

## Community orientation in primary care practices

### Results from the Comparison of Models of Primary Health Care in Ontario Study

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#### ABSTRACT

**OBJECTIVE** To determine which of 4 organizational models of primary care in Ontario were more community oriented.

**DESIGN** Cross-sectional investigation using practice and provider surveys derived from the Primary Care Assessment Tool, with nested qualitative case studies (2 practices per model).

**SETTING** Thirty-five fee-for-service family practices (including family health groups), 32 health service organizations, 35 family health networks, and 35 community health centres (CHCs) in Ontario.

**PARTICIPANTS** A total of 137 practices and 363 providers.

**MAIN OUTCOME MEASURES** Community orientation (CO) was assessed from the perspectives of the practices and the providers working in them. Practice CO scores reflect activities that practices use to reach out to their communities, assess the needs of their communities, and monitor or evaluate the effectiveness of their programs and services. The self-rated provider CO score reflects providers' participation in home visits and their perceptions of their own degree of CO.

**RESULTS** At the practice level, CHCs had significantly higher CO scores than the other models did ( $P < .001$  for most differences); in fact, the other models rarely reported meaningful levels of CO. Self-rated provider CO scores were also higher in CHCs, but were present in other models as well.

**CONCLUSION** Primary care providers in Ontario give themselves high ratings for CO; however, indicators of CO activity at the practice level were found to a significantly higher degree in CHCs than in the other models.

#### EDITOR'S KEY POINTS

- At the time of this study, 4 primary health care models (fee-for-service practices including family health groups, community health centres [CHCs], family health networks, and health services organizations) provided services to approximately 95% of the Ontario population. All but the CHCs were "professional" models run by the physicians who practised in them.
- This research examines whether the extent of community orientation of providers and practices differed among Ontario's 4 models of primary care.
- Survey instruments were adapted from the adult version of the Primary Care Assessment Tool.
- This study demonstrates that even though most providers considered themselves to be fairly community oriented, their practice organizations (with the notable exception of CHCs) were not community oriented.

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## L'orientation communautaire en contexte de soins primaires

### Résultats de la Comparison of Models of Primary Health Care in Ontario Study

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#### RÉSUMÉ

**OBJECTIF** Déterminer lequel des 4 modèles organisationnels de soins primaires en Ontario a la meilleure orientation communautaire.

**TYPE D'ÉTUDE** Étude transversale à l'aide de sondages dérivés du Primary Care Assessment Tool auprès des établissements et des intervenants, avec des sous-études de cas qualitatives (2 établissements par modèle).

**CONTEXTE** Trente-cinq cliniques familiales à rémunération à l'acte (incluant des groupes de santé familiale), 32 organismes de services de santé, 35 réseaux de santé familiale et 35 centres de santé communautaires (CSC) de l'Ontario.

**PARTICIPANTS** Un total de 137 établissements et de 363 intervenants.

**PRINCIPAUX PARAMÈTRES À L'ÉTUDE** L'orientation communautaire (OC) a été évaluée à partir des points de vue des établissements et des intervenants qui y travaillent. Pour les établissements, les scores d'OC reflètent les activités qu'ils utilisent pour rejoindre leurs communautés, en évaluer les besoins, et surveiller et évaluer l'efficacité de leurs programmes et services. Pour l'intervenant, le score d'OC qu'il s'attribue reflète sa participation aux visites à domicile et son opinion personnelle sur son OC.

**RÉSULTATS** Dans le cas des établissements, les CSC avaient des scores d'OC significativement plus élevés que les autres modèles ( $P < ,001$  pour la plupart des différences); en fait, les autres modèles ont rarement rapporté des niveaux importants d'OC. Les scores d'OC que s'attribuaient les intervenants étaient également plus élevés dans les CSC, mais on en trouvait aussi dans les autres modèles.

**CONCLUSION** Les intervenants de première ligne en Ontario s'attribuent des niveaux élevés d'OC; dans les établissements, toutefois, les indicateurs d'activités à OC observés étaient significativement plus hauts dans les CSC que dans les autres modèles.

