PROFESSIONAL OVER-THE-PHONE INTERPRETATION TO IMPROVE THE QUALITY OF PRIMARY CARE FOR MIGRANTS: A FEASIBILITY STUDY

By
Emily Parkinson

Dept. of Family Medicine, McGill University, Montreal

Submitted: May 15, 2015

A thesis submitted to McGill University in partial fulfillment of the requirements of the degree of a Masters of Family Medicine

Thesis Supervisors:
Dr. Ellen Rosenberg, St. Mary's Hospital Family Medicine Centre
Dr. Gillian Bartlett, Dept. of Family Medicine, McGill University

Table of Contents

Common acronyms:

OPI: over-the-phone interpretation, **LLP**: limited language proficient; **PI**: professional interpreter

Preface & contribution of authors

The following text has been reproduced in full from the *Guidelines for Thesis Preparation,* in order to fulfill the specifications provided by the faculty of Graduate Studies and Research for a manuscript-based thesis.

This thesis document includes the text of one article to be submitted for publication to the journal of Patient Education and Counseling (PEC). The authors, listed in order are: Emily Parkinson, Gillian Bartlett, Yvan Leanza, and Ellen Rosenberg. The article presents the methods and results of a primary analysis of data collected by Emily Parkinson as part of an original study on the feasibility of over-the-phone interpretation service use in primary care settings. Dr. Ellen Rosenberg acted as primary thesis supervisor, Dr. Gillian Bartlett as co-supervisor, and Dr. Yvan Leanza as thesis committee member. The research presented in the paper was inspired by the work of the Interpretation and Translation Service, who conducted a similar remote interpretation pilot study at the University Health Network in Toronto, Ontario in 2010. Drs. Rosenberg, Bartlett and Leanza reviewed drafts of the thesis prior to final submission. Emily Parkinson, Masters candidate, was responsible for determining the research question; establishing appropriate measurement procedures, and designing the study; recruiting subjects; collecting all the data; carrying out the statistical analysis; interpreting, organizing and presenting the results; and writing the manuscript.

Abstract[1]

Background: In Canada, health disparities exist between limited language (English/French) proficient (LLP) patients and English/French proficient patients, principally in the areas of quality and access to care. The use of professional interpreters (PIs) during medical encounters with LLP patients has been shown to significantly reduce these language-based inequalities, yet PIs are rarely engaged. Little work has been done to shed light on the feasibility of using language service technologies, such as telephone interpretation, especially in primary care. This is worthy of investigation in Montreal where clinicians have limited or no access to language support services.

Objective: To investigate the feasibility of over-the-phone interpretation (OPI) service use in primary care clinics by measuring healthcare professionals' service usage and their perception of the factors that are likely to impact service usage.

Participants: All (117) healthcare professionals (including staff physicians, residents, nurses, and nurse practitioners) from two Montreal primary care clinics were invited to participate.

Methods: For this prospective cohort study, all primary healthcare professionals at two Montreal primary care clinics were given unlimited, on-demand access to OPI services for three months. Participants completed two self-administered surveys *before* and *after* the study. This was supplemented with service usage data (routinely collected by the service provider) and participants' reports on their number of LLP patient encounters during the study.

Key results: OPI service usage at the two primary care clinics differed; while OPI usage was consistent at clinic 2, it decreased significantly at clinic 1. As expected, a significant gap exists between the number of LLP patient visits and the frequency of OPI usage. At both clinics, participants had positive attitudes towards and opinions of the OPI service but, for various reasons, many had difficulty integrating the service into their daily routine.

Conclusion: Based on the patterns of service usage at each clinic, and an evaluation of the factors that are likely to impact service usage, OPI service has the potential to be used in Montreal primary care clinics, but is not necessarily feasible under the given circumstance. Uptake of OPI services would improve by providing more in-depth training for healthcare professionals in OPI use, systematically identifying LLP patients, and by providing OPI services in both of Canada's official languages.

[1] Sections of the abstract, introduction and literature review have been published in the online Health Science Inquiry Graduate Student Journal, 2014. (http://healthscienceinquiry.ca/wp-content/uploads/2014-HSI-Volume-51.pdf)

Résumé

Contexte: Au Canada, il existe des inégalités en matière de santé entre les patients ayant des compétences linguistiques limitées et les patients parlant anglais ou français, principalement en termes de qualité et d'accessibilité des soins. Bien qu'il ait été démontré que l'utilisation en contexte médical d'interprètes professionnels avec des patients ayant des compétences linguistiques limitées permet de diminuer significativement ces inégalités fondées sur le langage, des interprètes professionnels sont rarement engagés. Peu d'études de faisabilité se penchant sur l'utilisation des technologies de service linguistique, comme l'interprétation téléphonique, ont été effectuées, particulièrement dans le contexte des soins primaires. Il s'agit d'un domaine d'enquête pertinent à Montréal, où les cliniciens ont un accès limité, voire absent, aux services de support linguistique.

Objectif: Examiner la faisabilité de l'utilisation de l'interprétation téléphonique dans les cliniques de soins primaires en mesurant l'utilisation du service par les professionnels de la santé ainsi que leur perception des facteurs pouvant influencer l'utilisation du service.

Participants: La totalité des professionnels de la santé (médecins, résidents, infirmiers et infirmiers praticiens) de deux cliniques de soins primaires à Montréal ont été invités à participer.

Méthodes: Étude de cohorte prospective. Tous les professionnels de soins primaires de deux cliniques de soins primaires à Montréal ont eu un accès sur demande illimité aux services d'interprétation téléphonique pendant trois mois. Les participants ont répondu à deux questionnaires auto-administrés *avant* et *après* le projet pilote de trois mois.

Résultats: L'utilisation du service d'interprétation téléphonique a différé dans les deux cliniques; alors que l'utilisation s'est avérée constante à la Clinique 2, elle significativement diminué à la Clinique 1. Tel qu'attendu, il existe un écart significatif entre le nombre de visites de patients ayant des compétences linguistiques limitées et l'utilisation du service d'interprétation par téléphone. Les participants des deux cliniques ont manifesté des opinions et des attitudes positives à l'égard du service d'interprétation téléphonique, mais beaucoup ont eu de la difficulté à intégrer le service à leur routine, pour diverses raisons.

Conclusion: D'après l'utilisation du service à chaque clinique, et d'après une évaluation des facteurs pouvant influencer l'utilisation du service, l'interprétation téléphonique a le potentiel d'être utilisé dans les cliniques de soins primaires de Montréal, bien que ce ne soit pas nécessairement faisable dans les circonstances actuelles. La bonne implantation des services d'interprétation téléphonique dans les cliniques de soins primaires de Montréal serait améliorée

en offrant des formations plus complètes aux professionnels de la santé qui se servent de l'interprétation téléphonique, en identifiant systématiquement les patients ayant des compétences linguistiques limitées, et en fournissant les services d'interprétation téléphonique dans les deux langues officielles du Canada.

Acknowledgements

This Master's thesis has significantly benefitted from the contributions of several key people that I would like to acknowledge.

Dr. Ellen Rosenberg: My supervisor, Dr. Ellen Rosenberg, has provided tremendous guidance and support throughout the entire research process. When I first proposed this project to Dr. Rosenberg (which was independent of the many projects she had already taken on), she responded with great interest and enthusiasm. It was her confidence, commitment, and continuous encouragement, as well as her wealth of practical knowledge from her years of experience as a family medicine physician and researcher, that I was able to complete this ambitious project.

Dr. Rosenberg has made many contributions to this project: from her career as a family medicine practitioner, Dr. Rosenberg's widespread connections at the St. Mary's Hospital Family Medicine Centre and other institutions were imperative during the recruitment of potential research sites. Her affiliations with these institutions, as well as her experience and reputation within the clinics and research centers, were also beneficial for developing strategies to recruit study participants and to distribute materials, such as information packages and surveys. Throughout my degree, she offered advice and editorial comments for Research Ethics and Compliance applications, funding and conference submissions, as well as for project materials, such as surveys, training programs and supplemental handouts. Dr. Rosenberg also played an important role in helping to further my interest and involvement in related areas of research; she invited me to participate in various meetings for organizations, such as the Interim Federal Health Program (IFHP) research group, the Consultation Committee for Cross-Cultural Quality of Care (ACCOQC), and the Community Health Alliance Project (CHAP) group. These experiences have broadened my awareness and perspective of issues faced by immigrant populations, and the current efforts to mitigate them. She also provided funding for me to attend the 2014 European Association for Communication in Healthcare (EACH) Conference, which exposed me to ideas, resources and contacts that further benefited this project.

Dr. Gillian Bartlett and the McGill Graduate Department of Family Medicine: My co-supervisor, Dr. Gillian Bartlett, also played a critical role in the success of my Master's thesis project. Dr. Bartlett specializes in building protocols for quantitative data collection and statistical analysis. As such, she was an essential guide in the design and implementation of this study, especially with regard to the survey development and analysis. As my co-supervisor, and

as the director of the McGill Family Medicine Graduate Program, Dr. Bartlett made sure that I received the appropriate training and developed the necessary skills to conduct rigorous, high quality clinical research. As a Masters candidate in the department of Family Medicine, I had the opportunity to participate in the department's monthly family medicine research seminars, as well as the monthly participatory research at McGill (PRAM) seminars. I also participated in the annual meeting of the North American Primary Care Research Group (NAPCRG). Attendance has exposed me to original research conducted by well-known family medicine researchers. It has also provided me with the opportunity to expand my networking with expertise in primary care research, all of which has been valuable in the development of my knowledge, experience and passion in this research field.

Dr. Yvan Leanza: Dr. Yvan Leanza was selected to fill the third seat of my thesis committee because of his extensive experience in this field of research. I have benefited significantly from Dr. Leanza's unique perspective, which has often forced me to question aspects of my project I had not yet considered. Dr. Leanza has been a thorough and thoughtful reviewer, which has raised the standard of this project to a caliber that could not have been achieved without his input.

The Language Services Toronto Program: This project was modeled after the 2010 over-the-phone interpretation pilot project conducted by the Interpretation and Translation Services department of the University Health Network (UHN) in Toronto, Ontario. This project would not have been possible without the generosity of the Language Services Toronto[2] project leads, Ms. Elizabeth Abraham and Ms. Grace Eagan, who conducted the initial project at UHN. At the beginning of this project, they committed to help us by sharing their project tools, including training materials, supplemental resources, as well as budget and cost reports. Their results, resources and guidance created the foundation of the study protocol. Their contributions also improved participants' experience of using the service, and thus the success of this project.

Language Line Solutions: Bruce Linkletter, the Canadian manager of the LanguageLine Solutions® remote interpretation service, has been a great supporter of this project. In collaboration with Access Alliance, they have provided reliable access to quality remote interpretation services at a flexible rate for the duration of this project. They also donated materials to improve participants' experience of and accessibility to the service.

[2] The Language Services Toronto program was launched in November 2012 and has since integrated phone interpretation services in over 40 organizations across seven regional health authorities in Ontario.

Other contributors: there are two more people who I would like to acknowledge for their generosity and support of this project. Mme. Amelie Goudreau, the head administrative agent and director of professional and medical services at the CLSC Parc Extension, was imperative to launching the OPI project at the CLSC Parc Extension clinic. She assisted in the recruitment of participants, room bookings, collecting surveys from participants, and passing along key feedback and information to and from the healthcare professionals. I would also like to acknowledge statistician, Alina Dyachenko, for her guidance during the statistical analysis phase.

Funding sources: I received funding from several sources that supported this project and me throughout my degree. I received the bourses d'etudes of $3,000 from the Migration et Ethnicité dans les Interventions en Santé et en Services Sociaux (METISS) organization, as well as the Master's training award of $30,000 over two years from Fonds de recherche du Québec (FRQS), and their partner Unité SUPPORT du Québec. In 2013 and 2014, I also received financial awards from the graduate department of Family Medicine and Experimental Medicine, including The Graduate Excellence Award of $1,500, and the Graduate Research Enhancement and Travel (GREAT) Award of $1,250. For the project itself, the St. Mary's Hospital Research Centre made a contribution of $3,500, Dr. Mark Sougavinski made a contribution of $1,000, and the telephone interpretation services provider, Language Line Solutions®, made a contribution of 1,250 minutes. This project also received tremendous support from the McGill Teams Advancing Patient Experiences: Strengthening Quality (TAPESTRY) project.

A special thank you to my family and friends
for their love and support.

CHAPTER 1. INTRODUCTION

1.1 Background

One-fifth of the Canadian population (6.6 million people) speaks a language other than French or English at home. For approximately 30% of these individuals (2.15 million people), this is not in combination with either official language [1]. As global migration continues to increase, Canada's healthcare system faces new challenges in providing quality care to the growing number of people with limited language (English/ French) proficiency (LLP). Language barriers are directly associated with health disparities between LLP and English/French proficient patients [2], principally in the areas of quality and access to care [2–4]. In order to bridge a language barrier one involves an interpreter (a person who conveys the content spoken by one participant into the language of the other participant and vice versa). A translator renders written material from one language to another. The provision of trained (professional) interpreters during medical encounters has been shown to improve the quality of care (in terms of equity, safety, effectiveness, efficiency, timeliness, and patient-centeredness) and health outcomes of LLP patients [2,5–10]. Despite the growing number of LLP patients, and evidence of the costs of care inequities [2], language services are often not considered "medically necessary," [11,12] and professional interpreters (PIs) are rarely engaged in primary care settings [13,14]. Therefore, a chronic problem exists for primary healthcare professionals to deliver quality care to their patients with limited English/French skills.

1.2 The importance of effective patient-provider communication, especially in primary care

The International Charter for Human Values in Healthcare identifies effective patient-provider communication as being fundamental to all dimensions of healthcare that ensure "compassionate, ethical and safe relationship-centered care" (p.276) [2,5,15,16]. Effective communication facilitates freedom of expression [11] as well as mutual and informed decision making [17], all of which are essential for good health results and for establishing a trusting patient-provider partnership [16,18–20].

For many healthcare professionals, communication is considered a means of obtaining clinically relevant patient information, and communication to elicit patients' questions, concerns, priorities and preferences are commonly considered less important to the clinical consultation [18,19]. The former approach to communication does not respect peoples' differences of opinion,

their own perception of illness and wellbeing, and their right to make autonomous and informed decisions [2,5,20]. An appreciation of cultural and linguistic differences is essential to valuing the patient-centered clinical approach, and for understanding personal barriers to treatment that might result in noncompliance [17,19]. As such, efforts to communicate across (cultural and linguistic) barriers are necessary for effective treatment and diagnosis, as well as patients' understanding of and adherence to (and therefore success of) such treatments [6,21].

The vital role of primary healthcare in keeping populations healthy makes effective communication in primary care particularly important [16,22,23]. Because of their lower access to preventive services [24–27], vulnerable populations, such as LLP immigrants and refugees, have poorer management of chronic illnesses and higher emergency department utilization rates compared to those who are proficient in the dominant language(s) [28–32]. Ensuring equal access to quality primary healthcare is thus important for reducing health disparities and for creating a sustainable health system [22,23].

1.3 Health (in)equity: the presence of language-based disparities in healthcare

In addition to other social determinants of health (such as cultural barriers and low health literacy), language discordance between patients and their care provider is a major contributor to health disparities [2,8,33,34]. Compared to the language proficient population, these patients have been shown to be less satisfied with the care they receive [35–37], have poorer access to and quality of care (in terms of equity, safety, effectiveness, efficiency, timeliness and patient-centeredness), and have worse health outcomes as a result [2,5–10]. More specifically, LLP patients have reduced access to regular sources of care [6,27], higher morbidity and mortality rates, experience more frequent medical errors and misdiagnoses [33,38], undergo a greater number of unnecessary tests and procedures [39–43], have fewer prescriptions written [44], experience more frequent adverse drug events, have poorer adherence to treatment [6,21,39], longer and more frequent hospital stays [28,41,42], higher hospital readmission rates, and are less likely to receive follow-up treatment [45–48]. Failure to provide language-appropriate oral and written procedural information also makes deficient consent more common among LLP patients [2,14,49,50]. Physicians have become so frustrated by the burden of miscommunication in their practice that some have essentially stopped providing LLP care [51,52].

1.4 The role of professional medical interpreters

The use of professional interpreters (PIs) during LLP patient medical encounters has been shown to significantly reduce language-based inequalities in care quality between LLP and English/French proficient patients [6,7,34,39,43,53–55], and to even improve the quality of care delivery to LLP patients to reach the standard of care received by patients who do speak English (and French) [6,29]. The use of PIs has been associated with improved patient and provider satisfaction [6,37,56,57], an increased number of LLP patient visits to primary/preventive medicine clinics [58], lower emergency department use [47], higher preventive screening rates, fewer unnecessary medical tests [7], fewer medical and communication errors, as well as higher patient compliance and adherence to follow-up [6,37,38]. In studies comparing the quality of interpreting methods, all have reported PIs to be superior to using untrained interpreters (i.e., family members, friends, bilingual staff, or other patients from the waiting room) [2,6,7,38]. PIs are thus considered to be "the only type of interpreter associated with overall improvement of care [for LLP patients]" (p.266) [59].

Understanding the PIs' role and unique skills is essential to appreciating their capacity to improve LLP patient care. Bilingualism does not solely qualify a person to interpret. Professional (medical) interpreters are trained and tested language professionals who are qualified to work in medical settings. Their role is to deliver messages, as faithfully as possible, between patients (family members and friends) and healthcare professionals who do not share a common language. Unlike untrained interpreters, PIs are held accountable for the quality of the interpreted message; they must respect the confidentiality of all parties, not impose their own values or opinions, nor engage in informal, personal, or potentially controversial discussions with the patient [60].

That being said, there is significant variation in interpretation training standards. Being a PI does not necessarily mean that they have undergone professional training. Since the length of training programs can range from several hours to more than a year, competency levels of PIs vary significantly by jurisdiction, agency and/or organization [6,43]. In a review of the literature, half did not specify what training, if any, the PIs underwent [6].

1.5 Over-the-phone interpretation services: an overview

Over-the-phone interpretation (OPI) services provide unlimited, on-demand access to professional medical interpreters in over 180 languages, with an average connection time of less

than 60 seconds. By using the speakerphone on standard examination room telephones, remote interpreters can be engaged at any time to interpret conversations between patients and their care providers in the patient's preferred language. There are several remote interpretation service providers worldwide. The largest of them, Language Line Solutions® (used for this study), employs over 6000 remote interpreters internationally, all of whom are required to meet high language proficiency standards and adhere to strict professional and ethical conduct (personal communication, Bruce Linkletter[3]).

In many circumstances, OPI has proven to be more time-efficient and cost-effective than face-to-face interpreting (see *Section 2.6)* [61]. Therefore, the feasibility of using OPI services to overcome language barriers in the Montreal primary care context is worthy of investigation.

Primary Objective:

The objective of this thesis is to investigate the feasibility of over-the-phone interpretation (OPI) service use in primary care clinics by measuring healthcare professionals' service usage during a three-month OPI integration, and their perception of the factors that are likely to impact service usage.

[3] Bruce Linkletter is the Canadian manager of LanguageLine Solutions®

CHAPTER 2: LITERATURE REVIEW

So far, we have addressed the importance of effective communication in medical (primary care) settings, the impact of language barriers on the quality of care delivery, and the ways professional interpretation services can reduce these language-based inequalities. The following literature review will address "best" versus current practices for overcoming communication barriers in healthcare, the advantages and disadvantages of ad hoc interpreting methods, known barriers to engaging professional interpretation services, and the factors that influence healthcare professionals' decisions to use one interpretation modality over another. I will then review the advantages of using over-the-phone interpretation services for overcoming communication barriers, specifically in primary care settings, and compare this to other methods for communicating across language barriers.

2.1 "Best practices" versus reality: discussing the disadvantages of using untrained interpreters in medical settings

Best practices recommend that professional interpreters (PIs) be used in any circumstance where a potential language barrier is detected (that is, for anyone who speaks English/French less than "very well") [34,62]. These guidelines are based on the known risks and consequences of allowing untrained interpreters (i.e., family members, friends, bilingual hospital staff or other patients from the waiting room) to interpret for limited language proficient (LLP) patients; untrained interpreters lack proof of proficiency in both languages [63,64], are less likely than PIs to ask either the patient or healthcare professional for clarification, and increase the likelihood of medical errors [6,38,65]. Many healthcare professionals are aware that using untrained interpreters can compromise the quality and safety of care delivery to LLP patients [14,18], yet PIs are rarely engaged [2,13,14,17,18,66,67]. In a survey of primary care physicians in Montreal, 92% reported using untrained interpreters during LLP patient encounters, while only 39% reported using a PI [17]. Based on PI usage trends from other studies [18,67], these physicians' self-reported PI usage was likely an overestimate.

