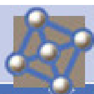

ORIGINAL RESEARCH PAPER

Implementing an Interfaculty Series of Courses on Interprofessional Collaboration in Prelicensure Health Science Curriculums

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ABSTRACT

Introduction: Interprofessional collaborative practices are increasingly recognized as an effective way to deal with complex health problems. However, health sciences students continue to be trained in specialized programs and have little occasion for learning in interdisciplinary contexts.

Program Development: The project's purpose was to develop content and an educational design for new prelicensure interfaculty courses on interprofessional collaboration in patient and family-centered care which embedded interprofessional education principles where participants learn with, from and about each other.

Implementation: Intensive training was part of a 45-hour program, offered each semester, which was divided into three 15-hour courses given on weekends, to enhance accessibility.

Evaluation: A total of 215 students completed questionnaires following the courses, to assess their satisfaction with the educational content. Pre/post measures assessed perception of skills acquisition and perceived benefits of interprofessional collaboration training. Results showed a significant increase from the students' point of view in the knowledge and benefits to be gained from interprofessional collaboration training.

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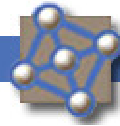

Conclusion: The implementation of an interfaculty training curriculum on interprofessional collaborative practice is challenging in many ways, though it offers a true opportunity to prepare future health human resources for contemporary practice requirements.

Keywords: Interprofessional, collaboration, training/education, health professional(s), prelicensure

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Introduction

The 20th century saw huge strides in population health. Nevertheless, complex health problems such as cancer, obesity, respiratory illnesses and cardiac disease remain with us and pose challenges as to how best to treat them. Managing these conditions goes beyond physical healing, often requiring psychological and social support, greater emphasis on education and behavior and lifestyle changes[1]. The broad range of healthcare and other services needed to respond to the diverse needs of patients cannot be provided by one profession alone[2,3]. Moreover, other problems, such as limited access to physicians and the transfer of certain types of care from institutions to communities, increase the responsibility put on professionals and the need for effective collaboration[4,5]. A consistent and integrated patient-centered approach—now considered the focal point of care—is more and more recognized as the preferred direction, and interprofessionality is seen to be one way to respond to contemporary practices challenges[6].

The Health Council of Canada[7] stresses the need for greater teamwork in Canadian clinical environments and improved interprofessional collaboration (IPC) through education and training. Future health professionals often begin their training with a stereotypical view of their own field and those of others[4,8-10]. Future professionals are socialized through immersion in the representations and culture of their own profession, thereby limiting opportunities to develop interprofessional collaboration skills. Lack of knowledge about basic concepts in collaboration and issues facing other professions, coupled with limited teamwork skills, can hinder effective collaboration between professionals[4]. Preparing future health and social services professionals to collaborate with the professionals with whom they will later have to work with would likely foster this ability[3,11].

Through the "Patient-Centered Care: Better Training for Better Collaboration" program funded by Health Canada under the Interprofessional Education for Collaborative Patient-Centered Practice Initiative (IECPCP), a team of Université Laval professors set themselves this very challenge. The aim of the project was to develop both the theoretical and practical basis required for collaborative patient-centered practice. The specific objectives were: 1) create an inventory of the existing courses which rely on content linked to interdisciplinarity and teamwork; 2) improve, validate and develop pedagogical content for new courses that will cover basic IPC concepts; 3) develop pedagogical strategies and learning guidelines according to the courses' objectives; 4) offer a new curriculum; and 5) evaluate the achievement of the courses' objectives.

This paper will outline the content and teaching approaches developed for three new courses—"Interprofessional Collaboration in Patient and Family-Centered Care I, II, and III"—and strategies used to implement them in the curriculum of eight disciplinary programs. Issues related to course development and viability, opportunities and preliminary assessment results will also be discussed.

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Program Development

Background and methods:

The Health Canada–funded "Patient-Centered Care: Better Training for Better Collaboration" program sought to foster a training continuum that includes prelicensure courses, graduate-level training in a clinical environment and continuing education. A team of professors and professionals from the Faculty of Nursing, the Faculty of Medicine and the School of Social Work at Université Laval in Quebec City, Canada, rose to the challenge of introducing future health and social services professionals to interprofessional collaboration in patient and family-centered care in 45 hours of classes. The initiative drew on learning derived from an existing course in interdisciplinary work at the Faculty of Nursing.

