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Promising quantities, disappointing distribution. Investigating the presence of French-speaking physicians in Ontario's rural Francophone communities

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ABSTRACT

Introduction: Previous studies have suggested that there may be a lack of French language healthcare services in the province of Ontario. The purpose of this study was to determine if physicians in Ontario who expressed a proficiency in providing services in the French language are located in 'Francophone communities'.

Method: Responses from 10 968 Ontario-based family physicians (FPs) certified by the College of Family Physicians of Canada and uncertified general practitioners (GPs) who responded to the 2007 College of Physicians and Surgeons of Ontario Annual Membership Renewal Survey were analysed and compared to the 2006 census of the population of Ontario. Main outcome measures were the number of FP/GPs categorized by their language of competency to conduct medical practice and the number of people categorized by their first official language spoken. The physician-to-population ratio was then compared for different groups of communities in Ontario categorized by the degree of francophonie of the community: strong French communities, with a Francophone population ≥25%; moderate French communities, with a Francophone population of 10–24%; and weak/no French communities, with a Francophone population <10%.

Results: There are 5.6 French speaking FP/GPs for every 1000 Francophones in communities with a French population less than 10%. This ratio is considerably greater than what was found in moderate French communities (3.4 FP/GPs) and strong French (1.3 FP/GPs). Overall the lowest ratios were found in rural strong French communities both in southern and northern Ontario (0.8 FP/GPs and 0.9 FP/GPs respectively). The ratio for all of Ontario was 0.7–1.3.

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Conclusions: As the number of Francophones increases in a community, the availability of French-speaking FP/GPs actually decreases, particularly in rural northern Ontario. Furthermore, there is a paradoxical relationship between the potentially high number of FP/GPs in the province with French-language capabilities and the perceived deficiencies in the availability of French language medical services.

Key words: family physician, Francophone community, general practitioners, health and human resources, language, physician–patient ratios, urban.

Introduction

There have been several recent attempts to look at health disparities among Canadians, including Francophone residents living in minority socio-linguistics situations[1]. Previous research suggests that Francophones in Ontario experience poorer health than the general population[2-4]. For some Francophones, lack of access to French language medical services may contribute to poorer health status[5], but the strength of this relationship is unknown. With over 12 million residents, Ontario accounts for nearly 40% of the Canadian population and has the largest Francophone population living outside of Quebec, although Francophones make up only 4.2% of Ontario's population[6]. A recent survey among Francophone policy-makers, health professionals, researchers and residents of Ontario identified French language health services research as the main priority for future inquiry[7]. The existence of adverse effects of language barriers on patient access has been well documented in Canada and abroad; effects include possible delays in seeking care, increased risk of adverse outcomes and reactions, reduced comprehension of physician instruction, reduced compliance with physician instruction, reduced patient satisfaction, and potentially less adequate management of chronic conditions[8-11]. However, research on the availability and use of French-language medical services in Ontario is relatively sparse, and to date has relied primarily on patient perceptions.

For instance, according to a report published by the Fédération des Communautés Francophones et Acadienne du Canada only 12% of Francophones in Ontario claimed to always have access to hospital services in French, while 74% of the more than half million Franco-Ontarians said they 'have either no access at all or rarely access to hospital services in French'[12]. Furthermore, an analysis of the Survey on the Vitality of Official-Language Minorities found that while 75% of Francophones in Ontario find it important to receive services in French, only 33% report having spoken to their family physician (FP) in French in the last 12 months[13]. There would appear to be only one study that sought to identify the prevalence of French-speaking primary medical care providers. Gauthier, Timony and Wenghofer recently reported that physician-to-population ratios appear quite favorable for Francophones, with one French-speaking physician for every 138 Francophones, compared to the provincial average of one physician for every 530 residents in Ontario[14]. However, the researchers concluded that perceptions of inadequate availability of French-language services across the province of Ontario are likely due to a mal-distribution of such services. Ratios of French-speaking physicians to Francophones were clearly favorable in southern and urban areas of the province (both areas are more heavily populated and developed), leaving rural and northern areas underserviced, which is important given the predominance of Francophones in rural northern regions.

It is estimated that 19% of Francophones live in rural Ontario[15], while nearly 25% live in northern Ontario[16]. The health of rural and northern Ontarians is worse in many respects when compared to urban and southern residents[17-19]. Thus, the ill effects of language barriers on access to and quality of health care, the geographic mal-distribution of

French-speaking physicians in Ontario, and the fact that there is a greater percentage of Francophones older than 45[16] and who may require more services in French, lead to potentially unfavorable synergistic interactions.

