Training in interprofessional collaboration

Pedagogic innovation in family medicine units

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Abstract

Problem addressed A number of agencies that accredit university health sciences programs recently added standards for the acquisition of knowledge and skills with respect to interprofessional collaboration. Within primary care settings there are no practical training programs that allow students from different disciplines to develop competencies in this area.

Objective of the program The training program was developed within family medicine units affiliated with Université Laval in Quebec for family medicine residents and trainees from various disciplines to develop competencies in patient-centred, interprofessional collaborative practice in primary care.

Program description Based on adult learning theories, the program was divided into 3 phases—preparing family medicine unit professionals, training preceptors, and training the residents and trainees. The program's pedagogic strategies allowed participants to learn *with, from,* and *about* one another while preparing them to engage in contemporary primary care practices. A combination of quantitative and qualitative methods was used to evaluate the implementation process and the immediate results of the training program.

Conclusion The training program had a positive effect on both the clinical settings and the students. Preparation of clinical settings is an important issue that must be considered when planning practical interprofessional training.

Formation en collaboration interprofessionnelle

Innovation pédagogique dans des unités de médecine familiale

Résumé

Problème à l'étude Un certain nombre d'agences qui accréditent les programmes universitaires en sciences de la santé ont récemment ajouté des exigences pour l'acquisition de connaissances et d'habiletés en rapport avec la collaboration interprofessionnelle. Dans les milieux de soins primaires, il n'existe pas de programme de formation pratique permettant aux étudiants des différentes disciplines de développer des compétences dans ce domaine.

Objectif du programme Ce programme de formation a été développé dans des unités de médecine familiale affiliées à l'Université Laval à Québec à l'intention des résidents en médecine familiale et des stagiaires de différentes disciplines afin de développer leur aptitude à prodiguer des soins primaires centrés sur les patients en collaboration interprofessionnelle.

This article has been peer reviewed.
Cet article a fait l'objet d'une révision par des pairs.
Can Fam Physician 2012;58:e203-9

EDITOR'S KEY POINTS

- Most examples of practical interprofessional collaborative training come from experiments conducted in settings with more captive patient populations, such as in geriatric, acute care, and rehabilitation units.
- One goal of this program was to develop competencies for patient-centred, collaborative practice based on the specific knowledge, attitudes, and expertise required. Another goal was to equip professionals to act as role models in interprofessional practice and to be confident in their ability to play this role in primary care.
- The positive results obtained in terms of perceived knowledge and skills acquisition, and changes in attitude about the possibility of working in settings with interprofessional collaboration, are similar to those achieved in other projects. The pedagogic strategies appeared to allow professionals, trainees, and residents to learn from, with, and about one another, which is the basis of interprofessional training.

POINTS DE REPÈRE DU RÉDACTEUR

- La plupart des exemples de formation pratique en collaboration interprofessionnelle proviennent d'expériences menées auprès de populations de patients captifs, par exemple en gériatrie, en soins aigus et en unités de réadaptation.
- L'un des buts de ce programme de formation interprofessionnelle pratique à l'intention des résidents de deuxième année de médecine familiale était de développer des compétences en vue d'une pratique en collaboration centrée sur le patient et fondée sur les connaissances, attitudes et expertises spécifiques requises. Un autre objectif important était de préparer les professionnels à agir comme modèles de rôle dans la pratique interprofessionnelle et à être confiants à l'égard de leur habileté à jouer ce rôle au niveau des soins primaires.
- Les résultats positifs obtenus pour ce qui est des connaissances et habiletés que les participants estimaient avoir acquises, et des changements d'attitude concernant la possibilité de travailler dans des contextes utilisant la collaboration interprofessionnelle, sont semblables à ceux obtenus dans d'autres projets. Les stratégies pédagogiques semblaient permettre aux professionnels, aux stagiaires et aux résidents d'apprendre des autres, avec les autres et sur les autres, ce qui est la base de la formation interprofessionnelle.