#### POINTS DE REPÈRE DU RÉDACTEUR

- Au moment de cette étude, environ 95 % de la population de l'Ontario était desservie par 4 modèles de soins primaires : établissements avec rémunération à l'acte incluant des groupes de santé familiale, centres de santé communautaires (CSC), réseaux de santé familiale et organismes de services de santé. À l'exception des CSC, tous ces modèles étaient du type « professionnel », c.-à-d. gérés par les médecins qui y pratiquent.
- Cette étude voulait déterminer si l'intérêt pour l'aspect communautaire différait chez les soignants et les établissements de ces 4 modèles ontariens de soins primaires.
- Une adaptation de la version adulte du Primary Care Assessment Tool a été utilisée pour le sondage.
- Cette étude a montré que même si la plupart des intervenants déclarent avoir une orientation plutôt communautaire, l'établissement où ils pratiquent (à l'exception des CSC) n'a pas cette orientation.

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Community orientation (CO) is an important dimension of primary care.<sup>1-3</sup> Researchers and policy makers believe that CO allows practitioners to recognize and address social and environmental determinants of health through knowledge of the community and actions and partnerships at the community level. In addition, having CO in primary care allows improvements in the recognition, prevention, and management of diseases through knowledge of all community members, not simply those who visit primary care practices.<sup>4,5</sup> Unfortunately, for the most part, CO seems to be very difficult to achieve in practice.

Numerous ways to define and measure aspects of CO exist. For the purposes of this paper, we use the Institute of Medicine's 1996 definition of *community* as the population that might reasonably be provided with health care, including both users and nonusers of primary care services; members of a community might be affiliated geographically, socially, culturally, or ethnically and might share values, experiences, language, or religion.<sup>6</sup> We define *community orientation* as "care providers' knowledge of community needs and involvement in the community."<sup>7</sup> In addition, we discuss *community-oriented primary care* (COPC), which is a model of primary care that puts into practice the idea that community context plays a role in the health of an individual<sup>8</sup>; COPC systematically identifies and acts on community health needs using principles from epidemiology, primary care, preventive medicine, and health promotion.<sup>9</sup> For the purposes of this paper, we refer to *provider CO* and *practice CO*, acknowledging that they are 2 very different concepts.

In 2005 to 2006, important efforts to reform primary health care (PHC) were under way in Canada, with the explicit goal of moving from a system of primary care delivered predominantly by independent family physicians working in and managing their private offices to increased multidisciplinary community-based primary health care organizations providing comprehensive, community-oriented services to a defined population.<sup>5</sup> We have previously described the important differences between primary care and PHC.<sup>10</sup>

Although Ontario was moving toward a more complex delivery model of primary care in 2005 to 2006, by far most primary care services continued to be delivered by family physicians and general practitioners in their private offices. These primary care providers were remunerated on a fee-for-service (FFS) basis by the provincial health insurance plan. Many FFS providers had joined family health groups (FHGs), which offered small incentives for providing preventive care and extended hours. There were other smaller organizational models—community health centres (CHCs), family health networks (FHNs), and health services organizations (HSOs)—that differed considerably from FFS practice; the features of the various models have been compared elsewhere.<sup>11,12</sup> Together, the 4 models (FFS including

FHGs, CHCs, FHNs, and HSOs) provided primary care services to approximately 95% of the Ontario population. With the exception of CHCs, all of these were "professional" models, run by the physicians who practised in them, and they provided only primary care services. Conversely, CHCs were governed by community boards of directors and provided primary care services as well as social and community services.

This analysis is part of a larger evaluation funded by the Ontario Ministry of Health and Long-Term Care Primary Health Care Transition Fund. It examines whether the extent of CO of providers and practices differed between Ontario's 4 models of primary care.