First, an inventory of existing courses and teaching on interdisciplinarity or teamwork was drawn up. At the same time, a survey of 342 students gauged how they felt about their ability to collaborate effectively in their future work environments. They strongly recognized (93.2%) the importance of offering, in their program, a course aimed at developing interprofessional collaboration skills. Yet, only 10% of the responding students considered that their curriculum allowed them to acquire the desired level of competence in this area.

According to the D'Amour & Oandasan model[6], training in interprofessional collaboration must seek to teach students the skills required for effective collaboration. These skills involve knowledge of the various professions and the needs of patients and their close relatives, as well as the competencies and attitudes that foster collaboration between professionals[12-16].

A number of definitions for *interprofessional education (IPE)* and interprofessional collaboration (IPC) in the healthcare field have been suggested in the specialist literature, but there seems to be no consensus on the basic skills to be acquired[17]. As part of the "Patient-Centered Care: Better Training for Better Collaboration" program, an ad hoc educational committee representing health sciences disciplines, program directors analyzed collaboration skill sets and learning objectives identified in the literature[18-22]. Through an iterative process, the committee reached a consensus on five skill sets for the study programs in question: 1) participation and partnership with patients and their families; 2) interaction skills; 3) professional roles and responsibilities; 4) collaboration; and 5) reflection.

The training was designed for students to acquire knowledge, skills and attitudes specific to each of the five skill sets. Developing a reflective approach is not a skill set for interprofessional collaboration in itself, but it does dovetail with a teaching strategy that is vital within an IPE context in which students are invited to reexamine gray areas between professions, shared decision-making and their attitudes toward others—areas for which there are no 'ready-made' answers[9].

Educational design:

Training content is continuous and interrelated. The first course familiarizes students with theoretical and conceptual foundations for interprofessional collaboration in patient and family-centered care. The second course exposes students to group processes in order to develop their interprofessional collaboration skills in a teamwork context. The third course aims to foster understanding of current interprofessional collaboration practices in the fields of practice and encourage students to examine them critically. Table 1 presents the objectives for courses I, II and III in relation to the five identified skill sets.

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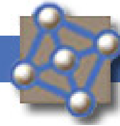

Interprofessional Collaboration in Patient and Family-Centered Care: Course I: The first course looks at the elements of collaborative practice from the perspective of patients and their families and of health professionals. It covers the concepts and theoretical models of interprofessional collaboration, the academic curriculums of the various health and social services professions and the separate and shared roles and responsibilities of those professions. The course introduces students to collaboration characteristics and ways to make collaboration more effective - notably, interpersonal skills and aptitudes.

Interprofessional Collaboration in Patient and Family-Centered Care: Course II: Patient and family participation in the healthcare process from a renewed perspective of interprofessional collaboration is the main theme of the second course. The course addresses care planning and the importance of taking the needs and expectations of patients and their families into account when developing interventions. It looks at the contributions of all team members and encourages students to assume their responsibilities while respecting those of the other team members. The different stages of the decision-making process as a team are also examined. Students learn to identify the chief sources of conflict in the context of interprofessional collaboration and familiarize themselves with different styles of conflict management.

Interprofessional Collaboration in Patient and Family-Centered Care: Course III: By familiarizing themselves with current interprofessional collaboration practices in patient and family-centered care, students again address the issue of professional roles and responsibilities, but this time in relation to professional concerns and obstacles such as legal accountability, power, professional autonomy and ethics. The ways in which patients participate (free and informed consent, decision-broker role) are also discussed. Students are divided into workteams to research and apply solutions to difficulties, problems or conflicts. This final module also looks at organizational, systemic and interactional factors that facilitate or hinder interprofessional collaboration. In addition, students are made aware of the realities of clinical practice through testimonials from seasoned professionals.

Certain training objectives cut across all three courses. Most notable are the development of *interpersonal communication skills*, particularly the ability to give and receive feedback and leadership skills to ensure that future professionals can contribute to a common goal by communicating information and ideas while seeking out and clarifying the ideas and options of other team members. Once they have completed their training, students must be able to express a personal point of view on interprofessional collaboration. By assimilating what they have learned, future professionals will come to reflect on their own behavior in the context of teamwork, behavior to be improved upon and attitudes to be acquired. Students are also asked to evaluate the processes and results of group activities as a team.

Teaching approaches:

In line with interprofessional education (IPE) principles, students are invited to learn “with others, from others, and about others”[23]. In IPE, interaction between students is identified as a success factor and is therefore to be encouraged[24]. Teaching approaches are varied and alternate between lectures, activities in small interdisciplinary groups and guest presentations by health professionals, patients and their families. Three professors from different disciplines are in charge of the courses. A team of specially trained teaching assistants provide support by acting as facilitators for sub-groups of eight or nine students from different disciplines. Videos on feedback, conflict resolution and patient-centered approaches have been produced to make up for the lack of resources of this type in French and to better reflect how health and social services are organized in Quebec. In addition to an individual exam in Course I, students are required to hand in personal and group written assignments for each of the three courses. Course II also gives students the opportunity to conduct a team objective structured clinical examination (TOSCE).

