

## Interprofessional education in academic family medicine teaching units

### *A functional program and culture*

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#### ABSTRACT

**PROBLEM ADDRESSED** The new family health teams (FHTs) in Ontario were designed to enable interprofessional collaborative practice in primary care; however, many health professionals have not been trained in an interprofessional environment.

**OBJECTIVE OF PROGRAM** To provide health professional learners with an interprofessional practice experience in primary care that models teamwork and collaborative practice skills.

**PROGRAM DESCRIPTION** The 2 academic teaching units of the FHT at McMaster University in Hamilton, Ont, employ 6 types of health professionals and provide learning environments for family medicine residents and students in a variety of health care professions. Learners engage in formal interprofessional education activities and mixed professional and learner clinical consultations. They are immersed in an established interprofessional practice environment, where all team members are valued and contribute collaboratively to patient care and clinic administration. Other contributors to the success of the program include the physical layout of the clinics, the electronic medical record communications system, and support from leadership for the additional clinical time commitment of delivering interprofessional education.

**CONCLUSION** This academic FHT has developed a program of interprofessional education based partly on planned activities and logistic enablers, and largely on immersing learners in a culture of long-standing interprofessional collaboration.

#### RÉSUMÉ

**PROBLÈME À L'ÉTUDE** Les nouvelles équipes de Santé familiale (ÉSF) de l'Ontario ont été créées pour favoriser la collaboration interprofessionnelle dans les soins primaires; toutefois, plusieurs professionnels de la santé n'ont pas été formés dans un contexte interprofessionnel.

**OBJECTIF DU PROGRAMME** Offrir aux professionnels de la santé en apprentissage une expérience de pratique interprofessionnelle en soins primaires qui présente des modèles de compétences en travail d'équipe et en pratique concertée.

**DESCRIPTION DU PROGRAMME** Les 2 unités d'enseignement universitaire des ÉFS à l'Université McMaster d'Hamilton, en Ontario, regroupent 6 types de professionnels de la santé et fournissent un milieu d'apprentissage pour les résidents de médecine familiale et les étudiants des diverses professions de la santé. Les étudiants assistent à des sessions formelles de formation interprofessionnelle et à des consultations cliniques regroupant professionnels et étudiants. Ils sont immergés dans un milieu interprofessionnel déjà établi, où tous les membres de l'équipe sont mis en valeur et collaborent aux soins des patients et à l'administration de la clinique. D'autres facteurs contribuent au succès du programme, entre autres la disposition physique de la clinique, le système de communication pour les dossiers électroniques et l'appui des autorités pour le temps clinique additionnel requis pour donner la formation interprofessionnelle.

**CONCLUSION** Cette ÉSF universitaire a élaboré un programme de formation interprofessionnel qui repose en partie sur des activités planifiées et des aides logistiques, mais surtout sur l'immersion des étudiants dans une culture de collaboration déjà bien établie.

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Clinical settings in primary care are uniquely positioned to provide interprofessional educational opportunities to health professional learners. *Interprofessional education* has been defined as “occasions when two or more professions learn from and about each other to improve collaboration and the quality of care.”<sup>1</sup> The Canadian government, recognizing the benefits of collaborative practice,<sup>2,3</sup> described initiatives in their 2003 accord on health care renewal to support and promote interprofessional practice and education in health care.<sup>4</sup> Substantial funds have been allocated to reforms to primary care that emphasize interprofessional teamwork.<sup>5-7</sup> In Ontario, a recent example is the initiation of family health teams (FHTs) in 2006.

Several authors have described the key elements of interprofessional education<sup>8,9</sup> and theoretical frameworks,<sup>10</sup> as well as the effects of interprofessional education on learner knowledge and behaviour.<sup>11</sup> Interprofessional education has a long history in the clinical teaching units of the Department of Family Medicine at McMaster University in Hamilton, Ont. Physician-nurse practitioner teams started in the early 1970s.<sup>12</sup> In the summer of 2006, 2 family practice units at McMaster University became an FHT, allowing expanded hiring of health professionals from new disciplines as additions to the existing interprofessional teams.

The FHT provided the basis for an interprofessional education program for family medicine residents, undergraduate medical students, and learners from other health professions to meet the goals of interprofessional education, including the development of teamwork skills, appreciation of each profession's scope of practice, and collaborative practice skills to enhance patient care.

The objective of this paper is to describe a program of interprofessional education, to evaluate the program through interviews with participating health professionals on the successes and challenges of the program, and to make recommendations for creating an interprofessional learning environment in primary care.