## METHODS

### Design

This mixed-methods study used a cross-sectional design with a concurrent nested qualitative component to examine many descriptive and performance factors. It was set in primary care practices in Ontario between October 2005 and June 2006. Data were gathered from primary care practices, providers (family physicians and nurse practitioners), and patients receiving care at these practices (through surveys and chart abstractions). The overall study methodology is summarized below. The study was approved by the Ottawa Hospital Research Ethics Board.

### Sample

This study of CO is part of a large study that examined several dimensions of primary care service delivery. The needed sample size for the broader study was calculated to be 40 practices per model in order to identify a different outcome (prevention) using a minimum clinically important difference of 0.5 standard deviations, with an  $\alpha$  value of .05, a  $\beta$  value of .20, and a cluster correlation coefficient of 0.2. Owing to budgetary and time limitations, the number of practices per model was later reduced to 35. Our sampling frame included all known and eligible FHNs ( $n=94$ ), CHCs ( $n=51$ ), and HSOs ( $n=65$ ) in Ontario. The FFS and FHG sampling frame of 155 practices represented a random sample extracted from a list of 1884 practices. We excluded practices that did not offer primary care services for adults, those that had belonged to their respective models for less than 1 year, and those in which fewer than 50% of the sites' providers consented to participate in the survey. Two practices per model were selected, using a typical case sampling strategy, to participate in the qualitative component. In each practice, we conducted semistructured interviews with between 1 and 4 family physicians. In the CHCs and HSOs, we also interviewed allied health professionals and nurse practitioners. Two to 5 patients per site who had completed patient surveys were also

interviewed for the qualitative study. Finally, we also interviewed key informants and policy makers who had in-depth knowledge of each model to understand broad issues such as governance, accountability, and performance measurement in the primary care field.

### Instruments

The survey instruments were adapted from the adult version of the Primary Care Assessment Tool (PCAT).<sup>13,14</sup> A provider survey was completed by consenting family physicians and nurse practitioners. Questions common to all providers in a practice were presented in a separate practice survey to be answered by the lead physician or practice manager. The surveys contained items describing the practice environment and demographic information about the providers. The PCAT has scales for CO in both the patient and provider surveys. Because the patient questionnaire was excessively long, we did not administer the CO scales to patients. Of the 4 scales assessing CO in the PCAT provider survey, only 1 pertained to individual providers; the other 3 dealt with practice activities and became part of the practice survey.

The 3 practice CO scores reflect the data sources used by the practices to determine what programs and services are needed by the communities they serve (assess scale); the activities used by practices to reach out to the populations in the communities they serve (reach-out scale); and the methods the practices use to monitor or evaluate the effectiveness of the services and programs they offer (monitor-evaluate scale). The self-rated provider CO scores reflect the providers' evaluations of their own CO.

Each item on the practice and provider questionnaires asked respondents to assess the likelihood of that attribute's presence on a 4-point Likert scale (definitely not or never, probably not or rarely, probably or usually, and definitely or always). A response of "don't know/not sure" was also available. Responses were included if answers were provided for at least 50% of the items in a scale. We averaged and normalized the item scores (each ranging from 1 to 4) for each scale to produce a score where 1 represented maximum performance. Scores below 0.5 were interpreted to mean that the attribute was not found to a meaningful degree, as this score corresponded to answers of "probably not" or "definitely not."

### Analysis

**Quantitative.** We described and compared the patient, provider, and practice characteristics across model using F statistics (ANOVA) and  $\chi^2$  statistics. We investigated the relationships between individual practice factors and CO scores using linear regression. We used ANOVA to compare CO across models and  $\chi^2$  statistics to compare the proportion of practices with CO scores below 0.5 and those with scores of 0.25 (which indicated that

they were not performing any of the CO activities listed on the scale) in each model. We also performed 2 sensitivity analyses. In the original analysis, unanswered items were disregarded. In the first sensitivity analysis, we assumed that unanswered items represented activities not carried out and attributed the lowest score (ie, 1) to these, then recalculated the overall scale score. In the second sensitivity analysis, for the 3 questions in the practice survey that allowed respondents to enter an "other" category, we calculated the score including this item as an additional item in the scale (only for those who did provide "other" responses) and recalculated the overall scale score.

