Testing New Technologies In Medical Interpreting

Testing New Technologies

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Cambridge Health Alliance
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Forward

The Cambridge Health Alliance, like many other health systems across the United States, is serving an increasingly diverse patient population, reflecting the changing demographic profile of our country. Cambridge Health Alliance has the oldest hospital-based interpreter service in Massachusetts, starting with the service at Cambridge Hospital in the mid-1970s. Today we have one of the largest medical interpreter services in the country, with 120,000 interpreted patient contacts in FY02 in 38 languages. We have found that quality interpreter service is necessary for patient care. It is also a business necessity for any medical system in a community with language diversity. At the same time, interpretation is costly and, for the most part, not reimbursed.

The Testing New Technologies in Medical Interpreting Project presented and discussed in this handbook is important for several reasons. First of all, it is one of a small but growing number of studies of medical interpreting service delivery. It compares our traditional face-to-face interpreting, where the interpreter works in the room with the patient and provider, with three other ways of delivering the service, all of which involve the interpreter working from a remote location using new technology: speakerphone, videoconferencing, and remote simultaneous interpreting equipment. Other studies have looked at one or two of these ways of delivering interpreter service. This is the first study to compare all four together.

Second, the project is important in that it sought out the patients' perspective on the different ways of delivering medical interpreting while also studying the perspectives of the health care providers, the interpreters, and the clinic staff and managers. Interestingly, the study found that patients were very open to using the new technology for interpreting and, in many cases, preferred it. Providers' assumptions that the patients would not like this change were not necessarily correct.

Finally, the project is important in that it suggests that quality medical interpreting can be delivered via videoconferencing and telephone, with the two-way videoconferencing having the advantage of allowing the interpreter, patient, and provider to read the nonverbal signals that are so important in communication. We believe that this finding has implications for making medical interpreting more affordable. One interpreter working from a videoconferencing interpreting station could provide services to many patients at several sites in the same time it would take a face-to-face interpreter to wait for an appointment to start, interpret, and then travel to a different site to work with a different patient and provider. This is important for large sites such as ours as well as for smaller hospitals and clinics with fewer patients requiring interpreters.

I would like to thank the Blue Cross Blue Shield Foundation of Massachusetts both for their funding and for their enthusiastic support of this project. Additional funding came from the US Health Resources and Services Administration's Bureau of Primary Health Care, through funds from a Community Access Program Grant, and from the Health Research Educational Trust of the American Hospital Association, and I thank them for their contributions and support.

Special thanks to our Medical Specialties Clinic and Tuberculosis Clinic at Cambridge Hospital for participating in this study. I congratulate the providers, patients, and interpreters who participated for being willing to experiment with the new technology. Finally, I want to acknowledge the leadership and vision of Senior Director of our Department of Community Affairs, Linda Cundiff, R.N., Director of Multilingual Interpreting, Loretta Saint-Louis, and Director of Planning and Evaluation in Community Affairs, Elisa Friedman, as well as the other members of the project team.

Dennis D. Keefe

Dennis Keefe, Chief Executive Officer, Cambridge Health Alliance

Acknowledgements

We would like to thank Shoshanna Sofaer from the School of Public Affairs at Baruch College/CUNY for the methodological consultation she provided to this project. We are also grateful for the funding we received from the Blue Cross Blue Shield Foundation of Massachusetts, the Health Research Educational Trust of the American Hospital Association, the Community Access Program of the US Health Resources and Services Administration's Bureau of Primary Health Care, and the Cambridge Health Alliance. We also appreciate the time of those who reviewed our instruments, including Dr.Sofaer, Sonali Gupta, Dr. Laura Obbard, and Cristina Almeida, and two individuals who provided additional support to the project while working as contractors at the Cambridge Health Alliance: Maria Vu, a student at Tufts University and Karen Leiter, an independent consultant. We want to thank Javier Gonzalez for sharing information about Remote Simultaneous Medical Interpreting, and, through the Center for Immigrant Health of NYU School of Medicine, providing training for our interpreters. We also thank him for reviewing this handbook. We want to thank Shari Gold Gomez, Manager of Interpreter Services at Beth Israel Deaconess Hospital, for sharing information about their pilot of videoconferencing medical interpreting. Special thanks go to Brenda Parisi, Associate Vice President for Ambulatory Services at the Cambridge Health Alliance, for her enthusiastic support and input from the time that this project was first initiated. We are especially grateful to the interpreters, Multilingual Interpreting administrative staff, and Medical Specialties providers, managers, and staff who participated in the project. This required significant work and the courage to try new things. Thanks, too, to their colleagues who made accommodations so that the project could proceed. We are especially thankful to the patients who participated in the project.

Many thanks to several colleagues who provided us with helpful feedback on this document: Donald Wood and Isabel Pinto Franco of the Multilingual Interpreting Department at the Cambridge Health Alliance; Tania Phocas, an intern in the Cambridge Health Alliance Department of Community Affairs and a graduate student in public health at Tufts University; John Nickrosz of New England Medical Center; and Eduardo Berinstein of the Dana Farber Cancer Institute. We also thank Mary Grace Prichard for her editing suggestions. Finally, many thanks go to Yadira Ramos for the many hours that she spent working on the layout and design of this handbook.

We acknowledge the Massachusetts Medical Interpreters Association for their leadership in the field and the Cambridge College Interpreters Training Program, led by Jan Peterson, for sharpening our thinking about interpreter skills. Thanks, too, to the Massachusetts Interpreter Services Collaborative for our work together in understanding best practices in managing hospital interpreter services.

Finally, we want to thank our Senior Director for Community Affairs at the Cambridge Health Alliance, Linda Cundiff, who immediately recognized the importance of doing the study and supported it. We also want to express appreciation to our current Chief Executive Officer, Dennis Keefe, and John O'Brien, former CEO at the Cambridge Health Alliance, for their unswerving support for medical interpreting as it facilitates access to health care for patients with limited English proficiency.

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I. Executive Summary

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The Cambridge Health Alliance, like other health care systems across the United States, is providing service to a patient population that is growing in its need for medical interpreting. The challenge is to provide quality interpreting to all patients who need it quickly and affordably. As financial constraints have grown, we have needed to find ways to maintain quality of service while reducing costs.

Remote interpreting, which eliminates interpreter travel time and minimizes wait time, could be more affordable than face-to-face interpreting, even with the additional equipment costs. The key question for this study was how well the different remote modes work in a clinical setting and what patients, providers, and interpreters would say about their comfort level if they could experience all four ways of delivering interpreter service: face-to-face, via speakerphone, through videoconferencing, and through remote simultaneous medical interpreting equipment. To the best of our knowledge, no one had compared these four modes.

Although this was a pilot-study with a small participant sample size, we were able to make some important observations about using the four modes of interpreting delivery. We discovered that the phones that are used across our system are not ideal for telephone interpreting because the speakerphones we used do not allow for voice overlapping. We found after the study that sound quality can be greatly improved with full duplex speakerphones. Videoconferencing, using a Polycom® ViewStation FX®, TCP/IP system over the Cambridge Health Alliance's LAN, turned out to be a very technically reliable mode, which offered clear video and audio transmission. Remote simultaneous medical interpreting, as it was implemented in our system, was not a technically reliable system, and offered unclear sound quality, as well numerous other technical complications. For this pilot we used a remote simultaneous medical interpreting console from Rauch Co. of New Jersey, with headsets with microphones linked to cordless phones for the provider and patient.

Participating physicians and nurses preferred using face-to-face to interpreting over any of the remote modes, while videoconferencing was their general favorite among the remote modes. Overall, providers said that they preferred modes of interpreting which allowed for visual cues. Participating interpreters had a mixed reaction to using the remote modes of interpreting, with three interpreters saying that they prefer face-to-face interpreting over interpreting using the remote modes, and two saying that they were equally satisfied with face-to-face interpreting and remote interpreting. Although the interpreters also found video-conferencing interpreting to be their favorite of the remote modes, they had an overall higher satisfaction level with remote simultaneous interpreting than did the providers and the patients.

