the MD, CN, OT, PT, and SLP disciplines have participated in the IPE program. Students had completed an average of 16 weeks of clinical placements prior to the studentship in areas as diverse as radiology, intensive care, and pediatrics. Previous MDT experience varied as a result of those placements, undergraduate education, mandatory didactic courses, and extracurricular activities.

For the IEPS, larger scores were indicative of a more positive view of the student's own profession. The average change in scores from baseline to week 6 ranged from 0.5 to -0.6. Of the 18 items in the IEPS, scores for 12 items increased, reflecting an improved outlook (Figure 1). Average absolute scores over time are shown in Figure 2, with 6 months of data available for four students. Scores usually decreased at week 6 in comparison with baseline, with some attitudinal changes maintained to 6 months, some returning to baseline, and still others increasing past baseline values (Figure 2).

For the AHPQ, smaller scores were indicative of a more positive view of other professionals. Changes in average scores from baseline to week 6 ranged from -0.3 to -2.1 (Figure 3).



Figure 1 Average change in Interdisciplinary Education Perception Scale scores, from baseline to 6 weeks (n = 8; *n = 7). Note: Positive changes in scores indicate that the respondents' opinions of their own profession improved over the course of the studentship.



Figure 2 Average change in Interdisciplinary Education Perception Scale scores, from baseline to 6 months (baseline and 6 weeks: n = 8 [except *n = 7]; 6 months: n = 4). Note: Higher scores indicate that the respondent holds a higher opinion of their own profession.

Average absolute scores over time are shown in Figure 4, with 6 months of data again available for four students. All scores decreased at week 6 in comparison with baseline, with many changes in perception still present at 6 months but some returning to baseline. Few increased past baseline values at 6 months (Figure 4). At the end of the elective, each participating profession was perceived as both more caring and more subservient than at baseline (Figure 5).

At the end of the elective, students generally described a more positive view of MDT practice and a better appreciation



Figure 3 Average change in Attitudes to Health Professions Questionnaire scores, baseline to 6 weeks (n = 8). Note: Negative changes in scores indicate that the respondents' opinions of other health care professions improved over time.



Figure 4 Average change in Attitudes to Health Professions Questionnaire scores, baseline to 6 months (baseline and 6 weeks: n = 8; 6 months: n = 4). Note: Smaller scores indicate that the respondents have a more positive view of other health professions.

of the cancer journey, with some expressing personal growth and an aspect of transformation from their experiences (Table 3).⁹

On average, clinical mentors spent between half a day to 1 day with each student on various activities, which seven of the eight students (87.5%) felt was appropriate and one felt was too little. Six of the eight students (75%) did not support changing the time of year of the studentship, one wanted to switch from summer, and one was neutral. In comparing these students with other students supervised, faculty considered



Figure 5 Average change in scores of the caring and subservient subscales of the Attitudes to Health Professions Questionnaire, baseline (pre) to week 6 (post), demonstrating the degree to which physicians (MD), registered dietitians (RD), and rehabilitation (REHAB) (speech-language pathology, physiotherapy, occupational therapy) professionals are viewed as caring and subservient by others.

the depth of reflection was much more significant; they noted advantages of two students being placed together and they considered the focus on MDT practice was a significant added benefit. All SC members who attended the final presentations considered that both the exploratory investigation and the presentation positively affected students' learning. All eight SC members agreed that objectives were met and agreed to continue their participation.

Discussion

Through the new CCI Multidisciplinary Summer Studentship in Supportive and Palliative Care in Oncology, prelicensure students were introduced to the art of supportive care throughout the cancer journey, from diagnosis to end of life, by a broad spectrum of health care professionals. Participating senior health care trainees gained experience in team-based skills and compassionate care, became familiar with other disciplines, and formed collaborative partnerships. The studentship attempted to encompass the features of best practice cooperative learning. Various types of multidisciplinary learning were utilized, such as working with illustrative cases, learning from experience, and inservice learning.² It was not intended to replace a disciplinespecific mandatory clinical placement. In the present study, the students' scores on the IEPS and AHPQ at week 6 (and,

Category	Feedback
What did you learn from	The importance, advantages, and challenges of working in an MDT and the necessity of good team communication
the studentship?	The role of emotion and compassion in health care
	A framework of health care for patients with advanced cancer
	An appreciation of the disease experience of cancer patients
	A broader understanding of the complex needs of [oncology] patients
	That the experience of being a patient is incredibly overwhelming, frightening, and exhausting
What were the most helpful	Fireside chats were a time for meaningful reflection and debriefing, enabling us to put our learning into perspective
or interesting aspects?	Participating in patient classes provided insight into their experience
	Exploring supportive care in different settings was enlightening
	Shadowing other disciplines will better inform my collaborations and consultations with other professionals in future
	Time within my own discipline to practice clinical skills
What surprised you about	How excited and welcoming the clinical mentors were
the studentship?	How valuable it was to learn with a student from a different discipline. We discussed our experiences during the
	times we were together. Alone it would have been a very different and less rich experience
	How much I changed as a person and how my professional outlook changed in such a short time
	l didn't expect we would participate in so many different programs
What surprised you about	The huge psychosocial component of disciplines not traditionally considered to be "supportive"
working with other	The amount of information which can be overlooked if only one discipline assesses a patient
disciplines?	It made me realize how much collaboration is not occurring in other clinical situations
	I never sensed a hierarchy in the MDT (which is what I had expected)
What will you take from	A different definition and a better understanding of patient-centered care and the value of compassionate support
this experience?	A better appreciation as to how disciplines benefit patients within an MDT
	Individual growth a realignment of professional and personal priorities
	A reminder of the absolute necessity of showing respect and compassion for patients and fellow team members
	A better perspective on my own life struggles
	More confidence working with other disciplines as a result of knowing what they do
	I hope this will make me a more compassionate caregiver