### Description of program

The McMaster FHT consists of 2 teaching units: McMaster Family Practice and Stonechurch Family Health Centre. The units conduct approximately 70000 patient encounters per year. There are 25 academic full-time physicians and 8 community or part-time faculty physicians. Other professional staff include 15 nurses (8 nurse practitioners, 1 registered nurse, and 6 registered practical nurses), 2 consultant psychiatrists (who provided patient care 1 half-day per week at each unit), 6 social workers, 2 dietitians, 3 pharmacists, and a chaplain; all of them work in various combinations of full- and part-time positions, with some shared staff between the units.

Most learners in the units are family medicine residents and undergraduate medical students. There

are also nurse practitioner, social work, dietitian, and pharmacist students. There are more than 55 family medicine residents based in the 2 units, with more than 15 of them working full-time during any 1 period.

The components of the interprofessional education program activities are shown in **Table 1**. The program includes formal and informal learning opportunities and programmatic enablers. Formal clinical learning opportunities are based on purposeful pairing of learners and teachers and include interprofessional teacher-learner patient encounters (eg, double-booking), shadowing, and case consultations. Other formal activities include various rounds and group learning sessions that include or are led by interprofessional learners and teachers. Informal encounter-based teaching opportunities are also key elements of the program. Much of this happens as a result of quick consultations on patient care issues in team rooms. Nonphysician professionals and their learners have opportunities to contribute to conversations between medical residents and physicians, in which they are able to provide important input on patient care, thereby being role models for teamwork and teaching the skill sets of various health professionals.

Programmatic enablers include the physical layout, the information technology system, and the leadership support of the clinics. Physical layout is seen as one of the main enablers of interprofessional practice and education in the clinics. One clinic was built in 2002 and the other in 2006. The layout of each clinic was designed to allow for informal encounters among staff. The central area in each clinic is a visually and acoustically private team room for all health professionals, which is crucial to providing interprofessional education experiences. The team room at the newer clinic is centrally located in the building and is next to the kitchen and social meeting area.

Interprofessional education takes additional time and resources for “purposeful pairing” in clinical encounters. For example, double-booking requires approximately 10 minutes before and 15 to 30 minutes after the patient visit for the learner and teacher to discuss learning needs and evaluate the outcome of the encounter. In a 3-month period there are approximately 50 appointments booked in this manner, 30 of which involve residents as learners, and mostly with social worker teachers, but also with the pharmacists and nurses. The leaders of the department and clinic units support this extra use of resources as part of the standards of teaching in the department.

### Evaluation

We performed a formative descriptive evaluation using qualitative methods. One author (M.H.) interviewed 2 physicians, 4 nurse practitioners, 1 social worker, and 1 pharmacist using a semistructured interview guide

to elicit opinions about the successes and challenges of interprofessional education program activities. The interview guide was developed from concepts of successful interprofessional education in the literature. Data collection and analyses were iterative, with revisions to the interview guide occurring while data collection was ongoing. Interviews were tape-recorded. One analyst (M.H.) created a coding template based on themes and categories driven by the study objectives and the interview guide. A second analyst also independently created a coding template. The 2 analysts discussed and merged the themes and categories after an agreement was reached. Member-checking of results was used to ensure verifiability of findings, as several interviewees were also co-authors. Data saturation was reached when no new information was provided in the final interviews.

In describing the successes of the interprofessional education activities, staff characterized the culture of interprofessional education as mirroring the culture of interprofessional practice in the clinics. Interviewees referred to the perceptions the different professionals' had of one another, the methods of communication, the

team dynamics, and the atmosphere in the units. Staff described the culture as nonhierarchical, holistic, synergistic, and trusting. They described mutual respect and egalitarianism, where "everyone is a clinician" with a unique and valued contribution to patient care. They also described comfort and trust in situations where roles overlap between professions, resulting in an absence of "turf defending." Interviewees who had previously worked in different family practice environments described a fundamental difference in the culture of the Hamilton FHT, compared with situations where non-physician professionals work alongside physicians and simply receive instructions to carry out. They stressed the collaborative working relationship, in which they "co-plan" patient care with physicians.

Interviewees described how some learners undergo a shift in their professional socialization. Medical residents and other learners are introduced immediately to the idea that not only physicians but also other health professionals will be their teachers. Nurse practitioners and social workers described examples of how new residents hesitate to consult them for advice and often verify information with physician preceptors. However, within a few