**Qualitative.** The interviews were audiotaped and transcribed verbatim. Transcripts were coded and analyzed with the support of qualitative data analysis software (N6, version 6). The coding scheme was developed gradually and the transcript analysis evolved using an open coding strategy. Ideas and categories generated after performing line-by-line analysis were tested and further explored in subsequent interviews until saturation was reached.

## RESULTS

Data were collected from 137 practices and 363 providers. Practice response rates ranged from 23% to 69% in the different models (**Table 1**). Comparison to provincewide health administrative databases showed the physicians participating in the study and their patterns of practice were similar to all physicians practising in each model. (This analysis is available on request.) The response rate for the provider questionnaires was 98%. For each practice CO question, 91% of practices responded. Qualitative interviews were conducted with 46 providers and 22 patients. **Table 1** describes the practices by model in terms of provider and practice characteristics.

### Quantitative evaluation

Provider self-rated CO scores ranged from 0.75 for FFS providers to 0.85 for CHC providers (**Table 2**). Providers in CHCs (which included nurse practitioners) reported significantly higher CO scores than providers in other models did ( $P < .001$  for most differences), although most providers in all models endorsed at least 1 feature of CO. The difference in the CO scores was largely driven by the fact that CHC providers were more likely to report being able to adapt their services in response to community needs.

At the practice level, relative to the other models, CHC practices reported significantly more efforts to assess the needs of their communities (**Table 3**), nearly twice the activity to reach out to their communities (**Table 4**),

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and significantly more methods to monitor and evaluate their services or programs (Table 5). A considerable proportion of non-CHC practices had scores below 0.5 on each of these scales, and several indicated that no assessment activity, and to a lesser extent no activity to

reach out, takes place in their practices. Most practices indicated that at least some monitoring or evaluation of their services occurs. Sensitivity analyses had a less than 6% effect on the scores of the models and did not change the conclusions.

**Table 1. Description of the models: A) Practice profiles and B) physician profiles.**

A) PRACTICE CHARACTERISTICS	MODELS			
	CHC, N = 35	FFS AND FHG, N = 35	FHN, N = 35	HSO, N = 32
Solo practices, %	0	26	37	38
Practice size > 4 FPs, %	17	14	40	3
Mean no. of full-time equivalent				
• FPs	3.0	2.4	3.6	1.7
• Nurse practitioners	2.5	0.1	0.3	0.2
• Nurses*	2.7	0.6	1.9	1.0
Practices with nurse practitioners, %	100	8.6	31.4	18.8
No. of patients per FP, in 1000s	1.3	1.8	1.4	2.0
Mean booking time for routine visit, min	25	13	14	14
Setting				
• Hospital within 10 km, %	71	85	94	84
• Rurality index <sup>†</sup>	14.2	12.6	16.2	8.0
• Mean length of practice operation, y	18.3	16.4	24.4	26.7
Information technology, %				
• Using electronic patient records	29	14	57	44
• Using electronic reminder systems	26	14	46	28
B) PHYSICIAN CHARACTERISTICS	MODELS			
	CHC, N = 182	FFS AND FHG, N = 58	FHN, N = 81	HSO, N = 42
Mean no. of years since graduation	19	22	23	29
Female providers, %	58	45	41	26
Foreign-trained providers, %	9	17	3	14
Providers with CFPC designation, %	79	85	78	68

CFPC—Certification in Family Medicine from the College of Family Physicians of Canada, CHC—community health centre, FFS—fee for service, FHG—family health group, FHN—family health network, HSO—health service organization.

\*Includes registered practical nurses, nurses, and nursing assistants.

<sup>†</sup>The rurality index is an empirical measure of rurality developed for planning purposes. It measures rurality on a scale of 0 (least rural) to 100 (most rural) by taking geographic and health service factors into account.