The literature identifies several disadvantages to allowing family members and/or friends to interpret for the LLP patient; patient's family and friends do not possess the training or knowledge to competently interpret medical terminology, concepts and procedures [61,68]. Besides the obvious inappropriateness (and illegality) of using children to interpret [14,69,70],

using family members raises other concerns, such as breaches of confidentiality [14,18] and inverted power dynamics among family members [51,59]. In addition to the high medical error rate associated with using untrained interpreters [38,39], using family members has also been shown to alter the content of communication during medical encounters [19,71]. Family and friends have a tendency to significantly filter information from the patient, and in some cases, fail to disclose information all together [19,38,72]. Unlike professional interpreters, they are not accountable for the quality of interpretation they provide, and their involvement is claimed to be "more dangerous in some circumstances than no interpreter at all" (p. 7) [2].

There are also specific disadvantages to allowing bilingual hospital staff to interpret for the LLP patient [14]; first, staff who are not part of the patient's healthcare team are being entrusted with confidential and sensitive information; second, their involvement is frequently not documented and may lead to role confusion and a potential conflict of interest; and third, interpreting takes time and energy away from their actual roles and responsibilities, ultimately creating a less effective and efficient care team (personal communication, Elizabeth Abraham) [4]. In a study conducted by Regenstein *et al.*, it was calculated that approximately 40% of bilingual staffs' time was spent interpreting, rather than tending to their actual duties [73].

While Bezuidenhout and Borry's paper thoughtfully acknowledges the problems of using untrained interpreters (with respect to patient privacy, patient autonomy and informed consent), they also stress that, realistically, ad hoc interpreting methods will continue to be used. It is not always possible to adhere to best practice guidelines, but by training healthcare professionals to work with untrained interpreters (and to promote respect of and adherence to ethical and moral standards), "better" practices might be achieved [20].

2.2 The role of untrained interpreters

More recent studies are now acknowledging the potential role of untrained interpreters during medical consultations with LLP patients [20,56,65,68,72,74]. In spite of best practice guidelines, untrained interpreters continue to be used, even in situation where PIs are available [75–77]. This would suggest that untrained interpreters might also play an important role in helping to assist communication, and that their potential contributions should not be overlooked.

[4] Elizabeth Abraham is the Manager of Translation and Interpretation Services of the University Health Network in Toronto, Ontario. She is the project lead of Language Services Toronto, a consortium of healthcare organizations sponsored by the Toronto Central Local Health Integration Network (TC LHIN).

There are notable reasons why patients and/or their care provider might preferentially use untrained interpreters in lieu of PIs; a family member or friend possesses background knowledge of the patient's personal and medical history, offering a perspective of the patient's lifeworld ("contextually grounded experiences") (p.1888) that is likely to be important to the consultation [19,78]. Compared to PIs, family and friends tend to play a stronger patient advocacy role and to take greater care to respect the patient's priorities and preferences [19,65]. Using a PI can be unsettling for certain patients, who might feel calmer and more comfortable using someone they know and trust to interpret for them [56,78,79]. Using family and friends to interpret also ensures a continuity to care not necessarily offered by professional language services. In small linguistic communities, where there is the possibility that the patient might know the professional face-to-face interpreter, there is also a value to knowing that medical and personal information will be kept 'in the family' (p.1176) [78,80,81]. While it is strongly recommended that children not be used to interpret during medical consultations, there is the advantage that children can communicate in a way that low health-literacy patients can understand [78]. Furthermore, the literature has reported patient and provider preferences for and satisfaction with both professional and untrained interpreters [56,81]. One study found that some healthcare professionals are not even aware of the difference between the two interpreting modalities [13].

The above considerations that justify the use of untrained interpreters during LLP patient encounters are controversial. The evidence of how untrained interpreters can compromise the safety and quality of care delivery to LLP patients is overwhelming (*Section 2.1*).

2.3 Identified barriers to accessing professional language support in medical settings

It is important to acknowledge the perceived benefits of using untrained interpreters and one's preference for using them in certain circumstances, but the significant underuse of PI services is not solely attributable to this. Numerous barriers to the use of professional language support have been identified. Depending on the context, individual factors may have a greater or lesser impact on the degree of PI usage; however, in no context do these factors act independently of one another [77]. The following section will identify and discuss some of the known barriers to engaging PIs in medical settings.

2.3.1 The up-front cost of providing professional language support

The up-front financial burden of providing language support presents a significant barrier to PI use in medical settings. Perceived costs, budget constraints and competing funding priorities have resulted in limited allocation of resources towards the integration of language services into many health systems [13,14,39,43,51,66]. Due to a lack of funding or reimbursement for using PI services, Montreal healthcare professionals are reluctant to engage PIs (personal communication, Elizabeth Abraham)[5] [39].

Misconceptions also exist regarding how much PIs actually cost. This is illustrated in one study from a private practice clinic in the United States where few participating healthcare professionals or office managers could recall an experience of having to pay for language services. They were also unable to quantify the demand for or use of PIs in their clinics, and therefore could not provide an accurate cost estimate [14]. In addition to undocumented volumes of PI usage, estimating PI service costs is further complicated by the fact that service rates vary greatly by institution. Compared to other health costs, the cost of providing language access is low (approximately 1.5% of the total cost according to a United States statistic) [57].

Empirical and theoretical studies unanimously support that the short- and long-term benefits of integrating language services into health settings far outweigh the costs [2,5,7,39,42,43,49,51,67,82]. Unnecessary tests and procedures [39–43], longer emergency department stays [28,41], inefficient use of staff time [73], as well as liability costs for adverse events and negative patient outcomes [2,5] are just some of the factors to be considered when weighing the risks of not providing such services (see *Section 1.3)*. Therefore, up-front costs of engaging PIs can be offset by avoiding errors, as well as increasing efficiency and effectiveness of treatment for LLP patients [2].

2.3.2 Insufficient training of healthcare professionals

Education and training of healthcare professionals is fundamental to ensuring equal access to quality care for vulnerable populations, such as LLP patients. Training healthcare professionals in how, why and when to use PI services is associated with an increase in language support service usage, as well as higher quality of care delivery to LLP patients [83–85]. A lack

[5] Ms. Abraham has interviewed Marie Serdynska, the Sociocultural Consultation and Interpretation Services Coordinator at Montreal Children's Hospital, on several occasions about language support services in Montreal hospitals and primary care organizations.

of healthcare professional training in health equity, cultural responsiveness, and the proper use of interpretation services is thus a deterrent to best practices for serving diverse populations [16,17,53,83,84,86–89].

In Canada (and elsewhere), healthcare professionals receive minimal cultural sensitivity training or training in the proper use of PI services [88]. Furthermore, there are rarely (if ever) standardized guidelines for how or when to access PI services [17]. Instead, healthcare professionals rely on improvised strategies for working across diverse cultural and/or linguistic barriers [17,18]. This is reflected in studies that address the navigation of LLP patient care; for example, healthcare professionals are often unable to properly assess their patient's language skills [59,90]. In a Montreal study on LLP prevalence in primary care, 17% of patients self-identified as having difficulty communicating in English/French, but physicians identified only 4.5% of their patients as being LLP [91]. In another Montreal survey of primary care physicians, 82% thought that it was the patient's responsibility to book an interpreter for their own consultation [17]. In most circumstances, however, patients are not notified by their care provider or the institution of their right to (free) interpreting services [92].

The perceived costs, inaccessibility and inconvenience of using PIs might also exists due to a lack of training, knowledge or experience of healthcare professionals in using professional language support [14]. For example, healthcare professionals have reported limited PI accessibility to be the biggest barrier to using language support services [17,93], yet a significant underuse of interpretation services is apparent even in situations where PIs are available (and encouraged, for example, by Title VI of the Civil Rights Act) [18,75,76,94]. In a hospital setting with 24/7 access to telephone interpretation services, 93% of patients reported a preference to using a PI when communicating with their physician, but only 43% were asked if they wanted or needed one. Actual PI use amongst physicians and nurses was even lower (14% and 4%, respectively) [67].

In recent years, healthcare professionals' knowledge and perceptions of the presence and impact of language barriers in health settings has shifted and efforts have been made to elucidate best practices for quality care delivery to LLP patients [87]. Cultural sensitivity training has made its way into the curricula of medical schools, healthcare institutions, and professional development training, and is a topic of interest at healthcare conferences around the world (for

example, the European Association or Communication in Healthcare (EACH) and the American Academy on Communication in Healthcare (AACH) conferences).

While notable progress has been made, current standards of cultural sensitivity training do not appear to be preparing future healthcare professionals to service Canada's ever-expanding diversity. In a survey of Montreal primary care physicians, 69% had not received any cultural sensitivity training [17]. This is not surprising given that, based on a study conducted in 2000, 7 of the 16 Canadian medical schools failed to specify any curricular objectives on cultural sensitivity. In Quebec, McGill University and Laval University both made statements with regard to specific cultural sensitivity training objectives; however, neither school explicitly mentioned cultural sensitivity in their clerkship evaluation forms [88]. Furthermore, while effective communication skills are now being recognized as an important part of the medical curriculum, these skills are not taught in multilingual scenarios, nor in the presence of a third party, such as a PI [16].

Knowledge is fundamental to action initiatives, such as the integration and normalization of language support services in health settings [95]. Specialized training is necessary for healthcare professionals to understand, appreciate, and respect differences among their patients, and also to develop the interest, knowledge and skills that are necessary to overcome the challenges these differences will likely present [17,83,84,86,89,96]. Healthcare professionals should be aware of what resources are offered, how to take advantages of them, and their value in improving the quality of care delivery to their diverse patient population [17]. Healthcare professionals who have received previous training in cultural sensitivity and the proper use of PI services are more likely to use professional versus untrained interpreters, are more likely to be satisfied with the quality of care they provide to their LLP patients, and tend to make a greater effort to accommodate immigrant patients, for example, by using multilingual education materials, visual materials and repetition strategies [17,83–86]. Increased PI usage and greater satisfaction with care delivery is also correlated with healthcare professionals' ability to speak another language (besides English/French) and previous exposure to other cultures [83]. Studies have also revealed a difference in PI usage based on healthcare professionals' personal characteristics, such as age, gender, and profession [17,83,96].

2.3.3 Misunderstanding patients' and healthcare professionals' language competencies

Errors can occur when healthcare professionals overestimate how much their patient understands or fail to recognize their patient's silence as an inability to express themselves. Alternatively, the patient may overestimate their own understanding of English and/or French. A patient may also feel uncomfortable asking for clarification after having indicated that they understand English/French [97] (*Appendix B*).

Healthcare professionals that feel proficient enough in the patient's language often rely on their own language skills to communicate [14,18,52]. Depending on their language competency, this may be ideal [57]; however, healthcare professionals that have *some* competency in the patient's language might make assumptions about how much they or their patient understands, and how much is being accomplished during the LLP patient consultation. These healthcare professionals have also been shown to be less likely to use a PI compared to those who have no competency in the patient's language [86,98]. When emergency medicine residents were required to complete a 45-hour medical Spanish course, frequent errors were recorded during LLP patient consultations in Spanish [98]. For these reasons, and because healthcare professionals' language proficiency is not tested [43], Diamond *et al.* asserts that "a little proficiency can be a dangerous thing" (p. S190) [86].

2.3.4 Discomfort with using language support services

The unfamiliarity of using professional language support makes some patients and their care providers uncomfortable using these services. Patients may be concerned about maintaining confidentiality when using a PI to interpret rather than someone familiar, such as a family member or friend [75]. Especially when the patient has experience using untrained interpreters, the patient might not think a PI is necessary. Patient-PI gender concordance, as well as the patient's familiarity with the PI, can also determine their preference for whether or not to use a PI [7,56]. When offered professional language support, patients may be "concerned about being judged, that they may have to pay for the service, or that it may delay or compromised their care" [97]. Even if patients are aware that interpreter services are available, free of charge, [92] the power dynamic that exists between the patient and their care provider might also make them uncomfortable to voice their preference to use professional language support [19,59].

If a bilingual family member or friend is present and willing to interpret for the patient, healthcare professionals might feel awkward declining their help. This is especially true if the healthcare professional has a high degree of comfort and overall confidence in untrained interpreters' ability to facilitate the conversation [77]. Some healthcare professionals also prefer direct communication, which they feel is important for establishing a trusting relationship with their patient [16]. Even healthcare professionals who recognize the benefits of engaging PIs have expressed concern that the PI's presence interferes with their ability to build rapport with their patients [13]. Another reason physicians might be reluctant to engage a PI is their inability to control the consultation in the presence of a third party, and their tendency to feel excluded from the conversation as a result [19]. Training healthcare professionals on how to manage a three-way consultation could mitigate this issue of exclusion. Also, several other sources have reported a higher degree of patient and provider satisfaction, patient engagement, and rapport building when PIs versus untrained (or no) interpreters are used [16,61,87].

2.3.5 Practical barriers to engaging professional language support

As previously mentioned, inadequate training of healthcare professionals, as well as a lack of institutional guidelines for how or when to engage a PI are major barriers to using PI services (*see Section 2.4.2*). Patient language data is not routinely collected, which also makes it difficult for healthcare professionals to anticipate the need for professional language support [62,99]. Furthermore, engaging a PI often requires coordination between different tiers of the health system (for example, between reception staff, healthcare professionals, administrators etc.), thereby adding another level of difficulty to the process of engaging a PI [73,77].

If a healthcare professional wished to engage a PI, there are still other barriers that might inhibit them from doing so. Clinicians are overworked, and time constraints are difficult to adhere to, even without the presence of cultural or linguistic barriers [18,83]. While it is true that healthcare professionals have to devote additional time outside of their normal routine to book a PI, there is little evidence that engaging a PI actually results in a longer consultation time [43,100,101]. This is understandable considering the time and effort required to communicate across cultural and linguistic barriers *without* a PI [14].

Limited availability of and accessibility to professional language support is a commonly perceived barrier to engaging a PI [17,93]. In the UK, 50% of general practitioners do not have

access to PI services [102]. A similar situation exists in Montreal where, among primary care mental health practitioners in Montreal, only 35.4% have access to language support services [13]. Also, a relatively small (face-to-face) interpreter bank exists to service all health, social services and education professionals across the city (*Section 2.5*). Under these circumstances, it is unlikely that a PI would be available, when needed, in the patient's requested language.

Because of the variability in the types of issues addressed during consultations (including complex, non-medical issues), the unpredictability of care delivery, and the size and geographical spread of practices, primary care clinics are less likely than secondary care facilities (i.e., hospitals) or specialist clinics to provide language support services [14,16]. Walk-in clinics, the most frequently used primary care facilities, rarely engage PIs [14]. This is especially true in places with less linguistic diversity [67].

2.3.6 Habit of "getting by" without professional language support

It is difficult for healthcare professionals to incorporate new strategies into their already busy routine. It is especially challenging for "complex interventions," such as interpreter-mediated consultations, to become part of normal practice [77]. This is exemplified by several instances of exceptionally low uptake of free and easily accessible PI services [75–77].

In light of all the barriers that exist to engaging PIs, healthcare professionals are accustomed to "getting by" without communication support [18,67]. Instead, physicians have reported most often relying on the presence of untrained interpreters or their own limited language skills [2,14,17,18,52,93]. Out of habit, a healthcare professional might also not think to engage a PI when the circumstance is appropriate [18]. Besides using family members, friends, bilingual hospital staff or strangers to interpret for the patient, other ad hoc strategies for communicating across a language barrier include: volunteer interpreters, speaking slowly, using hand gestures/drawings, and language support applications on mobile devices (personal communication, Elizabeth Abraham) [13].

2.4 The challenge we face: appreciating linguistic diversity in Montreal, Quebec

According to the Institute of Medicine Subcommittee, anyone who speaks English/French less than "very well" is considered to have limited language proficiency (LLP) [34,62]. This classification is important since quality of care is especially compromised for patients with *some*

competency in English/French [97,103]. By this definition, the prevalence of LLP patients in Canada is not known; however, it is estimated that in Quebec, approximately 12% of the population are allophones (someone whose mother tongue is/are not the dominant native language(s)), and 0.9% do not speak any English or French. The prevalence rates are even higher in Montreal, where allophones represent 32.5% of the population, and 2.6% of people do not speak either official language [13,104]. The pervasiveness of communication difficulties in the Montreal primary care system, and thus the magnitude of the challenge we face in serving our LLP communities, is still not known.

2.5 Professional language support services in Montreal, Quebec

The Montreal Banque interrégionale d'interprètes (Interpreter Bank) provides professional face-to-face interpreters to all health, social service and education professionals who request one. The costs are borne by the institution or the professional, and the service costs $60 per hour (minimum two hours). The services are available in 52 languages; however ten languages make up 79% of the requests for interpreters. No family physicians working outside of the Centre Local de Services Communautaires (CLSC), who provide 85% of the ambulatory care in Quebec, have used these services [105].

2.6 Over-the-phone interpretation services: the advantages and disadvantages of using remote versus face-to-face interpretation services

Compared to face-to-face interpretation services, over-the-phone interpretation (OPI) services are more cost effective for shorter consultations (40 minutes or less) [66,106]. According to the Language Services Toronto 2010 OPI pilot project, the average consultation time in community based health organizations is approximately 20 minutes. Because patient consultation times in primary care are unpredictable (complex cases warrant longer consultation times, and patients might arrive late or cancel an appointment last minute), booking a face-to-face interpreter is challenging. The interpreter may miss the consultation all together, or else spend much of their paid time waiting for healthcare professionals and patients rather than interpreting [73,107].

The use of remote interpretation services (with a centralized calling centre) has been shown to increase the volume of PI usage and decrease the cost of each PI encounter [61]. OPI

services employ a per-minute service rate, making it more cost-efficient for shorter, less predictable consultations [106]. The per-minute service rate is flexible according to the volume of service usage; that is, the service rate typically decreases as the volume of service increases [66]. While there is some evidence that remote interpreter consultations take longer than face-to-face interpreter consultations [100], results are inconsistent. A quasi-randomized control study found that OPI consultations were actually shorter compared to face-to-face and video conferencing methods of interpreting [45]. For these and other reasons, untrained or remote interpreters have been proposed to be the only realistic option to overcoming language barriers in primary care settings [16,45].

Face-to-face interpretation is usually preferred to OPI because of its more personal nature [13,45]. In other studies, however, remote interpretation was preferred over ad hoc and other face-to-face interpreting methods [108,109]. In another study comparing face-to-face, video and telephone interpretation services, patients rated all interpretation modalities equally (although each patient was only exposed to one) [45]. According to a systematic review of the literature, no difference was found between face-to-face and remote interpreters in terms of the quality (e.g., the number of errors) of the interpreted encounter [6,87,110]. Patient satisfaction was also rated equally between telephone and video interpretation [45,110].

There are several advantages to using remote instead of face-to-face interpretation services. In addition to providing fast, convenient and affordable access to trained medical interpreters in numerous rare and emerging languages, there are other features that make OPI an attractive alternative; first, remote interpreters can be engaged in a three-way call when trying to reach the LLP person at home, or when the LLP person calls into the clinic. Also, both the patient and the interpreter can remain anonymous to one another. This is beneficial in small language communities or during intimate medical examinations, such as physicals. The ability to select the interpreter's gender is another feature that can make the patient feel more comfortable when discussing sensitive or culturally taboo topics.

While remote interpretation services improve efficiency and accessibility to professional language support [61,107], it is important to acknowledge that there are other facets of communication besides verbal that are important for understanding one another. When using OPI, facial expressions, hand gestures and other non-verbal cues are lost [45]. This, in addition to the service's impersonal nature, may hinder healthcare professionals' ability to build rapport with

their patients. Compared to remote (video) interpretation, face-to-face interpretation was also preferred when trying to understand patient's cultural beliefs [87]. Furthermore, when using remote services, different interpreters are typically used to interpret for the same patient at different times. This would make it difficult for patients to build a trusting relationship with the interpreter, which for some patients is important for feeling comfortable during the medical consultation. This lack of continuity might also affect the quality of the interpreted discussion. It is important to note, however, that according to the 2014 independent evaluation of OPI service integration in Ontario, both patients and healthcare professionals reported improved relationship and rapport building between one another [61].

There are some circumstances when OPI services might not be appropriate, such as for hard of hearing patients, for mental health encounters (e.g., cognitive or capacity assessments), when communicating with children (but is appropriate when communicating with their parents), when teaching patients using visual aids, or when multiple parties are present and engaged (such as during family meetings) (personal communication, Elizabeth Abraham and Grace Eagan).