We received a positive reaction from the patients to using the remote modes, with nearly two thirds saying that the next time that they needed to use an interpreter, they would prefer to use one of the remote modes over face-to-face interpreting, or that they did not care which mode that they used.

For patients, greater satisfaction with one mode rather than others seemed to be, in large part, an issue of preferences about privacy and feelings of distance from the interpreter. Overall, both providers and patients indicated that they would have a higher satisfaction level with the remote modes if the modes were able to decrease waiting time and interpreter delay.

In general, study participants viewed videoconferencing interpreting as advantageous, compared to the other remote modes, because it allowed for visual cues. Many of the participants compared the experience, and the quality of communication, to face-to-face interpreting. Speakerphone interpreting was viewed as being particularly suitable for short and simple appointments, with varied participant reaction to the idea of using it for longer and more complicated appointments.

Overall, we found that a lot of experience is needed before everyone in the system is fully knowledgeable and comfortable using the remote modes. Thorough training on all modes that will be used is required for all employees within the clinical site where remote modes will be used, and specific protocols should be developed on how to handle the different situations that may arise while using the modes.

Face- to- face Interpreting

II. Introduction

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A. Why We Did This Project and Wrote This Handbook

This handbook describes findings from a study on interpreting in a medical specialties clinic at Cambridge Hospital in Cambridge, MA, one of three hospitals of the Cambridge Health Alliance. The study examined four modes of providing medical interpreting. In one mode, face-to-face interpreting, the interpreter was in the room with the patient and the medical provider. In the three other modes the interpreter was working from an interpreting station in another building. These three other modes are telephone interpreting, videoconferencing interpreting, and remote simultaneous interpreting (UN style).

B. What We Needed to Know and Why

The goal of this study for our own system was to identify the pros and cons of each mode of interpreting in order to help the managers of our very large interpreting service make decisions on how to provide the services. We have been providing face-to-face interpreting for more than twenty years. Our interpreter service was the first hospital-based interpreter service in Massachusetts, enjoys a wonderful reputation in the state, and has drawn patients into the Cambridge Health Alliance from far outside our immediate region. Our service has greatly benefited from participation in the Massachusetts Medical Interpreters Association and follows the Standards of Practice[1] of the association, which is entirely geared towards face-to-face interpreting.

Despite our success and our commitment to face-to-face interpreting, we have had several factors pushing us to explore delivering some of our interpreting remotely. The first is interpreter cost. Our interpreter budget for FY03 is $2.6 million. Some increased cost is due to growing volume. After four years of steady growth, we provided 120,000 interpreter-patient contacts during fiscal year 2002. Some increased cost is due to the large number of languages (over 30) that we serve and the relatively higher unit cost of interpreting for less frequently used languages. Some increased cost is due to rising interpreter salaries, commensurate with increased training, skill levels, and professionalism. Some increased costs come with the logistics of delivering the service to our growing institution. As we have added more sites, the time we pay for our staff interpreters to travel between sites has become significant. We now have three hospitals and twenty primary care sites, with miles between our sites and at least 30 minutes driving time from one end of our system to another. Also, all face-to-face interpreting systems have a certain amount of time the interpreter spends waiting for patient visits to start. Remote interpreting, which would tie up the interpreter's time only when they are needed to interpret, could lower total interpreter cost by allowing one interpreter to serve more patients.

The second factor pushing us to do this study is the cost of interpreter delay. When an interpreter travels between sites there is often delay in patient appointment start time at both sites. This hurts patient and health care provider satisfaction and clinic productivity. Interpreter delay is the number one complaint that we get about our service and a very significant issue in clinical operations at our outpatient and inpatient sites.

In exploring new ways of delivering interpreter services, we do not want to lose the satisfaction of our patients or our reputation. There would be business consequences and public health consequences if we were to lose patients and stop attracting new patients. We also do not want to downgrade the quality of the communication between patients and providers or make changes that are not acceptable to our physicians who depend on the interpreters.

C. Why Other Health Care Systems May Be Interested in Our Findings

All across the United States there is unprecedented attention to medical interpreting[2]. One reason for this is the quickly changing demographics of the US, with growing migration from Mexico, Central America, Latin America, the Caribbean, Asia, Europe, the Middle East, and Africa. Areas of the U.S. which twenty years ago were very homogeneous have quickly become linguistically diverse. At the same time, since August 2000, the Office of Civil Rights of Health and Human Services has clarified its requirement that all health care providers who receive federal funding must provide competent medical interpreters[3].

At the national level, both remote simultaneous and videoconferencing interpreting have been receiving some recognition as cutting edge ways of delivering service. Many systems have contracts with a telephone interpreting service, such as Language Line or Pacific Interpreters, and nothing else. We wanted to share our findings with other health care systems so that they could benefit from our experience as they make choices about how they will deliver interpreter services.

D. Funding for This Project

Funding for this project came from grants from the Blue Cross Blue Shield Foundation of Massachusetts, the Community Access Program of the US Health Resources and Services Administration’s Bureau of Primary Health Care, the Health Research Educational Trust of the American Hospital Association, and our operating budget at the Cambridge Health Alliance.

E. Our History and Philosophy

The Cambridge Health Alliance is a safety net health care system providing services to the underserved, as well as others in our area. Our patients with limited English proficiency (LEP) have historically come to this area with very little other than the proverbial shirt on their back. Our biggest LEP patient groups are people from Brazil, Central America, especially El Salvador, and Haiti, with smaller groups from India and Bangladesh, the former Soviet Union, China, Korea, various Arab nations, and many other countries. Many of our patients have not had access to education. Many are intimidated by the challenges of negotiating our health care facilities and systems and defer to the authority of the health care providers.

When our interpreter services first began in the mid-1980s with three interpreters at Cambridge Hospital, the hospital staff were mostly inexperienced in working with patients from other cultures and languages, and not always welcoming. Our interpreter job descriptions were created to meet the multiple needs of providing linguistic assistance, culture brokering, and patient advocacy[4]. Over the years, both through the day-to-day work of the interpreters and the senior management support for culture change, the Cambridge Health Alliance has become a much more culturally competent organization.

We now have bilingual bicultural staff at most of our clinical sites, in addition to our medical interpreters. However, our interpreters (now more than 40 regular staff interpreters and over 100 per diems) still are expected to provide cultural brokering and patient advocacy, when needed, in addition to interpreting. In fact, when clinicians stop the Director of Multilingual Interpreting in the hallway, they usually give her praise for the quality of the interpreting they are getting. However, when providers give feedback about an individual interpreter's work, it is usually focused on appreciation for their sensitive cultural brokering, advocacy, and support for a patient in an emotionally and clinically challenging situation. As we look to modify the way we provide the service, we do not want to lose this aspect that seems so valuable to clinical care.

F. Introducing Our Testing New Technologies Team

Loretta Saint-Louis, PhD, the Director of Multilingual Interpreting, had the initial idea for the project. This came after seeing a demonstration of remote simultaneous interpreting at Gouverneur Hospital in New York in December 1999 and, two years later, a demonstration of videoconferencing interpreting by Deaf Talk Inc. at Beth Israel Deaconess Hospital in Boston. She co-wrote the grant and has led this project.

Elisa Friedman, MPH, the Director for Planning and Evaluation for Community Affairs, wrote and co-wrote the grants for this project and led the research design.

Emily Chiasson, MSW, MPH, the Evaluation Coordinator for Community Affairs, worked with Elisa on the research design and led the implementation of the evaluation component.

Avlot Quessa, the Training Specialist for the Multilingual Interpreting and a member of the faculty at the Cambridge College Medical Interpreter Training Program, brought significant insight to our team discussions and writing as an expert in medical interpreting.

All of the above are staff in the Department of Community Affairs at the Cambridge Health Alliance.

Fernando Novaes, the Project Manager, came to us as a consultant for this project. Mr. Novaes, who worked as an interpreter at Cambridge Hospital many years ago, managed the logistics of coordinating technology and people for the project. He also served an important role as observer and patient interviewer, and provided valuable data for the project.

III. How the Interpreting Modes Work

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The following summarizes how each of the interpreting modes used for this project works. For those new to this field, we also describe the difference between consecutive interpretation and simultaneous interpretation.