**Table 2. Mean self-rated provider community orientation: Respondents answered questions about community orientation on a 4-point Likert scale (1 = definitely not or never to 4 = definitely or always).**

QUESTIONS OR SCORES	CHC N = 182*	FFS AND FHG N = 58*	FHN N = 81*	HSO N = 42*	P VALUE
Do you make home visits?	3.4	3.0	3.4	3.4	.023
Do you think you have adequate knowledge about the health problems of the community you serve?	3.4	3.3	3.3	3.4	.49
Do you get opinions and ideas from people that might help to provide better health care?	3.7	3.4	3.6	3.5	<.001
Are you able to change health care services or programs in response to specific health problems in the community?	3.3	2.6	2.7	2.6	<.001
Overall provider score <sup>†</sup>	0.85	0.75	0.81	0.79	<.001
Proportion of scores below 0.50	0	5	0	5	.0026
Proportion of providers indicating no activities	0	0	0	0	NA

CHC—community health centre, FFS—fee for service, FHG—family health group, FHN—family health network, HSO—health service organization, NA—not applicable.

\*All provider respondents in FFS and HSO were family physicians. In CHCs and FHNs 74 (41% of respondents) and 1 (1% of respondents) nurse practitioners completed the survey, respectively.

<sup>†</sup>Overall score is the average score normalized (divided by 4).

**Table 3. Mean scores on the practice assess scale:** Respondents answered the question "Does your practice site use the following types of data to determine what programs/services are needed by the communities you serve?" using a 4-point Likert scale (1 = definitely not or never to 4 = definitely or always).

TYPES OF DATA OR SCORE	CHC N=34	FFS AND FHG N=32	FHN N=34	HSO N=32	P VALUE
Mortality data	2.2	1.4	1.4	1.6	<.001
Public health communicable disease data (eg, STIs, TB)	3.0	2.4	2.2	2.5	.009
Community immunization rates	2.6	1.9	2.3	2.1	.036
Public health data on health or occupational hazards	2.9	2.3	2.1	2.4	.009
Clinical data from your practice	3.6	2.6	2.7	2.5	<.001
Other (please specify)*	10	0	2	0	NA
Overall assess scale score <sup>†</sup>	0.71	0.54	0.54	0.55	<.001
Proportion of scores below 0.50	0	52	46	48	<.001
Proportion of practices indicating no activities	0	39	27	39	<.001

CHC—community health centre, FFS—fee for service, FHG—family health group, FHN—family health network, HSO—health service organization, NA—not applicable, STI—sexually transmitted infection, TB—tuberculosis.

\*Number of practices providing a response.

<sup>†</sup>Overall score is the average score normalized (divided by 4).

**Table 4. Mean scores on the practice reach-out scale:** Respondents answered the question "Does your practice site use any of the following activities to reach out to the population in the community you serve?" using a 4-point Likert scale (1 = definitely not or never to 4 = definitely or always).

TYPE OF OUTREACH OR SCORE	CHC N=35	FFS AND FHG N=31	FHN N=33	HSO N=31	P VALUE
Networking with provincial and local agencies involved with culturally diverse groups	3.8	1.9	1.8	1.8	<.001
Linkages with religious organizations or services	3.4	1.5	1.7	1.5	<.001
Involvement with neighbourhood groups or leaders	3.9	1.8	1.8	2.0	<.001
Outreach workers	3.9	2.0	2.2	1.9	<.001
Other (please specify)*	10	1	5	4	NA
Overall reach-out score <sup>†</sup>	0.94	0.45	0.47	0.44	<.001
Proportion of scores below 0.50	9	38	44	28	.0094
Proportion of practices indicating no activities	0	22	12	13	.048

CHC—community health centre, FFS—fee for service, FHG—family health group, FHN—family health network, HSO—health service organization, NA—not applicable, STIs—sexually transmitted infections, TB—tuberculosis.

\*Number of practices providing a response.

<sup>†</sup>Overall score is the average score normalized (divided by 4).