Gauthier and colleagues' initial examination of the distribution of French-speaking physicians suggested a lack of such physicians in rural and northern parts of the province, where many Francophone reside[14]. However, this comparison of broad geographic regions was not sensitive enough to determine whether physicians who can offer services in French have located their practice among French-speaking populations, many of whom reside in rural areas. The objective of the current study was twofold: first, to establish a degree of 'francophonie' in each individual community of Ontario based on the percentage of residents identifying French as a first official language spoken; second, to identify the number of French-speaking physicians within each of these communities. As a result, a clearer understanding of medical service provision for French-speaking residents in Ontario could be obtained.

Methods

Data and study population

In this study, a secondary data analysis was conducted using data from 22 688 Ontario-based FPs and specialists who filled out the 2007 College of Physicians and Surgeons of Ontario Annual Membership Renewal Survey. The survey, which reports a 98% response rate, is the registration process for licensure in Ontario. In the current study, only Ontario's 10 968 FPs certified by the College of Family Physicians of Canada, and uncertified general practitioners (GPs), are included in the analyses. According to Wenghofer, Timony and Pong[20] the majority of specialists certified by the Royal College of Physicians and Surgeons of Canada are located in Ontario's southern urban communities. Specialists were not included in the analysis because their numbers would inflate results in southern urban communities, thus exaggerating the potential mal-distribution of physicians. These FP/GP data were compared to the population of Ontario using data from the 2006 census. Specifically, communities in which French-speaking physicians have located their primary practice were identified and categorized based on the proportion of the population who spoke French. These communities were further categorized based on their degree of rurality and their geographic location.

Language categorization

On the College of Physicians and Surgeons of Ontario Annual Survey, physicians list all languages in which they are competent enough to conduct practice. Physicians who self-identified as being competent in French were classified as French-speaking. Statistics Canada's first official language spoken, a variable derived by combining knowledge of Canada's two official languages (French and English), mother tongue and the language most often spoken at home, was used to determine the respondents' language[21]. In this study, Ontarians classified as Francophones represent those whose first official language spoken is solely French. All other Language categorizations, including 'English', 'English and French', 'English and other', and 'neither English nor French' were classified as 'English and other'. This more restrictive definition of a Francophone was chosen due to the greater likelihood that this group would both have a need for and a desire to receive medical services in French. A more detailed description of how the 'first official language spoken' is derived is available at the Statistics Canada website (http://www.statcan.gc.ca/concepts/definitions/language-langue05-eng.htm).

French community categorization

A 2010 Statistics Canada analysis of official-language minorities in Canada found that the majority (78%) of Ontario Francophones, as defined by their first official language spoken, live in census subdivisions (CSDs) where they account for less than 30% of the population in that community; and fewer than 40% of Francophones live in CSDs where they account for less than 10% of the

population[22]. Canadian CSD boundaries often reflect Ontario's municipalities and are therefore reasonably equivalent to communities. Since 1986 Ontario has adopted the *French Language Services Act*, which guarantees Ontarians, living in designated areas, the rights to be served in French by government agencies[23]. For an area to receive such a designation, it must have a Francophone population of at least 5000 (in urban centres) or represent 10% of the total population (in rural areas).

Given the distribution of Francophones reported by Corbeil and Lafrenière[22], and considering the designation criteria for the *French Language Services Act*[23], Ontario's CSDs were divided into three categories: strong French communities, with a Francophone population ≥25%; moderate French communities, with a Francophone population of 10–24%; and weak/no French communities, with a Francophone population <10%.

Geographic location categorization

The physicians' primary practice postal codes were used to define their geographic location. Postal codes beginning with P were classified as northern, while all remaining postal codes, (those beginning with a K, L, M or N) were classified as southern. The same approach was used to divide the Ontario population by geographic location. This definition of *north* and *south*, although not universally accepted, has been used in prior health research[14,20] and the boundary closely resembles that between the northern and southern local health integration networks[24] used by the Government of Ontario and applied in the Rural and Northern Health Framework[25]. In this study, physicians' primary practice postal codes were linked to CSDs employing Statistics Canada's Postal Code Conversion Files.