Description du programme Conformément aux théories sur l'apprentissage des adultes, on a divisé le programme en 3 phases: préparation des professionnels des unités de médecine familiale, formation des moniteurs, et formation des résidents et des stagiaires. Les stratégies pédagogiques du programme permettaient aux participants d'apprendre *avec* les autres, *des* autres et *sur* les autres, tout en les préparant à entreprendre une pratique contemporaine en soins primaires. Une combinaison de méthodes qualitatives et quantitatives a servi à évaluer le processus d'instauration de ce programme, de même que ses résultats immédiats.

Conclusion Ce programme de formation a eu un effet positif sur le milieu clinique comme sur les étudiants. La préparation du milieu clinique est un aspect important dont il faut tenir compte lorsqu'on planifie une formation interprofessionnelle pratique.

Primary health care professionals are facing an increase in patients presenting with multiple and varied biopsychosocial problems.[1] Interprofessional collaboration is essential for managing these complex care situations.[2] However, interprofessional collaborative practice in primary care faces a number of obstacles. Professionals sharing care treat outpatients presenting with a variety of problems and have few formal meetings to discuss cases, and they might even practice in different settings. The role of collaborator is 1 of the 7 key CanMEDS[3] competencies physicians must develop. In addition, the College of Family Physicians of Canada, the Royal College of Physicians and Surgeons of Canada, and the Committee on Accreditation of Canadian Medical Schools are actively working with accreditation bodies in 5 other disciplines on the Accreditation for Interprofessional Health Education project.[4]

Family medicine units (FMUs) provide a variety of services adapted to community needs, contribute to research activities, and promote faculty development.[5] Such clinical educational settings must tailor training programs for future health and social service professionals to the new realities of collaborative practice.[6]

A team composed of a social worker (L.P.), a physician (J.M.), and a nurse (F.P.) working in a Quebec city FMU tackled the challenge of developing and testing an interprofessional collaboration training program in French-speaking primary care educational settings. This educational program was part of a project involving Université Laval in Quebec and the Centre de santé et de services sociaux de la Vieille-Capitale in Quebec city, Que. The project was funded by Health Canada between 2005 and 2008 under the Interprofessional Education for Collaborative Patient-Centred Practice initiative, and it was approved by the Faculty of Medicine, the Faculty of Nursing, and the School of Social Work at Université Laval. As the whole project (development, implementation, and evaluation) was carried out in the context of an educational program, it was not subject to the same ethical rules (ie, approval from an ethics committee) as a research project would be.

The goal of this interprofessional practical training program for second-year family medicine residents and trainees in social work and nursing was to develop competencies for patient-centred, collaborative practice based on the specific knowledge, attitudes, and expertise required. The competencies and objectives are presented in **Table 1**. They reflect the objectives developed by the Royal College of Physicians and Surgeons of Canada[3] and the National Interprofessional Competency Framework.[7] Interprofessional education principles, which encourage 2 or more professions to learn *with*, *from*, and *about* one another to improve collaboration and the quality of care,[8] guided the development of the educational strategies.

Program description

Before the program began, FMU and student participants were recruited and training sessions in the various FMUs were organized. Formal support from related university training programs helped encourage FMUs to participate. Recruiting FMU sites entailed meeting with FMU managers and professionals from each discipline likely to be involved in order to present a summary of the project. Training settings had to be able to accommodate social work and nursing trainees. The training program was divided into 3 phases.

Phase 1 consisted of 4 half-day sessions with professionals from each training setting to help them develop or strengthen their collaborative skills and prepare them to become role models for students. Before training, participants completed a survey about their clinical settings so that training could be adapted to their needs with a view to improving interprofessional collaboration.

Phase 2 focused on helping preceptors feel comfortable with the pedagogic material developed for the students. A half-day meeting was held to present the educational activities and material developed for residents and trainees.

Finally, phase 3 was designed for family medicine residents and social work and nursing trainees. It included 4, 90-minute workshops held during a 6-week period. Residents and trainees also took part in weekly 30-minute case discussions. **Table 2** presents the themes and **Box 1** outlines the educational strategies of phases 1 and 3.