A. Face-to-face Medical Interpreting

In face-to-face interpreting, the interpreter is in the room with the provider and patient and establishes a triadic relationship with them. The conversation is free of any interpreting device or telecommunication equipment. Face-to-face interpreting has been included in this study for the purpose of comparison to the remote modes.

Face-to-face Medical Interpreting

For this study we used consecutive interpreting for face-to-face medical interpreting, as well as for videoconferencing and telephone interpreting. In consecutive interpreting, all three parties take turns speaking when conversing. For instance, the provider speaks a phrase or sentence, then pauses while the interpreter interprets it into the patient's language. Then the patient speaks, then pauses, while the interpreter interprets that into the provider's language. (The alternative to consecutive interpreting is simultaneous interpreting, used in remote simultaneous interpreting, which we describe later.)

In face-to-face interpreting, the interpreter, provider, and patient are able to see each other as well as hear each other. Other features of face-to-face interpreting include:

- ❑ The provider, interpreter, and patient may communicate through visual cues as well as spoken cues, gestures, facial expressions, and other body language. Because the provider and patient hear each other, they may also pick up on tone of voice.
- ❑ The interpreter may provide a short written translation, such as treatment instructions, which would otherwise be given to the patient in English.
- ❑ The interpreter may also do an on-the-spot sight translation of a written document. For example, the interpreter could provide a quick oral translation of a letter from the patient's doctor in the country of origin.
- ❑ The interpreter may be able to move with the patient and provider when they need to go to a new location.

On the other hand, face-to-face interpreting may require that the interpreter travel. An interpreter may have to travel from one department to another, as interpreters do when working in a hospital or large clinic, for example. In other systems, interpreters may travel across different hospitals or sites within one health system. The traveling time decreases the interpreter's productivity and adds transportation costs.

B. Telephone Medical Interpreting

In our project we used telephone interpreting this way: The provider placed a call to the interpreter. Then the interpreter called back, and the provider put the call on speakerphone with a push of a button so the three parties were able hear each other.

The interpreters used the consecutive mode, with each party pausing so that the interpreter could interpret, as in face-to-face interpreting.

Telephone Medical Interpreting

All exam rooms at the Cambridge Health Alliance are already equipped with telephone sets with speakerphone capabilities. Therefore no purchase of equipment was necessary. For this project, we used half duplex speakerphones, which did not allow voice overlapping.

(See Appendix D for discussion of telephone interpreting equipment.)

C. Videoconferencing Medical Interpreting

Videoconferencing interpreting uses videoconferencing equipment to connect the interpreter to the provider and patient. At a minimum, the system consists of a videoconferencing unit in an exam room and another one in an interpreter station. Each unit contains a video camera, a video monitor and a microphone. The video camera of one unit captures the image and audio and sends it to the other unit's monitor, and vice-versa. The interpreter is able to see and hear the patient and the provider at the medical appointment and, at the same time, the patient and the provider can see and hear the interpreter.

The video equipment is completely controlled by the interpreter. The only action required of the providers at the time of an appointment is to turn the monitor on, or to make sure that the system is on the stand-by mode. The interpreter remotely establishes the connection, makes all necessary adjustments to the camera and the audio volume and enables the interpretation to begin. The interpreter also controls the direction of the camera, "following" the patient and the provider across the exam room.

Videoconferencing Medical Interpreting

The system we used is able to provide picture-in-picture (PIP) capability. This feature offers a small picture at a corner of the screen displaying the picture that is being broadcast from that same unit. Utilizing this feature, interpreters can see themselves on the screen. This is very helpful in assuring that the interpreter provides a correct camera angle, is centered on the screen, is aware of details in the background and generally looks professional. In the exam room, the PIP shows the provider and the patient what the interpreter sees.

The view station and the monitor have their electrical cord and network cables connected to the wall jacks. However, if required, the unit can be easily unplugged, moved and plugged in again at another location. In our system, this is possible as long as it is within the same LAN partition. If the unit is transported to another LAN area, it will need a new IP address assigned to it.

As in face-to-face interpreting, videoconferencing uses consecutive interpreting.

(See Appendix D for more about the videoconferencing equipment we used.)

D. Remote Simultaneous Medical Interpreting (RSMI)

Remote simultaneous medical interpreting uses special equipment and simultaneous interpreting. It is familiar to many people as the way interpreters work at the United Nations.

In remote simultaneous medical interpreting the interpreter works from an interpreting station using a special console. The console is linked to two telephone lines connecting the interpreter to the exam room. One line is for the provider and one is for the patient. Each line is connected to a cordless telephone, which, in turn, is connected to a headset with a microphone. The headsets for remote simultaneous medical interpreting completely cover the ears, to block out other sounds in the room and ensure good audio quality.

After the provider or a staff person in the clinic notifies the interpreter that they are needed, the interpreter uses these two telephone lines to place two separate calls, one to the provider and one to the patient. The provider and patient answer their calls, put the headsets on, and proceed with the appointment.

The interpreter, connected to both telephone lines at once, interprets simultaneously, with a very slight delay, while the provider or patient speaks.

The interpreter uses the console to direct his voice, and the interpretation, to the telephone line of the person who is not speaking. During the conversation, the interpreter interprets for both the provider and patient, switching back and forth between the two speakers.

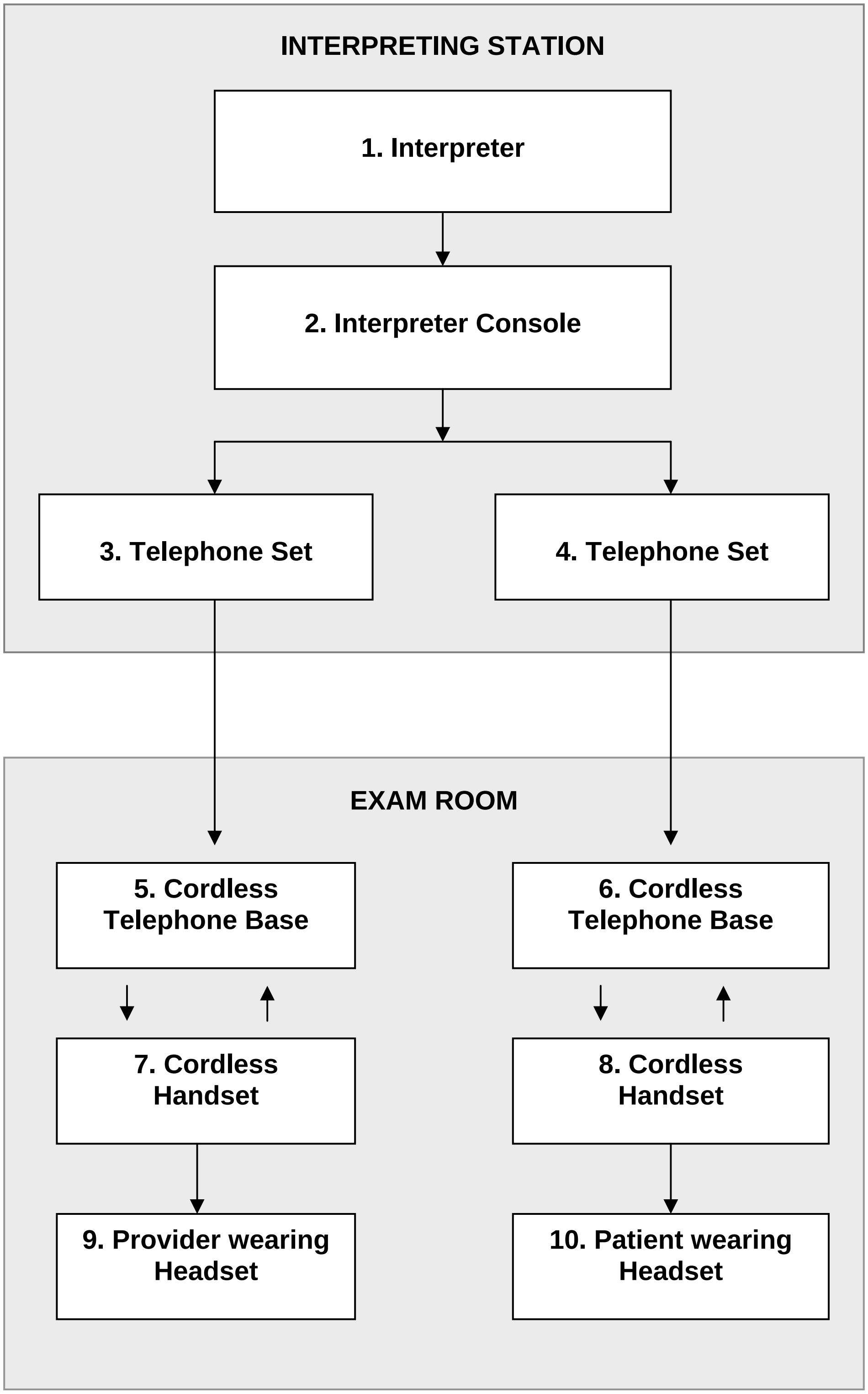
Remote Simultaneous Medical Interpreting (RSMI)