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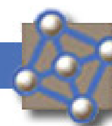

Table 1: Training Objectives According to Targeted Skill Sets

Skill Sets	Course I Foundations	Course II Teamwork	Course III Current Collaboration Practices
Patient and Family Participation	• Identify the key components of patient and family-centered practice from the point of view of individuals requiring care and services and the professionals who provide them	• Plan the involvement of patients and their families in the care and services provided	• Discuss ways to involve patients and their families in collaborative practices
Professional Roles & Responsibilities/ Collaborator role	• Use concepts or theoretical models to demonstrate one's understanding and questioning of Interprofessional Care (IPC) • Adequately describe various health and social services professions	• Facilitate and support team processes/actively participate in team action • Define one's contribution and that of others in a workteam • Exercise one's responsibilities while respecting those of other team members	• Acknowledge the contributions and concerns of professionals in light of their role and separate and shared responsibilities
Work in Collaboration	• Show knowledge of IPC methods and the elements crucial to their success, including interaction skills	• Use teamwork regulation processes • Use collaboration strategies with team members • Make decisions as a team by applying a structured decision-making process • Use an IPC tool	• Identify organizational, systemic and interactional factors that facilitate and hinder interprofessional collaboration
Interaction Skills	• Discuss attitudes toward IPC with other team members • Give and receive feedback on team discussions	• Contribute and communicate information and ideas • Solicit and clarify team member ideas and opinions • Look for and apply solutions to a difficulty, problem or conflict within the team	• Contribute and communicate information and ideas in a large group (leadership) • Solicit and clarify team member ideas and opinions in a large group • Identify the chief sources of conflict in an IPC context
Reflection & Integration	• Set out one's IPC vision • Take part in a reflective approach to ongoing learning with regard to behavior and attitudes	• Reflect on and evaluate team processes and results as a team • Evaluate one's individual behavior in the team context and identify ways to improve it • Set out one's IPC vision • Continue to reflect on ongoing learning with regard to behavior and attitudes	• Set out one's IPC vision • Take part in a reflective approach to ongoing learning with regard to behavior and attitudes

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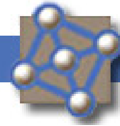

Implementation

In order to ensure the broadest possible access to this training in all health disciplines, the following points were agreed upon. Training is on the timetable every semester as part of a 45-hour program divided into three 15-hour courses given as weekend intensive sessions. The makeup of class groups is interdisciplinary, and a team of professors from the medicine, nursing and social sciences faculties is responsible for the training. The three courses were designed sequentially, and students are strongly advised to take them in order. The three courses have always been mandatory in the undergraduate nursing program and have gradually been made mandatory in the prelicensure medicine, social work, pharmacy, kinesiology, nutrition and physiotherapy programs. As of 2012, the courses will be a mandatory part of the occupational therapy program.

Evaluation

Methods:

The three courses on interprofessional collaboration in patient and family-centered care have been evaluated using an approach based on classical analytical frameworks for service organization inspired by the work of Donabedian[25] and the *Logic Model*[26] used to evaluate the Canadian IECPCP initiative. Essentially, the evaluation sought to gauge to what extent updating the initial prelicensure training program contributed to interprofessional training for collaborative practices in patient and family-centered care. Specifically, the evaluation aimed to understand the implementation process for the initial training program, identify the anticipated results, measure student appreciation for the teaching activities in the new courses and see how students felt about various aspects of content and teaching.

A self-administered Likert questionnaire using a five-point scale was developed to obtain students' points of view. The questionnaire included questions on topics covered in the courses, teaching approaches, perceptions of knowledge and skill acquisition and perceptions about changes in attitude toward interprofessional collaboration in patient and family-centered care. In order to evaluate the acquisition of training program target skills, prospective and retrospective (pre- and post-test) questions were posed at the end of the program[27]. This approach was used to attempt to take into account students' tendencies to overestimate skills and attitudes in traditional pre-/post-test assessment procedures. Questionnaires were designed based on the literature and course teaching content.

Results:

The observation period for evaluation spanned two semesters, which allowed data to be collected from the 215 participating students. Since the courses had recently been introduced at the time of the observation period, they were only mandatory in the undergraduate nursing program. As shown in table 2, students from this program made up over 50% of the cohort observed (n=112).