Community size categorization

While no universally accepted definitions of *rural* or *urban* have been established in the literature, many rural health researchers[14,17,20,26-28] have adopted Statistics Canada's definitions of census metropolitan area, census agglomeration and metropolitan influenced zones. This approach defines census metropolitan areas (CSDs with a population of at least 100 000) and census agglomerations (CSDs with population of at least 10 000) as urban whereas metropolitan influenced zones (all other CSDs) are considered rural. In this study, CSDs were classified as either urban (when located in a census metropolitan area or a census agglomeration) or rural (when located in any metropolitan influenced zones).

Data analysis

The College of Physicians and Surgeons of Ontario Annual Survey data set represents all physicians with a primary practice address in Ontario, making the use of inferential statistics unnecessary. Physicians were categorized by language of competence and their primary practice addresses were linked to CSDs using postal codes. All of Ontario's CSDs were classified for degree of francophonie, rurality and geographic location. The number of physicians and population size of each CSD was used to create the following ratios: French-speaking FP/GPs per 1000 Francophones and total number of FP/GPs per 1000 Ontarians. Results presented here are a comparison of these ratios.

Ethics and funding

Funding for this study was provided by the Consortium National de Formation en Santé (CNFS) and research ethics approval was granted by the Laurentian University Research Ethics Board; ethics approval number 2012-05-02.

Results

Ontario's Francophone communities

Ontario had 527 communities (CSDs)in 2006: 141 (27%) were urban and 386 (73%) were rural (Table 1). Northern Ontario had 248 communities.

Approximately 9% of Ontario's communities were classified as strong French communities while 6% were classified as moderate French communities. Approximately 76–79% of the strong French and moderate French communities were located in northern and rural Ontario. On average, 41% of the population of strong French communities and 16% of the population of moderate French communities were considered Francophone. In Figure 1, a map of Ontario's communities clearly demonstrates that the strong and moderate French communities were primarily located in north-eastern Ontario.

The vast majority (85%) of communities in Ontario were considered to be weak/no French communities (n=446). These communities were primarily located in southern (59%) and rural (73%) parts of the province and had an average French population of 2%. One out of every four weak/no French communities had a French population of 0%.

Ontario family physicians and general practitioners within French communities

Among the 10 968 Ontario-based FP/GPs, 1674 (15%) identified French as a language in which they are competent enough to conduct practice. Approximately 55% of all FP/GPs in strong French communities, and 43% of FP/GPs in moderate French communities report that they are competent enough to provide services in French, compared to only 10% of FP/GPs in weak/no French communities (Table 2). However, most French-speaking FP/GPs (55%) in Ontario were located in weak/no French communities, while only 14% were located in strong French communities (Table 2).

This mal-distribution is further exemplified when examining physician-to-population ratios (Fig2). Overall, the number of FP/GPs per 1000 Ontarians ranged from 0.9 to 1.2. Interestingly, as the degree of francophonie decreased, ratios of French-speaking FP/GPs to Francophones increased: by a factor of almost three for moderate French communities and by four for weak/no French communities compared to strong French communities.

On average, ratios remained relatively consistent when comparing total FP/GPs to the population in each community category, ranging from 0.7 to 0.8 FP/GPs per 1000 Ontarians in rural Ontario and from 0.9 to 1.3 in urban Ontario (Table 3). French-speaking FP/GPs to 1000 Francophone ratios were variable, with the smallest ratios identified in the strong French communities (0.9 French-speaking FP/GPs per 1000 Francophones in rural Ontario and 1.6 in urban Ontario). The largest ratios were in weak/no French communities (5.4 French-speaking FP/GPs per 1000 Francophones in rural Ontario and 5.6 in urban Ontario). Compared to rural CSDs, urban CSDs had consistently larger ratios in all community categories. In fact, urban weak/no French communities had twice the population but 13 times the number of French-speaking FP/GPs than rural strong French communities.

Much like the rural and urban comparison, an examination of northern and southern communities revealed that average provincial ratios remained relatively consistent, ranging from 1.0 to 1.2 FP/GPs per 1000 Ontarians in northern Ontario and 0.9 to 1.2 in southern Ontario (Table 4). Ratios of French-speaking FP/GPs to 1000 Francophones were much less consistent. Both in the north and in the south, weak/no French communities had the largest ratios of French-speaking FP/GPs to 1000 Francophones (5.2 in the north and 5.6 in the south), whereas strong French communities had the smallest ratios (1.1 in the north and 1.7 in the south). Also, regardless of the Francophone community classification, southern communities consistently had larger ratios.