For example, after the provider starts a sentence, the interpreter immediately presses the “Patient” button and starts interpreting for the patient. Then, when the patient starts speaking, the interpreter presses the “Provider” button to interpret for the provider. There is a third button that allows the interpreter to speak to patient and provider at the same time.

For this study, we stored the RSMI exam room equipment in a specially designed cabinet that holds the cordless telephone bases and handsets, as well as the headsets.

(See Appendix D for more on the RSMI equipment.)

RSMI SCHEME


INTERPRETING STATION
1. Interpreter
2. Interpreter Console
3. Telephone Set
4. Telephone Set
EXAM ROOM
5. Cordless Telephone Base
6. Cordless Telephone Base
7. Cordless Handset
8. Cordless Handset
9. Provider wearing Headset
10. Patient wearing Headset

IV. Research Design and Methods

IV. Research Design and Methods

A. Overview

The Testing New Technologies project was an exploratory study, consisting primarily of qualitative data. As mentioned above, the study was implemented in the Medical Specialties Clinic at Cambridge Hospital, with the intention of testing the new modes of interpretation with Spanish, Portuguese and Haitian Creole speaking patients. Approval for the study was obtained from the Institutional Review Board of the Cambridge Health Alliance.

Based on information gathered from a literature review, the following research questions were developed:

1) Does patient, provider, and interpreter satisfaction differ for the four modes?

2) What technical issues were encountered when using each of the modes?

3) For what clinical situations are the different modes appropriate?

4) How did each mode affect the relationship between providers, patients, and interpreters?

Data was collected from the following sources:

- Pre and post acceptability of technology surveys were used to determine the physicians' and the interpreters' knowledge, experience and perceptions of each of the modes at baseline, and again at the end of the study.

- In-depth interviews were conducted with participating MD's, nurses, interpreters, managers, and a select group of patients.

- Observations of the medical appointments of this same group of patients were made by a trained observer.

- Notes were collected from the interpreters using a standardized, three-question form.

- An event log was created to document events such as major equipment problems or a provider dropping out of the study.

- Emails, meeting notes, and other records of daily events were also collected for analysis.

Data was gathered from five groups of people: MDs, nurses, patients, interpreters, and managers, with a total of 55 interviews conducted. Flow charts were developed around each category of participants in order to capture and refine the process of data collection. Although the original research questions and domains remained the base of the research, refinements were made to the research design throughout the project.

Dr. Shoshanna Sofaer from the School of Public Affairs at Baruch College/CUNY provided methodological consultation on research design and analysis throughout this project.

We conducted interviews with:

- ☐ **Four physicians**
- ☐ **Three nurses**
- ☐ **Twenty-eight patients**
- ☐ **Five interpreters**
- ☐ **Four managers**

Remote Simultaneous Medical Interpreting (RSMI)

B. Research Design

The original research design called for each participating physician and nurse pair to use each of the four modes for a two-week period, and to be interviewed on their experiences using each mode at the end of the two weeks, for a total of four interviews. All Portuguese, Spanish and Haitian-speaking patients who saw any of the participating providers during the study period were to use the mode that their physician was assigned at the time of their appointment. A total of forty appointments were to be observed by the TNT research team, and those patients were to be interviewed in their native language after their appointment. The design called for a total of ten patients to be interviewed on each mode, with as even a distribution across the three languages as possible. The interpreters were to use all four of the modes throughout the study period, and to be interviewed once on their experiences with all of the modes at the end of the study. All interviews were conducted by trained interviewers, tape recorded and transcribed, and the data was then coded. Further detail on the research design will be given in the following sections, and barriers to implementation of our original research design will be discussed in Part G of this section.

C. Instrument Development

Instruments developed for this study included the pre- and post-acceptability survey, interview protocols for the physicians, nurses, interpreters, patients and managers, the appointment observation tool, the interpreter note sheet, and the event log. The pre and post acceptability surveys, appointment observation protocol, and interpreter note sheet were pilot-tested. The appointment observation protocol was also tested for inter-rater reliability. The interview protocols, which we were unable to pilot-test because the questions could only be answered by people who had experience using the new modes, were reviewed by members of the TNT research team, as well as by a select group of physicians, nurses, interpreters, managers, and experts in the field of medical interpreting. After the instruments were finalized, the patient interviews were sent to the Cambridge Health Alliance Translation Service to be translated into Spanish, Portuguese, and Haitian Creole.

D. Participant Selection

A total of four physicians and three nurses participated in the study. Physicians who worked in the Medical Specialties Clinic were selected to participate by the clinic manager. Selection criteria included that they be willing to participate, that their specialty did not deal extensively with emotionally charged issues relative to other specialties, and that they had a high number of appointments with patients with limited English proficiency. Participating physicians included a dermatologist, an endocrinologist, a neurologist, and an infectious disease specialist who works in the Tuberculosis clinic. Three of the participating physicians had been practicing clinicians for over 10 years, while the fourth had been practicing for less than a year. With the exception of the infectious disease specialist, all physicians in the Medical Specialties Clinic work closely with one nurse, and so these nurses also were selected to participate in the study.

Interpreters who participated in the project were among the most skilled interpreters at the Cambridge Health Alliance and had successfully completed the exam that was given at the end of the 40-hour RSMI training. The interpreters were selected based on the language they interpret, their experience as medical interpreters and their willingness to participate in the project. Interpreters were given an opportunity to learn about the different modes prior to committing to participate in the project. A total of 5 interpreters participated in the project: 2 Portuguese-speaking, 2 Spanish-speaking, and 1 Haitian Creole-speaking. All participating interpreters work full-time at the Cambridge Health Alliance. Their experience working as an interpreter ranged from 2 years to over 20 years. Three of the participating interpreters had received training as an interpreter outside of the training that they receive at the Cambridge Health Alliance.

Patients were excluded from the study if they were going to be receiving bad news at their appointment, if for other reasons the provider felt that it was not appropriate for them to participate, or if the patient declined to participate. Other than those reasons for exclusion, the expectation was for all Spanish, Portuguese and Haitian Creole speaking patients who saw one of the participating providers during the study to use whichever mode the provider was scheduled to be using at that time.

E. Data Collection

All physician, nurse, interpreter, and manager interviews were conducted by experienced members of the research team. A team of trained interviewers conducted patient interviews and appointment observations. This team was made up of Cambridge Hospital interpreters who were not interpreting in the study. They were fluent in the languages of the patients in the study. Because they worked on-site at the hospital they were easily accessible to participate in the study as observer/interviewers. They attended a 3-hour training that covered information on informed consent, interviewing techniques and a review of the interview protocol. All observer/interviewers practiced completing an observation and interview before beginning to work in the study.

Data Collection: Providers

Before they began participating in the study, all physicians were given an acceptability of technology pre-survey. The survey measured knowledge of, attitude towards, and perceived aptitude in RSMI, videoconferencing interpreting, and telephone interpreting, participants' perceptions of the potential of these new technologies to increase productivity, and whether or not the new modes were less acceptable than face-to-face interpreting.