Interprofessional collaboration training activities were incorporated into the family medicine residency program at each FMU. Each academic semester, meetings were

held with the Faculty of Nursing and the School of Social Work to promote the training program and recruit students. Supported by colleagues, the training leader (L.P.) played a pivotal role in promoting and organizing the training program, coordinating activities based on the requirements of each academic program, and providing on-site support. It should be noted that no additional professional resources were added to the FMUs.

Evaluation design. The reference framework for the program evaluation was based on the combination of a classic health service evaluation framework, inspired by the work of Donabedian,[9] and the logical model used to evaluate the Canadian Interprofessional Education for Collaborative Patient-Centred Practice initiative.[10] It evaluated the program's structural characteristics as well as its implementation processes, achievements (outputs), and immediate results. The team developed self-administered questionnaires using 5-point Likert scales (1 = strongly disagree, 5 = strongly agree). To evaluate the perceived acquisition of the skills targeted by the training program, questionnaires were administered before and after the training program. In the absence of validated questionnaires in French, the questions were developed based on literature on the subject and the pedagogic content of the training programs. They were reviewed and approved by the project leaders to ensure content validity. All questionnaires were completed anonymously and did not contain personal data. Supplemental data on factors associated with the implementation process were also collected in semistructured interviews with the project leader (L.P.).

Box 1. Educational strategies

The following educational strategies were used:

- Exercises completed individually or in subgroups followed by full-group discussion of the key concepts of interprofessional collaboration through patients' narration, clinical vignettes, video simulations, meetings with professionals from various disciplines, and summary slide shows
- Integration of the interprofessional collaboration process by
  - working in teams on issues determined by professionals and
  - experimental teamwork following simulated interviews in which students from various disciplines take turns meeting with the same patient
- Activities led by professionals from various disciplines
- Support for leaders during activities and follow-up between training sessions
- All clinical and educational opportunities were used during the training sessions to encourage collaboration

Table 1. Practical training objectives accepted by participating disciplines

OBJECTIVES	COMPETENCIES
Use interprofessional collaboration to solve primary health care problems while respecting the patient as an essential partner	• Describe the philosophy of interprofessional collaboration and explain how it can be used to solve problems requiring a comprehensive approach, specifically for patients who are vulnerable or who present with complex problems • Explain the role, fields of intervention, and expertise of health care professionals and social workers active in the clinical setting • Become familiar with the resources available in the community • Assess the merits of interprofessional collaboration in the patient's best interest • Make good use of referral and consultation procedures while ensuring that the patient agrees with the intervention goals and resources selected • Share decisions in the problem-solving process
Develop the skills required for effective interprofessional collaboration	• Be open to collaborative work • Clearly transmit relevant information (concise summary of key facts, visual contact with others, etc) • Communicate clearly, effectively, and respectfully • Actively participate in collaborative work in a cooperative manner by respecting different points of view and truly listening to what people have to say • Write in a concise, structured, and readable manner using the right terminology • Take into account differences in disciplinary jargon when sharing information in order to foster mutual understanding • Know how to use communication tools to solve problems and manage conflict
Assume one's ethical, moral, and legal professional responsibilities by involving the patient when working in a collaborative context	• Assume one's responsibilities based on one's professional role and work in a team with other resources and partners • Coordinate professional interventions associated with one's professional role, taking into account the team and the patient • Determine how professional liability influences the interprofessional collaborative approach ethically, morally, and legally

The compiled information was analyzed using a mixed quantitative and qualitative approach. SPSS, version 14.0, was used to analyze quantitative data through descriptive and parametric statistics. Nonparametric tests were also used for small samples. The averages obtained this way were used to calculate overall average scores for the statements. Qualitative data were subject to content analysis using NVivo 7.