2.7 The knowledge gap

In many parts of Canada, including Montreal, there is a reported underuse of PI services in health settings [2,13,14,17,18,66,67]. So far, the literature has focused on the importance of and barriers to providing access to professional language support in medical settings, as well as the risks and consequences of not providing these services. These factors mostly apply to face-to-face interpretation services and within the context of secondary care facilities. With few exceptions [45,100,108,110], language service technologies have not been thoroughly evaluated. More specifically, little work has been done to shed light on the feasibility of using remote (telephone) interpretation services to overcome communication barriers between LLP patients and their care providers in the primary care context. There is a particular void of literature on healthcare professionals' perspectives (opinions and attitudes) about using PI services in their daily practice [8,87]. Therefore, an examination of the factors that impact remote interpretation service usage by primary healthcare professionals is justified.

In Montreal, no systematic record exists of the number of LLP patients served in primary care clinics. Furthermore, face-to-face interpreter usage in Montreal is reported globally, not by care type (e.g., hospital versus walk-in clinics) [105]. This information is critical for estimating

the current need for language support in primary care settings, where and how to target intervention strategies, the potential benefit of these interventions, and how much they would cost.

2.8 Definition of key terms and justification of feasibility measures

According to the Miriam Webster Encyclopedia Britannica Company, *feasible* can be defined as "capable of being used or dealt with successfully: suitable, reasonable, likely." In the context of this study, I am interested in investigating whether the over-the-phone interpretation service (the *intervention* [111]) is suitable, or likely, to be used successfully as a means of communicating with limited English/French proficient patients in Quebec primary care outpatient settings.

Bowen's review on "*How to design feasibility studies"* was used as the basic framework for evaluating the feasibility of OPI service usage, including the development of the conceptual framework for the pre-and post-OPI study surveys (*Appendix G*) [111]. Since OPI services have already been shown to be effective and efficacious in other medical settings, the question was whether or not this service was feasible to use in a novel context (i.e., Quebec primary care clinics)?

Patterns of healthcare professionals' OPI usage was the main outcome of interest to measure feasibility. Based on Bowen's guide and a review of the literature, we also identified factors that were likely to impact service usage. These include healthcare professionals' 1) *acceptability (attitudes and opinions) of OPI services, 2) demand for OPI services, and 3) healthcare professionals' personal characteristics.* The following sections will discuss each focus and the measures used to define them.

2.8.1 Acceptability of OPI services

Acceptability refers to the extent to which participating healthcare professionals consider OPI services as "suitable, satisfying, or attractive" [111]. Hudelson *et al.* (2010) recognized that the delivery of culturally competent care to immigrant (or LLP) patients is not solely based on the knowledge and skills that healthcare professionals acquire in formal teaching and learning environments, but is also dependent on their *attitudes* and *opinions* towards caring for such patients [96]. By extension, healthcare professionals' attitudes and opinions about their

experience of using OPI services and caring for LLP patients are likely to correlate with the extent to which they accommodate (or are willing to accommodate) diverse patients, and their likelihood of using OPI services in their daily practice.

***Opinions of OPI services*:** opinion can be defined as "a belief, judgment, or way of thinking about something: what someone thinks about a particular thing" [112]. For this study, *opinions* were operationalized based on healthcare professionals' perceptions of, 1) the quality of OPI services, and 2) the impact OPI services have on the quality of care delivery to their LLP patients.

***Attitudes towards OPI services**:* attitude can be defined as "the way you think and feel about…something: a feeling or way of thinking that affects a person's behavior" [112]. For this study, *attitudes* were operationalized based on healthcare professionals', 1) comfort accessing and working with a PI, 2) comfort providing care to LLP patients, 3) confidence in professional versus untrained interpreters, 4) satisfaction with the OPI service and their experience of using it, 5) perceived importance of OPI in care delivery, and 6) willingness to use OPI services in the future.

2.8.2 Demand for OPI services

Demand for OPI services is intended to reflect the relevance of language support services in Montreal primary care practices and the extent to which OPI services are likely to be used in the future [111]. For this study, demand will be operationalized based on healthcare professionals' self-reported frequency and volume of LLP patient encounters.

2.8.3 Participants' personal characteristics

The literature suggests that personal characteristics such as age, gender, profession, country of study for medical training, years of experience, language proficiency, and previous training in cross-cultural care and PI use, are associated with the likelihood of engaging PI services (see *Section 2.3.2*).

2.9 Evidence from OPI introduction in Toronto: The Language Services Toronto Program 2010 Pilot Study

In 2010, the University Health Network's (UHN) department of Interpretation and Translation Services launched a three-month over-the-phone interpretation (OPI) pilot project in

24 areas of care. In that time, utilization of OPI services increased across the UHN by 590% when compared to the same period the previous year. From staff surveys, it was revealed that timely access to PIs improved the quality of care, patient safety, patient-centered care, as well as patient and staff satisfaction [61]. In addition, the cost of providing interpretation services were reduced by 25% ($ 25,270) compared to the same period the previous year using face-to-face interpreters. The total number of interpreter encounters increased slightly during the pilot phase, which was attributable to an increase in OPI use and a decrease in face-to-face interpreter use (*Appendix A*). The success of the pilot project led to full implementation of OPI across the organization with centralized funding. UHN negotiated a significant discount with the vendor based on increasing volume. Out of 38 organizations, 10 were community health centers (plus 1 community care access center, 1 family medicine clinic, 21 hospitals, and 5 mental healthcare organizations) (personal communication, Elizabeth Abraham).

Leveraging the successful integration and adoption of OPI at UHN, the Toronto Central Local Health Integration Network (TC LHIN) approached UHN to lead a bulk purchase of OPI for a consortium of healthcare organizations across the regional health authority. The Language Services Toronto (LST) program, sponsored by the TC LHIN, was launched in November 2012 with 30 participating organizations in five regional health authorities. Since then, LST has integrated OPI services into over forty organizations across seven regional health authorities in Ontario.

Enablers of and barriers to OPI service integration in Montreal are likely to be different from those in Ontario hospitals. Prior to the UHN pilot project, OPI services were infrequently used in UHN emergency departments. UHN also had an established language service department with both staff and freelance face-to-face interpreters. In Montreal, OPI technology is relatively unheard of and, as previously mentioned, only a small face-to-face interpreter bank is available for all health, social service and education professionals. Quebec's bilingualism presents an additional complexity to offering language support services. Therefore, specific research must be undertaken to understand the specific factors that might impact the success of OPI use in Montreal primary care systems.

2.10 Conclusion

The integration of language support services into (any) health settings is difficult. It will take more than just increasing healthcare professionals' accessibility to the service, as is demonstrated by the low uptake of service usage during other PI pilot projects [76,77]. Capturing healthcare professionals' perspectives, as well as the gap between OPI demand and use, is necessary for understanding the overall feasibility of using OPI in primary care settings; survey questions are intended to provide insight into the attitudes and opinions of healthcare professionals, and the context of their judgments [77], but cannot provide objective measures of actual service usage (captured by the interpretation service provider). Therefore, an examination of the following research questions is fundamental to understanding *if* and *how* OPI services can be integrated into primary healthcare professionals' daily routine, and thus its' feasibility for use in this context. The results of this study will offer valuable information for future language service integration efforts in regional health authorities and family practice clinics, both in Montreal and across Canada.

Research Questions:

Based on a three-month over-the-phone interpretation (OPI) intervention at two Montreal primary care clinics, the following research questions will be addressed:

1. What is the feasibility of using OPI services in this context as measured by healthcare professionals' service usage and associated costs?
2. What is the demand for and acceptability (opinions and attitudes) of OPI services by primary healthcare professionals, and how are these factors likely to impact their OPI service usage during the study?
3. What is the difference between the number of LLP patients that are served at two Montreal primary care clinics, and the number of times OPI services are actually used by healthcare professionals during LLP patient encounters during the study period?

CHAPTER 3. PREFACE FOR MANUSCRIPT OF ARTICLE

This thesis document includes the text of one article to be submitted for publication to the journal of Patient Education and Counseling (PEC). The authors, listed in order are: Emily Parkinson, Gillian Bartlett, Yvan Leanza, and Ellen Rosenberg. The article presents the methods and results of a primary analysis of data collected by Emily Parkinson as part of an original study on the feasibility of over-the-phone interpretation service use in primary care settings. Dr. Ellen Rosenberg acted as primary thesis supervisor, Dr. Gillian Bartlett as co-supervisor, and Dr. Yvan Leanza as thesis committee member. The research presented in the paper was inspired by the work of the Interpretation and Translation Service, who conducted a similar remote interpretation pilot study at the University Health Network in Toronto, Ontario in 2010. Drs. Rosenberg, Bartlett and Leanza reviewed drafts of the article prior to final submission for publication. Emily Parkinson, Masters candidate, was responsible for determining the research question; establishing appropriate measurement procedures, and designing the study; recruiting subjects; collecting all the data; carrying out the statistical analysis; interpreting, organizing and presenting the results; and writing the manuscript.

Interpretation Service Provider: Two collaborative remote interpretation service providers were used for this project. The call was first directed to the Access Alliance Remote Interpretation Ontario (RIO) Network, a consortium of not-for-profit interpreting agencies. If an interpreter was not available in the requested language, the call was automatically redirected to LanguageLine Solutions®. As the largest remote interpretation service provider, LanguageLine Solutions® employs over 6000 trained and tested professional interpreters (all interpreters have completed the required 40-hour training program and passed a test which qualifies them to take medical calls). The service provider interprets into English, not French. The use of a monolingual service in a bilingual context was justified by the fact no alternative language support services are readily available to primary healthcare professionals.

Conflict of Interest & Ethical Considerations:

This project received funding from several parties: the St. Mary's Hospital Research Centre, Marc Sougavinski of CSSS de la Montagne, as well as from the Family Medicine Graduate Department TAPESTRY grant. The service provider, LanguageLine Solutions®, also donated 1250 minutes, as well as various project materials.

LanguageLine Solutions® provided remote, over-the-phone interpretation services at a significantly reduced rate for the duration of this project. As such, they were not invited to participate or collaborate on any decision-making during this study. The investigators are entirely free to use the study data in any way they see fit, including scientific publications, presentations to government and healthcare institution authorities. All materials produced to report study results will be presented as a study of over-the-phone interpretation services. We will only name LanguageLine Solutions® in the methods section of scientific reports and not at all in presentations to the general public. LanguageLine Solutions® will have access to materials available to the public. Their role and contributions will be made transparent at all times. The only benefit that could accrue to LanguageLine Solutions® would be the creation of demand for their services by persons or organizations that learn about their services from our scientific publications. Ethical approval was obtained from the McGill Research Ethics and Compliance Board, the Centre de Santé et de Services Sociaux de la Montagne, and the St. Mary's Hospital Research Centre.

MANUSCRIPT OF ARTICLE: Original Article Submission

PROFESSIONAL OVER-THE-PHONE INTERPRETATION TO IMPROVE THE QUALITY OF PRIMARY CARE FOR MIGRANTS: A FEASIBILITY STUDY

Emily Parkinson, Dr. Gillian Bartlett, Dr. Yvan Leanza, Dr. Ellen Rosenberg

Submitted to

The Journal of Patient Education & Counseling

Key words: primary care, language barrier, interpretation, health equity, care quality

ABSTRACT

Objective: to investigate the feasibility of over-the-phone interpretation (OPI) service use in primary care clinics by measuring healthcare professionals' service usage during a three-month OPI integration, and their perception of the factors that are likely to impact service usage.

Methods: For this prospective cohort study, all 117 healthcare professionals (staff physicians, residents, nurses, and nurse practitioners) at two Montreal primary care clinics were given unlimited access to OPI services for three months and asked to fill out two self-administered questionnaires before and after the OPI integration. Survey data was supplemented with a count of the number of limited language (English/French) proficient patients and actual service usage data during the three-month period.

Results: OPI service usage at the two primary care clinics differed; while OPI usage was consistent at clinic 2, it decreased significantly at clinic 1. As expected, a significant gap exists between the number of limited language (English/French) proficient (LLP) patients and the frequency of OPI usage. At both clinics, participants had positive attitudes towards and opinions of the OPI service but, for various reasons, many had difficulty integrating the service into their daily routine.

Conclusion: Based on the patterns of service usage at each clinic, and an evaluation of the factors that are likely to impact service usage, OPI service use is feasible in Montreal primary care clinics, but not necessarily under the given circumstance.

Practice Implications: Uptake of OPI services in Montreal primary care clinics would improve by providing more in-depth training for healthcare professionals in PI use, systematically identifying LLP patients, and by providing OPI services in both of Canada's official languages.

HIGHLIGHTS

- Trained interpreters reduce language-based disparities in quality of care and health outcomes
- Telephone interpreters provide fast, convenient and affordable access to trained interpreters
- Telephone interpretation service usage in Montreal primary care varied by clinic
- Telephone interpreter use is feasible in Montreal primary care, but not under the given circumstance
- More training and a bilingual interpreter service is necessary for improved uptake

1. INTRODUCTION

One-fifth of the Canadian population (6.6 million people) speaks a language other than French or English at home. For approximately 30% of these individuals (2.15 million people), this is not in combination with either official language [1]. As global migration continues to increase, Canada's healthcare system faces new challenges in providing quality care to the growing number of people with limited language (English/ French) proficiency (LLP). Language barriers are directly associated with health disparities between LLP and English/French proficient patients [2], principally in the areas of quality and access to care [2–4]. In order to bridge a language barrier, one involves an interpreter (a person who conveys the content spoken by one participant into the language of the other participant and vice versa). The provision of trained (professional) interpreters during medical encounters has been shown to improve the quality of care and health outcomes of LLP patients [2,5–10]. Despite the growing number of LLP patients, and evidence of the costs of care inequities [2], professional interpreters (PIs) are rarely engaged in primary care settings [13,14]. Therefore, a chronic problem exists for primary healthcare professionals to deliver quality care to their patients with limited English/French skills.

Effective communication facilitates freedom of expression [11] as well as mutual and informed decision making [17], all of which are essential for good health results and for establishing a trusting patient-provider partnership [16,18–20]. The vital role of primary healthcare in keeping populations healthy makes effective communication in primary care particularly important [16,22,23]. Because of their lower access to preventive services [24–27], vulnerable populations, such as LLP immigrants and refugees, have poorer management of chronic illnesses and higher emergency department utilization rates compared to those who are proficient in the dominant language(s) [28–32]. Ensuring equal access to quality primary healthcare is thus important for reducing health disparities and for creating a sustainable health system [22,23].

Language discordance between patients and their care provider is a major contributor to health disparities [2,8,33,34]. Compared to the language proficient population, these patients have been shown to be less satisfied with the care they receive [35–37], have poorer access to and quality of care, and worse health outcomes as a result [2,5–10]. Failure to provide language-

appropriate oral and written procedural information also makes deficient consent more common among LLP patients [2,14,49,50].

Several barriers to language support have been identified. Perceived costs and budget constraints have resulted in limited allocation of resources towards the integration of language services into many health systems [2,13,14,39,43,51,66]. However, a lack of healthcare professional training in health equity, cultural responsiveness, and the proper use of PIs is also a deterrent to best practices for serving diverse populations [16,17,53,83,86–89]. Other barriers include a lack of institutional policy or guidelines on how, why and when to engage a PI [17], time constraints [74,83], the unpredictability of care delivery (especially in primary or emergency care settings) [14,16], and/or the convenience of other interpreting methods (e.g., patient's bilingual family and friends) [2,14,17,18,93]. Instead, physicians have reported relying on untrained interpreters or their own limited language skills to communicate with their LLP patients [14,18,52].

The short- and long-term benefits of language service integration far outweigh the costs (≤1.5% of healthcare spending) [2,5,7,39,42,43,49,51,67,82]. Unnecessary tests and procedures [39–43], longer emergency department stays [28,41], inefficient use of staff time [73], as well as liability costs for adverse events and negative patient outcomes [2,5] are all to be considered when weighing the risks of not providing such services. Evidence of the risks and consequences of using untrained interpreters instead of PIs is also extensive and well documented [6,38,64,65].

In primary care, where in-person intervention is less practical than in institutions [16], over-the-phone interpretation (OPI) might provide a feasible solution to overcoming communication barriers. OPI services provide 24–hour access to PIs in over 180 languages, with an average connection time of less than 60 seconds. By using the speakerphone on standard examination room telephones, remote interpreters can be engaged at any time to interpret conversations between patients and their care providers in the patient's preferred language. Various studies comparing types of interpreting modalities (face-to-face, telephone and video) found no difference in terms of quality (e.g., number of errors) and patient satisfaction [6,45,110].

With few exceptions [45,100,108,110], language service technologies have not been thoroughly evaluated, especially in primary care settings. In many instances, OPI is more time-efficient and cost-effective than face-to-face interpreting methods. Therefore, the feasibility of

using this service to overcome language barriers in the primary care context is worthy of investigation. Furthermore, no systematic record exists of the number of LLP patients served in Montreal primary care clinics, or how often (face-to-face) interpreters are used. This information is critical for estimating the current need for language support in Montreal primary care settings, where and how to target intervention strategies, the potential benefit of these interventions, and how much they would cost. Based on a three-month OPI intervention at two Montreal primary care clinics, the following research questions will be addressed:

1. What is the feasibility of using OPI services in this context as measured by healthcare professionals' service usage and associated costs?
2. What is the demand for and acceptability (opinions and attitudes) of OPI services by primary healthcare professionals, and how are these factors likely to impact their OPI service usage during the study?
3. What is the difference between the number of LLP patients that are served at two Montreal primary care clinics, and the number of times OPI services are actually used by healthcare professionals during LLP patient encounters during the study period?

2. MATERIALS & METHODS

2.1 Study design and setting

This prospective cohort study surveyed healthcare professionals at two Montreal primary care clinics, before and after a three-month over-the-phone (OPI) integration phase. Of the two clinics, only one site occasionally engaged face-to-face professional interpreters (PIs) from the Banque interrégionale d'interprètes (Interpreter Bank); however, there is no record of how frequently this occurred [105].

2.2 Participants

All 117 primary healthcare professionals (staff physicians, residents, nurses, and nurse practitioners) at two primary care clinics were invited to participate in the study. I distributed emails and flyers advertising 30-minute OPI information and training tutorials to all healthcare professionals' office mailboxes. Healthcare professionals were also approached in-person during resident team meetings.

There are 93 healthcare professionals (36 physicians, 49 residents, 8 nurses) from Clinic 1 and 24 healthcare professionals (10 physicians, 2 residents, 9 nurses, 3 nurse practitioners) from Clinic 2. The OPI service provider made usage data available for all 117 healthcare professionals.

2.3 Equipment and Services

Standard examination room telephones with speaker function were used to access the OPI service (mobile devices could also be used). With the patient and healthcare professional both present, a PI would be called to interpret in the patient's preferred language. Unique care group identification numbers were issued in order to distinguish between care groups' OPI use. Stickers with easy OPI access instructions (in English only) were placed on all examination room and reception telephones. Posters (in multiple languages) were hung in the waiting rooms to notify patients that OPI services were available at no cost to them.

Information Packages: The *Telephone Interpretation Information Packages* (in French and English) were distributed to all healthcare professionals, regardless of whether or not they consented to participate. Packages contained OPI access instructions, tools for using OPI services (e.g., language identification charts for identifying the patient's preferred language), tips for

working effectively with remote interpreters, guidelines for when to access remote interpreters, a list of frequently asked questions with answers, and my contact information (*Appendix B*). LanguageLine Solutions® developed the language identification cards and badge tags with easy service access instructions. The Language Services Toronto program developed all other materials, which I then adapted for this project.

2.4 Questionnaire

2.4.1 Study preparation

We reviewed several studies that addressed immigrant (or limited language proficient (LLP)) patient care and/or professional interpretation service usage [17,18,61,83,96]; however, none explicitly evaluated the feasibility of using remote interpretation services from the primary healthcare professionals' perspective. Therefore, relevant questions were taken directly from surveys or otherwise adapted by the research team to fit this study's research questions and objective. I consulted survey development expert, Dr. Jeannie Haggerty, my co-supervisor and director of the graduate program of Family Medicine, Dr. Gillian Bartlett, as well as Ms. Alina Dyachenko, a statistician at the St. Mary's Hospital Research Center. The information and training tutorials were based on Language Services Toronto's "Over-the-phone Interpretation Services Train-the-Trainer Session." I modified the tutorials for this project, in collaboration with the Language Service Toronto project lead, Ms. Elizabeth Abraham.

2.4.2 Cognitive interviewing for survey development

To reduce survey measurement error, cognitive interviewing was performed with healthcare professionals (not participating in the study). Saturation was reached after five interviews, at which point no new or relevant information was being collected. For the last interview, the participant was asked to fill out each questionnaire in real time to ensure that it did not take more than 5-10 minutes to complete.

