What can organizations do to improve family physicians' interprofessional collaboration?

Results of a survey of primary care in Quebec

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Abstract

Objective To assess the degree of collaboration in primary health care organizations between FPs and other health care professionals; and to identify organizational factors associated with such collaboration.

Design Cross-sectional survey.

Setting Primary health care organizations in the Montreal and Monteregie regions of Quebec.

Participants Physicians or administrative managers from 376 organizations.

Main outcome measures Degree of collaboration between FPs and other specialists and between FPs and nonphysician health professionals.

Results Almost half (47.1%) of organizations reported a high degree of collaboration between FPs and other specialists, but a high degree of collaboration was considerably less common between FPs and nonphysician professionals (16.5%). Clinic collaboration with a hospital and having more patients with at least 1 chronic disease were associated with higher FP collaboration with other specialists. The proportion of patients with at least 1 chronic disease was the only factor associated with collaboration between FPs and nonphysician professionals.

Conclusion There is room for improvement regarding interprofessional collaboration in primary health care, especially between FPs and nonphysician professionals. Organizations that manage patients with more chronic diseases collaborate more with both non-FP specialists and nonphysician professionals.

EDITOR'S KEY POINTS

- Little empirical work has examined the influence of organizational factors on interprofessional collaboration in primary health care. This study examined the degree of interprofessional collaboration in primary health care organizations in the 2 most densely populated regions of Quebec.
- A high degree of interprofessional collaboration was more frequently reported between FPs and other specialists than between FPs and nonphysician health professionals.
- Interprofessional collaboration is higher in primary health care organizations with a high proportion of patients with chronic diseases and in those that collaborate with a hospital.

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Ce que les organismes peuvent faire pour améliorer la collaboration entre les médecins de famille et les autres professionnels

Résultats d'une enquête sur les soins de première ligne au Québec

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Résumé

Objectif Vérifier le degré de collaboration entre MF et autres professionnels de la santé dans des organismes dispensant des soins primaires; et cerner les facteurs organisationnels qui jouent un rôle dans cette collaboration.

Type d'étude Une enquête transversale.

Contexte Des organismes dispensant des soins de santé primaires dans les régions de Montréal et de la Montérégie, au Québec.

Participants Des médecins et des administrateurs de 376 organismes.

Principaux paramètres à l'étude Le degré de collaboration entre MF et autres spécialistes, et le degré de collaboration entre MF et professionnels de la santé autres que les médecins.

Résultats Près de la moitié (47,1%) des organismes ont répondu qu'il y avait un très bon niveau de collaboration entre les MF et les autres spécialistes; toutefois, la collaboration entre les MF et les professionnels autres que les médecins n'atteignait pas souvent un tel niveau (16,5%). Le fait de collaborer avec un hôpital ou d'avoir plus de patients souffrant d'au moins une maladie chronique était associé à une meilleure collaboration entre les MF et les autres spécialistes. C'est seulement lorsqu'il y avait une forte proportion de patients souffrant d'au moins une maladie chronique que la collaboration entre MF et professionnels autres que les médecins était meilleure.

Conclusion Dans les établissements de santé primaire, la collaboration interprofessionnelle pourrait certainement être meilleure, notamment entre les MF et les professionnels autres que les médecins. Les organismes qui s'occupent de patients souffrant de plus de maladies chroniques collaborent mieux avec les spécialistes autres que les MF et les professionnels autres que les médecins.

POINTS DE REPÈRE DU RÉDACTEUR

- Peu d'études empiriques ont porté sur l'influence des facteurs organisationnels sur la collaboration interprofessionnelle dans les établissements de soins de santé primaires. Notre étude portait sur le degré de collaboration interprofessionnelle au sein des organismes de soins primaires des 2 régions les plus densément peuplées du Québec.
- En général, les participants ont rapporté qu'il y avait une meilleure collaboration entre les MF et les autres spécialistes qu'entre les MF et les professionnels de la santé autres que les médecins.
- Le niveau de collaboration interprofessionnelle est plus élevé dans les organismes de soins primaires qui traitent un pourcentage élevé de malades chroniques et dans ceux qui collaborent avec un hôpital.