When examining the interaction of geographic location and community size (data not shown), French-speaking FP/GPs to 1000 Francophone ratios are smallest in strong French communities of the rural south (0.8) and rural north (0.9) and largest in weak/no French communities of the urban south (5.6) and rural north (5.9).

Table 1: Ontario communities by degree of 'francophonie'

Ontario (population 12 018 740; 4.1% Francophone)			
	Rural	*Urban*	*Total*
Northern	220	28	248 (47%)
Southern	166	113	279 (53%)
Total	386 (73%)	141 (27%)	527 CSDs
Strong French community CSDs (population 428 750; 41% Francophone)			
	Rural	*Urban*	*Total*
Northern	29	6	35 (76%)
Southern	7	4	11 (24%)
Total	36 (78%)	10 (22%)	46 CSDs
Moderate French community CSDs (population 1 007 250; 16% Francophone)			
	Rural	*Urban*	*Total*
Northern	23	4	27 (79%)
Southern	3	4	7 (21%)
Total	26 (76%)	8 (24%)	34 CSDs
Weak/no French community CSDs (population 10 582 740; 1.6% Francophone)			
	Rural	*Urban*	*Total*
Northern	167	17	184 (41%)
Southern	157	105	262 (59%)
Total	324 (73%)	122 (27%)	446 CSDs

CSD, census subdivision.

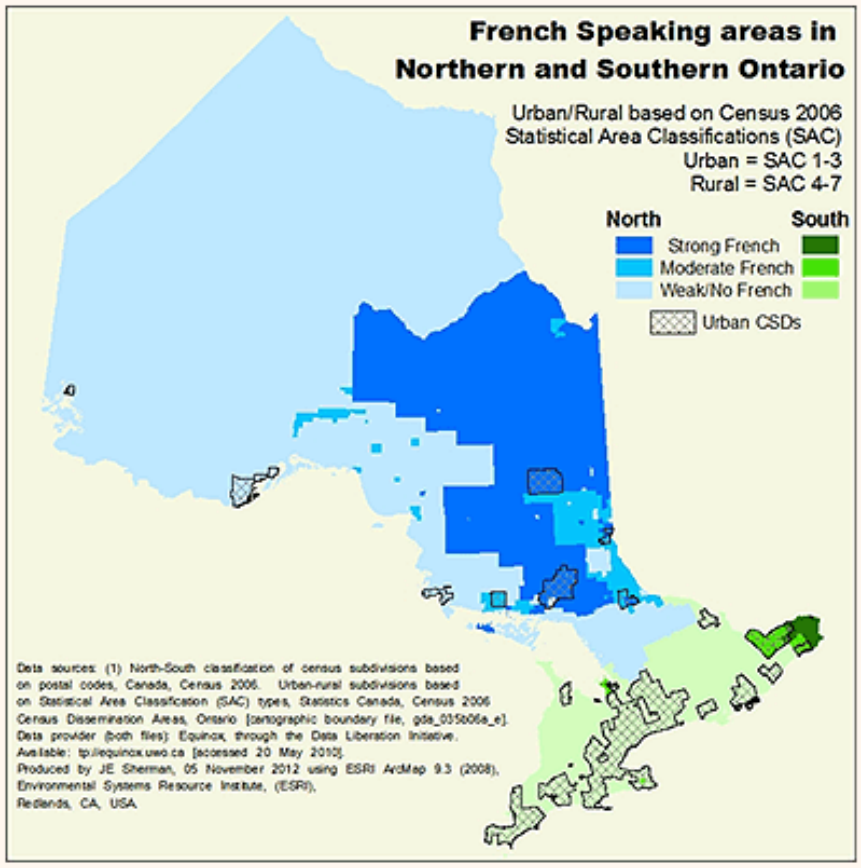

Figure 1: Map of Ontario's census subdivisions by degree of francophonie.

Table 2: Number of Ontario family practitioners and general practitioners within French communities

Community category		FP/GP language category		
		French-speaking	Non-French speaking	Total
Strong French	*n*	233	189	422
	% of community category	55%	45%	100%
	% of FP/GP language category	14%	2%	4%
Moderate French	*n*	528	710	1238
	% of community category	43%	57%	100%
	% of FP/GP language category	32%	8%	11%
Weak/no French	*n*	913	8 395	9 308
	% of community category	10%	90%	100%
	% of FP/GP language category	55%	90%	85%
All communities	*n*	1674	9 294	10 968
	% in community category	15%	85%	100%
	% in FP/GP language category	100%	100%	100%

FP, family practitioner. GP, general practitioner.