The original research design called for each physician/nurse pair to use each mode for two weeks, with all Spanish, Portuguese and Haitian Creole speaking patients that they saw during that time, and then to be interviewed on their experiences using the mode at the end of those two weeks. The provider interviews addressed the technical issues that arose around each mode, and the types of appointments for which each mode was optimal, and for which was it not appropriate. They also addressed how each mode affected quality of communication, as well as how it affected the relationship between patient, providers, and interpreter. Finally, the interviews addressed the provider's overall satisfaction with the mode and how each mode compared to the others.

The questions asked in the physician and nurse interviews varied slightly in order to better reflect the different roles that they each played during the appointment. Interviews were tape recorded in order to ensure accuracy and were later transcribed. At the end of the study period all physicians also completed an acceptability of technologies post-survey.

As will be discussed later, various issues that arose during the implementation of the study prevented the original research design from being precisely carried out. All physicians did use all four of the modes. Two of the nurses only had minimal exposure to some of the modes. In total, 10 physician interviews and 8 nurse interviews were conducted, as some of the interviews ended up being combined to include discussion of more than one mode.

Data Collection: Patients

A convenience sample of patients was selected for observation/interview based on the numbers needed in terms of language and provider distribution, and the availability of observer/interviewers and participating interpreters at the time that the patient arrived for his or her appointment. Selected patients were approached upon arrival by one of the observer/interpreters who spoke their native language. The study was explained to them, any concerns that they had were addressed, and they were given the informed consent form with the option to participate. Informed consent forms were translated into Portuguese, Spanish, and Haitian Creole through the Cambridge Health Alliance's in-house translation service. While they waited for the appointment to start they made the decision whether or not to participate.

During registration, in cases where a mode other than face-to-face interpreting was being used, patients had telephone interpreting available to them to assist with registration (telephone interpreting is already used at most sites at the Cambridge Health Alliance).

During the appointment, patients who agreed to be part of the study were assigned a participating interpreter who used the mode scheduled for that provider at that time. If the patient agreed to have their medical appointment observed, then the trained observer observed the appointment, using the observation protocol.

The observation protocol focused on quality of communication during the appointment. It was designed to measure the number of interpreter errors (the number of additions, omissions, mistakes and distortions made by the interpreter) during the first two minutes of the appointment. It was also designed to rate how well the interpreter bridged the gap in linguistic register between provider and patient and managed the flow of the communication process. It included two measures of the provider's direct communication with the patient: speaking directly to the patient rather than to the interpreter (using first person rather than third person) and looking at the patient. It also included documentation of the different roles (conduit/clarifier/culture broker/patient advocate) that the interpreter filled during the appointment. For appointments that took place using face-to-face, telephone, and videoconferencing interpreting, the observer was in the exam room during the appointment. For appointments, the observer was stationed in the room with the interpreter, listening in by headphone.

RSMI

At the conclusion of the appointment, the same observer/interviewer who had observed the appointment interviewed the patient in his or her native language. Patient interview questions focused on the quality of interpreting and the overall experience of the patient. The interview gathered some demographic information from the patients and solicited their opinions about how well the technical aspects of the mode worked. The interviewer also asked questions about the patient’s interactions with the interpreter, the doctor, and the front desk staff. If the patient had been included in the study before, the interviewer asked about other modes that they had used. The patient was also asked what mode they would like to use the next time they needed an interpreter. Patient interviews were tape recorded, with the patient’s permission, and later transcribed.

All patients who were observed and interviewed were given a telephone card as compensation for their participation in the study.

Although the original goal was to interview a total of 40 patients, due to the barriers that will be discussed shortly, we ended up with a total of 28 patient observations and interviews, with between 6 and 8 in each of the modes. Interviewed patients ranged in age from 21 to 80, with the majority being in their late 20's and 30's. Twenty of the patients interviewed were women, and eight were men, and twenty-one were from Brazil, 3 were from the Azores, and 4 were from El Salvador. Participants had been using the Cambridge Health Alliance for their health care for a time period ranging from 2 weeks to 35 years, with about half having been patients there for a year or less. Fifteen of the patients that we interviewed had previously seen the participating provider with whom they had their appointment that day.

Patients Interviewed

Originally from:	
21	**Brazil**
3	**Azores**
4	**El Salvador**

Gender:	
20	**Women**
8	**Men**

Data Collection: Interpreters

Before beginning the project, all participating interpreters completed an acceptability of technologies pre-survey. Interpreters used all four modes throughout the project, and were assigned to appointments by Cambridge Hospital's interpreting services dispatcher, depending on availability. Interpreters were asked to complete a standardized, open-ended 3-question appointment note form after each TNT appointment, asking about their experiences during that appointment. Interpreters were interviewed once at the end of the project implementation period, and also completed the acceptability post-survey at that time. Interpreter interviews focused on satisfaction with each mode, technical difficulties encountered, differences among the modes, and pros and cons of each mode. They were also asked how each mode could best be used, and how the new modes could best be implemented within the Cambridge Health Alliance. A total of five interpreter interviews were conducted.

Data Collection: Managers

Four managers at the Cambridge Health Alliance were an integral part of this project: The Medical Specialties Office Manager, the Medical Specialties Practice Manager, the TNT Project Manager, and the Director of Multilingual Interpreting. All four of these managers were interviewed at the end of the project implementation period. Manager interview protocols varied according to each manager's role in the project, but focused on the managers' impressions of the modes, and how the modes could be best be implemented within the Alliance.

F. Data Analysis

The fifty-five interviews conducted with project participants were transcribed for analysis. Patient interviews in Portuguese and Spanish were translated into English during transcription by bilingual transcribers. Based on a review of our instruments and initial transcripts, five thematic groups were developed on which our analysis was based and interviews coded: technical issues; clinical issues; communication/cultural issues; relationship issues between providers, interpreters, and patients; and satisfaction issues. We placed issues that did not fall in to these categories in an “other” category. Interpreter notes, emails, meeting notes, and other records of daily events from the project were also coded using these categories. All interviews were read independently by the two evaluators and the coding scheme discussed between them until agreement was reached. The evaluators also met regularly with the project team as analysis was being conducted to confer on conclusions.

G. Barriers to Implementation of Research Design

As mentioned above, throughout the course of the project, the research team encountered various obstacles to successful implementation of the original research design. These included a low number of appointments suitable for the project, difficulties with scheduling, technical problems, and some resistance to participation, though not on the part of the patients.

To begin with, there were fewer appointments than anticipated for the project. The project implementation period included the winter holidays, when some of the participating physicians simply had very few or no appointments requiring interpreters. Also, two of our participating physicians spoke Spanish and did not use an interpreter when seeing Spanish-speaking patients.

Scheduling was difficult. Due to a systems problem, the appointment reports from the clinic where we did our study were not a reliable source of information on interpreter need. The clinic also has a high rate of patients missing appointments without canceling them (no shows). The research team tried to increase the predictability of the appointments for the study by making reminder/confirmation calls to the patients a day or two before the appointment. Even with the reminder calls, there was still a high incidence of patient no shows.

Except for certain very predictable needs, Cambridge Hospital does not have scheduled interpreter appointments. Instead, the clinical areas page the interpreter service when they need the interpreter. (Computer scheduling of interpreter appointments and improvement work to decrease no shows are both soon to be implemented). Interpreter staffing levels are based on weekly and monthly patterns of interpreting volumes. However, in any given moment, the interpreter needed in one area may be busy in another area, resulting in delay. Due to financial constraints the project could not hire special interpreters or observer/interviewers just for this study, and very little staff time could be reserved for the project. The five participating interpreters continued to respond to calls throughout the hospital. When a provider participating in the study called for an interpreter, the interpreter dispatcher made arrangements for a participating interpreter to come and use the mode scheduled. The dispatcher also called the observer/interviewer.

Scheduling problems arose with the providers, too. Due to other time constraints, it was difficult to schedule them for meetings and interviews. Some of the physicians were working with residents during some of the weeks of the study. When the resident conducted the appointments we could not use that appointment for the study.

Equipment problems, both large and small, arose during the course of the study. These problems would sometimes require that face-to-face interpreting be used rather than the remote mode that had been scheduled. Sometimes technical problems caused several days of delay in use of one of the remote modes. Also, because the RSMI and videoconferencing equipment was installed only in certain exam rooms, there were some issues that arose around room scheduling.