Cognitive interviewing focuses on the content of the questionnaire, from the wording of the questions and instructions, to the format and layout of the survey. The purpose was to reduce survey measurement error by ensuring that the respondent understood the questions correctly and that they were able to navigate through the survey with minimal effort. Each cognitive interview was based on the four stages of the response process, as defined by Gordon B. Willis [113].

These are: 1) Comprehension (understanding the question), 2) Retrieval (recalling relevant information), 3) Judgment or Decision (selecting the most relevant information), and 4) Response (matching judgment to response options). Two cognitive testing methods were employed during the interviews: *thinking out loud* and *selective probing*. During *thinking out loud*, respondents were encouraged to verbalize their thought process as they answered the survey questions. During *selective probing*, respondents were asked specific questions that addressed each of the four stages of the response process, such as "can you repeat the question in your own words?, why do you agree or disagree with that statement?", or "is an appropriate response option listed?"

The final *pre*- and *post*-OPI integration surveys were written in English and consisted of 12 questions, each taking no more than 5-10 minutes to complete (*Appendix E*). Acceptability (opinions and attitudes) of OPI services was operationalized based on healthcare professionals', 1) perceived quality of the OPI service, 2) perceived impact of OPI services on the quality of care delivery to LLP patients, 3) comfort towards accessing and working with PIs, 4) comfort providing care to LLP patients, 5) confidence in professional versus untrained interpreters, 6) satisfaction with OPI services and their experience of using it, 7) perceived importance of OPI service in care delivery to LLP patients, and 9) willingness to use OPI services in the future. Demand for OPI services was operationalized based on healthcare professionals' self-reported frequency and volume of LLP patient encounters. Refer to *Table 1* (p.41) for healthcare professionals' personal characteristics.

Surveys and supplemental materials were translated to French and back translated to English for accuracy. A unique ID number was assigned to all participants in order to anonymously track their responses before and after the OPI integration.

2.5 Study Procedures

2.5.1 Information and training on using over-the-phone interpretation services

All healthcare professionals at each clinic site were invited to attend a 30-minute training and information tutorial. I provided instruction on how, why and when to access OPI services, as well as best practices for working with PIs in clinical settings. Immediately following the tutorial, those interested in participating were requested to fill out a consent form and the pre-OPI integration survey (survey 1 of 2). See *Appendix C* for consent details and *Appendix D* for the

tutorial agenda and training objectives. *Note:* healthcare professionals were also recruited individually during team meetings and regular clinic hours.

2.5.2 Over-the-phone interpretation integration (3 months)

Prior to the project launch date, all healthcare professionals were given a '*Telephone Interpretation Information Package'* in both French and English (see *Appendix B*). All primary healthcare professionals were then given unlimited, on-demand access to OPI services for three months (93 days). Those who consented to participate were requested to: 1) complete a pre- and post-OPI integration survey, 2) incorporate the service into their daily routine whenever appropriate (i.e., with any patient who spoke English/French less than "very well"), and 3) identify (from patient lists) which of their patients over the past three months had difficulty communicating in English/French. Survey data was supplemented with OPI usage information routinely collected by the OPI service provider for each clinic. During the study, all healthcare professionals were given monthly feedback reports on the clinics' OPI service usage.

2.6 Statistical analysis

Survey data was analyzed using both descriptive and inferential statistical methods. Due to the limited sample size and unequal distribution of participants between clinics, survey data from the two clinics was mostly pooled. Data was primarily reported as frequencies and means. Group responses were compared (within and between clinics) using chi-square tests and ANOVAs, while McNemar and paired t-tests were used to evaluate changes in participants' strategies for communicating with LLP patients and their change in attitudes, respectively. Results were considered significant at $p \leq 0.05$. Service usage data was based on monthly reports from the service provider. Information included clinic, date, care group, language requested, call duration and cost.

With a sample size of 87 consenting healthcare professionals and a confidence level of $\alpha=0.05$, this study had 80% power to detect a 7.4% increase of OPI service usage for LLP patients from the current estimate of 0.01%* (95% confidence interval: 6% to 10%). Data analysis was performed using SAS software, version 9.3.

(*) *Note: for computational purposes, the initial percentage of PI use must be greater than 0%.*

3. RESULTS

3.1 Healthcare professionals' survey response rates and personal characteristics

Of the 117 healthcare professionals at both clinics, 87 (74%) consented to participate and 48 (41% of all healthcare professionals) completed both surveys (56% from Clinic 1 (C1) and 46% from Clinic 2 (C2)).

The average age of healthcare professionals was 36.6 years (SD: 12.6, range: 25-68), the majority (78.7%) were female, either a staff physician (36.1%) or resident (47.5%), and (91.8%) studied at a Canadian medical school. The average number of years of experience was 5.9 years (SD: 10.6, Range: 0-40), where residents were counted as having zero years of experience. Most participants (88.5%) spoke English and/or French growing up, but several (16.4%) spoke a third (or fourth) language, or neither French nor English (9.8%) growing up. Based on survey responses, 37.7% of healthcare professionals claim some level of proficiency in a language other than French or English, and 13.1% claim proficiency in two or more languages (*Table 1*). Training experience was similar in both clinics, as was participants' gender, age and country of study. Years of experience categories (Fisher's: $p=3.2*10^{-5}$) and the distribution of care groups (Fisher's: $p=9.8*10^{-6}$) were significantly different in the two clinics (but mean years of experience were similar).

Healthcare professionals were more likely to have received cross-cultural training (through work training (27.9%), professional development workshops (26.0%), or medical (or other professional) school (48.1%)) than training to use PI services. Participants received an average of one cross-cultural training course (SD=1.2, range=0-6), and zero training courses for working with PIs (SD=0.6, range=0-3) during their education and/or professional careers.

3.2 Feasibility of using over-the-phone interpretation services as measured by healthcare professionals' service usage and associated costs

All 117 (participating and non-participating) healthcare professionals at the 2 clinics used over-the-phone interpretation (OPI) services 135 times during the study months. The total cost of providing unlimited OPI to all healthcare professionals at two Montreal primary care clinics for three months was $2,661.40. Between the two clinics, 21 languages were requested during the three month study.

3.2.1 OPI usage over time

Despite having significantly fewer healthcare professionals ($p<0.0001$), C2 had higher OPI services usage (in terms of total number of calls and total interpreted consultation time) than C1. At C1, the total number of calls significantly decreased from month 1 to month 3 ($p=0.003$). No difference was found in the total number of calls per month at C2, but the number of calls made by each care group was significantly different between months 1, 2 and 3 (Fisher's: $p=2.3*10^{-8}$) *(Fig. 1 & 2)*. With the exception of using family members to interpret ($p=0.02$), the frequency of healthcare professionals who reported using alternative communication strategies "often" (weekly versus monthly) did not decrease during the three-month study.

A marginally significant increase was observed between monthly mean call durations at C1 ($p=0.05$), but not at C2. No difference was found in mean call duration between either clinic (C1: 14.7 minutes, C2: 14.5 minutes), but a significant difference was observed in residents' average monthly call duration at C1 ($p=0.02$) (*Table 2*).

3.3 Percentage of visits with limited language proficient patients for which OPI services were used by healthcare professionals

Shortly after the study, 40 of the 93 healthcare professionals at C1 identified all their limited language proficient (LLP) patients on their appointment lists for the 3 study months. All 93 healthcare professionals used OPI 59 times. Given that we have no reason to believe that participants' rate of OPI use was different from the rate of non-participants, we estimate that these 40 participants used OPI services 25 times (40% of the total calls at C1). Therefore, of the 312 LLP patients seen, those 40 participants used OPI 8% of the time it was appropriate. At C2, 3,233 patients were seen during the three month OPI study. We were unable to obtain a measure of the number of LLP patient visits during that time; however, C2 is located in a neighborhood of recent immigrants, where 75% of the adult population are allophones [104]. From this, it was estimated that OPI services was used for 3% of eligible patients.

3.4 Demand for over-the-phone interpretation services

At both clinics combined, 27 (44.3%) of healthcare professionals reported having 1-4 LLP patient encounters per month, 18 (29.5%) reported having 1-4 LLP encounters per week, and 16 (26.2%) reported having 5 or more encounters per week. A significant difference was

found between the proportions of LLP patient encounters at each clinic; healthcare professionals at C2 were more likely to report more frequent (weekly versus monthly) LLP patient encounters than at C1 (Fisher's: p = 1.9*10-7) (*Fig. 3).* The estimated percentage of visits with LLP patients was 6.5% at C1 and 75% at C2.

3.5 Acceptability of over-the-phone interpretation services

3.5.1 Opinions of OPI services

Participating healthcare professionals' who used the service rated the quality of OPI highly on convenience, reliability, ease of use, language proficiency and professionalism of the interpreters, and the interpreters' overall ability to facilitate the conversation (see *Table 3).*

Of the participants who used the service, the majority perceived OPI services as having a positive impact on (either improved or significantly improved) LLP healthcare delivery in terms of their: confidence in diagnosis (79.2%), relationship with their patients (81.4%), patients' disclosure of information (81.4%), patients' privacy (52.0%), patients' autonomy (76.0%), patients' comfort level (80.8%), patients' engagement (88.0%), patients' adherence to/understanding of information provided (92.6%), patients' satisfaction with the care received (87.5%), and overall quality of care provided (88.9%). The remaining participants perceived no change in these aspects of care delivery, and only one perceived it to compromise patient privacy (*Fig. 4*).

3.5.2 Attitudes towards OPI services

A significant increase was observed in healthcare professionals' comfort accessing PIs (on a ten-point scale, mean difference=2.5, p=0.0001), comfort working with PIs (mean difference=1.4, p=0.008), and comfort providing healthcare to LLP patients (mean difference=0.95, p=0.007) (*Table 4*). When examined independently, this significant increase was only observed in C1. That is, participants' comfort accessing (p=0.0004) and working with (p=0.02) a PI, and comfort in providing care to LLP patients (p=0.008) significantly improved in C1 during the study to match the *initial* average ratings of C2 (*Fig. 5*).

The majority of the participants who used the service were satisfied (either satisfied or very satisfied) with the availability of interpreters (92.9%), the quality of interpretation (96.4%), the wait time to connect to an interpreter (82.1%), the technology and equipment available

(86.2%), the reference materials provided (85.7%), and their overall experience of using the service (90.0%). The remaining participants were neither satisfied nor dissatisfied, and a small percentage (3.6%) were dissatisfied with the wait times and availability of interpreters. When asked to rate the importance of OPI services in the quality of care delivery to LLP patients on a ten-point scale (with 1="not at all" and 10="extremely"), the average rating was 8.2 (SD=1.7). Moreover, when asked to rate their willingness to use OPI services in the future (with 1="not at all" and 10="definitely"), the average rating was 8.2 (SD=2.0) (*Table 3)*.

3.6 Enablers of and barriers to over-the-phone interpretation use

The most common factors that were perceived to facilitate the use of OPI services were unlimited access to the service (67.4%), the pre-OPI integration information and training tutorial (49.0%), and the convenience and reliability of the service (46.9%). A smaller percentage (22.5%) perceived support from superiors/colleagues as an enabling factor.

When asked if they used OPI services every time they needed, only 19% of participants responded "yes." The most commonly perceived barriers to the use of OPI services were time constraints (42.9%), the convenience of other methods (e.g., family or friends to interpret) (30.6%), healthcare professionals forgetting to use the service (22.5%), or family/friends' preference to interpret for the patient (20.4%). See *Appendix F* for participants' written comments.

4. DISCUSSION, CONCLUSION & PRACTICAL IMPLICATIONS

4.1 Discussion

The aim of this study was to investigate the feasibility of over-the-phone interpretation (OPI) use in Montreal primary care clinics by measuring healthcare professionals' OPI service usage during a three-month study, and by evaluating the factors that were likely to impact service use in this context. A secondary aim was to estimate the gap between the demand for OPI services (i.e., the number of limited language proficient (LLP) patient visits) and actual service use during the study months.

Despite Clinic 2 (C2) having fewer healthcare professionals and patient visits than Clinic 1 (C1), OPI usage was higher in terms of total number of calls and total interpreted consultation time. Based on the number of identified LLP patient visits at C1, OPI was used for only 8% of eligible patients. This low percentage might be explained, in part, by the fact that one call was sometimes made for multiple LLP patients during family consultations; however, more likely is that the number of LLP patient visits was underestimated and the gap between OPI demand and use is actually wider than was reported [91]. From survey and demographic language statistics [104], the patient population that C2 is mandated to serve is more diverse than at C1 (not mandated to service a particular district). Though likely an overestimate, the prevalence of LLP patients was approximately 11 times higher in C2 than C1, and OPI services were used for only 3% of eligible patients. Therefore, this discrepancy in OPI usage between clinics is at least partially in response to a higher demand for the service at C2. The diversity of their patient population and their (limited) previous experience of engaging face-to-face professional interpreters (PIs) might also account for C2's higher pre-OPI integration ratings in their comfort accessing and working with PIs, and in caring for LLP patients.

Acceptability of OPI services, as measured by healthcare professionals' opinions of and attitudes towards OPI services, was high. Participants who used the service had an overall positive experience and felt that it positively impacted the quality of care delivery to their LLP patients. During the study, C1 participants (with no prior experience of using PI services) became as comfortable as C2 in accessing and working with PIs, and in caring for LLP patients. Since there was no control group (a clinic without OPI intervention), it is uncertain whether the pre-OPI

integration training and/or experience of having unlimited access to OPI services was responsible for this change.

Indeed, healthcare professionals at both clinics reported having higher confidence in the knowledge and expertise of trained (professional) versus untrained interpreters, yet the majority (81%) did not use OPI every time they needed it. Also dissimilar from the Language Services Toronto 2010 OPI pilot study was that participants reported no change in their use of alternative strategies for communicating with LLP patients during the study [61].

Several barriers were identified to explain why so many healthcare professionals did not take advantage of free and unlimited access to OPI services during the study months. Even though healthcare professionals perceived OPI to be accessible and convenient, and the average consultation time (call duration) was not longer than the reported average (20 minutes) [106], time constraints were reported as a significant barrier to OPI use. This might be because LLP consultations continued after the OPI call ended. Also, since many participants had limited training and/or experience in using PI services prior to this study, OPI was likely perceived by many as an "added layer of complication" in their already busy routine (*participant's comment, Appendix G*). Hesitancy to use OPI was especially true when patients were perceived to have *some* command of English/French. In some instances, these patients tried the service but did not want to use it a second time. As is common elsewhere [2,14,17,18,93], the convenience of using untrained interpreters, as well as family/friends' preference to interpret for the patient, was yet another deterrent to engaging OPI. Other healthcare professionals forgot that the service was available. The English-only OPI service also proved to be a barrier for clinicians whose first language is French. These clinicians either had difficulty communicating with the English-speaking interpreters, or were offended that a French equivalent was not available (see participants' written comments in *Appendix G*).

Healthcare professionals had difficulty knowing when it was appropriate to use OPI services. Consistent with the 2010 study on LLP prevalence in Montreal primary care clinics, physicians (and residents) at C1 identified only 6.5% of their patient visits to be with LLP patients [91]. According to that study, healthcare professionals tend to drastically underestimate their patients' language proficiency. Therefore, rather than limited accessibility being the major barrier to PI use (as was reported in previous studies) [17,67,93], an inability to identify their LLP patients, and thus an uncertainty of when to use the OPI services, was a more relevant

barrier to PI engagement in this context. Since healthcare professionals at C2 serve a more diverse patient population, they may have been more competent at identifying their LLP patients, and used OPI services more often as a result.

Notable differences exist between Toronto and Montreal's health system environments that might account for OPI's greater success during Toronto's 2010 pilot study (*Section 2.9*). In Toronto, OPI integration was institution wide, and special portable equipment (IPOP: interpreter-phone-on-pole) was used to engage remote interpreters. In Montreal, OPI was only integrated into the family medicine units of independent primary care clinics, and the quality of the examination room speakerphones varied. Healthcare professionals' previous experience of using PIs, the contributions of dedicated health equity experts, as well as financial and moral support from local and regional health authorities makes Toronto atypical of more 'naïve' (less experienced or equipped) healthcare systems. As such, the limited (or slow) uptake of OPI that was observed in Montreal primary care clinics may better reflect what is to be expected in other (Canadian or international) health systems that are less prepared for OPI service integration.

This project was limited by the fact that OPI services were integrated into only two primary care clinics, and for only three months. In fact, several healthcare professionals commented that they could not properly evaluate the service as they were either away or that none of their patients with language barriers were booked during that time. As a result, many of the participants responded "not applicable" to several of the survey questions. Another limitation was our inability to accurately assess the demand for OPI services; the number of LLP patients were estimated based on a small sample of patient lists at only one of the two clinics (neighbourhood language statistics were used to estimate the approximate number of LLP patients at C2). Furthermore, LLP patients were identified by their care providers, which has been shown to be less accurate than self-reported language proficiency measures [91,114]. Repeated visits by the same patients were detected by hand which may have led to further underreporting of LLP patient visits. Because healthcare professionals were asked to identify their LLP patients from a list of patients they had seen over the past three months, recall bias was also of concern. A similar issue of subjectivity was raised by the fact that survey data was self-reported. Due to social bias, participants may have been more or less likely to report certain attitudes, opinions or behaviors. In response to this concern, the surveys were made anonymous. This study would have benefited from a qualitative component, which would have offered a more in-depth

understanding of service usage and the factors that impacted it. In order to match personal characteristics to service usage, one could request that the service provider collect healthcare professionals' full name; however, this would compromise participants' anonymity.

This project's study design, and features of the service itself, offer several advantages towards language service integration. By providing training and information tutorials, participating healthcare professionals are likely to be more aware of language-based disparities in care, and more motivated and equipped to overcome them in their practice. Furthermore, this project provides an explicit training agenda, guidelines for how and when to use OPI services, as well as directions for successfully launching OPI services. Demonstrating the gap between the number of LLP patient visits and actual service use also reveals the severity of language difficulties in these clinics and the relevance of language support services in this context. Another advantage to this project is that, unlike for face-to-face interpretation services [14], OPI service usage is routinely tracked by the service provider. Details such as language, call duration and the cost of each interpreted encounter provide objective measures of who the primary care system is serving, and if and how their needs can be better accommodated. This information is not only essential to language service integration efforts, but is fundamental to achieving higher standards of health equity in any health system.

4.2 Conclusion

This study was the first trial and evaluation of over-the-phone interpretation (OPI) services in Quebec outpatient settings. Based on this study's findings, OPI has the potential to be used in Montreal primary care clinics, but is not necessarily feasible under the given circumstance. Compared to the number of identified LLP patient visits, OPI usage was low. Despite the general lack of training and experience of participants in the use of PI services, OPI uptake was still higher than what was reported in previous professional interpretation integration studies [76,77]. Healthcare professionals' positive attitudes towards and opinions of OPI services, the verified need for OPI in this context, and the minimal cost of providing unlimited access to OPI, are all arguments in favor of using OPI services in Montreal primary care settings. Still, for various reasons, many healthcare professionals did not use (or have the opportunity to use) OPI services during the study and were therefore unable to properly evaluate the service. As such, results of this study should be used to detect patterns and trends, rather than draw solid

conclusions. Also, this study may have limited external validity, especially in areas with less linguistic diversity.