## Qualitative evaluation

Provider interviews suggested that CO activity is found mainly in CHCs because many CHCs have nonphysician, non-nurse practitioner staff who actually do the CO work.

[W]e are responsible for the purely doctor-doctor, medical program—medical program liaison. But I look to other people to do the other liaising .... I need to know where I can get the information. But I don't feel like I need to be the one doing the time to maintain it. (CHC physician)

Providers in FHNs recognized that they will never have enough resources within their practices to meet all community needs, making the integration of services between practices and community agencies necessary.

We will have a more supportive role and collaboration with some of the other community services, such as mental health services and psychiatrists as well

as ... home care services. There may be better integration of public health as well, and we are talking about some public education programs that instead of us doing this on our own, we've got a system that supports the process. (FHN physician)

## DISCUSSION

**We found that, in primary care practices in Ontario in 2005 to 2006, practice CO was present at higher levels in CHCs than in other models.**

Community health centres are non-profit, community-governed organizations that provide PHC, health promotion, and community development services, using interdisciplinary teams of providers who are paid by salary, rather than through an FFS system. They are sponsored and managed by incorporated community boards made up of members of the community and others.<sup>15</sup> They are funded by

**Table 5.** Mean scores on the practice monitor-evaluate scale: Respondents answered the question “Does your practice site use the following methods to monitor and/or evaluate the effectiveness of services/programs it offers?” using a 4-point Likert scale (1 = definitely not or never to 4 = definitely or always).

TYPE OF ACTIVITY OR SCORE	CHC N = 34	FFS AND FHG N = 34	FHN N = 35	HSO N = 31	P VALUE
Surveys of the practice patients	3.9	1.5	1.8	1.9	< .001
Community surveys	3.5	1.5	1.5	1.5	< .001
Feedback from community organizations or community advisory boards	3.5	1.6	1.6	1.8	< .001
Feedback from the practice staff	3.7	3.2	2.9	3.4	< .001
Analysis of local data or vital statistics	3.3	1.7	2.0	2.0	< .001
Systematic evaluations of the practice programs and services provided	3.4	1.7	1.9	2.0	< .001
Community health workers	3.6	1.7	1.6	2.2	< .001
Have a patient on the board of directors or advisory committee	3.6	1.2	1.3	1.3	< .001
Other (please specify)*	2	2	0	1	NA
Overall monitor-evaluate score <sup>†</sup>	0.85	0.45	0.47	0.53	< .001
Proportion of scores below 0.50	6	65	63	42	< .001
Proportion of practices indicating no activities	3	3	3	0	0.82

CHC—community health centre, FFS—fee for service, FHG—family health group, FHN—family health network, HSO—health service organization, NA—not applicable, STIs—sexually transmitted infections, TB—tuberculosis.

\*Number of practices providing a response.

<sup>†</sup>Overall score is the average score normalized (divided by 4).

the Ontario Ministry of Health and Long-Term Care to provide services that are oriented to either geographic or social communities, and hire staff specifically for this purpose. It is thus part of their funded mandate to perform the activities of CO. **Our findings are consistent with a US study of patient-rated primary care quality in a CHC and an HMO, which demonstrated significantly higher CO in the CHC.<sup>7</sup> Likewise, in Quebec, Centres locaux de services communautaires (CLSCs), a model with similarities to the CHC model, are described as providing “basic primary health and social services with a community orientation as the basic framework.”<sup>16</sup>**

Others have also described practice CO as existing almost exclusively in CHC-type models. Haggerty and colleagues’ recent Canadian lexicon of PHC attributes clearly distinguishes between “community” models, in which the “population served” is defined by geography or social characteristics, and “professional” models in which the “population” is the patient population served.<sup>17</sup> Haggerty’s group would not expect the professional models to be oriented to the community as we and the Institute of Medicine have defined it.