Table 3: Geographic distribution of French-speaking family practitioners and general practitioners in Ontario by urban/rural communities

Community category	Rural Ontario			Urban Ontario		
	French FP/GPs	French population	Ratio	French FP/GPs	French population	Ratio[†]
Strong French	62	71 160	0.9	171	104 625	1.6
Moderate French	21	10 725	2.0	507	145 820	3.5
Weak/no French	107	19 810	5.4	806	144 675	5.6
	Total FP/GPs	*Population*	*Ratio range*	*Total FP/GPs*	*Population*	*Ratio range*
Provincial average	1048	1 422 380	0.7–0.8	9920	10 596 360	0.9–1.3

[†] Ratios represent the number of FP/GPs per 1000 population (Francophone or total as noted).
FP, family practitioner. GP, general practitioner.

Table 4: Geographic distribution of French-speaking family practitioners and general practitioners in Ontario by north/south communities

Community category	Northern Ontario			Southern Ontario		
	French FP/GPs	French population	Ratio	French FP/GPs	French population	Ratio[†]
Strong French	113	103 155	1.1	120	72 630	1.7
Moderate French	37	18 260	2.0	491	138 285	3.6
Weak/no French	54	10 375	5.2	859	154 110	5.6
	Total FP/GPs	*Population*	*Ratio range*	*Total FP/GPs*	*Population*	*Ratio range*
Provincial average	850	821 680	1.0–1.2	10 118	11 197 060	0.9–1.2

[†] Ratios represent the number of FP/GPs per 1000 population (Francophone or total as noted).
FP, family practitioner. GP, general practitioner.

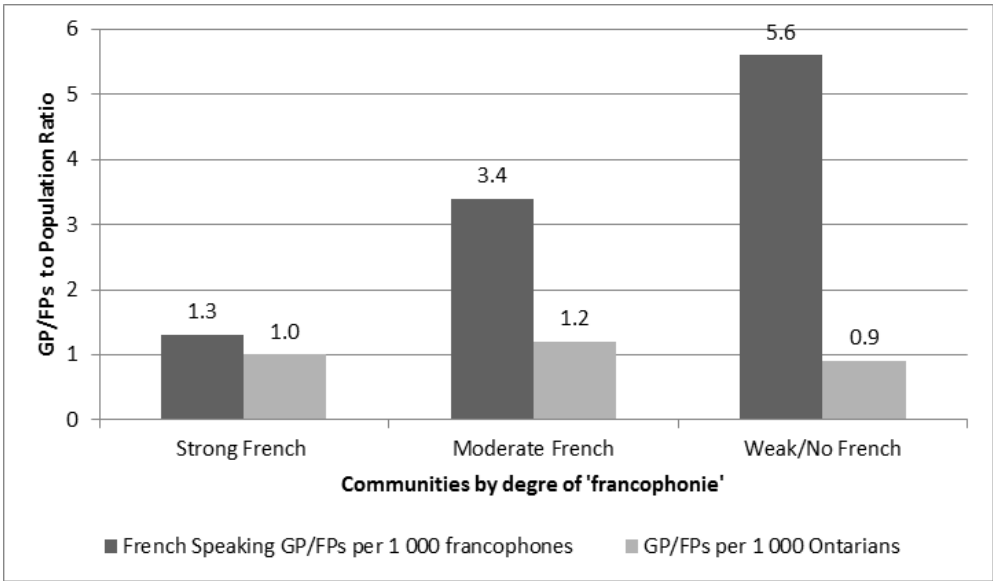

Figure 2: FP/GP-to-population ratios within French communities. FP, family practitioner. GP, general practitioner.

Discussion

There are nearly as many French-speaking FP/GPs as non-French speaking FP/GPs in the strong and moderate French communities. This would suggest that Francophones living in these communities are likely to be served in French, which is in contrast to what has been previously reported by others[8]. However, physician-to-population ratios in these communities range between 1.0 and 1.2, which, according to Chan and Benjamin[29], is nevertheless indicative of a physician shortage. Although an equal distribution of French-speaking and non-French-speaking physicians in strong French communities seems favorable, these strong French communities are underserved – 50% of too few remains too few. It is interesting to note that more than half of Ontario's French-speaking FP/GPs have located their practices in communities virtually uninhabited by Francophones, and may not be serving a French population at all. Across the province of Ontario, as the number of Francophones increases in a community, the ratio of French-speaking physicians to Francophones decreases.