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Interprofessional collaboration has been increasingly promoted in recent years to optimize the quality of health care.[1] The Romanow Commission report on the future of health care highlighted the importance of interprofessional collaboration in the Canadian health system, including in primary care.[2] In Quebec, recent initiatives for primary health care renewal have translated into the implementation of family medicine groups (FMGs) and network clinics (NCs).[3] Developing interprofessional collaboration, notably between FPs and nurses, was viewed as an essential aspect of these new models of care.[4]

Interprofessional collaboration has been described as a solution to the shortage of human resources, the fractioning of professional fields, and the need to improve the effectiveness and efficiency of services, and as a way to better respond to patients' needs, especially those with complex or chronic conditions.[5-8] Previous work shows that interprofessional collaboration has positive effects on worker and patient satisfaction, clinical outcomes, and quality of care.[9-12] Interprofessional collaboration between FPs and other specialists substantially contributes to continuity between primary and specialty care.[13] Moreover, lack of communication and collaboration could be associated with patient harm.[14,15]

Not surprisingly, interprofessional collaboration has become a hallmark of the competency profiles of numerous professions (eg, physiotherapists, nurses), including those of physicians. The 2005 CanMEDS framework states that "as collaborators, physicians effectively work within a healthcare team to achieve optimal patient care."[16] This health care team includes all professionals with whom physicians practise within their own workplaces, but also those from other organizations.[16]

Multiple forces influence the development and implementation of interprofessional collaboration. Several frameworks have been proposed in an attempt to capture the numerous factors that shape interprofessional collaboration and team performance. According to D'Amour et al,[17] there are 3 main categories of determinants of interprofessional collaboration: interactional determinants between professionals, organizational determinants, and determinants related to the professional system. More specifically, organizational determinants include aspects such as organizational structure, technology, size, and human resources.[1] Reeves et al[18] proposed another framework where relational, process, organizational, and contextual factors all influence interprofessional teamwork. Even if there are considerable overlapping features and interconnections between different categories of factors,[18] a favourable organizational setting is essential for interprofessional collaboration.[19] Nonetheless, most of the published writings on factors associated with collaboration have relied on conceptual rather than empirical work.[19] Gaining a better understanding of the factors associated with interprofessional collaboration is essential to identifying targets for improving interprofessional collaboration when relevant.[20]

The objectives of this study were to assess the degree of collaboration in primary health care organizations between FPs and other health care professionals (non-FP specialists and nonphysicians) and identify organizational factors associated with collaboration.

METHODS

Study design

This study was part of a larger study that documented the evolution and performance of primary care organizational models in Quebec following primary care reform (2005 to 2010), and also examined organizational and wider contextual factors associated with these transformations in primary care.[21] Primary care organizations within Quebec's 2 most densely populated regions, Montreal and Monteregie, were surveyed. Ethical approval was obtained from the research ethics committee of the Agence de la santé et des services sociaux in Montreal and from research ethics committees in each health and social services centre in the regions under study.

Selection of organizations

The list of primary health care organizations was compiled by using administrative lists of the Ministère de la Santé et des Services sociaux, the regional Agence de la santé et des services sociaux, and the Collège des médecins du Québec, and by including other nonlisted organizations identified by participants in the population survey, which was part of the larger study. Each organization was contacted to identify the potential respondent, an FP or manager.

All eligible organizations were sent an invitation to participate in the study with a copy of the survey questionnaire and consent forms. The questionnaire could also be completed online via LimeSurvey using a unique access code, and in either English or French according to the respondent's preference. Up to 3 reminders were sent to nonresponding organizations. Data were collected between March 2010 and January 2011.

Survey questionnaire

The questionnaire was adapted from one used in a previous study.[22,23] It covered organizational characteristics based on the 4 dimensions of the configurational approach that served as a framework for the study: organizational vision (ie, goals, values, and orientations), resources (ie, availability, quantity, and variety), structure (ie, rules of governance, conventions, and procedures), and practices (ie, mechanisms that support

service delivery).[24,25] Regarding collaboration, no formal definition was provided but items asked to what degree the FPs in the clinic collaborate (eg, exchange, referrals) with other specialists or nonphysician professionals.