Indeed, in our study professional primary care models performed very few or no practice CO activities. These activities are key processes required for COPC. As many US studies examining COPC have discovered, physician-led primary care organizations are rarely, if ever, able to undertake the activities required to fulfill the requirements for COPC within their practices.<sup>8,9</sup> These activities likely cannot be performed during the

course of a physician’s usual workday and would not be remunerated under the FFS pay schedule or by capitation models. Influential commentators have even questioned whether it is reasonable or safe to demand a high degree of formal COPC-type activity of primary care physicians, as it would leave them less time for other important activities.<sup>18</sup>

**Our qualitative findings emphasize that physicians believe they need the help of a team or linkages external to the practice to really “do” CO. The original COPC (circa 1940) model, which provided strong evidence that COPC could have a substantial effect on the health of communities, involved the community itself and used teams of both professional and non-professional health workers.<sup>9,19</sup> Community health centres have several features in common with the original COPC model.** These features (interprofessional team, community governance, etc) are not present in the other models we examined. However, which feature or combination of features leads to improved CO activity cannot be determined from our data, which are not powered to detect associations within a model. Future studies might focus on CO-earmarked funding, staffing, community governance, or explicit responsibility for the care of a defined geographic or social community.


Primary care providers in our study believed that they had fairly high degrees of CO, regardless of which model they practised in. Providers practising in CHCs rated themselves higher than those in other models rated themselves, though not to nearly the same degree that their organizations were ahead of other

primary care organizations in terms of CO. This difference might have arisen because the provider questionnaire did not inquire about the performance of specific activities (other than home visits). In contrast, the practice questionnaire was very specific and process oriented. Participants in our study might have been by nature more “community oriented” or “community responsive” than their peers who chose not to participate. We did not attempt to examine providers’ value systems. Oandasan and colleagues<sup>20</sup> noted that those family physicians who were considered responsive to their communities shared a value system of “doing the right thing” or “trying to make a difference in peoples’ lives.” Whether certain models attract providers with particular values or whether the models influence the values of those working in them is another question that cannot be answered by our data.

## Limitations

Our study has several limitations. First and most important is the relatively small number of questions, especially for providers, on which we based our assessment of CO. Although the PCAT is a validated tool, and the provider self-rated CO scale was taken directly from it, the scale standing alone might not provide an accurate view of provider self-rated CO. In addition, there was only a small amount of data gleaned from the qualitative study. Second, we did not seek to verify providers’ responses to our questions by comparing their knowledge of community issues against accurate community-level data. In addition we had no data about CO directly from patients or community members. Third, our 3 practice-level scales, although psychometrically validated, might have been too narrow to capture the full range of strategies used by practices. Our questionnaire might not have elicited information on informal linkages between practices and community members or organizations. Fourth, the word *community* was not defined in the survey and might have been interpreted in some cases to mean the practice community of patients and not the broader community.

## Conclusion

Our study demonstrates that even while most providers consider themselves to be fairly community oriented, their practice organizations (with the notable exception of CHCs) are not performing activities that indicate practice CO. We cannot reach firm conclusions about the attributes of primary care practices that lead to improved practice CO other than to speculate that 1 or a combination of the attributes of CHCs that distinguish them from the other models (eg, specific funding or staff directed toward CO activities, responsibility for a specific community, or community governance) might increase practices’ internal capacity for CO. 

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### Contributors

**Dr Muldoon** contributed to the concept of the study and oversaw its implementation, helped guide the analysis, directed the writing, and approved the final version of the manuscript. **Ms Dahrouge** was responsible for the quantitative data collection and analysis, participated in the writing, and approved the final version of the manuscript. **Dr Hogg** contributed to the concept of the study and oversaw its implementation, helped with the analysis, participated in the writing, and approved the final version of the manuscript. **Dr Geneau** was responsible for the qualitative data collection and analysis, participated in the writing, and approved the final version of the manuscript. **Dr Russell** helped oversee the implementation of the project, helped guide the analysis, participated in the writing, and approved the final version of the manuscript. **Mr Shortt** guided the analysis, participated in the writing, and approved the final version of the manuscript.

### Competing interests

None declared

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