4.3 Practice Implications

This study has implications for successfully integrating OPI services into primary care clinics. Pre-OPI integration training was perceived to enable service usage, therefore mandatory training of healthcare professionals on using OPI would likely improve service uptake. The routine collection of language data (as is done in other Canadian institutions) would assist healthcare professionals by eliminating the uncertainty and discomfort of deciding when OPI should be used. Also, if there is to be any chance of long-term integration in the province of Quebec, OPI needs to be offered in French, Quebec's official language. Finally, institutions piloting OPI would benefit from a longer trial phase, especially if healthcare professionals lack prior training and/or experience in engaging PIs. *Note: OPI services was extended to a third clinic, and all three sites will have unlimited access to the service until December 2015.*

TABLES

Table 1: Participating healthcare professionals' personal characteristics *(n=61)*

Characteristics	n	%	Characteristics	n	%
Age *(n=57)*			**First language** *(n=60)*		
≤ 29 years	24	42.1	English and/or French	54	88.5
30-44 years	23	40.4	English/French + other language(s)	10	16.4
45-59 years	3	5.3	Not English/French	6	9.8
≥ 60 year	7	12.3			
Gender			**Other languages:**		
Male	13	21.3	Spanish	3	4.8
Female	48	78.7	Cantonese	2	3.2
			Russian	2	3.2
Position/Profession *(n=60)*			Arabic	1	1.6
Staff physician	22	36.1	Creole	1	1.6
Resident physician	29	47.5	Hindi	1	1.6
Nurse (and student nurse)	5	8.2	Japanese	1	1.6
Nurse practitioner	3	4.9	Lithuanian	1	1.6
			Mandarin	1	1.6
			Romanian	1	1.6
Country of study			Vietnamese	1	1.6
Canada	56	91.8			
Outside Canada	5	8.2			
			Proficiency in other language(s)		
Years of experience			None	30	49.2
Resident/Student nurse	29	47.5	1 language (besides English/French)	23	37.7
≤ 4 years	15	24.6	≥2 languages (besides English/French)	8	13.1
5-9 years	4	6.6			
10-29 years	8	13.1			
≥ 30 years	5	8.2			

Table 2: Call details for Clinic 1 and 2, as reported by the service provider

		MONTH 1	MONTH 2	MONTH 3	TOTAL
Calls per care group at Clinic 1	Staff *(n=36)*	18	7	4	29
	Residents *(n=49)*	9	9	7	25
	Nurses *(n=8)*	0	2	0	2
	Clerical staff	2	0	0	2
	Unknown	1	0	0	1
	Total calls	**30 calls**	**18 calls**	**11 calls**	**59 calls**
	Average call duration	**12.7 minutes**	**10.7 minutes**	**20.7 minutes**	**14.7 minutes**
	Total interpreted consultation time	**380 minutes**	**192 minutes**	**228 minutes**	**800 minutes**
Calls per care group at Clinic 2	Staff *(n=10)*	17	5	14	36
	Residents *(n=2)*	0	11	7	18
	Nurses *(n=9)*	6	5	4	15
	NP *(n=3)*	2	3	2	7
	Total calls	**25 calls**	**24 calls**	**27 calls**	**76 calls**
	Average call duration	**14.7 minutes**	**13.9 minutes**	**14.8 minutes**	**14.5 minutes**
	Total interpreted consultation time	**368 minutes**	**333 minutes**	**400 minutes**	**1,101 minutes**

Table 3: Perceived quality and importance of OPI service

	Rating	p-Value	95% CI
Convenience of service *(n=29)*	8.4 (1.6)	0.92	-0.07-1.33
Reliability of service *(n=27)*	8.6 (1.4)	0.72	-0.104-1.48
Overall ease of use of service *(n=28)*	8.1 (1.8)	0.85	-1.45-1.75
Language proficiency of interpreter *(n=27)*	8.5 (1.3)	0.79	-0.1.33-1.03
Professionalism of interpreter *(n=27)*	9.0 (1.2)	0.29	-0.49-1.55
Interpreters' ability to facilitate conversation *(n=28)*	8.5 (1.3)	0.82	-1.03-1.27
Perceived importance of OPI in quality care delivery to LLP patients *(n=45)**	8.2 (1.7)	0.51	-1.6-0.80
Willingness to use OPI services in the future *(n=45)***	8.2 (2.0)	0.53	-0.97-1.86

Rated on Likert scale (from 1 = "poor" to 10 = "excellent")
*Rated on Likert scale (from 1 = "not at all" to 10 = "extremely")**
*Rated on Likert scale (from 1 = "not at all" to 10 = "definitely") ***

Table 4: Healthcare professionals' self-reported comfort and confidence before and after OPI study (clinic 1 and 2 combined)

	Before	*After*			
	Mean (SD)	*Mean (SD)*	*Mean difference*	*95% CI*	*p-Value*
Comfort accessing interpreter *(n paired=38)*	4.6 (2.9)	7.0 (2.8)	2.5 (3.6)	1.31-3.68	0.0001*
Comfort working with interpreter *(n paired=35)*	6.2 (2.5)	7.8 (1.7)	1.4 (2.9)	0.40-2.40	0.0075*
Comfort providing healthcare to LLP patients *(n paired=44)*	5.4 (2.0)	6.6 (2.2)	0.95 (2.2)	0.27-1.64	0.0072*
Confidence in untrained interpreters *(n paired=43)*	4.2 (1.8)	4.4 (1.8)	0.17 (2.1)	-0.47-0.82	0.59
Confidence in trained interpreters *(n paired=35)*	-	8.0 (1.4)	-	-	-

Rated on Likert scale (from 1 = "not at all" to 10 = "Extremely")

Figure 1: Number of OPI calls per month

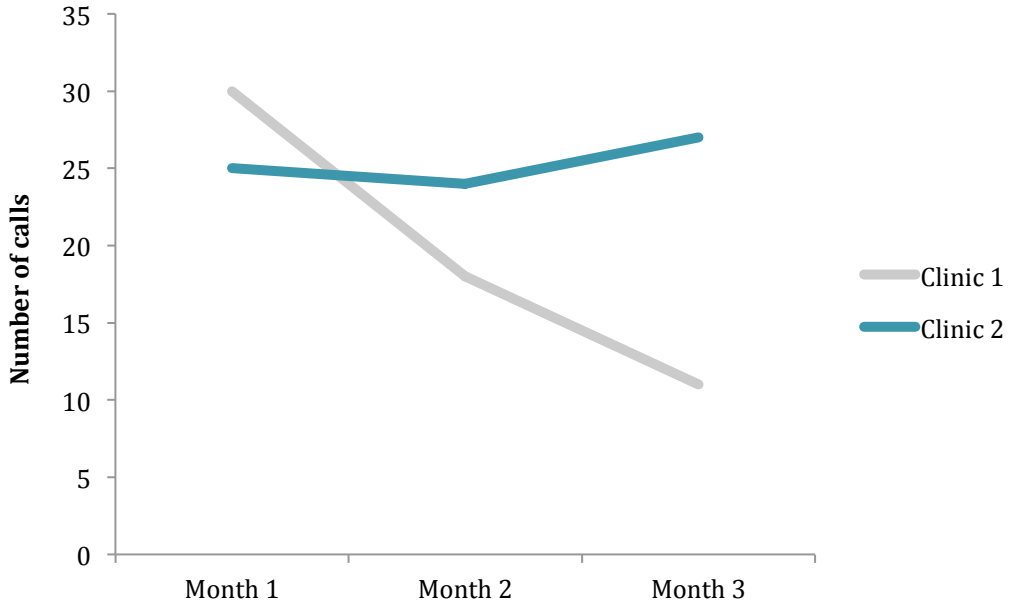


Figure2: Total interpreted consultation time per month

Figure 3: Frequency of LLP patient encounters (percentages proportional to each clinic)

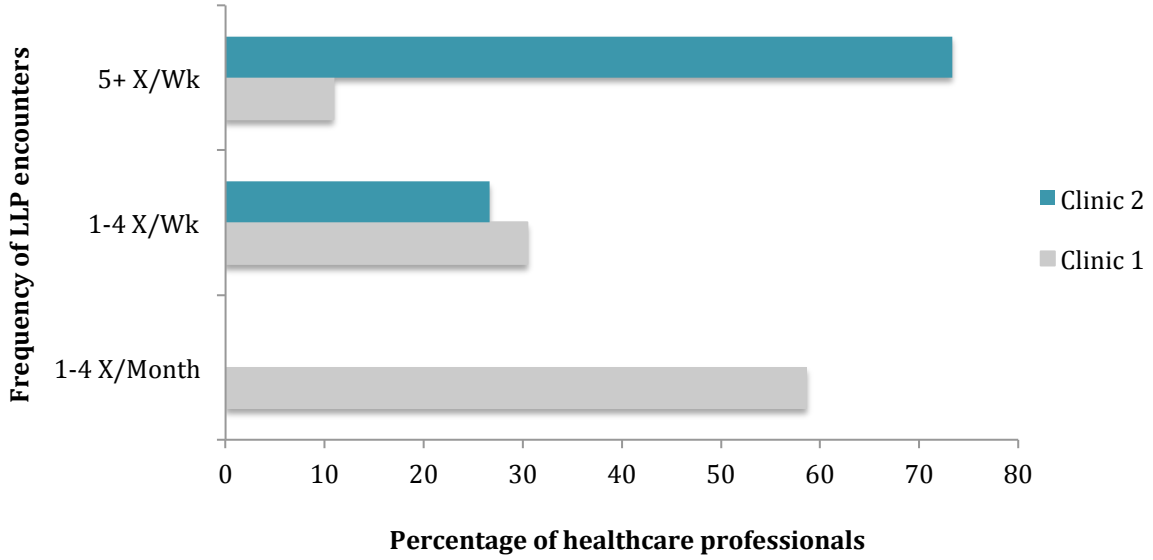


Figure 4: Perceived impact of OPI services on the quality of LLP care delivery

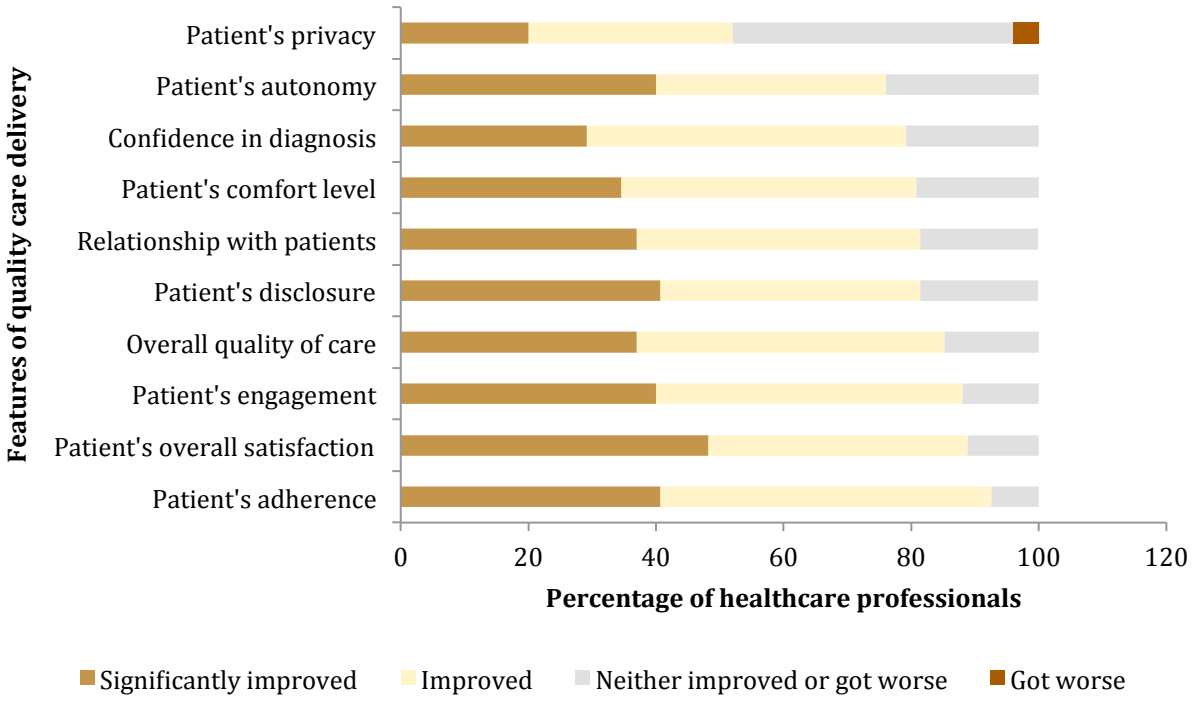
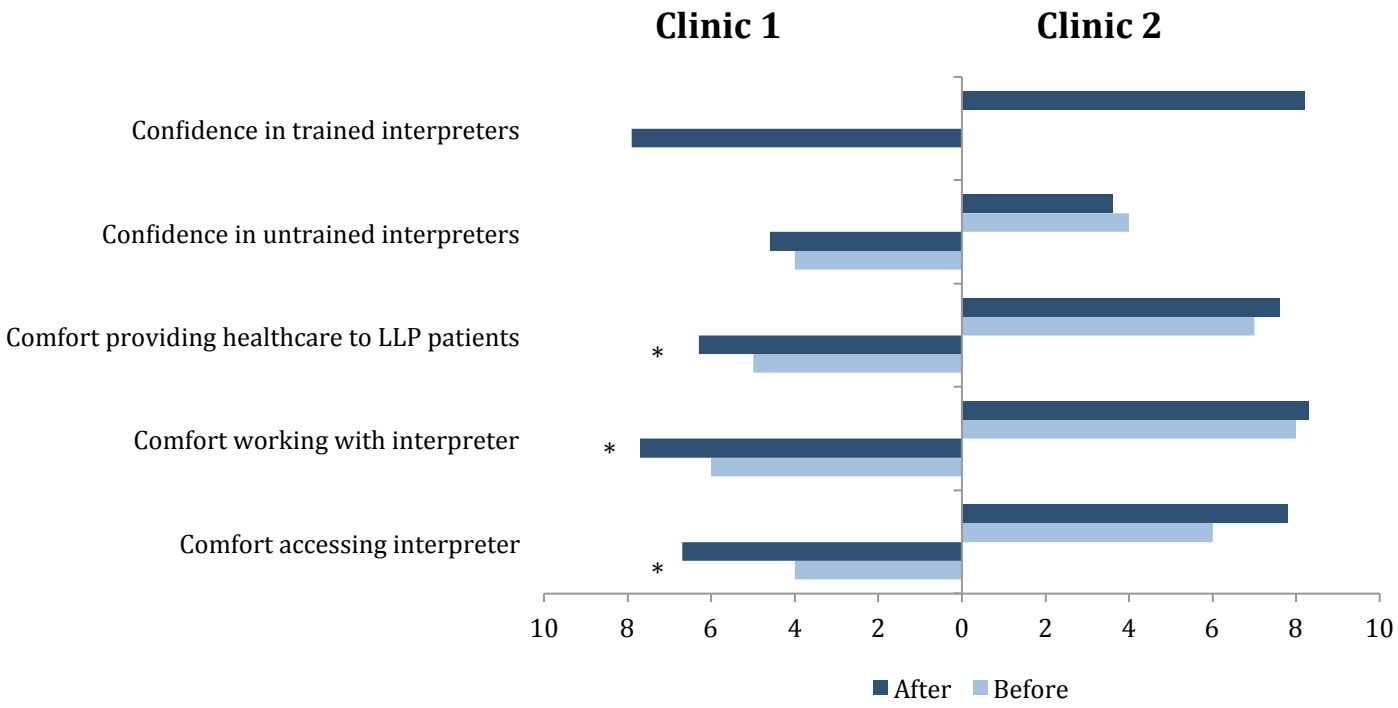


Figure 5: Healthcare professionals' self-reported comfort and confidence before and after OPI study (clinic 1 and 2 separate)



* Indicates significance ($p<0.05$)

CHAPTER 4: CONCLUSION & SUMMARY

Communication barriers are "the most frequent cause of serious adverse events" in medical settings (p.16) [5], yet in many parts of Canada, including Montreal, there is a reported underuse of PI services in healthcare [2,13,14,17,18,66,67]. So far, the literature has focused on the importance of and barriers to providing access to professional language support, as well as the risks and consequences of not providing these services; however, few studies have focused on the use of interpretation technologies in primary care, especially in clinics where no other language services are readily accessible.

This study was the first trial and evaluation of over-the-phone interpretation (OPI) services in Quebec outpatient settings. Based on this study's findings, OPI service has the potential to be used in Montreal primary care clinics, but is not necessarily feasible under the given circumstance. Healthcare professionals that used OPI had positive attitudes towards and opinions of the service; however, many healthcare professionals did not use (or have the opportunity to use) OPI during the study months and were therefore unable to properly evaluate the service. Several barriers were identified that might explain why so many participants did not take advantage of free and unlimited access to OPI. These include perceived time constraints, the convenience of using untrained interpreters, family/friends' preference to interpret for the patient, forgetting to use the service, and the fact the service provider only interprets into English, not French. Based on the gap between OPI demand and use, and the likely discrepancy between the number of identified versus actual LLP patient visits at C1, healthcare professionals also appear to have difficulty knowing when it is appropriate to use OPI services. The effort made by healthcare professionals to use OPI, and thus the feasibility of OPI use, may vary depending on the actual and/or perceived burden that language barriers impose on their practice. Therefore, helping healthcare professionals' to identify their LLP patients might increase service usage. This study may have limited external validity, especially in areas with less linguistic diversity. Results should thus be used to detect patterns and trends within the data rather than draw solid conclusions.

The acceptability of OPI to healthcare professionals, the verified need for PIs in this context, and the minimal cost of providing unlimited access to OPI, are all arguments in favor of using OPI services in Montreal primary care clinics. Also, despite the general lack of training and experience of participants in the use of PI services, OPI uptake was still higher than reported in

previous professional interpretation integration studies [76,77]. Further research (including a qualitative component and a comparative cost analysis of face-to-face versus remote interpreter use in Montreal) based on a longer study is required for a more in-depth evaluation of long-term feasibility. Nonetheless, this study has made several contributions towards future language service integration efforts, especially in the context of healthcare systems with less experience of using professional language support services.

REFERENCES

[1] Statistics Canada [internet]. 2011 Census of population: linguistic characteristics of Canadians. Catalogue no. 98-314-X2011001 [cited 2015 May 1]. Available from: http://www12.statcan.gc.ca/census-recensement/2011/as-sa/98-314-x/98-314-x2011001-eng.pdf

[2] Hyman I. Literature review: Costs of not providing interpretation in health care. Access Alliance: Multicultural Health and Community Services. Toronto (ON). 2009;1-16.

[3] Gardner B. Health equity discussion paper executive summary. Toronto Central LHIN. Toronto (ON). 2008;1-5.

[4] Kinnon D. Canadian research on immigration and health: an overview. Ottawa (ON): Health Canada; 1999. 14 p. Catalogue No.: H21-149/1999E.

[5] Betancourt JR, Green AR, King RR. Improving quality and achieving equity: a guide for hospital leaders. MGH:Institute for Health Policy. Massachusetts (USA). 2008; 1-72.

[6] Karliner LS, Jacobs EA, Chen AH, Mutha S. Do professional interpreters improve clinical care for patients with limited English proficiency? A systematic review of the literature. Health Serv Res 2007;42:727–54. doi:10.1111/j.1475-6773.2006.00629.x.

[7] Flores G. The impact of medical interpreter services on the quality of health care: a systematic review. Med Care Res Rev 2005;62:255–99. doi:10.1177/1077558705275416.

[8] Brach C, Fraser I, Paez K. Crossing the language chasm. Health Aff (Millwood) 2005;24:424–34. doi:10.1377/hlthaff.24.2.424.

[9] Timmins C. The impact of language barriers on the health care of Latinos in the United States: a review of the literature and guidelines for practice. J Midwifery Womens Health 2002;47:80–96. doi:10.1016/S1526-9523(02)00218-0.

[10] [No Author]. Crossing the quality chasm: a new health system for the 21st century. Institute of Medicine Committee on Quality Health Care in America. Washington (DC): National Academies Press; 2001.

[11] Anand R, Watson J. Lifeline: Language access as a human rights issue. [no publisher] 2005:1–23.

[12] Government of Canada. Canada Health Act (Loi canadienne sur la santé). Minist Justice 1985;1-14.

[13] Brisset C, Leanza Y, Rosenberg E, Vissandjée B, Kirmayer LJ, Muckle G, et al. Language barriers in mental health care: a survey of primary care practitioners. J Immigr Minor Health 2013. doi:10.1007/s10903-013-9971-9.

[14] Gadon M, Balch GI, Jacobs E a. Caring for patients with limited English proficiency: the perspectives of small group practitioners. J Gen Intern Med 2007;22:341–6. doi:10.1007/s11606-007-0311-4.

[15] Rider EA, Kurtz S, Slade D, Longmaid III HE, Ho M-J, Pun JK-H, et al. The International charter for human values in healthcare: an interprofessional global collaboration to enhance values and communication in healthcare. Patient Educ Couns 2014;96:273–80. doi:10.1016/j.pec.2014.06.017.

[16] Li S, Pearson D, Escott S. Language barriers within primary care consultations: an increasing challenge needing new solutions. Educ Prim Care 2010;21:385–91.

[17] Malak Z, Rosenberg E, Papic O. Survey of family physicians' perspectives on management of immigrant patients: attitudes, barriers, strategies, and training needs. Patient Educ Couns 2012;86:205–9. doi:10.1016/j.pec.2011.05.015.

[18] Diamond LC, Schenker Y, Curry L, Bradley EH, Fernandez A. Getting by: underuse of interpreters by resident physicians. J Gen Intern Med 2009;24:256–62. doi:10.1007/s11606-008-0875-7.

[19] Leanza Y, Boivin I, Rosenberg E. Interruptions and resistance: a comparison of medical consultations with family and trained interpreters. Soc Sci Med 2010;70:1888–95. doi:10.1016/j.socscimed.2010.02.036.

[20] Bezuidenhout L, Borry P. Examining the role of informal interpretation in medical interviews. J Med Ethics 2009;35:159–62. doi:10.1136/jme.2008.026286.