Data analysis

We conducted multivariate logistic regression analyses to identify factors associated with interprofessional collaboration. We constructed 2 separate models for each of the 2 dependent variables: the degree of collaboration between FPs and other specialists and between FPs and nonphysician health professionals, categorized as higher (original response: quite a bit) versus lower (original response: somewhat, a bit, or not at all). The independent variables were organizational characteristics of the primary health care organizations identified as potentially influencing interprofessional collaboration based on previous work.[1,17,26] They included type of clinic (traditional vs new [FMGs and NCs]), affiliation with a hospital by at least 1 of the clinic's FPs, clinic collaboration with a hospital, number of non-FP specialists or nonphysician professionals in the clinic's building, proportion of patients with at least 1 chronic disease within the clinic's patient caseload, and region. Missing values were replaced by the modal value.[24] Analyses were conducted using SPSS, version 21.

RESULTS

Participating organizations

We sent questionnaires to 606 primary health care organizations, 376 of which responded for a 62.0% response rate. **Table 1** describes these organizations. Most were located in the Montreal region (61.2%), in rented offices in commercial buildings (35.4%+30.6%=66.0%), and had been open for at least 10 years (87.8%). Most of them had multiple FPs working within the organization and had non-FP specialists and nonphysicians working in the same building. All clinics reported that more than 50% of their patients had at least 1 chronic condition (mean [SD] 57.5% [3.3%]).

FPs' degree of collaboration

Figure 1 illustrates the degree of collaboration between FPs and other specialists and between FPs and nonphysician professionals. The most frequently reported degree of collaboration was "quite a bit" regarding collaboration between FPs and other specialists (47.1%), while it was "somewhat" for collaboration between FPs and other types of professionals (46.5%).

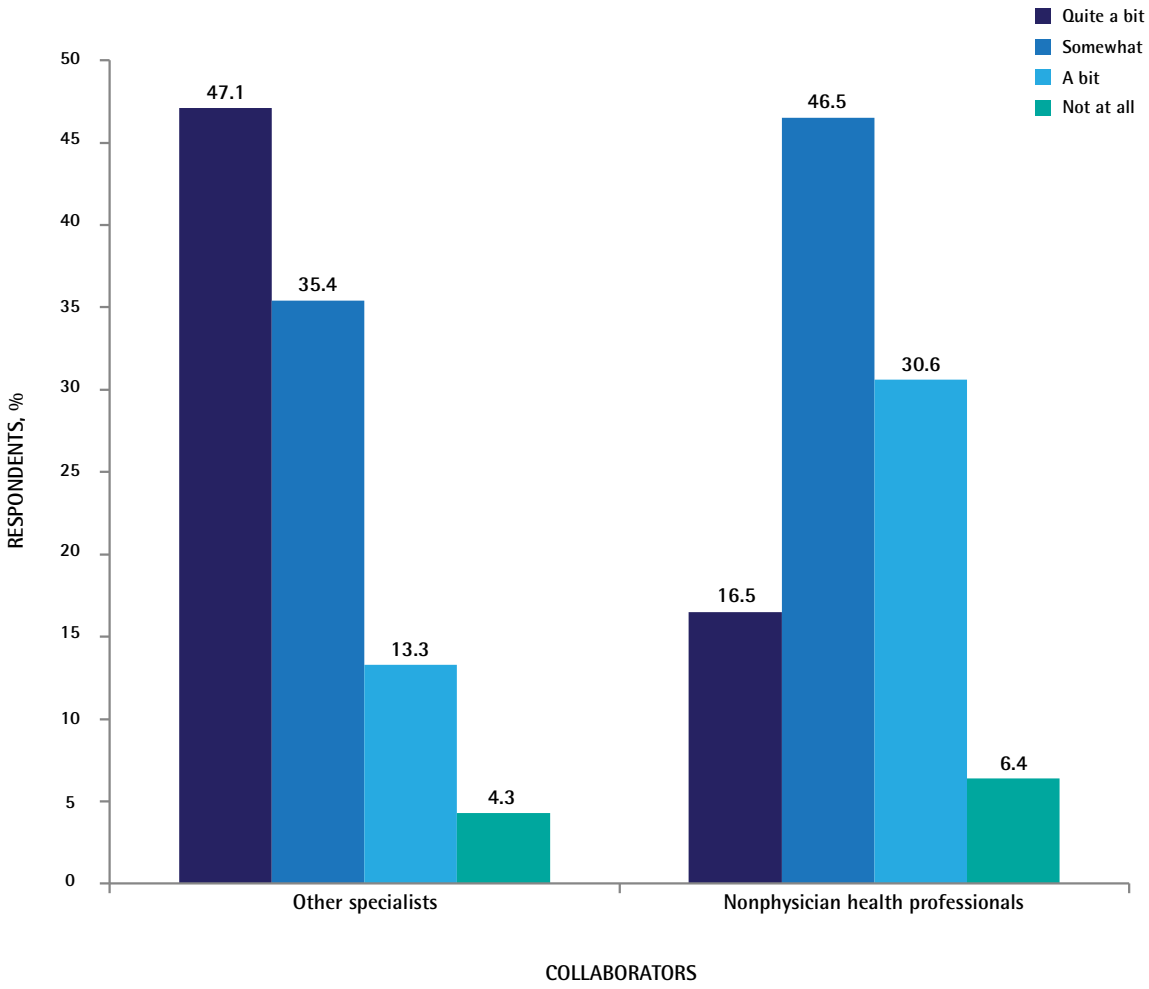
Factors associated with degree of collaboration