Several obstacles delayed us from starting patient interviews and observations until several weeks into the project. One major issue was finding people to serve as observer/interviewers. We had great difficulty in scheduling training due to competing demands for the time of likely observer/interviewers. We trained five people who all decided not to participate in the project, either because of scheduling conflicts or lack of interest in the project. We then trained another group of observer/interviewers, but two of them also dropped out. In addition, there was delay waiting for responses from people who had agreed to pilot-test and review our instruments.

We encountered various forms of resistance from providers and interpreters to participating in the project and using the new modes of interpreting. Two of the initial physicians who were selected to participate in the project dropped out, one before project implementation began, and one shortly after. It then took us some time to find replacement providers. There were times when providers who did participate did not follow the schedule for using the new technologies. Also, sometimes interpreters did not use the new technologies when called to the appointment of participating providers. They did not always complete the interpreters note form after appointments, and did not always add entries to the appointment tracking form designed to track the number and length of TNT appointments interpreters completed each day.

Our original research design called for patient interviews to be spread across Portuguese, Spanish, and Haitian Creole speaking patients. However, throughout the course of the project, the number of appointments with Haitian Creole speaking patients was very small, and we were not able to observe or interview any of these patients. This occurred due to a number of the issues discussed above, including scheduling problems, apparent interpreter reluctance to participate, and lack of appointments.

It should be noted that, although we ran into a number of barriers that prohibited our original design from being implemented exactly as planned, we still believe that we collected valuable information. We expect that this information will be useful both for our system and other health systems that are considering implementing the four modes of interpreting.

V. Interpreter Training

V. Interpreter Training

A. Interpreter Training and Why It Was Important to This Project

For this project we selected medical interpreters from our staff. (For more on the selection process see Section IV). All interpreters at the Cambridge Health Alliance have passed extensive written and oral testing prior to being hired. The interpreters selected for the project had demonstrated high level skills. They were trained in:

- Interpreting skills for consecutive face-to-face interpreting.
- The Code of Ethics for Medical Interpreters from the National Council on Interpreting in Health Care and the Massachusetts Department of Public Health.
- The Standards of Practice for Medical Interpreters of the Massachusetts Medical Interpreters Association.
- The roles of the medical interpreter in the medical setting, elaborated in the Bridging the Gap[5] interpreter training of the Cross-Cultural Health Care Program.

Phone Interpreting

Specifically, the roles of the interpreter are:

Conduit: This is the most basic of the roles and involves rendering in one language exactly what has been said in the other without adjusting register: no additions, no omissions, no editing or polishing. This is the "default" role of the interpreter, which the interpreter adopts unless he or she perceives a clear potential for misunderstanding.

Clarifier: In this role, the interpreter adjusts register, makes word pictures of terms that have no linguistic equivalent (or whose linguistic equivalent will not be understood by the patient) and checks for understanding. The interpreter takes this role when he or she believes it necessary to facilitate understanding.

Culture Broker: In this role, the interpreter provides a necessary cultural framework for understanding the message being interpreted. The interpreter takes this role when cultural differences are leading to a misunderstanding on the part of either provider or patient.

Advocate: Advocacy is any action an interpreter takes on behalf of the patient outside the bounds of an interpreted interview. The advocate is concerned with quality of care in addition to quality of communication. Interpreters appropriately become advocates when the needs of the patient are not being met due to a systemic barrier such as the complexity of the health care system or racism. Advocacy most often takes the form of giving information or connecting the patient with other clinic staff whose job it is to resolve the patient's problem.

It is worth mentioning that there is a difference of opinion about the roles that medical interpreters should be performing. Within the field of medical interpreting, the debate focuses especially on the appropriateness of culture brokering and patient advocacy. For example, some experts don't think that interpreters should serve as patient advocates because it can affect the dynamics of the triad between the provider, patient and interpreter when all of the intentions behind the advocacy are not fully communicated and understood by all parties involved. It's also worth mentioning that it can create conflict in a system where patient advocacy by medical interpreters does not receive full support from higher leadership. Others, however, believe that patient advocacy is an important role for the medical interpreter so that a diverse patient population can fully access services and so that all of their concerns can be heard and addressed. In our health system, interpreters are trained on how to build the best working alliance with our providers and at the same time to advocate for the patients when they are facing barriers in accessing services.

In our organization, and for the purpose of our study, we expect our interpreters to take on all the four roles. This is because, in our experience at the Cambridge Health Alliance, the four roles together help to reduce the level of frustration that can sometimes surface in the exam room when providers and patients cannot fully communicate and understand each other or the patient does not get what they need.

It is important to point out that many of the skills and concepts that the selected interpreters have acquired and used in consecutive face-to-face interpreting were also applicable in the remote modes that we studied. However, we understood that the transition from consecutive face-to-face interpreting to remote simultaneous interpreting required additional skills[6], especially in simultaneous interpreting. For training in simultaneous interpreting, and in using the RSMI equipment, we contracted with the Center for Immigrant Health at the New York University School of Medicine for a 30-hour training. This program is top in the country in RSMI.

B. Training for Interpreters in Different Interpreting Modes

1. Remote simultaneous medical interpreting training

Interpreters need to go though an RSMI training program before they start interpreting using this mode.

We contracted with The Center for Immigrant Health for a 30-hour RSMI training to be delivered at Cambridge Hospital. They brought a training team for one week. The team included one instructor, whose primary language was Spanish, and two language coaches, one for Portuguese and one for Haitian Creole. In addition to the interpreters participating in the study, several other interpreter staff, interpreter managers, and the project manager for TNT participated in the training.

Training included theory sessions and practical sessions each day, including role-plays simulating medical appointments using the RSMI equipment[7]. (See Appendix A for curriculum outline.)

The interpreters selected for the project successfully completed both the theory and the practical components of the training.

It is important to mention that the RSMI training included content specifying that RSMI interpreting focuses on the interpreter's roles as conduit and clarifier, with little room for culture brokering and no room for patient advocacy.

2. Videoconferencing interpreting training

Since the main purpose of the videoconferencing mode is to provide a simulation of face-to-face consecutive interpreting, no special interpreting skills had to be developed for this mode. However, the interpreters had to learn some basic concepts of videoconferencing as well as how to operate the videoconferencing equipment used for this project.

The project manager trained the interpreters to use the videoconferencing equipment through one-on-one coaching. Training consisted of:

Familiarity with the equipment

- How the system works – Overview of the concept
- Overview of the set up at the interpreter's station and the medical exam rooms
- System limitations – Interpreters were made aware of limitations such as the ability to help the patient with different needs outside of the exam room as well as possible audio difficulties and camera limitations

System navigation and operation

- System overview – A "walk through" the system showing interpreters the system features and instructions on how to navigate the system
- How to establish connections
- Tips on the use of microphones

Camera operation

- Object positioning – Instructions that interpreters have to give patient and providers on how to position correctly in front of the camera
- Panning, tilting and zooming – Tips on how to get the best picture framing positions

Troubleshooting Tips

- Overcoming difficulties in establishing connections
- System navigation problems
- Sound problems or lack of sound
- Noises and distortions

3. Telephone interpreting training

Prior to the TNT project, all interpreters had previous experience providing telephone interpreting as part of their regular daily work.

4. Face-to-face interpreting training

All interpreters for the project had already been trained and were experienced in face-to-face interpreting.

C. Protocols for Interpreting for the TNT Project

To guide the interpreters for the project during the implementation phase, the project manager prepared a TNT Interpreter Protocol containing guidelines for each interpreting mode. The protocol includes information on telephone, videoconferencing, and RSMI equipment and, for each mode, the steps to take with the dispatcher, clinicians, and other medical staff.

(See Appendix E for the TNT Interpreter Protocol)

D. Training for Providers and Front Desk Staff

All participants of the TNT project had previous experience communicating through interpreters at the Cambridge Health Alliance. Providers at the Cambridge Health Alliance receive training and guidelines from the Multilingual Department. All providers and staff are familiar with interacting with interpreters in the face-to-face mode. However, they needed training in using the remote modes for this study.