Results

Participants' characteristics. Professionals from 6 FMUs affiliated with Université Laval participated in phase 1 of the project. Phase 3 participants were second-year residents in family medicine, third-year undergraduate or graduate social work trainees, and second- and third-year undergraduate nursing trainees. Of the participating professionals, 35 of 42 completed their questionnaires, and 59 of 71 residents and trainees completed their questionnaires (an 83% response rate) (**Table 3**).

The resident-to-trainee ratio reflects the reality of clinical practice in family medicine in Quebec. For several FMUs, this was the first time they had had access to any social work or nursing trainees. Therefore, providing preceptors with ongoing support was critical.

Overall appreciation of themes. The professionals indicated that they appreciated the training themes, with an average score of 4.26 out of 5. The themes discussed in the training program earned an average of 4.00 among social work trainees, 4.44 among nursing trainees, and 3.70 among family medicine residents. The students particularly appreciated being able to better understand the roles and responsibilities of each professional.

Perception of knowledge and skills acquisition. The main goal of the training program was to improve primary caregivers' skills and knowledge with respect to interprofessional collaboration. Comparison of the answers to the questionnaire before and after the training program shows that both professionals and students made considerable gains overall. These findings are presented in **Table 4**.

Change in attitude. The results from the retrospective questions showed that 51 participants had more positive attitudes toward interprofessional collaborative practice than they did before the training program. Moreover, 44.2% maintained their positive perceptions. Of all the participants, only 1 student did not have a positive or very positive perception of interprofessional collaboration in primary care after completing the training (**Table 5**).

Appreciation of pedagogic strategies and professionals as role models. Professional participants appreciated the obvious energy and teamwork of the training team, which always included representatives from the 3 disciplines. The team's motivation led participants to adopt and pursue collaborative practices. Students appreciated the workshops and discussions of clinical

Table 2. Training themes

SESSION	PHASE 1: PROFESSIONALS	PHASE 3: STUDENTS
1	• Introduction • General concepts • Communication	• Interprofessional collaboration: from theory to practice
2	• The role of team members • Teamwork	• The role of professionals
3	• Problem solving and conflict management • A guide to interprofessional collaboration	• Teamwork
4	• A plan for continuous improvement	• Interprofessional collaboration on a day-to-day basis

Table 3. Participating professionals (N = 42) and students (N = 71) per discipline who completed the evaluation questionnaire

RESPONDENTS	NURSING	MEDICINE	SOCIAL WORK	NUTRITION	OCCUPATIONAL THERAPY	PSYCHOLOGY	OTHER	TOTAL*
Professionals, n	10	15	6	1	1	1	1	35
Students, n	8	44	7	0	0	0	0	59

*The evaluation took place during the final training activity. Those who were absent owing to vacation or to required clinic or teaching duties did not complete the evaluation. Analysis indicated no reason to expect a nonresponse bias, as there was no relationship between the training activity date and the assignment of vacation and required duties.

cases. When asked to rate their level of agreement with the following statement "The pedagogical method made it possible to learn from, about, and with others" on a Likert scale from 1 to 5, the average for participating professionals was 4.45. For students, the average rating was 3.99 when asked about the workshops and 4.06 when asked about the clinical case discussions.

It is important to remember that the attitude of trainers and preceptors toward interprofessional training in patient-centred, collaborative practice is crucial because trainers and preceptors serve as role models and thus can influence students' attitudes.[11] The professionals were aware that they must first serve as an example, and the training gave them the tools to do so. Participating professionals rated their ability to act as role models for trainees and family medicine residents at 4.01 out of 5.

Still using the 5-point Likert scale, we asked residents and trainees to rate their appreciation of the trainers' abilities to serve as role models. The 4.33 average obtained suggests that trainers and preceptors successfully assumed their roles in interprofessional training for patient-centred, collaborative practice.

Discussion

Apart from a few exceptions,[12-14] most examples of practical interprofessional collaborative training come from experiments conducted in settings with more captive patient populations, such as those in geriatric, acute care, and rehabilitation units.[15-19] This innovative experiment provided added value to existing practical training programs. That interprofessional collaboration is now essential speaks to the coherence and convergence of curriculums and the vision for organizing primary care and services.