In addition, Francophone ratios are consistently larger in all community categories in southern Ontario. Unlike the south, northern Ontario has a much smaller population density: northern Ontario covers nearly 90% of the province's land mass, but houses only 6% of the population[30]. As a result, not only do Francophones have less access to French language services, but, like all northerners, they must also travel greater distances to receive such services. The disparity is further exemplified considering that ratios are consistently smaller in rural areas of Ontario. Non-Francophone urban communities in the south have the highest availability of French-speaking FP/GPs whereas Francophone rural communities in the north have the lowest availability.

The fact that French FP/GP ratios are consistently equal to or more favorable than ratios for the general population, regardless of a community's Francophone classification, its geographic location or its size, cannot be ignored. These ratios suggest that Francophones should have adequate or even better access to French-speaking physicians, which is not what is found in the literature[12,13]. The divergence between the potential availability of French physicians and the actual

utilization of their services has previously been discussed[14] but warrants further attention. First, French-speaking FP/GPs in this study have been defined using a self-assessed measure of competence. Conclusions based on this definition need to be made with caution as it is possible that physicians have overestimated their level of competence with the French language, which in turn inflates their counts. Second, the definition of a Francophone used here intentionally excludes Ontarians whose first official language spoken is both French and English, potentially underestimating the number of people who are actually seeking French-language services. The interaction of overestimating the number of FP/GPs who can offer services in French and underestimating the number of Francophones may be artificially inflating the ratios of French-speaking FP/GPs to Francophones. Furthermore, self-reported ability to conduct practice in French does not mean that these physicians are actually practicing in French or serving a French population. Mistaking potential availability with actual service provision is possible when interpreting these results. The ratios discussed here represent a hypothetical situation where French-speaking FP/GPs exclusively treat Francophones and do not take into account that these physicians may also treat non-French speaking persons. All told, the actual number of Francophones seen by these physicians is potentially much lower than the ratios suggest. Regardless of the potential availability of French-speaking physicians, the literature shows that Ontario's Francophones continue to be underserved, which can be attributed in part to a mal-distribution of French-speaking physicians who are predominantly located in non-Francophone communities of the urban south.

These findings illustrate a paradox: the high potential availability of French language medical services for the population who could benefit from such services and the relatively poorer health of that population[2-4]. In addition, this research has uncovered the potential for a severe misalignment between the need for services in French and the availability of such services, particularly in rural areas. Communities with a French-speaking population of less than 10%, which is the minimum required to be considered a designated area under the Ontario *French Language Services Act*[31], had greater potential opportunities to receive French language medical services than communities with a greater percentage of Francophones.

Conclusion

Gauthier and colleagues initially identified a severe mal-distribution of medical services in the province, with higher ratios in southern and urban Ontario[14]. The purpose of the present study was to more closely examine the distribution of French-speaking family physicians and general practitioners at the level of the community in Ontario. Communities that are least likely to need French-language medical services have more French-speaking FP/GPs, and communities with the greatest need seem to be left underserved. Furthermore, and consistent with Gauthier and colleagues' conclusions at the regional level, the French-speaking FP/GP to Francophone population ratios are considerably lower in northern and rural communities.

The present study has identified a gap between the potential and the perceived availability of French-language services. Furthermore, the relatively high ratios of French-speaking FP/GPs discussed here suggest that improving the supply of French-language services may not be as simple as increasing the number of physicians who can practice in French; rather, it requires greater efforts to ensure that these physicians locate their practice near French populations and actively provide services in French. Additional work is needed to understand the disconnection between this high potential availability of French-language medical services and the poor health status of Francophones. Future research will examine characteristics of French-speaking physicians who have located their practice in communities largely occupied by a French-speaking population. The health of Francophones, particularly those residing in rural and northern locations of the province of Ontario, is currently at risk. Narrowing the gap between the need for quality medical services and access to such services may result in a stronger, healthier Francophone population. Reducing the adverse effects of

language barriers between a patient and their family physician is an important step in narrowing this gap. As Tumulty stated in 1970, 'What the scalpel is to the surgeon, words are to the clinician … the conversation between doctor and patient is the heart of the practice of medicine'[32].

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