[21] Manson A. Language concordance as a determinant of patient compliance and emergency room use in patients with asthma. Med Care 1988;26:1119–28.

[22] Starfield B, Primary care: balancing health needs, services, and technology. 1st rev. ed. United Kingdom: Oxford University Press; 1998. 448 p.

[23] Bartlett G. Research training in family medicine: who, what, where and why? Presentation at: the graduate dept. of Family Medicine, McGill University. Montreal (QC). Oct 2013.

[24] Bell TS, Branston LK, Newcombe RG, Barton GR. Interventions to improve uptake of breast screening in inner city Cardiff general practices with ethnic minority lists. Ethn Health 1999;4:277–84. doi:10.1080/13557859998056.

[25] Hu DJ, Covell RM, Jolla L. Health care usage by Hispanic outpatients as a function of primary language. West J Med 1986;144:490-3.

[26] Weinick RM, Krauss NA. Racial/ethnic differences in children's access to care. Am J Public Health 2000;90:1771–4.

[27] Woloshin S, Schwartz LM, Katz SJ, Welch HG. Is language a barrier to the use of preventive services? J Gen Intern Med 1997:12:472–7.

[28] John-babtiste A, Naglie G, Tomlinson G, Alibhai SMH, Etchells E, Cheung A. The effect of English language proficiency on length of stay and in-hospital mortality. J Gen Intern Med 2004;19:221–8.

[29] Tocher TM, Larson E. Quality of diabetes care for a comparative study. West J Med 1998;168:504–11.

[30] Martinez EL. For the health care CEO: thinking about language access in health care. Polyglot: Health Through Understanding. 2008;1-14.

[31] Haggerty J, Fortin M, Beaulieu M-D, Hudon C, Loignon C, Préville M, et al. At the interface of community and healthcare systems: a longitudinal cohort study on evolving health and the impact of primary healthcare from the patient's perspective. BMC Health Serv Res 2010;10:1-10. doi:10.1186/1472-6963-10-258.

[32] Bowen S. Language barriers within the Winnipeg regional health authority: evidence and implications. Winnipeg Reg Heal Auth. Winnipeg (MB). 2004;1-54.

[33] Jacobs EA, Agger-gupta N, Chen AH, Piotrowski A, Hardt EJ. Language barriers in health care settings: an annotated bibliography of the research literature. Prepared for: the California Endowment. California (USA). 2003;1-72.

[34] Ulmer C, Mcfadden B, Nerenz DR. Race, ethnicicity, and language data: standardization for health care quality improvement. Institute of Medicine Subcommittee. Washington (DC): National Academies Press; 2009;1-264.

[35] Baker DW, Hayes R, Fortier JP. Interpreter use and satisfaction with interpersonal aspects of care for spanish-speaking patients. Med Care 1998;36:1461–70.

[36] Carrasquitlo O, Orav EJ, Brennan TA, Burstin HR. Impact of language barriers on patient satisfaction in an emergency department. J Gen Intern Med 1999;14:82–7.

[37] Ramirez D, Engel KG, Tang TS. Language interpreter utilization in the emergency department setting: a clinical review. J Health Care Poor Underserved 2008;19:352–62. doi:10.1353/hpu.0.0019.

[38] Flores G, Laws MB, Mayo SJ, Zuckerman B, Abreu M, Medina L, et al. Errors in medical interpretation and their potential clinical consequences in pediatric encounters. Pediatrics 2003;111:6–14. doi:10.1542/peds.111.1.6.

[39] Ku L, Flores G. Pay now or pay later: providing interpreter services in health care. Health Aff (Millwood) 2005;24:435–44. doi:10.1377/hlthaff.24.2.435.

[40] Waxman M, Levitt M. Are diagnostic testing and admission rates higher in non-English-speaking versus English-speaking patients in the emergency department? Ann Emerg Med 2000;36:456–61. doi:10.1067/mem.2000.108315.

[41] Hampers LC, Cha S, Gutglass DJ, Binns HJ, Krug SE. Language barriers and resource utilization in a pediatric emergency department. Pediatrics 1999;103:1253-6

[42] Hampers LC, McNulty JE. Professional interpreters and bilingual physicians in a pediatric emergency department. Arch Pediatr Adolesc Med 2002;156:1108. doi:10.1001/archpedi.156.11.1108.

[43] Jacobs E, Chen AHM, Stroger JH, Hospital J. The Need for More Research on Language Barriers in Health Care: A Proposed Research Agenda. Milbank Q 2006;84:111–33.

[44] Flores G. Culture and the patient-physician relationship: Achieving cultural competency in health care. J Pediatr 2000;136:14–23.

[45] Locatis C, Williamson D, Gould-Kabler C, Zone-Smith L, Detzler I, Roberson J, et al. Comparing in-person, video, and telephonic medical interpretation. J Gen Intern Med 2010;25:345–50. doi:10.1007/s11606-009-1236-x

[46] Lindholm M, Hargraves JL, Ferguson WJ, Reed G. Professional language interpretation and inpatient length of stay and readmission rates. J Gen Intern Med 2012;27:1294–9. doi:10.1007/s11606-012-2041-5.

[47] Bernetsin J, Berstein E, Dave A, Hardt E, James T, Linden J, et al. Trained medical interpreters in the emergency department: effects on services, subsequent charges, and follow-up. J Immigr Health 2002;4:171–6.

[48] Sarver K, Baker DW. Effect of language barriers on follow-up appointments after an emergency department visit. J Gen Intern Med 2000;15:256-64.

[49] Quan K. The high costs of language barriers in medical malpractice. School of Public Health. University of California, Berkeley. 2010;1-21.

[50] Schyve PM. Language differences as a barrier to quality and safety in health care: the Joint Commission perspective. J Gen Intern Med 2007;22:360–1. doi:10.1007/s11606-007-0365-3.

[51] Sperling J. Language-based inequalities in access to public services: consequences of the gap between policy and reality. CUNY. New York (NY). 2002;1-6.

[52] Burbano O'Leary SC, Federico S, Hampers LC. The truth about language barriers: one residency program's experience. Pediatrics 2003;111:e569–73. doi:10.1542/peds.111.5.e569.

[53] Nelson A. Unequal treatment: confronting racial and ethnic disparities in health care (executive summary). J Natl Med Assoc. 2002;94:666-668.

[54] Regenstein M, Sickler D. Race, ethnicity, and language of patients: hospital practices regarding collection of information to address disparities in health care. NPHHI. Washington (DC). 2006;1-51.

[55] Azarmina P, Wallace P. Remote interpretation in medical encounters: a systematic review. J Telemed Telecare 2005;11:140–5. doi:10.1258/1357633053688679.

[56] Kuo D, Fagan MJ. Satisfaction with methods of spanish interpretation in an ambulatory care clinic. J Gen Intern Med 1999;14:547–50. doi:10.1046/j.1525-1497.1999.07258.x.

[57] Jacobs EA, Sadowski LS, Rathouz PJ. The impact of an enhanced interpreter service intervention on hospital costs and patient satisfaction. J Gen Intern Med 2007;22:306–11. doi:10.1007/s11606-007-0357-3.

[58] Jacobs EA, Lauderdale DS, Meltzer D, Shorey JM, Levinson W, Thisted RA. Impact of interpreter services on delivery of health care to limited-English-proficient patients. J Gen Intern Med 2001;16:468–74.

[59] Schenker Y, Lo B, Ettinger KM, Fernandez A. Navigating language barriers under difficult circumstances. Ann Intern Med 2008;19:264–9.

[60] Roy J, Bowen S, Heath B, Ling A, Mohr D. Language access: code of ethics and standards of practice for interpreters. Winnipeg Reg Heal Auth 2013;1-23.

[61] O'Campo P, Devotta K, Dowbor T, Pederson C. Reducing the language accessibility gap: Language Services Toronto program evaluation report. CRICH Surv Res Unit, St. Michael's Hosp. 2014;1-32.

[62] Karliner LS, Napoles-Springer AM, Schillinger D, Bibbins-Domingo K, Pérez-Stable EJ. Identification of limited English proficient patients in clinical care. J Gen Intern Med 2008;23:1555–60. doi:10.1007/s11606-008-0693-y.

[63] The Healthcare Interpretation Network Policy Committee. National standard guide for community interpreting services. The Healthcare Interpretation Network (HIN). Toronto (ON). 2007;1-24.

[64] Moreno MR, Otero-Sabogal R, Newman J. Assessing dual-role staff-interpreter linguistic competency in an integrated healthcare system. J Gen Intern Med 2007;22:331–5. doi:10.1007/s11606-007-0344-8.

[65] Rosenberg E, Seller R, Leanza Y. Through interpreters' eyes: comparing roles of professional and family interpreters. Patient Educ Couns 2008;70:87–93. doi:10.1016/j.pec.2007.09.015.

[66] Jacobs EA, Leos GS, Rathouz PJ, Fu P. Shared networks of interpreter services, at relatively low cost, can help providers serve patients with limited english skills. Health Aff (Millwood) 2011;30:1930–8. doi:10.1377/hlthaff.2011.0667.

[67] Schenker Y, Pérez-Stable EJ, Nickleach D, Karliner LS. Patterns of interpreter use for hospitalized patients with limited English proficiency. J Gen Intern Med 2011;26:712–7. doi:10.1007/s11606-010-1619-z.

[68] MacFarlane A, Glynn LG, Mosinkie PI, Murphy AW. Responses to language barriers in consultations with refugees and asylum seekers: a telephone survey of Irish general practitioners. BMC Fam Pract 2008;9:68. doi:10.1186/1471-2296-9-68.

[69] Downing B, Roat CE. Models for the provision of language access in health care settings. Natl Counc Interpret Heal Care 2002;1-24.

[70] Meeuwesen LL. Proceedings of the European Association for Communication in Healthcare (EACH) conference. 2014 Sept 30. Amsterdam (NL).

[71] Rosenberg E, Richard C, Lussier M-T, Shuldiner T. The content of talk about health conditions and medications during appointments involving interpreters. Fam Pract 2011;28:317–22. doi:10.1093/fampra/cmq094.

[72] Ho A. Using family members as interpreters in the clinical setting. J Clin Ethics 2008;19:223-33.

[73] Regenstein M, Huang J, West C, Trott J, Mead H, Andres E. Improving the quality of language services delivery: findings from a hospital quality improvement initiative. J Healthc Qual 2012;34:53–63. doi:10.1111/j.1945-1474.2011.00190.x.

[74] Hsieh E. Not just "getting by": factors influencing providers' choice of interpreters. J Gen Intern Med 2015;30:75–82. doi:10.1007/s11606-014-3066-8.

[75] Gray B, Hilder J, Donaldson H. Why do we not use trained interpreters for all patients with limited English proficiency? Is there a place for using family members? Aust J Prim Health 2011;17:240–9. doi:10.1071/PY10075.

[76] Phillips CB, Bsocstuds JT. Low levels of uptake of free interpreters by Australian doctors in private practice: secondary analysis of national data. Aust Health Rev 2011;35:475–9. doi: 10.1071/AH10900.

[77] MacFarlane A, O'Reilly-de Brun M. An evaluation of uptake and experience of a pilot interpreting service in general practice in the HSE Eastern Region. Dep Gen Pract 2009;1-132.

[78] Greenhalgh T, Robb N, Scambler G. Communicative and strategic action in interpreted consultations in primary health care: a Habermasian perspective. Soc Sci Med 2006;63:1170–87. doi:10.1016/j.socscimed.2006.03.033.

[79] Parnes BL, Westfall JM. An elderly woman with severe anxiety associated with anticipated use of an interpreter. J Am Board Fam Pract 2003:16:255–6.

[80] Wiener ES, Rivera MI. Bridging language barriers: how to work with an interpreter. Clin Pediatr Emerg Med 2004;5:93–101. doi:10.1016/j.cpem.2004.01.007.

[81] Macfarlane A, Singleton C, Green E. Language barriers in health and social care consultations in the community: a comparative study of responses in Ireland and England. Health Policy 2009;92:203–10. doi:10.1016/j.healthpol.2009.03.014.

[82] Jacobs EA, Shepard DS, Suaya JA, Stone E, Otr L. Overcoming language barriers in health care: costs and benefits of interpreter services. Am J Public Health 2004;94:866–9.

[83] Karliner LS, Perez-Stable EJ, Gildengorin G. The language divide: the importance of training in the use of interpreters for outpatient practice. J Gen Intern Med 2004;19;175–83.

[84] Jacobs EA, Diamond LC, Stevak L. The importance of teaching clinicians when and how to work with interpreters. Patient Educ Couns 2010;78:149–53. doi:10.1016/j.pec.2009.12.001.

[85] Hudelson P, Dao MD, Perneger T, Durieux-Paillard S. A "migrant friendly hospital" initiative in Geneva, Switzerland: evaluation of the effects on staff knowledge and practices. PLoS One 2014;9:1-7. doi:10.1371/journal.pone.0106758.

[86] Diamond LC, Jacobs E a. Let's not contribute to disparities: the best methods for teaching clinicians how to overcome language barriers to health care. J Gen Intern Med 2010;25:S189–S193. doi:10.1007/s11606-009-1201-8.

[87] Nápoles AM, Santoyo-Olsson J, Karliner LS, O'Brien H, Gregorich SE, Pérez-Stable EJ. Clinician ratings of interpreter mediated visits in underserved primary care settings with ad hoc, in-person professional, and video conferencing modes. J Health Care Poor Underserved 2010;21:301–17. doi:10.1353/hpu.0.0269.

[88] Azad N, Power B, Dollin J, Chery S. Cultural sensitivity training in Canadian medical schools. Acad Med 2002;77:222–8. doi:10.1097/00001888-200203000-00009.

[89] Beach M, Price E, Gary T, Robinson K, Gozu A, Palacio A, et al. Cultural competency: a systematic review of health care provider educational interventions. NIH Public Access 2005;43:356–73.

[90] Fernandez A, Schenker Y. Time to establish national standards and certification for health care interpreters. Patient Educ Couns 2010;78:139–40. doi:10.1016/j.pec.2009.12.008.

[91] Rosenberg E. Prevalence of patient communication difficulties in urban family practice. McGill Family Medicine Studies Online, 05:e01. 2010;1-15

[92] Grubbs V, Chen AH, Bindman AB, Vittinghoff E, Fernandez A. Effect of awareness of language law on language access in the health care setting. J Gen Intern Med 2006;21:683–8. doi:10.1111/j.1525-1497.2006.00492.x.

[93] Kale E, Syed HR. Language barriers and the use of interpreters in the public health services: a questionnaire-based survey. Patient Educ Couns 2010;81:187–91. doi:10.1016/j.pec.2010.05.002.

[94] Legal Inforamtion Institute [internet]. Title 42 - The public health and welfare; Chapter 21-Civil Rights; Subchapter V - Federally assisted programs § 2000d. United States Government 1964. [cited 2015 May 1]. Available at: https://www.law.cornell.edu/uscode/pdf/lii_usc_TI_42_CH_21.pdf

[95] Miller G. The assessment of clinical skills/competence/performance. Acad Med 1990;65:S63-7.

[96] Hudelson P, Perron NJ, Perneger T V. Measuring physicians' and medical students' attitudes toward caring for immigrant patients. Eval Health Prof 2010;33:452–72. doi:10.1177/0163278710370157.

[97] Eagan G. Identifying limited language proficient patients and language preferenes: frequently asked questions. Interpretation and Translation Services, University Health Network. Toronto (ON). 2010.

[98] Prince D, Nelson M. Teaching Spanish to emergency medicine residents. Acad Emerge Med 1995;2:32–7.

[99] Hudelson P, Dominicé Dao M, Durieux-Paillard S. Quality in practice: integrating routine collection of patient language data into hospital practice. Int J Qual Health Care 2013;25:437–42. doi:10.1093/intqhc/mzt035.

[100] Fagan MJ, Diaz J a., Reinert SE, Sciamanna CN, Fagan DM. Impact of interpretation method on clinic visit length. J Gen Intern Med 2003;18:634–8. doi:10.1046/j.1525-1497.2003.20701.x.

[101] Tocher TM, Larson EB. Do physicians spend more time with non-English-speaking patients? J Gen Intern Med 1999;14:303–9.

[102] Greenhalgh T, Voisey C, Robb N. Interpreted consultations as “business as usual”? An analysis of organisational routines in general practices. Sociol Health Illn 2007;29:931–54. doi:10.1111/j.1467-9566.2007.01047.x.

[103] Roter D (chair). Proceedings of the European Association for Communication in Healthcare (EACH) conference: Diversity seminar. 2014 Sept 30. Amsterdam (NL).

[104] Statistics Canada [internet]. Languages: all subtopics. [cited 2015 May 1]. Available at: http://www5.statcan.gc.ca/subject-sujet/result-resultat?pid=50000&id=50000&lang=eng&type=CST&pageNum=1&more=1

[105] Banque interrégionale d’interprètes 2012 - 2013 [Internet]. Agence de la santé et des services sociaux de Montréal, Quebec. [cited 2015 May 1] Available at: http://www.santemontreal.qc.ca/fileadmin/fichiers_portail/Professionnels/Jerome/BII_bilan_2012-2013_FR.pdf

[106] Abraham E, Eagan G. Over-the-phone interpretation services: train-the-trainer presentation. Languages Services Toronto Program, University Health Network. Toronto (ON). 2010.

[107] Jacobs EA, Fu PC, Rathouz PJ. Does a video-interpreting network improve delivery of care in the emergency department? Health Serv Res 2012;47:509–22. doi:10.1111/j.1475-6773.2011.01329.x.

[108] Gany F, Leng J, Shapiro E. Patient satisfaction with different interpreting methods: a randomized controlled trial. J Gen Intern Med 2007;22:312–8.

[109] Hornberger JC, Gibson CD Jr, Wood W, Dequeldre C, Palla B, Bloch DA, et al. Eliminating language barriers for non-English-speaking patients. Med Care 2015;34:845–56.

[110] Jones D, Gill P, Harrison R, Meakin R, Wallace P. An exploratory study of language interpretation services provided by videoconferencing. J Telemed Telecare 2012;9:51–6.

[111] Bowen DJ, Kreuter M, Spring B, Linnan L, Weiner D, Bakken S, et al. How we design feasibility studies. Am J Prev Med 2009;36:452–7. doi:10.1016/j.amepre.2009.02.002.

[112] Merriam-Webster Encyclopaedia Britannica [Internet]. [cited 2015 May 1] Available at: http://www.britannica.com/EBchecked/topic/376313/Merriam-Webster-dictionary

[113] Willis GB, Casper RA, Lessler JT. Cognitive interviewing: a "how to" guide. Presented at the Meeting of the American Statistical Association. Rockville (MD). 1999;1-41.

[114] Higgins PC, Taylor EF. Measuring racial and ethnic disparities in health care: efforts to improve data collection. Mathematica Policy Research Inc. 2009;1-11.