The positive results obtained in terms of perceived knowledge and skills acquisition and changes in attitude

Table 4. Perception of knowledge and skills acquisition before-and-after testing: *Scores are presented as the average rating on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree).*

KNOWLEDGE AND SKILLS ACQUIRED OR DEVELOPED	PROFESSIONALS* (N = 35)		STUDENTS* (N = 59)	
	BEFORE	AFTER	BEFORE	AFTER
Know the concepts of interprofessional collaboration applied to practice in primary health care and services	2.77	3.91†	2.88	4.12†
Know the role and expertise of other professionals	3.42	4.14†	3.46	4.12†
Recognize and respect the contribution of other professionals and the obstacles they face in accomplishing their tasks	3.89	4.40†	4.37	4.46
Master the skills required for effective patient-centred, interprofessional collaboration	3.20	3.86†	3.54	4.04†
Share information and decisions with other professionals on referrals or joint follow-up needs	3.79	4.37†	3.88	4.42†
Be equipped to participate in interprofessional collaboration when providing primary health care and services	2.80	4.09†	3.02	4.00†
Identify clinical situations in which interprofessional collaboration is in the patient's best interest	3.60	4.14†	3.54	4.29†
Recognize the sources of problems or conflicts that could impede care and service delivery	3.17	3.89†	3.23	4.17†
Assume one's professional responsibilities in the context of interprofessional collaboration	3.97	4.40†	3.88	4.37†
Be equipped to consider the patient as an essential partner	3.54	4.06†	4.02	4.43†
Take into account the views of other professionals in the context of interprofessional collaboration	3.94	4.46†	4.29	4.56†
Overall average	3.46	4.15†	3.65	4.27†

*Crude data are presented because the differences with respect to sex and profession of the participants were not statistically significant.
†The change in score is statistically significant ($P < .05$); Wilcoxon nonparametric test used.

Table 5. Changes in attitude toward interprofessional collaborative practice: *Attitudes were significantly more positive (P <.001) after training (Wilcoxon nonparametric test).*

ATTITUDE BEFORE → AFTER THE TRAINING	PROFESSIONALS* (N = 38), N (%)	STUDENTS* (N = 57), N (%)
Very positive → very positive	3 (7.9)	11 (19.3)
Very positive → positive	0	1 (1.75)
Positive → very positive	19 (50.0)	13 (22.8)
Positive → positive	7 (18.4)	21 (36.9)
Neutral → very positive	3 (7.9)	2 (3.51)
Neutral → positive	6 (15.8)	8 (14.0)
Neutral → neutral	0	1 (1.75)

*Crude data are presented because the differences with respect to sex and profession of the participants were not statistically significant.

regarding the possibility of working in settings with interprofessional collaboration are similar to those obtained in other projects.[13,20-22] However, it is difficult to compare these studies with the present one owing to their very different content, duration, pedagogic approaches, and evaluation parameters. Unlike the other experiments, which emphasized clinical themes as a pretext for interprofessional collaboration training, the program developed here is dedicated specifically to interprofessional collaboration skills. The students ranked their level of agreement as lower than that of the professionals about the following statement: "The pedagogical method made it possible to learn from, about, and with others." This could be owing to the different pedagogic methods used for the 2 groups and their perceptions of the usefulness of training on this subject. Professionals with less than 3 years' experience who participated in phase 1 reported seeing little importance in the various aspects of interprofessional collaboration before being exposed to it in their practices.

One of the main goals of this training program was to equip professionals to act as role models in interprofessional practice and to be confident in their ability to play this role. The follow-up provided by the project leader (L.P.) enabled them to strengthen and validate their skills, and recognize and describe the aspects of interprofessional collaboration that needed to be addressed in clinical practice. This support is all the more important because most students learn to interact with their colleagues by observing the behaviour of professionals in educational settings. A study by Pollard[23] shows that although students report that the interprofessional collaboration in their educational clinical settings is good, the behaviour described does not always correspond to that required for good collaborative practices. A number of authors have also noted discrepancies in how prepared preceptors are for practical training on interprofessional collaboration.[19,23]

As mentioned in other projects,[24] the before-and-after measures used assume that participants are able to identify and gauge changes even before they have had the chance to put their learning into practice.