Table 2 shows the model for the degree of collaboration between FPs and other specialists. Clinic collaboration with a hospital (P=.01) and having a higher proportion

Table 1. Characteristics of health care organizations

CHARACTERISTICS	N (%)
Region of Quebec	
• Monteregie	146 (38.8)
• Montreal	230 (61.2)
Specific location	
• Building owned by physicians	66 (17.6)
• Rented offices in commercial building for health professionals	133 (35.4)
• Rented offices in commercial building for any type of business	115 (30.6)
• Publicly funded health network (hospital, local community service centre, etc)	49 (13.0)
• Other	13 (3.5)
Time since opening, y	
• 0-4	20 (5.3)
• 5-9	26 (6.9)
• ≥10	330 (87.8)
Type of clinic	
• Traditional (group or solo clinic, family medicine unit, local community service centre)	279 (74.2)
• New (family medicine group, network clinic, or both)	97 (25.8)
Population served	
• Anyone who needs services	79 (21.0)
• Regular or registered clients	234 (62.2)
• Population in the area	63 (16.8)
No. of FPs working in the organization	
• 1	116 (30.9)
• 2-5	128 (34.0)
• 6-10	73 (19.4)
• >10	59 (15.7)
At least 1 nurse working in the organization	178 (47.3)
At least 1 clinic FP also working in an emergency or acute care unit in a hospital	183 (48.7)
Clinic collaboration with a hospital	170 (45.2)
No. of non-FP specialists within clinic building	
• 0	166 (44.1)
• 1-2	84 (22.3)
• 3-4	53 (14.1)
• ≥5	73 (19.4)
No. of nonphysician professionals within clinic building	
• 0	132 (35.1)
• 1-2	104 (27.7)
• 3-4	88 (23.4)
• ≥5	52 (13.8)
Walk-in patient visits, %	
• 0	67 (17.8)
• 1-25	175 (46.5)
• 26-50	78 (20.7)
• >50	56 (14.9)

Figure 1. Degree of collaboration between FPs and other specialists and nonphysician health professionals



of patients with chronic diseases (P=.001) were significantly associated with a greater degree of collaboration between FPs and other specialists.

The model for the degree of collaboration between FPs and nonphysician professionals is presented in **Table 3**. Degree of collaboration with nonphysician professionals was significantly associated with the proportion of patients with at least 1 chronic disease within the clinic caseload (P=.04).

DISCUSSION

This study explored the degree of collaboration in primary care organizations between FPs and other specialists or nonphysician professionals as well as the organizational factors associated with collaboration.

Collaboration between FPs and other specialists has been described as suboptimal in traditional models of consultation.[27] Our results show that there is room for improvement regarding the degree of collaboration between FPs and other specialists within primary care organizations in Quebec. Almost 50% of organizations reported high collaboration, but most stated that FPs collaborated somewhat, a bit, or not at all. In the 2007 Canadian National Physician Survey, most FPs reported having had regular collaboration with other specialists in areas such as pediatrics, psychiatry, and gynecology.[28] Also, we found that a high degree of collaboration was less frequently reported between FPs and nonphysicians than between FPs and other specialists. In the 2007 survey, most physicians stated they had regularly collaborated in providing patient care with pharmacists (73.5%), physiotherapists (67.4%), nurses (56.5%), social workers (54.1%), and nutritionists (52.2%).[28,29] Proportions

Table 2. Organizational factors associated with a high degree of collaboration between FPs and other specialists