On a scale of 1 (not at all) to 5 (entirely), the average satisfaction rating with the topics covered in the courses was 4.05. There was no significant difference between students from different programs, genders or years in school. As presented in Table 3, students felt they made progress on all of the targeted skill and knowledge sets, as well as changes in attitude regarding interprofessional collaborative practice.

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Table 2: Number of Registered Students during 2007 Winter and Summer Semesters per Discipline, Gender and Number of Years in Their Program

Program	Years in their program	Gender		Total N	%
		Male	Female		
Nursing	First year	4	19	23	10.7
	Second year	7	55	62	28.8
	Third year	6	19	25	11.6
	Fourth year	0	2	2	0.9
	Total	**17**	**95**	**112**	**52.0**
Pharmacy	First year	1	4	5	2.3
	Second year	4	9	13	6.0
	Third year	3	10	13	6.0
	Fourth year	1	6	7	3.3
	Total	**9**	**29**	**38**	**17.6**
Kinesiology	First year	3	12	15	6.9
	Second year	1	6	7	3.3
	Third year	0	7	7	3.3
	Total	**4**	**25**	**29**	**13.5**
Nutrition	First year	0	1	1	0.5
	Second year	0	9	9	4.2
	Third year	0	3	3	1.3
	Fourth year	0	1	1	0.5
	Total	**0**	**14**	**14**	**6.5**
Occupational therapy	First year	0	9	9	4.2
	Second year	0	2	2	0.9
	Total	**0**	**11**	**11**	**5.1**
Psychology	Second year	0	1	1	0.5
	Third year	2	1	3	1.3
	Total	**2**	**2**	**4**	**1.9**
Medicine	First year	0	1	1	0.5
	Second year	0	1	1	0.5
	Third year	1	0	1	0.5
	Total	**1**	**2**	**3**	**1.5**
Physiotherapy	First year	0	1	1	0.5
	Third year	2	0	2	0.9
	Total	**2**	**1**	**3**	**1.4**
Community Health	Second year	0	1	1	0.5
	Total	**0**	**1**	**1**	**0.5**
Total (%)		**35** (16.3%)	**180** (83.7%)	**215**	**100** (100%)

Students were also questioned, using a scale of 1 to 5, to see if teaching methods allowed them to learn *with others, from others and about others*. Lectures were given an average rating of 3.63, while teamwork activities scored 4.41.

The evaluation also assessed students' reports of their knowledge and understanding of the benefits of specific training on interprofessional collaboration in patient and family-centered care. As mentioned above, students were given prospective and retrospective (pre- and post-test) questions at the end of the training program. Table 4 shows their perceptions of the four indicators in the IECPCP evaluative framework[26].

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Table 3: Students' Perceptions of Training Skill Acquisition (n=215)

Skill Set	Average/5 Before	Average/5 After	Observed Change
Concepts relating to interprofessional collaboration in patient and family-centered care	2.39	4.02	32.6%*
Patient and family participation	3.29	4.24	19.0%*
Professional roles/responsibilities and collaborator role	3.23	4.22	19.8%*
Work in collaboration	2.58	4.09	30.2%*
Interaction skills	3.08	4.13	21.0%*
Reflection and integration	2.71	4.17	29.2%*

*Paired Samples T-test: p<0.05

Table 4: Perceived Benefits of Interprofessional Collaboration Training (n=215)

	Average/5 Before	Average/5 After	Observed Change
Better knowledge of the benefits of interprofessional training in health	2.83	4.32	29.8%*
Better knowledge of the benefits of an interprofessional team	2.95	4.42	29.4%*
Better knowledge and understanding of the benefits of good interprofessional collaboration practices	2.89	4.41	30.4%*
Better knowledge of the benefits of involving patients and their families in interprofessional collaboration	3.22	4.38	23.2%*

*Paired Samples T-test: p<0.05

The results show a significant increase from the students' point of view in the knowledge and benefits to be gained from interprofessional collaboration training.

Discussion

There are many challenges[28,29] to setting up an interprofessional collaboration training program within university health science programs. Recruitment and management of teaching staff, specific program needs, setting up timetables and schedule and responsibility-sharing are just some of the many difficulties facing proponents of specialized curriculums at the crossroads of various disciplines. Université Laval has had to deal with all of these. The challenges would have been difficult to overcome had it not been for the institutional support the project received from the deans of the Faculty of Medicine, the Faculty of Nursing and the Faculty of Social Sciences from the very start. In 1998, the Université Laval steering committee recommended disciplinary decompartmentalization at the undergraduate level by way of appropriate budgetary mechanisms, collaboration between faculties and departments and the establishment of interdisciplinary programs[30]. Ten years later in February 2008, these recommendations were renewed in an institutional orientation and development plan[31]. External financing from Health Canada as part of the IECPCP initiative lent the project legitimacy and also provided resources without which it would probably never have gone ahead or had such an impact.