During the practical training period, the preceptors noticed that a climate of confidence and a better understanding of everyone's contribution slowly emerged among students from different disciplines. The students confirmed that they were optimistic about the future possibility of working in settings with interprofessional collaboration.

The future of this interprofessional training program for collaborative practice hinges on the willingness of various stakeholders to maintain it and take part in its development. The family medicine residency program at Université Laval decided to make this training mandatory in each of its 12 affiliated FMUs by 2011. In time, preceptors will gain experience and become more comfortable with the pedagogic material, which will continue to be adapted to the knowledge that students gain in their preclinical courses. To maintain the interdisciplinary nature of the training program, the other faculties involved have been invited to take part in the process and officially appoint a person in charge of promoting and coordinating the program for social work and nursing trainees, and eventually for other disciplines.

Conclusion

The project faced several organizational challenges similar to those identified in the literature, such as preparing the practical clinical settings, identifying professionals to be responsible for activities in each FMU, and ongoing support.[12,13]

The pedagogic strategies appear to have allowed professionals, trainees, and residents to learn from, with, and about one another, which is the basis of interprofessional training.[8] The pedagogic material and strategies developed for professionals and students can be adapted and made available in settings involving other academic training programs. In fact, phase 1 of the training has been successfully tested in the hospital setting.

Professionals and managers need to understand the implications of such a project and commit themselves to it to facilitate collaborative practice and develop role models in each field. Sustaining this type of practice requires administrators who make it a priority and agree to organize work in a way that fosters collaborative practice in a time of staff shortages.

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Contributors

Ms Paré was the project leader. She developed the content and educational strategies; coordinated the family medicine units and the trainees' academic programs; recruited the preceptors and promoted the training among the students; and acted as a facilitator and coach throughout the project. **Dr Maziade** and **Ms Pelletier** co-led the project, worked on the educational context and strategies, and acted as facilitators. **Ms Houle** was the coordinator of the Interprofessional Education for Collaborative Patient-Centred Practice project and worked with the evaluation team. **Mr Iloko-Fundi** was the research professional for the coordination of the program evaluation process. All authors contributed to preparing the manuscript for publication and approved the final version.