**Table 1. Components and activities of the interprofessional education program**

COMPONENTS	ACTIVITIES
<b>Formal learning opportunities</b>	
<ul style="list-style-type: none"> <li>• Purposeful pairing of learners and teachers</li> </ul>	<ul style="list-style-type: none"> <li>• Clinical clerks spending designated time with health professionals (eg, nurse practitioners, pharmacists, lactation consultants, dietitians) for patient education and preventive care</li> <li>• Scheduled case consultations between residents and allied health providers to review specific cases</li> <li>• Double-bookings of learners with other health professionals (eg, medical resident, dietitian)</li> <li>• Multiprofessional learners and supervisors facilitating patient groups (eg, diabetes education, anxiety)</li> <li>• Shadowing a profession for a day (eg, clinical clerks spending time with nurse practitioners in order to learn about their skill sets)</li> <li>• Direct observation of residents visiting patients, with evaluation and follow-up</li> </ul>
<ul style="list-style-type: none"> <li>• Pairing of learners</li> </ul>	<ul style="list-style-type: none"> <li>• Clinical clerks paired with medical residents for patient encounters</li> <li>• Pharmacy students paired with medical residents and clinical clerks for reviews of patient medication</li> </ul>
<ul style="list-style-type: none"> <li>• Health professional-led group activities</li> </ul>	<ul style="list-style-type: none"> <li>• Weekly rounds with contributions from all professionals</li> <li>• Problem-based small group learning sessions for residents led by several health professionals; also attended by learners present in the practices</li> <li>• Psychiatrist rounds once a month in each clinic</li> <li>• Pharmacist rounds once a month in each clinic</li> </ul>
<ul style="list-style-type: none"> <li>• Interprofessional-led patient groups</li> </ul>	<ul style="list-style-type: none"> <li>• Education groups for patients with diabetes led by nurses, pharmacists, social workers, and dietitians, including residents and other appropriate learners (eg, social work students)</li> <li>• Mental health patient groups led by social workers with pharmacists, including residents and other appropriate learners (eg, social work students)</li> <li>• Healthy-eating classes led by dietitians, including appropriate learners</li> </ul>
<b>Informal learning activities</b>	
<ul style="list-style-type: none"> <li>• Faculty supervisors providing examples of interprofessional care (ie, being role models)</li> </ul>	<ul style="list-style-type: none"> <li>• Social worker and pharmacist jointly planning and conducting anxiety patient groups</li> <li>• Pharmacists interacting with physicians to assess medication-related knowledge needs</li> <li>• Social workers advising physicians and residents on management of mental health issues</li> </ul>
<b>Programmatic enablers</b>	
	<ul style="list-style-type: none"> <li>• Common team room to facilitate interaction and communication</li> <li>• Information technology system to facilitate interaction and communication</li> <li>• Leadership support</li> <li>• Flexibility in office operations</li> <li>• Supportive culture</li> </ul>

months, residents begin to seek out the most appropriate professional for a particular issue. Interviewees noted that this model of learning provided necessary exposure for nonphysician learners in prelicensure training in particular, as they learn to appreciate their unique contributions to patient care while simultaneously learning how other professionals approach clinical care. Evidence of the need for this was apparent when interviewees described that nonphysician learners are often initially very passive in their interactions with physicians. We believe the program assisted in shifting professional socialization of these learners by engaging them in a model of collaborative care.

Interviewees discussed 2 main categories of enablers to the interprofessional education program: attitudes and logistics. Staff noted that the attitude of the leaders supported the culture of interprofessional education by allowing health professional hours to be used for those teaching strategies that require resources in practice. Another example of positive attitudes is the collaborative decision-making process in the clinics, ensuring the views and values of all members of the team are included. Interviewees noted that there was support from the leadership for innovations of all team members in practice as long as they benefited patient care.

In the design of both buildings, there was deliberate interprofessional involvement to ensure that teamwork would be enabled (eg, patient care areas shared by all professionals) rather than physicians having separate space from other team members. The other main logistic enabler is the Web-based electronic medical record, which enables seamless information flow between team members. Team members can use the messaging system to communicate with one another about issues that require attention, as many have administrative responsibilities and are not always physically present at the clinic. All health care providers add information to patient charts on the same “page,” making it more likely that others involved in the care will see and learn from their colleagues’ notes.

### Discussion

Our findings highlight the formal and informal components of a program of interprofessional education in family practice that work in tandem to ensure the necessary resources and an enabling culture. A systematic review of the effects of interprofessional education on learner outcomes found that successful programs featured attention to nonclinical skills (eg, communication) and employed a combination of didactic and clinical teaching as well as nontraditional teaching methods (eg, interprofessional problem-based learning).<sup>11</sup> These elements are also present in our program, with a large emphasis on the culture, environment, and physical enablers (eg, physical layout, information technology) that especially facilitate a variety of clinical and nonclinical learning opportunities.

In a key informant survey on Canadian programs on interprofessional education, the most common professions of learners and educators were medicine and nursing, similar to our program.<sup>13</sup> In programs set in educational and services settings, 52% used workshops, 34% used patient-centred case conferences, and 30% used patient interactions as teaching methods. Perceived enablers included program logistics and administration, balanced participation from various professional groups, financial and organizational support, a critical mass of learners, participant compensation, and a quality improvement paradigm. Barriers included attitudes, individuals not understanding their roles, and lack of organizational culture support. Our results confirm the importance of several of these barriers and enablers, as well as the need to base teaching, to a large extent, on direct patient care that models an interprofessional culture.