Setting up interprofessional training activities in health requires cross-sectional coordination among the various programs. Knowledge of program requirements is essential to organizing and coordinating activities to take into account the opportunities and constraints inherent to each discipline. In this respect, efforts to raise awareness among different groups of actors within the

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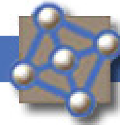

university community, garner support from program directors and provide flexibility in the choice of implementation strategies appear to have been key to the training program's successful implementation. Furthermore, bringing the faculties of medicine, nursing and pharmacy under one roof helped make the project possible. Much more than just an opportunity to better manage campus real estate, the new integrated health sciences training center is designed to foster collaborative practices in the health sciences as well as the emergence of a real interdisciplinary scientific culture. The development of an interprofessional collaboration training curriculum was quickly acknowledged as a tangible expression of institutional will, which has undeniably provided a 'shot in the arm' to project actors.

It is unfortunate that although Université Laval supports interfaculty decompartmentalization and vigorously promotes an interdisciplinary perspective within its programs, it still has difficulty resolving problems related to the equitable distribution of resources and the redistribution of benefits resulting from interfaculty training initiatives. The difficulty in appointing professors from different faculties to teach an interfaculty course, planned for a large audience composed of students registered in many programs, illustrates the amplitude of such challenges.

Among the many challenges to collaborative training in university health programs, two deserve a closer look. The first is the recruitment of qualified teaching staff, including lecturers and teaching assistants. Because the three courses are mandatory in seven programs, student numbers are now way up, which requires increasing resources.

Secondly, although the importance of interprofessional collaborative training is increasingly acknowledged, the impact of such educational programs on students' competencies and on the quality of healthcare services they are called upon to provide has yet to be demonstrated in robust experimental studies[32]. To–date, most assessments of interprofessional training in health have looked at its impact on student behavior and the acquisition of particular skills or competencies[33]. Longitudinal studies among student cohorts are needed to better document the benefits of their training on professional practice.

Two methodological limitations of our study can be raised. First, the cohort was characterized by a disproportionately high number of nursing students due to the fact that the interprofessional courses were already mandatory for them. Future research with a better representation of all health disciplines is needed. Moreover, even though the strategy of assessing students' attitudes and skills pre and post at the end of the intervention seems to be suitable in the current context, the robustness of this methodology is not yet clearly established.

Conclusion

Although scientific evidence of the benefits of interprofessional training on the quality of healthcare is mixed, new practice realities, changing government policy directions and a pronounced shift toward interprofessional collaboration in the organization of clinical services have convinced the management of three Université Laval faculties and Centre de Santé et de Services Sociaux de la Vieille-Capitale of the desirability and need to further promote and integrate this type of training into their health disciplines programs. This willingness took concrete form thanks to Health Canada funding for the development, testing and evaluation of the "Patient-Centered Care: Better Training for Better Collaboration" project.

Our three innovative courses offer students the opportunity to acquire a body of knowledge and skills common to all disciplines. The teaching approaches designed tackle important aspects of the best collaborative practices as defined in the literature.

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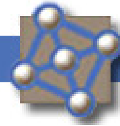

Moreover, this curriculum is embedded within the current revision of Canadian health disciplines education accreditation standards[34].

According to the students' own perceptions—which are in line with what can be found elsewhere in literature—their knowledge and skills with regard to collaboration in patient and family-centered care have vastly improved. Student attitudes toward interprofessional collaboration also dramatically changed following the training course. Work in small interdisciplinary teams has been especially popular as a way to learn with, from and about others.

All students acknowledged the importance and usefulness of courses on interprofessional collaboration in patient and family-centered care. This is important as students need to learn about these skills to enter a job market composed of establishments that must now meet accreditation criteria that demand interdisciplinary collaboration. Course content will continue to evolve with new cohorts of students who must now take all three courses and through ongoing work to draw up a validated list of interprofessional collaboration skills[35].

We look forward to our ongoing partnerships and further educational development, new interdisciplinary courses and the development of suitable evaluation plans.

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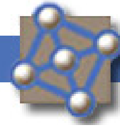

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