Competing interests

None declared

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References

1. Fortin M, Hassan S, Hudon C, Bayliss EA, Van den Akker M. Multimorbidity's many challenges. *BMJ* 2007;334(7602):1016-7.
2. World Health Organization. *Framework for action on interprofessional education and collaborative practice*. Geneva, Switz: World Health Organization; 2010.
3. The Royal College of Physicians and Surgeons of Canada [website]. *CanMEDS 2005 framework*. Ottawa, ON: The Royal College of Physicians and Surgeons of Canada; 2005. Available from: **http://rcpsc.medical.org/canmeds/bestpractices/framework_e.pdf**. Accessed 2009 Nov 10.
4. Canadian Interprofessional Health Collaborative [website]. *Accreditation of interprofessional health education (AIPHE). Principles and practices for integrating interprofessional education into the accreditation standards for six health professions in Canada*. Vancouver, BC: Canadian Interprofessional Health Collaborative; 2009. Available from: **www.cihc.ca/files/complementary/AIPHE_PrinciplesandPracticesGuide_2009.pdf**. Accessed 2010 Jan 15.
5. Département de médecine familiale et de médecine d'urgence [website]. *Mission, vision et valeurs*. Laval, QC: Université Laval; 2012. Available from: **www.fmed.ulaval.ca/mfmu/index.php?id=1220**. Accessed 2012 Mar 9.
6. Dancause GB. *Études préliminaires pour l'implantation d'un modèle de formation multidisciplinaire et interdisciplinaire des médecins, infirmières et travailleurs sociaux en service de première ligne*. Quebec, QC: Régie régionale de la santé et des services sociaux de Québec; 2002.
7. Canadian Interprofessional Health Collaborative [website]. *A national interprofessional competency framework*. Vancouver, BC: Canadian Interprofessional Health Collaborative; 2010. Available from: **www.cihc.ca/files/CIHC_IPCompetencies_Feb1210.pdf**. Accessed 2010 Oct 8.
8. Centre for Advancement of Interprofessional Education [website]. *Defining IPE*. London, UK: Centre for Advancement of Interprofessional Education; 2002. Available from: **www.caipe.org.uk/about-us/defining-ipe/**. Accessed on 2012 Feb 23.
9. Donabedian A. *The methods and findings of quality assessment and monitoring: an illustrated analysis*. Vol. 3. Ann Arbor, MI: Health Administration Press; 1985.
10. Oandasan I, Reeves S. Key elements of interprofessional education. Part 2: factors, processes and outcomes. *J Interprof Care* 2005;19(Suppl 1):39-48.
11. D'Amour D, Oandasan I. Interprofessionality as the field of interprofessional practice and interprofessional education: an emerging concept. *J Interprof Care* 2005;19(Suppl 1):8-20.
12. McNair R, Brown R, Stone N, Sims J. Rural interprofessional education: promoting teamwork in primary health care education and practice. *Aust J Rural Health* 2001;9(Suppl 1):S19-26.
13. Coleman MT, Roberts K, Wulff D, van Zyl R, Newton K. Interprofessional ambulatory primary care practice-based educational program. *J Interprof Care* 2008;22(1):69-84.
14. Kipp J, Pimlott JF, Satzinger F. Universities preparing health professionals for the 21st century: can something new come out of the traditional establishment? *J Interprof Care* 2007;21(6):633-44.
15. Fineberg IC, Wenger NS, Forrow L. Interdisciplinary education: evaluation of a palliative care training intervention for pre-professionals. *Acad Med* 2004;79(8):769-76.
16. Mackenzie A, Craik C, Tempest S, Cordingley K, Buckingham I, Hale S. Interprofessional learning in practice: the student experience. *Br J Occup Ther* 2007;70(8):358-61.
17. Richardson J, Montemuro M, Cripps D, Mohide EA, Macpherson AS. Educating students for interprofessional teamwork in the clinical placement setting. *Educ Gerontol* 1997;23(7):669-93.
18. Lumague M, Morgan A, Mak D, Hanna M, Kwong J, Cameron C, et al. Interprofessional education: the student perspective. *J Interprof Care* 2006;20(3):246-53.
19. Nisbet G, Hendry GD, Rolls G, Field MJ. Interprofessional learning for prequalification health care students: an outcomes-based evaluation. *J Interprof Care* 2008;22(1):57-68.
20. Jackson CL, Nicholson C, Davidson B, McGuire T. Training the primary care team—a successful interprofessional education initiative. *Aust Fam Physician* 2006;35(10):829-32.
21. Price D, Howard M, Hilts L, Dolovich L, McCarthy L, Walsh AE, et al. Interprofessional education in academic family medicine teaching units: a functional program and culture. *Can Fam Physician* 2009;55:901-1.e1-5. Available from: **www.cfp.ca/content/55/9/901.full.pdf+html**. Accessed 2012 Mar 3.
22. Hammick M, Freeth D, Koppel I, Reeves S, Barr H. A best evidence systematic review of interprofessional education: BEME guide no. 9. *Med Teach* 2007;29(8):735-51.
23. Pollard KC. Non-formal learning and interprofessional collaboration in health and social care: the influence of the quality of staff interaction on student learning about collaborative behaviour in practice placements. *Learn Health Soc Care* 2008;7(1):12-26.
24. Reeves S. Community-based interprofessional education for medical, nursing and dental students. *Health Soc Care Community* 2000;8(4):269-76.