Providers received the TNT Protocol including instructions on how to communicate through interpreters when using the remote modes. (See Appendix E for Protocol) They were introduced to the technology prior to the use of the remote interpreting modes through one-on-one instruction and coaching. The project manager also coached the providers during their first few appointments with each mode to assist with the process.

E. Training Patients

We did not train patients on the new interpreting modes prior to their appointments. We anticipated that most of the patients in the TNT project had experience only with face-to-face interpreting. We also expected that a few patients might have had experience with speakerphone interpreting. Patients who agreed to be observed for the study were informed about the use of new technology by the observer, before the start of the appointment. Many of the other patients, most of whom were Brazilian, were informed about the mode that they would be using by the project manager, who was on site, prior to the start of their appointment. This worked because many of our patients with limited English proficiency do understand some English, though not enough to communicate with their provider about medical issues with full understanding on both sides.

See Appendix C for ways to prepare patients for appointments with remote interpreting.

VI. Lessons Learned About The Modes (Results)

VI. Lessons Learned About the Modes (Results)

A. Introduction

This section gives an account of what we learned about each of the modes during the project. Although we encountered a wide range of opinions on the different modes, there were many themes that emerged again and again. While reading these findings, there are, however, some important caveats to keep in mind:

- Our health care system has used face-to-face interpreting as its primary mode of interpreting for more than twenty years. It is the type of interpreting that our providers, interpreters, patients and managers are accustomed to using. Videoconferencing interpreting and remote simultaneous interpreting were new to our system. Speakerphone interpreting, although used in some parts of our system, is generally considered a back up. Speakerphone interpreting had not been previously used by all of our study participants. This study, therefore, reflects most participants' first experiences using remote simultaneous, videoconferencing, and speakerphone interpreting.

- We encountered many technical and equipment problems while using the remote modes. Although encountering these problems provided us with valuable information on how best to use the different types of equipment, it also means that study participants' views on the modes were affected by their experiences with these technical problems.

- Study participants' perception of the different modes seemed to vary somewhat depending on the order in which they used the modes.

- We were doing this study in a hospital setting where the interpreters were not actually situated off-site while using the remote modes, but were, instead, in a different building within the hospital. We received several comments from project participants saying that they believed that this might have affected participants' perception of the modes, as they knew that instead of using a remote mode, the interpreter could easily walk to the medical appointment and provide face-to-face interpreting.

- As discussed in the previous section, Cambridge Health Alliance interpreters fill many roles besides interpreting the language of patients and providers, including that of a cultural broker and a patient advocate. Many of the participants' views on the modes of interpreting we studied reflect the varied roles interpreters at the Cambridge Health Alliance are expected to play.

- Nearly all providers and interpreters participating in the study said that they felt like they needed more experience using the modes before truly forming an opinion on using them. Because of the time frame that we had for our grant, we were not able to build in time for the participants to get used to the modes before starting data collection.

- The providers and interpreters who participated in this study were handpicked for this project, and were not randomly selected. They are not necessarily representative of other providers or interpreters at the Cambridge Health Alliance. For instance, participating providers may place more importance on the role of the interpreter than non-participating providers. Similarly, participating interpreters may generally be more interested in using technology for interpreting than non-participating interpreters. In addition, patients were not selected or assigned to mode of interpreting randomly. Rather, only patients of the four participating providers who spoke one of the target languages were eligible for the study, and interpreting mode was assigned according to the date on which patients were seen.

In general, it is important to remember that these are the reflections of four doctors, three nurses, five interpreters, twenty-eight patients and four managers in one clinic, in one hospital. We believe that what we have discovered through this project will be useful for other systems as they explore using new modes to serve their interpreting needs. However, it is important to remember that these results may not be generalizable beyond the study participants and the clinic where the study took place.

Videoconferencing Interpreting

Note on measuring culture brokering:

Part of the interpreter’s role at the Cambridge Health Alliance is to serve as a culture broker. In this study we hoped to explore how the different modes affected an interpreter's ability to serve in this capacity. Although our interviews included questions on cultural issues, we found very few examples of instances where cultural issues were clearly noted, or where the remote modes seemed to make it more difficult for the interpreter to serve in this capacity. We are unsure of the extent to which this was due to the way in which we phrased our interview questions. On the other hand, perhaps cultural issues do not come up frequently in the patient language groups or particular medical specialties involved in the study.

B. Telephone Medical Interpreting (using speaker telephone)

Technical issues:

In order to have good sound quality while using telephone interpreting, we found that it is vital to have telephones with high quality speakerphone capabilities that do the following:

- ☐ Allow for voice overlapping.
- ☐ Can pick up sound from any direction.
- ☐ Do not encounter interference from other devices such as a computer.
- ☐ Can be moved around the room to allow for room layout and for the patient and provider as they move around.

In general, there were few technological problems with this mode, and we had comments from physicians, nurses, and patients on how easy it was to set up and to use. The fact that most people are familiar with using the telephone was cited as an advantage. Participants also liked the fact that the equipment took up little space in the small exam rooms.

We found that is important in telephone interpreting, as in the other remote modes, for the interpreters to be located in an area where they are able maintain patient privacy.

Best ways to use speakerphone telephone interpreting:

<u>Situations where speakerphone interpreting worked well:</u> We received many comments that telephone interpreting worked well for cases that were not extremely complex or multi-dimensional, and for short appointments. One physician said that it works well for basic, uncomplicated appointments, where it is not as important for the interpreter to read the visual cues.

<u>Situations where speakerphone interpreting did not work well:</u> Speakerphone interpreting did not work well when the telephone was far away from the patient and/or provider. It also did not work well when there was a lot going on in the room (such as when a test or a procedure was being done on the patient, and there were multiple people and/or lots of equipment noise in the room). When the patient or provider could not project his or her voice, the interpreter had difficulty hearing them. Also, interpreters commented that it was hard to follow appointments when more time was spent on examination or procedures, while less time was spent on speaking.

Some interpreters had difficulty telling who was who, and when they should interpret, when multiple people were in the room (especially when there were multiple family members with similar sounding voices). Others did not find this so much of a problem.

Quality of communication:

Telephone interpreting does not allow for visual cues, which made it harder to follow the conversation, and perhaps to pick up on cultural cues. One interpreter commented that she would compensate for missing the visual information by listening very carefully and being more explicit in her descriptions. A physician said that she found herself having to describe exactly what she and the patient were doing, so that the interpreter had more context as to what was going on in the appointment.

In general, participants seemed to find telephone interpreting fast and efficient. One nurse commented that "It's the ultimate to have somebody here, but when you don't, the telephone's fine."

Observations on how this mode of interpreting affects provider/patient/interpreter relationships:

Two of the interpreters said that they thought that telephone interpreting allowed for a better provider/patient connection, because there was no interpreter to look at. As one interpreter commented, it "forces [the patient and provider] to deal with each other." Another interpreter said, "it makes doctors take the lead, and not fall back on interpreters."

> *"It's the ultimate to have somebody here, but when you don't, the telephone's fine."*
>
> *–A nurse talking about telephone interpreting*

Some patients especially liked the fact that telephone interpreting allows for increased privacy. As one patient said, "This is a very good way to serve patients and respect patient confidentiality."

> *"Telephone interpreting is a very good way to serve patients and respect patient confidentiality."*
>
> *– A patient*

As with all of the remote modes, there were comments from providers that they missed the "extras" that they got from the interpreters. These extras include getting advice outside of the appointment, especially on cultural issues, and having the interpreter "deal with" the patient's family and friends who accompanied them to the appointment.

> *It felt "a bit disrespectful to have a voice on the wall."*
>
> *–A patient commenting on telephone interpreting.*

One provider also commented that it felt "a bit disrespectful to have a voice on the wall." Another provider said that it felt "more removed" and she missed the interpreter.

Participant satisfaction:

Six patients were interviewed about their experiences with telephone interpreting. Three patients said that they liked the fact that it allowed for increased privacy, and two patients said that they found it easy and convenient. None of them noted anything that they did not like. All six had used face-to-face interpreting before, and five out of the six said that the next time they needed an interpreter, they would prefer to use telephone interpreting. Reasons given included the fact that it is faster and the fact that it offers increased. privacy. One person said he would prefer to use face-to-face "because it's better".