Table 3 Examples of qualitative student feedback (n = 8)

Abbreviation: MDT, multidisciplinary team.

to a lesser extent, at month 6) suggest internalization of their experiences resulting in attitudinal and perceptual change. The authors propose that this blueprint is transferable to other settings, with minor modifications.

Assumptions underpinning the push for multi- or transdisciplinary collaboration include advantages surrounding quality and individualization of care, access to providers, effective use of scarce resources, patient and practitioner satisfaction, and cost-effectiveness.¹⁰ Complex health care presentations, such as are commonplace in oncology, often exceed the capacity of any one individual to support. Formal teams provide a structure for coordinating the efforts of independent disciplines, and team practice results in pooling of knowledge, skills, and attitudes for the benefit of the patient and his or her family.¹¹ By making the best use of the competencies of all health professionals, collaboration should provide timely quality care, potentially in a more cost-effective manner.¹¹

Two of the main barriers to teaching an interdisciplinary approach are (1) lack of existing IPE and (2) a dearth of role models in undergraduate clinical placements.¹¹ Unfortunately, most health care professionals are first introduced to team practice "on-the-job."¹ However, learning must prepare students for the real world in which they will work, especially in emotionally charged areas.²

In view of ... changing trends, corresponding changes must be made in the way health care providers are educated ... If health care providers are expected to work together and share expertise in a team environment, it makes sense that their education ... should prepare them for this.¹²

If current best practices dictate a paradigm shift toward MDTs, then undergraduate student learning must model these teams in increasingly realistic and complex situations.² Changing the way health provider students are educated and socialized is key to entrenching system change.^{3,10,11}

It is important to objectively measure the impact of the approach used in the present study. The authors considered that the IEPS was appropriate, given its validation on a cross-disciplinary sample (n = 143) of students from OT (60%), medical office assistant (27%), SLP (9%), and therapeutic recreation (4%) programs, of whom 83% were undergraduates and 86% were female. The Cronbach's alpha coefficient of reliability for all items was 0.87, and construct validity has been established.⁷

Unlike the IEPS, the AHPQ measures attitudes around specific health professions and is applicable to a wide range of disciplines. The AHPQ was developed by staff from a range of different health care backgrounds, and, after revision, was validated on first-year trainees from the MD, RN, OT, PT, midwifery, and pharm disciplines (n = 160).⁸ In that study, pharm trainees were viewed as significantly less caring than MD trainees, who were in turn viewed as less caring than PT trainees. Professions seen as the most caring were OT, RN, and midwifery. Nurses were perceived as being the most subservient and MDs as being the least, with other professions perceived as intermediate between the two. Internal consistency overall was 0.86 (0.91 for the caring and 0.59 for the subservient subscales). Test-retest intraclass correlation coefficients ranged from 0.34 to 0.85.8 To the authors' knowledge, there have been no reports of similar questionnaires either constructed or validated using CN students.

The CCI Multidisciplinary Summer Studentship in Supportive and Palliative Care in Oncology was loosely based on a similar interprofessional elective at the Toronto Rehabilitation Institute (Ontario, Canada), which began in 2004.¹ In the Toronto interprofessional elective, representatives from the RN, OT, pharm, PT, social work, MD, and SLP disciplines are placed together on the same clinical unit, as a team unto themselves. The student team attends group orientation sessions followed by weekly tutorials, clinical shadowing of discipline-specific mentors, and a group presentation at the completion of the rotation.⁶

Benefits of hosting IPE clinical placements have been reported by other institutions to include the following: improved recruitment and retention of health care providers, recommitment to collaboration and teamwork, increased teaching activity, increased number and breadth of students completing rotations, and an increase in research dollars.⁶ Additionally, clinical faculty themselves learn more about the professions they work with; student feedback can be used for quality improvement in the teams they shadow; the development of, for example, education materials by students is beneficial for current and future patients; enhanced awareness of collaborative opportunities and challenges occurs; and team education through the final presentations takes place.⁶ Furthermore, facilitating and modeling MDT best practices for the benefit of students strengthens current partnerships.

Conclusion

In conclusion, the CCI Multidisciplinary Summer Studentship in Palliative and Supportive Care in Oncology is feasible, successful, and potentially transferable to other academic settings. The results of this study suggest that even over as short a period as 6 weeks, objective attitudinal and perceptual change is seen. Trainees practice team process and clinical skills that are transferable to future clinical placements and, ultimately, post-licensure practice. Further studies are required that describe the integration of students within established MDTs, which must be accompanied by an evaluation component proving presumptive outcomes.

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Disclosure

The authors report no conflicts of interest in this work. The authors alone are responsible for the content and writing of this article.

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