Limitations of our program include the lack of structured interprofessional education curriculum in many health professional programs, and the various lengths of time spent in the clinic setting for different learners, sometimes limiting the exposure of learners to each other and to all professions. In addition, owing to academic roles that take them out of the clinic frequently, faculty members do not have continuous relationships with their assigned learners, and learners must seek out other teachers to achieve their learning objectives. This is also a strength because it necessitates broader exposure to other teachers and forces learners to articulate their learning needs and be self-directed.

Not all health professions that could be present in primary care are represented in our clinics; therefore, exposure is limited to the professions present at a given time. Planned improvements include being more purposeful in ensuring that all learners are exposed to all teacher professions, and creating more opportunities for academic work, such as research, among learners. The exact activities in any setting would need to be based on factors such as the mix of professionals and learners, learner program curriculum, and physical layout of the settings. We have attempted to highlight the broad categories of activities that we have found to be important and that could be reproduced in some manner in other settings.

### Conclusion

With the recent reforms in primary care emphasizing interprofessional practice and quality of care, there might be challenges when various health professionals begin working together—possibly for the first time. Although our setting is different from community family practices that are beginning to engage in interprofessional care, there are several elements of success that can be extrapolated (**Box 1**). We believe that working in teams has increased our efficiency. Staff anecdotally report that the volume of patients seen daily, while still

### Box 1. Elements of successful interprofessional practice in primary care, based on learnings from a program of interprofessional education

- Opportunities for face-to-face interactions among all professions regarding patient care (eg, team rooms, patient care areas)
- Deliberate communication mechanisms (eg, information technology systems, team meetings)
- Inclusiveness of all professions in planning, implementation, and evaluation of clinic activities and initiatives
- Opportunities to create understanding of individual's role and role of other professions

meeting the needs of our roster of patients, has eased and that they are able to see patients more effectively and for a longer period of time, which might contribute to improved quality of care.

This paper describes a program of interprofessional education that features the key elements of deliberate interprofessional pairing in the context of patient care and case consultation, and logistic and leadership enablers; the program also provides learners with an example of an established culture of collaborative care. 🌱

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#### Contributors

**Drs Price, McCarthy, and Walsh** and **Ms Hilts** and **Ms Dykeman** contributed to the concept and design of the program. **Dr Howard** contributed to data gathering and analysis. **Dr Dolovich** contributed to analysis. All authors contributed to interpretation of the results, preparing the manuscript for submission, and providing final approval for publication.

#### Competing interests

None declared

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### EDITOR'S KEY POINTS

- With the recent reforms in primary care emphasizing interprofessional practice, there might be challenges when various health professionals begin working together, as many have not been trained in interprofessional environments.
- This article describes and evaluates an interprofessional training program. Formal clinical learning opportunities are based on purposeful pairing of learners and teachers (eg, interprofessional patient encounters, shadowing, case consultations, and group learning sessions). Informal teaching opportunities, such as quick consultations on patient care in team rooms, and logistic factors, such as electronic records and physical layout of the clinics, are also important.
- Although the setting described is different from community family practices that are beginning to engage in interprofessional care, there are several elements to success that can be extrapolated, including providing opportunities for face-to-face interactions among professions; having deliberate communication mechanisms; including all professions in planning, implementation, and evaluation of activities and initiatives; and ensuring there are opportunities to create understanding of the roles of the various professionals.

### POINTS DE REPÈRE DU RÉDACTEUR

- La récente réforme des soins de première ligne qui encourage la pratique interprofessionnelle risque de susciter certains problèmes lorsque les divers membres d'une équipe de santé commencent à travailler ensemble, plusieurs d'entre eux n'ayant pas été formés dans un contexte interprofessionnel.
- Cet article décrit et évalue un programme de formation interprofessionnel. Les occasions formelles d'apprentissage reposent sur un pairage intentionnel étudiant-professeur (p. ex. rencontres interprofessionnelles de patients, surveillance discrète, études de cas, sessions d'apprentissage en groupe). Les occasions informelles, comme les discussions rapides sur les soins des patients dans les chambres d'équipe, et les facteurs logistiques, comme les dossiers électroniques et la disposition physique des cliniques, sont également importants.
- Même si l'organisation décrite diffère de celle des cliniques familiales communautaires qui commencent à adopter les soins interprofessionnels, on peut déjà distinguer plusieurs éléments de réussite, notamment: fournir des occasions d'interaction directes entre professions; disposer de mécanismes de communication déjà établis; faire participer toutes les professions à la planification, à l'instauration et à l'évaluation des activités et initiatives; et s'assurer que tous ont l'occasion de comprendre le rôle de chacune des professions.

## Program Description | Interprofessional education in academic family medicine

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