CHARACTERISTICS	ODDS RATIO	95% CI	*P* VALUE
Region of Quebec			
• Montreal	0.91	0.59-1.40	.66
• Monteregie*	1		
Type of clinic			
• New	1.00	0.58-1.73	.99
• Traditional*	1		
At least 1 clinic FP also working in an emergency or acute care unit in a hospital			
• Yes	1.10	0.69-1.73	.70
• No*	1		
Clinic collaboration with a hospital			
• Yes	1.78	1.13-2.78	.01†
• No*	1		
No. of non-FP specialists within clinic building			
• ≥ 5	0.58	0.32-1.06	.08
• 3-4	0.84	0.44-1.58	.58
• 1-2	1.31	0.76-2.26	.33
• 0*	1		
Proportion of patients with at least 1 chronic condition	1.15	1.06-1.25	.001†

*Reference category.
†Statistically significant relationship ($P < .05$).

of physicians reporting collaboration with other professionals were much lower in a study in Alberta, although interest in collaborating was high.[30] Nonetheless, comparisons among studies can only be made tentatively because their definitions of interprofessional collaboration vary, some of them being limited to formal teamwork, with others, like ours, including referral and consultations. Furthermore, there is no universal ideal or benchmark for collaboration in primary health care in terms of degree of collaboration to attain, types and timing of interactions, and professionals to involve.

In terms of factors associated with the degree of collaboration, our findings show that FMGs and NCs, implemented in Quebec as the result of recent primary care reform, are not associated with increased collaboration between FPs and other specialists and between FPs and nonphysician professionals. This is somewhat disappointing, as the desire to increase interprofessional collaboration was central to the reform. However, this reform did not specifically target FP collaboration with other specialists and nonphysicians other than nurses. Previous work indeed shows that collaboration between nurses and FPs improved as a result of the implementation of FMGs.[31] Furthermore, clinic collaboration with a hospital was associated with high collaboration between FPs and other specialists, an indication that the development of formal and informal arrangements between primary care organizations and hospitals supports collaboration between actors working within these institutions. Creating formal links between medical practices and the wider health system was one of the underlying aims of the reform.[3] The associations we found between the proportion of patients with at least 1 chronic disease and collaboration are in line with the often-cited rationale for promoting interprofessional collaboration as a means to improve patient care by better responding to the needs of persons with complex conditions.[8,32]

Limitations

This study was cross-sectional; we cannot conclude that organizational characteristics affect the degree of collaboration, only that these were associated. The findings are based on self-report, which might induce information bias. Only one FP or manager acted as respondent for each organization. Although it is possible that in some cases the responses did not represent the reality of the whole organization, in all cases the person chosen was the one who was the most capable of providing a valid answer. This often-used reputational approach for identifying a respondent was viewed as the most valid and efficient. Conducting field observations (eg, using ethnographic designs, as done by others[15]) would provide complementary findings. It is also possible that some organizational factors associated with interprofessional collaboration were omitted. Furthermore, while the results of this study show the importance of organizational factors, interventions to increase FPs' degree of collaboration in primary health care most likely need to target multiple factors and be context dependent. Targeting solely the organizations to help improve interprofessional collaboration might not be sufficient. For instance, developing new approaches to teach collaboration and mutual respect to FPs and other specialists might be required.[13,33] Multifaceted interventions targeting professionals and organizations might be preferable.[18,34,35]

Conclusion

This study examined the degree of interprofessional collaboration in primary health care organizations in the 2 most densely populated regions of Quebec. Based on our findings, interprofessional collaboration is more frequently reported as high between FPs and other specialists than between FPs and

Table 3. Organizational factors associated with a high degree of collaboration between FPs and nonphysician professionals

CHARACTERISTICS	ODDS RATIO	95% CI	*P* VALUE
Region of Quebec			
• Montreal	1.25	0.69-2.25	.46
• Monteregie*	1		
Type of clinic			
• New	2.01	0.93-4.33	.08
• Traditional*	1		
At least 1 clinic FP also working in an emergency or acute care unit in a hospital			
• Yes	1.18	0.60-2.31	.64
• No*	1		
Clinic collaboration with a hospital			
• Yes	1.25	0.68-2.32	.47
• No*	1		
No. of other professionals within clinic building			
• ≥ 5	0.96	0.36-2.56	.94
• 3-4	0.84	0.37-1.90	.67
• 1-2	1.58	0.81-3.07	.18
• 0*	1		
Proportion of patients with at least 1 chronic condition	1.13	1.00-1.27	.04†

*Reference category.
†Statistically significant relationship ($P < .05$).

nonphysician health professionals. Also, interprofessional collaboration is higher in primary health care organizations that serve a higher proportion of patients with chronic diseases and in those that collaborate with a hospital. In terms of development of interprofessional collaboration, primary health care organizations should consider the complexity of their patients' needs as well as the establishment of formal and informal arrangements with other health care organizations.