APPENDICES

Note: translated (French) materials not included in appendices

Appendix A: Results from the Language Services Toronto 2010 OPI pilot project

Testimonials from participants:

"I can tell you that I have been truly touched, as well as impressed, that we can now communicate with patients and meet their every need through this mode of communication. I believe this will further improve our delivery of care for many patients." (Olga Muir, TWH Nurse Manager)

"Since [Language Line] has been installed, it has saved nurses & doctors time. They no longer have to search for a translator or independently rely on family who may or may not be present or the most reliable source of interpretation." (Survey respondent)

"It was very clear once we engaged in a conversation with the translator that they went from being very quiet and compliant to actively seeking information and assuring that they understood what was going on." (Survey respondent)

"Language Line has transformed how we care for our patients" (Silvie Groe, TWH IP Nurse Manager)

"The language line paid for itself today…It's a keeper" (PMH Radiation Therapist)

Cost savings and telephone interpretation usage data:

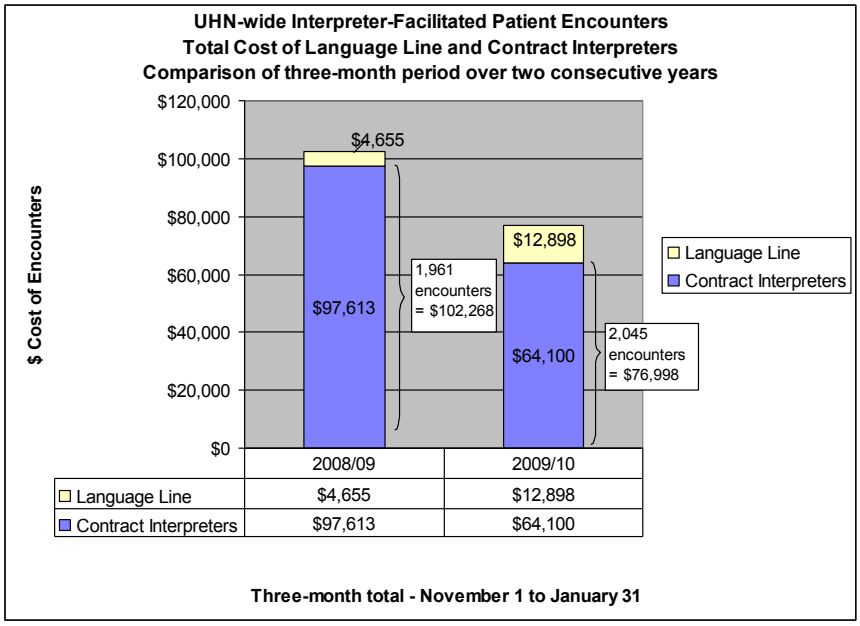


Figure 1: Cost of providing professional (face-to-face versus face-to-face/remote) interpretation services. Following the introduction of OPI, the average cost per encounter decreased 25% (total cost reduction of $25, 270 during the 3-month pilot compared to the same period the previous year)

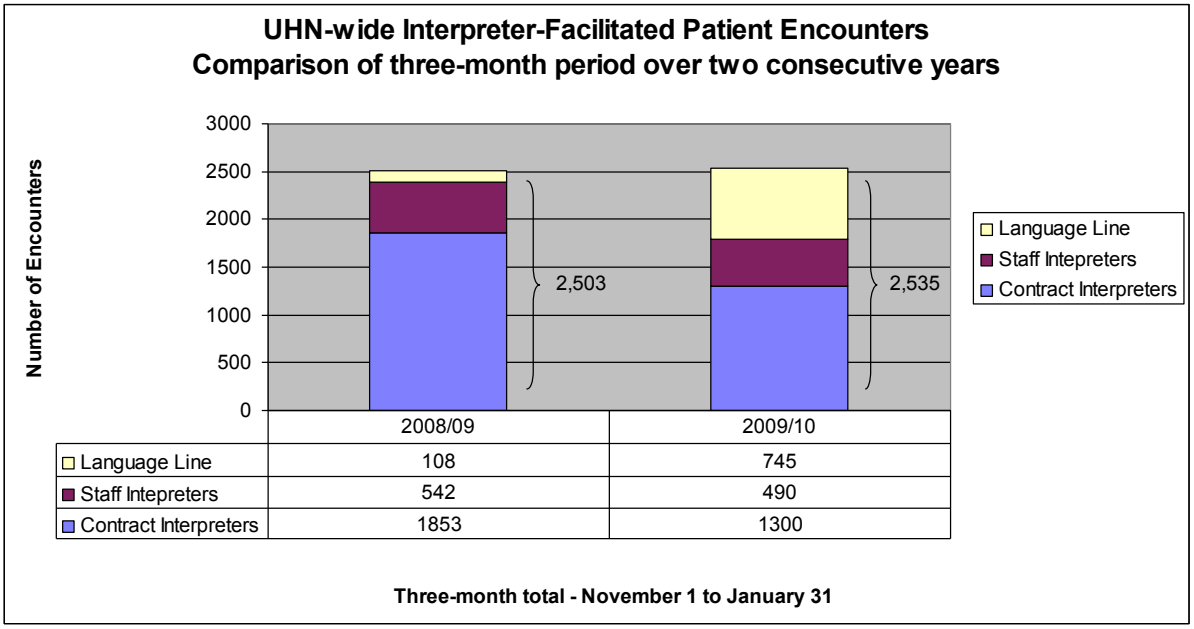


Figure 2: Volume of professional interpretation service usage. During the pilot phase, OPI usage increased 590% (yellow) compared to the same period the previous year. Total number of professional interpreter encounters remained the same (slight increase).

Appendix B: Over-the-phone interpretation information package

Accessing Telephone Interpreters

(Adapted from the TC LHIN, Language Services Toronto Program)

Contact a professional interpreter if **ANY** language barrier is detected between you and your patient.

For anyone who speaks English/French less than **"very well" ASK**:

"What language do you prefer when speaking with your doctor or nurse?"

1. How to Access a Telephone Interpreter

Telephone interpretation can be accessed using phone devices with **speaker function** (office/examination room telephones and mobile devices).

To connect with a Telephone Interpreter:

1. Dial **1-888 278 8007** and press "1" for RIO Network.

2. You will be prompted to **speak** the desired language or to use the number pad to **spell the first three letters** of the language you wish to connect to.

   Ex. Spanish is 7-7-2 (see Language ID Card for language codes)

   Please note: *If a RIO interpreter agent is busy in the specified language, your call will be automatically routed to Language Line Solutions, where you may be asked again to indicate the preferred language. See* ***Language Line Solutions Connection Instructions*** *below.*

3. An interpreter will be connected to the call.

4. You will be asked to **speak** or **enter** your:

- 6-digit Client ID: **252340** ***PLEASE DO NOT SHARE CODES***
- 3-digit Care Group Code (see badge tags - # is unique to your care group!)

5. Introduce yourself and your role, and brief the interpreter as to the nature of the situation.

Language Line Solutions Connection Instructions:

1. Enter 6 digit Client ID: **252340**
2. Press "1" for Spanish, Press "2" for all other languages.
3. **Speak** the name of the desired language. Press "1" to confirm.
4. Enter 3-digit Care Group Code and press "#" (see badge tags - # is unique to your care group!)

Important Notes:

UNKNOWN LANGUAGE - If you do not know which language to request, a representative will help you.
INTERPRETER IDENTIFICATION - Interpreters identify themselves by first name and number *only*.

NOTE: *Please inform your limited English/ French speaking patients that the RIO Network and Language Line Solutions are not government funded.*

2. Placing a 3-way Call with a Telephone Interpreter

The following explains how to access telephone interpretation in the following two situations:

A. You receive **a call from** an limited English/French speaking individual

B. You need to make **a local call to** a limited English/French speaking individual

REMINDERS:

- You will need to have the **conference feature** activated on your phone
- Please be prepared to provide your 6-digit Client ID and 3-digit Care Group Code

A. You receive a call from an individual with limited English/French:

1. As best as possible, explain to the patient that you are going to get an interpreter and to please wait while you place them on hold.
2. Place the patient on conference hold by pressing the **"Conference"** button.
3. Dial **1-888 278 8007** and press "1" for the RIO Network. Provide the details as prompted (see pg.1 *How to Access a Telephone Interpreter*).
4. When the interpreter is connected, brief the interpreter (e.g., your role, the purpose of the call, and that the patient is on the other line).
5. Conference in the patient by pressing the **"Conference"** button again.
6. After the interpreter has introduced himself/herself to the patient, begin speaking directly to the patient.
7. Say, **"End of call"** to the interpreter when call is completed.

B. To place a local call to an individual with limited English/French:

1. Dial **1-888 278 8007** and press "1" for RIO Network. Provide the details as prompted (see pg.1 *How to Access a Telephone Interpreter*).
2. When the interpreter is connected, brief the interpreter (e.g., your role, your clinic/area, the purpose of the call to the patient).
3. Explain that you will place the interpreter on hold while you call the patient at home.
4. Place the interpreter on hold by pressing the **"Conference"** button.
5. Dial the number for your limited English/French speaking patient and press the "**Conference**" button **before anyone answers** to conference in the interpreter.
6. After the interpreter has introduced himself/herself to the patient, begin speaking directly to the patient.

IMPORTANT NOTE: It is important to brief the interpreter on the context ***before*** placing the call to the limited English/French speaking person in case they have to leave a voicemail message on your behalf.

HOT TIPS for Working with Telephone Interpreters

Before placing the call:

- Know how to spell the desired language
- Know your 6-digit Client ID and 3-digit Care Group Code (on badge tag)

Getting connected to a telephone interpreter:

- Brief the interpreter – a line or two about the case helps the interpreter prepare
- Let interpreter introduce him/herself to all parties and explain his/her role

During the encounter:

- **Focus on the patient** – address the patient/family directly and maintain eye contact
- Speak in the **first person** – don't say, "Ask him…" or "Tell her…"
- Speak at an **even pace**
- **Break after 1-2 sentences** to allow for interpretation
- **Avoid jargon**, slang, medical terminology
- **Remember interpreter's role** – to render the message as faithfully as possible
- **Check in with the interpreter** if you suspect that the entire message was not interpreted
- **Check in with the patient** for comprehension (teach-back method)
- **Stay present for the entire call** – do not leave the patient 'alone' with the interpreter. Hang up and call back.
- **Everything uttered is interpreted** – no side conversations in front of the patient

After the encounter:

- **Document** the interpreter's name and number

Important Tip:
Try to minimize background noise and make sure patient is close to telephone speaker

When to Use a Telephone Interpreter?

In many cases, phone interpretation is the optimal modality of interpretation. These guidelines have been developed collaboratively by members of the Language Services Toronto program and are based on best practices for working with interpreters in clinical settings.

Advantages of Telephone Interpretation:

- Available 24/7
- Direct, on-demand access
- Average connection time to an interpreter is less than 60 seconds
- More cost-effective for short encounters (i.e. less than ***40*** minutes)
- Access to rare languages (>180) not necessarily supported by in-person interpreters

Use Telephone Interpretation in the following situations:

- For short encounters (less than 40 minutes)
- To obtain informed consent from a patient *when an in-person interpreter is not readily available.*

For the following situations, phone interpretation may NOT be appropriate:

- For encounters 40 minutes or longer
- For hard of hearing patients
- For cognitive or capacity assessments
- For mental health encounters (except for urgent cases)
- When communicating with children (***but acceptable with parents of children***)
- When providing patient education with visual materials
- When there are multiple participating parties present (e.g., during family meetings)

Note: while in-person interpreters may be preferable in certain situations, telephone interpretation is appropriate if in-person interpreters are not available.

Identifying Limited Language Proficient Patients and their Language Preferences

FREQUENTLY ASKED QUESTIONS

(Adapted from the TC LHIN, Language Services Toronto Program)

Why can't we ask "Do you need an interpreter?"
Patients tend to say "no" when asked this question because they are concerned about being judged, that they may have to pay for the service, or that it may delay or compromise their care. They also may say "no" if they have a family member/friend with them who can interpret.

Why can't I ask a patient's family member/friend who speaks English/French if the patient needs an interpreter?
Families/friends sometimes respond that the patient does not need an interpreter because they prefer to interpret, which is not best practices and can actually place the patient at risk.

Why shouldn't a family member, friend or bilingual staff interpret?
Research demonstrates that quality of care is compromised when lay people perform as interpreters in a medical setting.

How do I get an interpreter to help me ask the preferred language question?
Call the telephone interpretation service provider **(1-888-278-8007).** Telephone interpreters provide interpretation in over 180 languages, the average connection time is 30 seconds, and the service is available 24/7.

I have no idea what language the patient is speaking. How can I find out what language to ask for when I call for a telephone interpreter?
Use the foldout brochure referred to as the "Language Identification Card." The phrase, "*Point to your language. An interpreter will be called. The interpreter is provided at no cost to you*" is translated into 92 languages. The translations are grouped geographically and are listed alphabetically by language name. If you are still having difficulty identifying the language that the patient is speaking, the telephone interpretation service provider will assist you.

Can I call a patient at home if he/she doesn't speak English/French?
Yes, please refer to the ***Accessing Telephone Interpreters*** handout for instructions on ***placing a 3-way call with a telephone interpreter (pg. 2/2)***. There are instructions for the following situations:

1. Receiving a call from a limited English/French speaking person
2. Making a call to a limited English/French speaking person

The patient speaks some English/French. Why does he/she need an interpreter?
More errors occur when a patient speaks some English/French, because the care provider may make assumptions about how much the patient is understanding and may not recognize that the patient's silence is due to a compromised ability to express a thought, question or concern in English/French. Conversely, a patient may feel that their English/French is "good enough," and either may make assumptions about their own understanding of the terminology being used, or may not feel comfortable asking for clarification after having indicated that their English/French is "good enough".

Appendix C: Information and Consent Form

Telephone Interpretation Information and Consent Form

***Title**: Professional over-the-phone interpretation to improve the quality of primary care for migrants*

Introduction:

You are being invited to participate in this research study, which seeks to evaluate a telephone (remote) interpretation service. *The purpose of this study is to improve the quality of healthcare for people with limited English/French language skills in Quebec.*

Study Objectives:

For this project, we will provide all healthcare professionals at your institution with *unlimited* access to over-the-phone interpretation (OPI) services for three months. The research objectives are to investigate the feasibility of OPI service use at two Montreal primary care clinics based on the value healthcare professionals attribute to the service, their comfortability using the service, perceived enablers of and barriers to using the service, and actual service usage. This will be used to generate information that will inform future OPI integration efforts in primary care settings. This service has never been used in Montreal but has had great success in other Canadian (and international) jurisdictions.

Study Procedures & Participant Roles:

You will be asked to complete two, **5-minute** surveys *before* and *after* the three-month OPI intervention. The surveys will contain questions regarding, 1) demographic characteristics, 2) the relevance of OPI to your practice, 3) current strategies for communicating across language barriers, 4) previous training received in cross-cultural care and the proper use of professional interpreters, 5) current use of interpreters, both professional and untrained (e.g., family members, friends), 6) comfort in providing care to patients with limited English/French skills, 7) perceived quality of OPI services and remote interpreters, 8) what OPI services are used for most often, 8) impact (if any) of OPI services on quality of care delivery, 9) perceived facilitators of and barriers to OPI use, 10) changes in approach (if any) towards treating patients with limited English/French skills, 11) perceived importance of OPI service use on quality of care delivery, 12) overall satisfaction with experience of using OPI services, and 13) willingness to use OPI services in the future.

As a participant, you will be asked to try to incorporate the use of this tool into your daily practice when providing care to patients with limited English/French skills. Physicians and residents will also be requested to record all encounters with limited English/French speaking patients on patient appointment lists.

All participants are strongly encouraged to attend a 30-minute training and information tutorial on the proper use of professional remote interpretation services.

Potential Benefits:

If you choose to participate in this study, you will benefit from free training in how, why and when to engage professional interpreters, as well as instruction in best practices for working with professional interpreters in clinical settings. You will also be provided with unlimited access to professional language support services, which have been shown to improve patient-provider information exchange and satisfaction during medical encounters.

Risks and Discomfort:

There are no foreseen risks to you associated with your participation in this research.

Confidentiality and Anonymity:

All data obtained during this study will be kept strictly confidential. It will be kept in a locked filing cabinet and a password protected computer in the office of Dr. Ellen Rosenberg, Department of Family Medicine, McGill University. The information will be kept for five years and will then be destroyed. You will be identified on the surveys by an identification number (ID) only. Any personal information collected will only be used to compare participants' responses before, during, and after the intervention period. We will keep a list of names and IDs, and the list will be destroyed as soon as data collection is complete. Only the investigators will have access to documents containing personal information. The ethics committee of McGill University may review the records containing personal information in order to ensure the proper management of this study.

Cost and Reimbursement:

You will not be offered any compensation for your participation in this study. However, we do not expect that your participation will create any additional costs for you. Lunch and refreshments will be provided on the day of the tutorial.

Voluntary participation and/or withdrawal:

Your participation in this study is voluntary. You may refuse to participate or may discontinue your participation at any time without any explanation, penalty or prejudice whatsoever. You may also refuse to answer any questions during the study. In the case of withdrawal, information collected up to that point will be used to preserve the integrity and quality of the study.

Questions and Contact Information:

If you have any questions or desire further information, you may contact Dr. Ellen Rosenberg at the Department of Family Medicine, McGill University (514) 345-3511 ext 5620. If you want to talk to someone not connected with the study about your rights as a study participant, or if you have any complaints about the research, you can call the St. Mary's Ombudsperson at (514) 345-3511 ext. 3301. If you decide to participate in this research study, you will receive a copy of this consent form.

Declaration of Consent:

I have read this consent form, and I voluntarily agree to participate in this study. I have had the opportunity to ask questions and all my questions have been answered to my satisfaction. I will be able to keep a copy of the consent form for my own records. I have been informed that my participation in this study is entirely voluntary and that I may refuse to participate or withdraw from this study at any time. I may ask now or in the future any questions about this study. I have been assured that records related to this study will be kept confidential and that no information about me will be released or printed that would disclose my personal identity. I understand I have the right to access my personal information and to make corrections, subject however to the applicable laws and regulations. This consent is valid until the study is completed; however, I may discontinue my participation in this study at any time without consequence.

I hereby consent to participate in the study.

Participant's Full Name	Signature	Date (YYYY/MM/DD)

Appendix D: Information & Training Tutorial

Tutorial plan for healthcare professionals working in Montreal primary care clinics

This workshop is designed for all healthcare professionals working in Montreal primary care centers to learn the principles of *how, why* and *when* to access over-the-phone interpretation (OPI) services, as well as best practices for working with professional interpreters in clinical settings. This workshop was also developed to create an awareness and appreciation of language-based disparities in health settings, and to encourage healthcare professionals to participate in our 'vision of change' towards a more equitable and sustainable health system.

This information/training workshop is based on the 'Train-the-Trainers' workshop given in preparation of the OPI pilot project conducted by the University Health Network's Interpretation and Translation Services program in 2010.

Set-up
The workshop is to be held at two Montreal primary care clinics. All healthcare professionals will be given unlimited access to the service (24 hours per day, 7 days per week).

To accommodate healthcare professionals' busy schedules, tutorials will take place on site during regular staff lunch hours, several times per week. Each tutorial will take approximately 30 minutes and food and drink will be provided.

Workshops will be delivered by: Emily Parkinson, M.Sc. Candidate
Elizabeth Abraham, Language Services Toronto Project Lead

Tutorial Objectives

a) To create an awareness and appreciation of language-based disparities in health settings.
b) To train care providers in how, why, and when to access over-the-phone interpretation services, as well as best practices for working with professional interpreters in clinical settings.
c) To encourage participation, commitment and engagement among healthcare professionals, and identify champions to maintain a 'vision of change.'

Tutorial Agenda

1. Welcome & Introduction
2. Why language support: creating a 'Vision of Change'
3. Logistics
4. When and how to access remote interpreters
5. Best practices for working with remote interpreters
6. Mock demonstration call with live remote interpreter
7. Participants' Roles & Responsibilities
8. Contact Information
9. Questions and Discussion

Training tutorial breakdown

	TOPIC	MIN
1	**Welcome & Introduction** • What is a professional (remote) interpreter? • Problem statement • Over-the-phone interpretation service introduction: Who, What, & Why?	**5**
2	**Why Language Support: creating a 'Vision of Change'** • Why use a professional interpreter? • Disadvantages of not using a professional interpreter	**5**
3	**Logistics** • ***WHEN (when not) and HOW to access a professional remote interpreter*** ▪ When (and when not) to use a professional interpreter ▪ How to identify patient's preferred language ▪ Equipment ▪ Steps to access professional remote interpreters ▪ Three-way calling instructions (optional) • ***Best Practices for working with Remote Interpreters*** ▪ Hot tips for working with remote interpreters ▪ Working effectively with remote interpreters	**5**
4	**Mock demonstration call with live interpreter**	**5**
5	**Participants' Roles and Responsibilities** • Incorporate OPI whenever appropriate • (Physicians and residents only): record the number of daily encounters with limited English/French speaking patients on a patient appointment sheet • Complete 3, 5-minutes surveys, *before, during,* and *after* the three-month study • Motivate, encourage and assist one other in achieving a higher standard of health equity	**3**
6	**Contact Information**	**2**
7	**Questions and Discussion**	**5**

Following the tutorial, attendees will be asked to sign a consent form to participate in the study. If they choose to participate, they will then be requested to fill out the first of two 5-10 minute surveys before they leave. If they do not have time, they will be given the survey to fill-out and return at their convenience.

Appendix E: Pre- and post-OPI integration surveys

Centre hospitalier de St. Mary
St. Mary's Hospital Center

_____

L'excellence au coeur de nos soins
Caring through excellence

- OVER-THE-PHONE INTERPRETATION SERVICES - Helping improve the quality of primary care for limited English/French speakers

Please remember:

- ✓ this survey is for research purposes only
- ✓ all surveys are ***anonymous***
- ✓ your answers will ***not*** be used to evaluate the performance of individuals or the institution
- ✓ there are no "right" or "wrong" answers, check the answer that best corresponds to your experience

*This survey will take you no more than **5 MINUTES** to complete. Your responses will provide **valuable** information on how to better serve our multilingual communities.*

Pre-OPI integration survey

1. What year were you born? _____

2. Do you identify as Male ☐ Female ☐ Other ☐ No response ☐ ?

3. What is your current position/profession? _____

4. In what country did you initially study to become a healthcare professional? _____

5. How many years have you worked in your **current** position (at this or other institutions)? *If you are a resident physician or student nurse, please write 'Resident' or 'Student Nurse'* _____

6. What language(s) did you speak as a child at home? _____

7. Besides English and/or French, in what **other** language(s) can you communicate **verbally** with patients? *Please list.*

   _____

8. On average, how often do you encounter limited English/French speaking patients in your practice?
   - ☐ Never
   - ☐ 1-4 times/month
   - ☐ 1-4 times/week
   - ☐ 5 or more times/week

9. On average, how often do you use each of the following strategies for dealing with limited English/French speaking patients?

	Never	1-4 times/ month	1-4 times/ week	5 or more times/ week	Not applicable
Patient's bilingual family members to interpret	☐	☐	☐	☐	☐
Patient's bilingual friends to interpret	☐	☐	☐	☐	☐
Untrained bilingual clinic staff	☐	☐	☐	☐	☐
Other patients that speak the patient's language	☐	☐	☐	☐	☐
Volunteer language interpreters	☐	☐	☐	☐	☐
Speaking slowly	☐	☐	☐	☐	☐
Hand gestures/drawings	☐	☐	☐	☐	☐
Language support application on mobile device	☐	☐	☐	☐	☐
Professional (in-person) interpreter	☐	☐	☐	☐	☐
Other strategies	☐	☐	☐	☐	☐

If other, please specify:

10. a) **What** formal training have you received in **cross-cultural care**?

	Yes	No
As part of previous/present job training	☐	☐
Medical or other professional school training	☐	☐
In a professional development workshop	☐	☐
Other training	☐	☐

If other, please specify:

b) If you selected **YES** to one or more of the above options, **how many classes/workshops** have you attended? _____

11. a) **What** formal training have you received in working with **trained (professional) interpreters** (excluding the tutorial on telephone interpretation you may have just attended)?

	Yes	No
As part of previous/present job training	☐	☐
Medical or other professional school training	☐	☐
In a professional development workshop	☐	☐
Other training	☐	☐

If other, please specify:

b) If you selected **YES** to one or more of the above options, **how many classes/workshops** have you attended? _____

12. How would you rate the following? *Please place a checkmark anywhere on the scale from 0 (not at all) to 10 (extremely).*

	Not at all 0 1 2 3 4 5 6 7 8 9 10 **Extremely**	**N/A**
Your comfort **accessing** a professional (telephone or in-person) interpreter		☐
Your comfort **working with** a professional (telephone or in-person) interpreter		☐
Your comfort providing health care to limited English/ French speaking patients		☐
Your overall confidence in the knowledge and expertise of **untrained** interpreters (e.g., patient's family or friends)		☐

Additional Comments (Optional)

Your comments are **extremely valuable**!

_____
_____
_____
_____
_____
_____
_____
_____

THANK YOU FOR YOUR SUPPORT!

Do not hesitate to contact us if you have any questions!

Emily Parkinson. **Email**. mtl.opi@gmail.com. **Phone**. (514) 415-8324

Post-OPI integration survey

*You have now had access to telephone interpretation services for **three months (or more)**. Please answer the following questions based on your experience of using this service.*

1. How many **half days per week** do you see patients? _____

2. How many times did you use telephone interpretation services during the past **two weeks**? _____

3. During the past **month**, how often did you use each of the following strategies for dealing with limited English/French speaking patients?

	Never	1-4 times/month	1-4 times/week	5 or more times/week	N/A
Patient's bilingual family members to interpret	☐	☐	☐	☐	☐
Patient's bilingual friends to interpret	☐	☐	☐	☐	☐
Untrained bilingual clinic staff	☐	☐	☐	☐	☐
Other patients that speak the patient's language	☐	☐	☐	☐	☐
Volunteer language interpreters	☐	☐	☐	☐	☐
Speaking slowly	☐	☐	☐	☐	☐
Hand gestures/drawings	☐	☐	☐	☐	☐
Language support application on mobile device	☐	☐	☐	☐	☐
In-person professional interpreter	☐	☐	☐	☐	☐
Other strategies	☐	☐	☐	☐	☐

If other, please specify:

4. During the past **month**, how often did you use telephone interpretation services in the following circumstances?

	Never	1-4 times/month	1-4 times/week	5 or more times/week	N/A
General check-ups	☐	☐	☐	☐	☐
Obtaining informed consent	☐	☐	☐	☐	☐
Medication instructions	☐	☐	☐	☐	☐
Home care instructions	☐	☐	☐	☐	☐
Diagnosis discussions	☐	☐	☐	☐	☐
Mental health services	☐	☐	☐	☐	☐
Pre-natal (incl. genetic testing) consultations	☐	☐	☐	☐	☐
Discussing advanced directives and/or level of care	☐	☐	☐	☐	☐
Other uses	☐	☐	☐	☐	☐

If other, please specify:

5. Having had unlimited access to telephone interpreters, how would you rate the following? *Please place a checkmark anywhere on the scale from 0 (not at all) to 10 (extremely).*

	Not at all — **Extremely**	**N/A**
Your comfort **accessing** a professional interpreter	0 1 2 3 4 5 6 7 8 9 10	☐
Your comfort **working with** a professional interpreter	0 1 2 3 4 5 6 7 8 9 10	☐
Your comfort providing healthcare to limited English/French speaking patients	0 1 2 3 4 5 6 7 8 9 10	☐
Your overall confidence in the knowledge and expertise of **untrained** interpreters (e.g., family/friends)	0 1 2 3 4 5 6 7 8 9 10	☐
Your overall confidence in the knowledge and expertise of **trained** (professional) interpreters	0 1 2 3 4 5 6 7 8 9 10	☐

6. How would you rate the following aspects of the telephone interpretation service? *Please place a checkmark anywhere on the scale from 0 (poor) to 10 (excellent).*

	Poor — **Excellent**	**N/A**
Convenience of the telephone interpretation **service**	0 1 2 3 4 5 6 7 8 9 10	☐
Reliability of the telephone interpretation **service**	0 1 2 3 4 5 6 7 8 9 10	☐
Overall ease of use of the telephone interpretation **service**	0 1 2 3 4 5 6 7 8 9 10	☐
Language proficiency of the telephone **interpreters**	0 1 2 3 4 5 6 7 8 9 10	☐
Accuracy of the telephone **interpreters**	0 1 2 3 4 5 6 7 8 9 10	☐
Professionalism of the telephone **interpreters**	0 1 2 3 4 5 6 7 8 9 10	☐
Telephone **interpreters'** overall ability to facilitate the conversation	0 1 2 3 4 5 6 7 8 9 10	☐

7. From your perspective, how has your use of telephone interpretation services impacted the following aspects of healthcare provision for your limited English/French speaking patients (if at all)?

	Significantly decreased	Decreased	Neither improved nor decreased	Improved	Significantly improved	No response/ Not applicable
Confidence in your diagnosis	☐	☐	☐	☐	☐	☐
Your relationship with your patients	☐	☐	☐	☐	☐	☐
The disclosure of patients (e.g., do you feel the patient provides a more or less complete history?)	☐	☐	☐	☐	☐	☐
Patient's privacy	☐	☐	☐	☐	☐	☐
Patient's autonomy	☐	☐	☐	☐	☐	☐
Patient's comfort level	☐	☐	☐	☐	☐	☐
Patient's engagement	☐	☐	☐	☐	☐	☐
Patient's adherence to/understanding of the information provided	☐	☐	☐	☐	☐	☐
Patient's overall satisfaction with the care they receive	☐	☐	☐	☐	☐	☐
Overall quality of care	☐	☐	☐	☐	☐	☐
Other observed impacts	☐	☐	☐	☐	☐	☐

If other, please specify:

8. From your perspective, what **facilitated** the use of telephone interpretation services with your limited English/French speaking patients? *Check all that apply.*
   - ☐ The pre-pilot training tutorial
   - ☐ Unlimited access to telephone interpretation services
   - ☐ My institution's health equity policies/mandates
   - ☐ Encouragement from my superiors/colleagues
   - ☐ Continuous update reports of service usage
   - ☐ On-call technical support
   - ☐ The convenience and reliability of telephone interpretation services
   - ☐ Access to additional resources (e.g., information package, point-to-your language chart etc.)
   - ☐ Patients' awareness of the availability and purpose of telephone interpretation services
   - ☐ Other _____

9. a) Did you use telephone interpretation services every time you needed?
   - ☐ Yes
   - ☐ No
   - ☐ Not applicable

b) If **no**, please select the reason(s) why. *Check all that apply.*

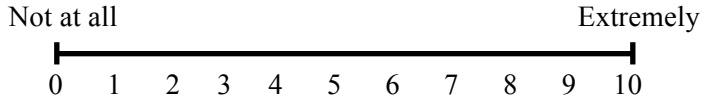
- ☐ Difficulty identifying patients' language abilities/preferred language
- ☐ Uncertain how to access telephone interpreters
- ☐ Technical or equipment challenges
- ☐ Wait time to connect to an interpreter
- ☐ Telephone interpretation not an appropriate modality for type of visit
- ☐ Convenience of other methods (e.g., bilingual family member/friend)
- ☐ Time constraints
- ☐ Did not think to use the service
- ☐ Patients' preference (e.g., concerned about confidentiality, or preferred to use family/friend to interpret)
- ☐ Family/friends' preference to interpret for the patient
- ☐ Professional interpreter not necessary (e.g., I prefer communicating directly with my patient, or I am fluent in the patient's language)
- ☐ Other _____

10. How **satisfied** are you with the following aspects of the telephone interpretation provided?

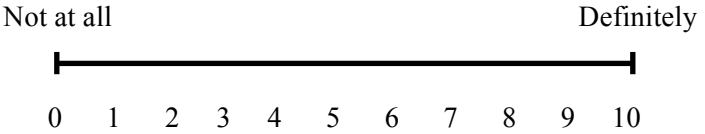
	Very dissatisfied	**Dissatisfied**	**Neither satisfied nor dissatisfied**	**Satisfied**	**Very satisfied**	**No response/ Not applicable**
Availability of interpreters in needed language	☐	☐	☐	☐	☐	☐
Quality of interpretation	☐	☐	☐	☐	☐	☐
Wait times	☐	☐	☐	☐	☐	☐
Technology and equipment availability	☐	☐	☐	☐	☐	☐
Service reference materials	☐	☐	☐	☐	☐	☐
Overall, how satisfied are you with your experience of using telephone interpretation services?	☐	☐	☐	☐	☐	☐

For the following questions, please place a checkmark anywhere on the scale from 0 (not at all) to 10 (extremely/definitely)

11. How would you rate the **importance** of telephone interpretation services in providing quality healthcare to your limited English/French speaking patients?



12. How would you rate your **willingness** to use telephone interpretation services in the future?



Additional Comments (Optional)

Please share any challenges, experiences, thoughts, insights, or suggestions regarding the use of telephone interpretation services.

Your comments are **extremely valuable**!

THANK YOU FOR YOUR PARTICIPATION!

Do not hesitate to contact us if you have any questions!

Emily Parkinson. **Email**. mtl.opi@gmail.com. **Phone**. (514) 415-8324

Appendix F: Participants' (written) comments

The following quotations are participants' written comments from the pre- and post-OPI integration surveys. The comments lefts were positive; however, others addressed participants' challenges in using the service and/or suggestions on how the service could be improved.

Positive feedback from participants

"I would encourage hospital administrators and administrators of other high-volume clinics in the city to consider having a budget for phone interpreter services. I would like to compare the cost of this service to the cost of the Banque d'interpretes in Montreal."

"I think this service is really important because health is really important. You wouldn't want to miss a red flag just because the communication is difficult…Patients don't think of bringing someone to interpret (family or professional). I really hope this service is maintained."

"After attending the information session you gave us, I am more wary of family member interpreters and more conscious of the fact that even if I speak slowly and try to listen, there is probably much more info missing than I originally thought."

"Very interesting program. Can be cost effective considering all the patient no-shows with a booked interpreter."

"Access to the [telephone interpretation] service is extremely helpful."

"Loved having it available."

"This is a great initiative."

"I feel less concern that an unknown person or "friend" will have to be used as an interpreter for walk-in or unscheduled visits by a patient"

"…The fact that there is an interpreter service available makes me feel much more at ease accepting new patients that might be unilingual…"

"Great experience. Should be continued."

"I think this project is an extremely good idea!! I think it will be appreciated by the patients."

"I found greatest use of the telephone system was in the urgent care clinic where patients arrive for urgent issues without family/friend interpreters. The service was very helpful in that domain! Thanks."

"A valuable service. I think I understand my patients much better and I think they trust me more when using this service."

"Je continue à trouver que le service d'utilisation téléphonique est extrêmement pertinent dans le contexte de barrière de langue très fréquent ici… Merci!"

"Excellent service – fait une grande différence surtout en contexte de sans rendez-vous (pas d'interprète cédulé d'avance). Selon moi [un] service essentiel dans notre pratique…"

"Nous avons vraiment besoin de ce service au [Clinic 2], [il y a une] clientèle avec d'énormes barrières linguistiques."

OPI integration period was too short: several participants commented that they were away during the three-month OPI integration, that none of their LLP patients had scheduled appointments during that time, or that three months was not long enough to get used to using the service. These participants were generally eager to have another opportunity to try. Some healthcare professionals were simply uncertain of when to use it.

"…My patients with language barriers were not scheduled to see me during [the pilot] unfortunately. But if this service were made available in the future I would think it would be extremely useful." (S2C1)

"I sadly was away for the two first months of service and very few patients with language barriers during the last month. I am thrilled to see that the period has been extended…"

"…You'd have to use the service for a while to get a feel for the situations where there is the most added value. Something else I realized is my need to adapt my interviewing style: listening to translator I often lost my train of thought! – this would take more practice."

"I apologize for not using the service. I heard it is amazing!"

"Was not able to use service …would love the opportunity to use it in the future."

"Gold standard care means using professional interpreters. Not using such interpreters brings a risk of bad medical outcomes…Therefore, the dilemma is choosing or guessing whether a non-professional interpreter should be employed when access to care in time-limited and difficult to set up…This is a judgment I have to make on a case-by-case basis. It is not often clear which is the way to go in a walk-in clinic."

OPI service not provided in French: some clinicians were uncomfortable by the fact that the OPI service only interpreted into English; some had difficulty understanding the English-speaking interpreters and/or were offended that a French equivalent was not offered.

"French telephone interpreters service would be very useful."

"I find the posters in the waiting room somewhat offensive to French speakers. French is listed as one of the translated languages. French is the official language in Quebec."

"Il serait intéressant d'avoir accès à des interprètes qui peuvent traduirent du français vers une autre langue."

Time constraints: some clinicians perceived OPI services to be too time consuming for the high pace of their practice.

"Using the service was…time-consuming – not because the phone access was difficult, but because it made the conversation much longer.

"The connection time is ok but then I found the interview was significantly longer when using the telephone system and I'm [hesitant] to use it when I still have many patients to see after."

"Booking a unilingual non-English non-French speaker has to be considered an appointment with complicated patient and longer time-frame has to be given as it is taking more time."

"As a resident, the time constraints are too important to permit a good use of the telephone system. We should have more time in our clinic with always 45 minutes for patients with language barrier."

Difficulty communicating with patients via OPI service: some clinicians found it difficult to speak to their patients via remote interpreters.

"Limited Punjabi interpreters available and high demand at [Clinic 2]. Speaker phone and location of phone in walk-in made it difficult to communicate."

"…Il est parfois plus "objectif" mais j'aime beaucoup le contact visuel, ce qui est difficile avec l'interprète au bout du fil."

"Ma seule plainte c'est [que] les clients souvent pensent que l'interprète est un ami et parlent des longues phrases et l'interprète n'a pas le temps de tout traduire. Et les clients ne laissent pas la chance de traduire, ils commencent à reparler."

"Ce que je trouve le plus difficile est que je n'arrive souvent pas à avoir une belle qualité de son via le haut-parleur et devons être très prêts du téléphone."

No need for OPI services: some clinicians did not have any need for OPI services as they spoke multiple languages, or treated few (if any) LLP patients. In some circumstances, patients and/or their care providers did not think the service was necessary (even if they had tried it before).

"…I have not been able to use the service myself because I have not yet encountered a need during the time that the service was available. However, I have encouraged residents to use the service."

"The patients I used the service with were patients I have known for some time, [and] have some command of English. I turned to the service to see if it would change things with these patients… the service didn't seem to make a huge difference and added a layer of complication. In resident supervision, there were more instances of patients with little or no English/French. I have encouraged residents to use [the] service which seemed to make a significant difference in info gathering and explanation…."

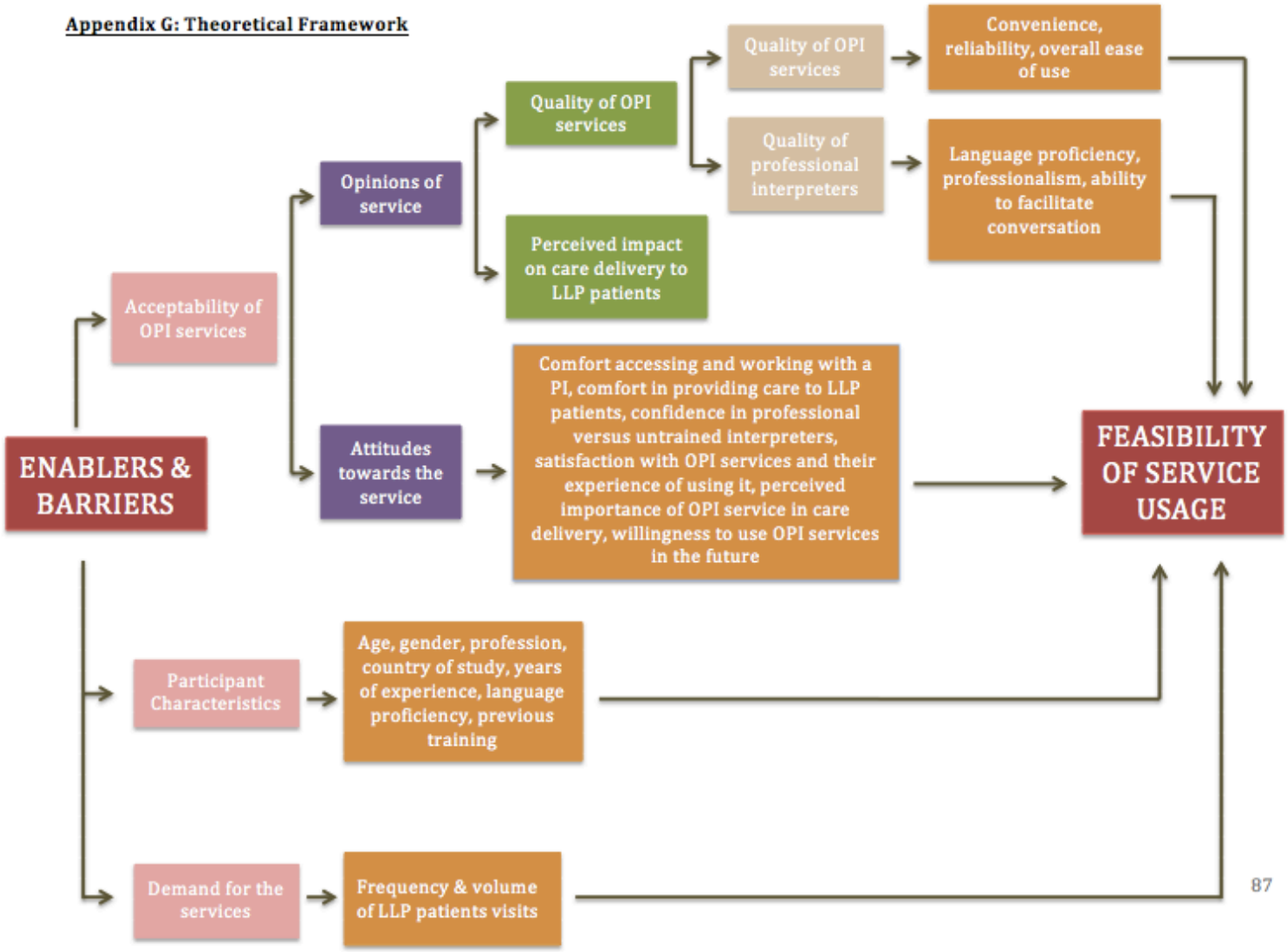
"A significant challenge was when the patient overestimated their English/French proficiency and was answering directly to me instead of to the interpreter…Some patients did not think it necessary to use the service, despite their language limitations in English/French!"

"In my FMC practice, not many limited English/French patients…"

"I have only English/French patients. Did not need to use service."

"Very rare opportunity to use it. I forgot about when it came up."

Appendix G: Theoretical Framework



87