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Contributors
All authors contributed to the concept and design of the study, or data gathering, analysis, or interpretation of the data; and preparing the manuscript for submission.

Competing interests
None declared

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References

1. D'Amour D, Goulet L, Labadie JF, Martín-Rodriguez LS, Pineault R. A model and typology of collaboration between professionals in healthcare organizations. *BMC Health Serv Res* 2008;8:188.
2. Romanow RJ. *Building on values. The future of health care in Canada.* Saskatoon, SK: Commission on the Future of Health Care in Canada; 2002.
3. Ministère de la Santé et des Services sociaux. *Évaluation de l'implantation et des effets des premiers groupes de médecine de famille au Québec.* Quebec, QC: Gouvernement du Québec; 2008.
4. Commission d'étude sur les services de santé et les services sociaux. *Les solutions émergentes. Rapport et recommandations.* Quebec, QC: Gouvernement du Québec; 2000.
5. 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.
6. Leathard A. Introduction. In: Leathard A, editor. *Interprofessional collaboration: from policy to practice in health and social care.* New York, NY: Routledge; 2003. p. 3-11.
7. Oandasan I, Baker GR, Barker K, Bosco C, D'Amour D, Jones L, et al. *Teamwork in healthcare: promoting effective teamwork in healthcare in Canada. Policy synthesis and recommendations.* Ottawa, ON: Canadian Health Services Research Foundation; 2006.
8. Samuelson M, Tedeschi P, Aarendonk D, de la Cuesta C, Groenewegen P. Improving interprofessional collaboration in primary care: position paper of the European Forum for Primary Care. *Qual Prim Care* 2012;20(4):303-12. Epub 2012 Nov 2.
9. Lemieux-Charles L, McGuire WL. What do we know about health care team effectiveness? A review of the literature. *Med Care Res Rev* 2006;63(3):263-300.
10. Corser WD. A conceptual model of collaborative nurse-physician interactions: the management of traditional influences and personal tendencies. *Sch Inq Nurs Pract* 1998;12(4):325-41.
11. Zwarenstein M, Reeves S. Knowledge translation and interprofessional collaboration: where the rubber of evidence-based care hits the road of teamwork. *J Contin Educ Health Prof* 2006;26(1):46-54.

12. Zwarenstein M, Goldman J, Reeves S. Interprofessional collaboration: effects of practice-based interventions on professional practice and healthcare outcomes. *Cochrane Database Syst Rev* 2009;(3):CD000072.
13. Beaulieu MD, Samson L, Rocher G, Rioux M, Boucher L, Del Grande C. Investigating the barriers to teaching family physicians' and specialists' collaboration in the training environment: a qualitative study. *BMC Med Educ* 2009;9:31.
14. Alvarez G, Coiera E. Interdisciplinary communication: an uncharted source of medical error? *J Crit Care* 2006;21(3):236-42. Epub 2006 Sep 23.
15. Zwarenstein M, Rice K, Gotlib-Conn L, Kenaszchuk C, Reeves S. Disengaged: a qualitative study of communication and collaboration between physicians and other professions on general internal medicine wards. *BMC Health Serv Res* 2013;13:494. Epub 2013 Nov 28.
16. Frank JR, editor. *The CanMEDS 2005 physician competency framework. Better standards. Better physicians. Better care.* Ottawa, ON: Royal College of Physicians and Surgeons of Canada; 2005.
17. D'Amour D, Sicotte C, Lévy R. L'action collective au sein d'équipes interprofessionnelles dans les services de santé. *Sci Soc Sante* 1999;17(3):67-94.
18. Reeves S, Lewin S, Espin S, Zwarenstein M. *Interprofessional teamwork for health and social care.* Oxford, UK: Wiley-Blackwell; 2010.
19. Oandasan I, D'Amour D, Zwarenstein M, Barker K, Purden M, Beaulieu MD, et al. *Interdisciplinary education for collaborative, patient-centred practice. Research and findings report.* Ottawa, ON: Health Canada; 2004.
20. Bronstein LR. A model for interdisciplinary collaboration. *Soc Work* 2003;48(3):297-306.
21. Levesque JF, Pineault R, Provost S, Tousignant P, Couture A, Da Silva RB, et al. Assessing the evolution of primary healthcare organizations and their performance (2005-2010) in two regions of Québec province: Montréal and Montérégie. *BMC Fam Pract* 2010;11:95. Epub 2010 Dec 3.
22. Hamel M, Pineault R, Levesque JF, Roberge D, Lozier-Sergerie A, Prud'homme A, et al. *L'organisation des services de santé de première ligne. Portrait des services médicaux de première ligne à Montréal et en Montérégie.* Sherbrooke, QC: Centre de recherche de l'Hôpital Charles LeMoyne; 2008.
23. Pineault R, Hamel M, Levesque JF, Roberge D, Lamarche P, Haggerty J. *Questionnaire organisationnel. Clinique médicale de première ligne.* Montreal, QC: Direction de santé publique, Agence de la santé et des services sociaux de Montréal; 2006.
24. Prud'homme A, Pineault R, Couture A, Borgès Da Silva R, Levesque JF, Tousignant P. *Rapport méthodologique de l'enquête organisationnelle à Montréal et en Montérégie.* Quebec, QC: Gouvernement du Québec; 2012.
25. Pineault R, Borgès Da Silva R, Provost S, Beaulieu MD, Boivin A, Couture A, et al. Primary healthcare solo practices: homogeneous or heterogeneous? *Int J Family Med* 2014;2014:373725. Epub 2014 Jan 12.
26. Sicotte C, D'Amour D, Moreault MP. Interdisciplinary collaboration within Quebec community health care centres. *Soc Sci Med* 2002;55(6):991-1003.
27. Frost DW, Toubassi D, Detsky AS. Rethinking the consultation process. Optimizing collaboration between primary care physicians and specialists. *Can Fam Physician* 2012;58:825-8 (Eng), e423-6 (Fr).
28. College of Family Physicians of Canada, Canadian Medical Association, Royal College of Physicians of Canada. *2007 National results by FP/GP or other specialist, sex, age, and all physicians.* Mississauga, ON: College of Family Physicians of Canada; 2008. Available from: **http://nationalphysiciansurvey.ca/result/2007-national-results**. Accessed 2014 Jul 25.
29. Interprofessional teams. Who are FPs working with? *Can Fam Physician* 2009;55:385.
30. Wilson DR, Moores DG, Woodhead Lyons SC, Cave AJ, Donoff MG. Family physicians' interest and involvement in interdisciplinary collaborative practice in Alberta, Canada. *Prim Health Care Res Dev* 2005;6(3):224-31.
31. Beaulieu MD, Denis JL, D'Amour D, Goudreau J, Haggerty J, Hudon É, et al. *L'implantation des Groupes de médecine de famille: un défi de la réorganisation de la pratique et de la collaboration interprofessionnelle. Étude de cas dans cinq GMF de la première vague au Québec.* Ottawa, ON: Canadian Health Services Research Foundation; 2006.
32. World Health Organization. *Framework for action on interprofessional education and collaborative practice.* Geneva, Switz: World Health Organization; 2010.
33. Manca D, Varnhagen S, Brett-MacLean P, Allan GM, Szafran O. RESPECT from specialists. Concerns of family physicians. *Can Fam Physician* 2008;54:1434-5.e1-5. Available from: **www.cfp.ca/content/cfp/54/10/1434.full.pdf**. Accessed 2017 Aug 2.
34. Goldman J, Meuser J, Rogers J, Lawrie L, Reeves S. Interprofessional collaboration in family health teams. An Ontario-based study. *Can Fam Physician* 2010;56:e368-74. Available from: **www.cfp.ca/content/cfp/56/10/e368.full.pdf**. Accessed 2017 Aug 2.
35. Pullon S, McKinlay E, Dew K. Primary health care in New Zealand: the impact of organisational factors on teamwork. *Br J Gen Pract* 2009;59(560):191-7.