One of the four physicians preferred telephone interpreting to the other remote modes. He liked the fact that once the connection is made, little time was needed for set-up, and the process and equipment were easy to use. A resounding advantage of telephone interpreting for all of the physicians was the increased privacy that it offered. The loss of visual cues and the impersonal nature of using the telephone came up as disadvantages among the providers.

The nurses involved in the project generally seemed happy with speakerphone interpreting, noting that it was easy to set up and to use, that it had few technical difficulties, and that it took up little space. One rated it as her favorite of the remote modes. The nurses did not like the fact that it did not offer the interpreter visual cues.

All of the interpreters who used speakerphone interpreting said that they liked it because they found it to be fast, efficient, and easy to use. Two of the interpreters said that they found telephone interpreting more difficult than face-to-face interpreting because they did not have visual cues. Since the speakerphones that were used did not allow for voice overlapping, it was cited as a disadvantage of using telephone interpreting. Interpreters also said that it would have been helpful if the providers were more familiar with using the mode.

Telephone Interpreting: Summary of what we found

☐ Telephone interpreting was "fast and simple", "very efficient"
☐ Easy to use
☐ Great for simple exchanges and short appointments where non-verbal communication and cultural issues are less likely to play a critical role
☐ Most people are familiar and comfortable with using a telephone
☐ Allows for increased privacy for patient
☐ Good for use in small exam rooms because the equipment is small
☐ Provider and patient may feel more connected to each other
☐ Without high quality equipment, there were problems with voice-overlapping, and with voices not being picked up from all directions.
☐ Lack of visual cues
☐ More difficult for interpreter if there were multiple people present at the appointment, or a lot of movement or action occurred during the appointment
☐ More difficult for interpreter when patient had some fluency in English
☐ Appointment as a whole felt more distant, removed for many participants, particularly providers and interpreters

Note on measuring quality of communication:

We had hoped that our observation tool would yield quantitative and qualitative information about the quality of communication in the interpreted appointments. We found that the quantitative measures on our tool were not sensitive enough to be useful to the study. On the other hand, the qualitative information that we gathered from our observers was very useful.

C. Videoconferencing Medical Interpreting

Technical issues:

When implementing videoconferencing interpreting within the system, we found it important to take into account the following considerations:

- ☐ Providers, patients, and interpreters found videoconferencing easy to use, although on the interpreters' side, figuring out exactly how the equipment works and how to navigate through the system took some training and getting used to.
- ☐ Although the equipment that we are using is, theoretically, portable, it was not easy to move, which meant that providers and patients could not move extensively around the exam room, or to other parts of the clinic, and move the equipment with them.
- ☐ There were many comments that the videoconferencing equipment that we used was too big for our small exam rooms, and that it made the rooms especially crowded if there were family members or friends accompanying the patient. Also, because the room was so small, it was difficult to place the TV in a spot that was conducive to eye contact between the provider, patient, and interpreter. On the other hand, some providers commented that it was easier to move around a fixed object than to have an extra person (i.e., the interpreter) in the exam room.
- ☐ If increased privacy was needed during the exam, this could be provided by turning the camera away from the patient, or by covering the camera with a sheet or cloth.
- ☐ It is important to have a private videoconferencing interpreting station to maintain patient privacy and confidentiality. The appointment should not be able to be observed by other people in the interpreter's office.

In general, we had few technical problems with the equipment that we used. There were some comments that participants heard an echo, or occasionally experienced some delay in sound transmission.

Best ways to use videoconferencing interpreting:

<u>Situations where videoconferencing interpreting worked well:</u> In general, we found that videoconferencing worked well in most types of situations, largely because it allowed for visual cues. As one provider said, there are "not a lot of situations where video wouldn't be a good option, simply because the video technology is a simulation of a face-to-face encounter. You have all the benefits of the visual cues, [and] with the equipment that we used, you have good quality sound and image." We also heard from interpreters that they appreciated having the visual cues, without the travel time. As one interpreter said, "It's face-to-face without the walking."

<u>Situations where videoconferencing interpreting did not work well:</u> One problem that was encountered was that some patients felt uncomfortable in front of the camera; the presence of the camera and the TV made them nervous. Interpreters explained to the patients at the beginning of the appointment that the images were being transmitted only, and that they were not being taped. However, some patients continued to think that they were on tape, and one patient even commented to the interpreter, "I'm going to be on the Internet!" Patient comfort level with using videoconferencing, as with using the other remote modes, may vary according to the patient's age, education level, and other factors. Several interpreters and providers said that they felt that the younger patients, and those from more educated backgrounds, were more receptive to using videoconferencing interpreting.

We had one case where we used videoconferencing interpreting with a psychotic patient who often hears the TV talking to him personally. The provider was not aware of the patient's medical history before videoconferencing interpreting began. Needless to say, we quickly learned that videoconferencing interpreting was not appropriate to use with this patient.

Quality of communication:

The feeling from many providers, interpreters, and patients seemed to be that videoconferencing interpreting maintained basically the same ability to communicate as face-to-face. As with the other remote modes, there was some concern that it might be harder to pick up on cultural issues when using videoconferencing, although others felt that with the visual cues, this would not be a serious issue.

We received comments from several providers and interpreters that videoconferencing interpreting was good in terms of efficiency and ease of interpreting. One doctor said that he thought that videoconferencing interpreting worked well as far as accomplishing the goals of interpreting. In general, since videoconferencing interpreting allows for visual cues, it was cited as a big advantage. In some cases, though, it was pointed out that sometimes it is useful for an interpreter to follow along with a demonstration, such as how to use an inhaler, or how to apply a cream. In videoconferencing interpreting the interpreter would not have the items to be demonstrated readily available.

Observations on how this mode of interpreting affects provider/patient /interpreter relationships:

Opinions on how videoconferencing interpreting influences relationships varied. As with the other modes, much seemed to be dependent on personal preference here. One provider said that it did not feel too different than having someone in the room, while another said that for him, it felt like "a talking head type of thing." Some providers commented that this might be good for patients who preferred to have some distance from the interpreter, but it would still allow for visual cues. An interpreter commented that "it comforts the patient knowing that I am

Videoconferencing Interpreting

One difficulty that was noted by several of the providers was the tendency of some patients to be drawn towards looking at the TV. One provider said that he had a couple of patients who persisted in looking at the TV throughout the entire appointment, and that he felt uncomfortable because he was not able to make eye contact with them.

In general, participants felt that providers and patients had more of a relationship with the interpreter using videoconferencing interpreting than when using the other two remote modes, and that you "didn't lose so much." On the other hand, there were also comments from nearly every provider that the interpreter felt "more distant and less involved" as compared to face-to-face interpreting, and that it felt like "additional support, and an additional patient advocate wasn't there."

The interpreter felt "more distant and less involved" as compared to face-to-face interpreting and it felt like "additional support and an additional patient advocate wasn't there."

–Provider comments on videoconferencing interpreting

In general, the interpreters seemed to feel that videoconferencing interpreting did not feel very different from face-to-face interpreting. As one interpreter put it, videoconferencing interpreting "gets closer to face-to-face…it's not very different from sitting here [with the interviewer]." As with the other remote modes, some of the interpreters seemed to appreciate the distance that the mode put between them and the doctor and the patient.

As one interpreter put it, videoconferencing interpreting "gets closer to face-to-face…it's not very different from sitting here [with the interviewer]."

Interpreters said that they liked the fact that they could get "visual cues without getting personal," and that videoconferencing interpreting was "fast, with no chance for chatting, no time wasted." One interpreter noted that it was a bit harder to establish an interpreting rhythm than it usually is when interpreting face-to-face.

Interpreters said that they liked the fact that videoconferencing interpreting was "fast, with no chance for chatting, no time wasted."

Participant satisfaction:

Seven patients were interviewed about their videoconferencing interpreting experiences. Four of the patients said that they liked the clarity of the video, and one said that it was just like face-to-face interpreting. One patient said that he didn't like using a machine, and one said he felt camera-shy in the beginning. All seven of these patients had used face-to-face interpreting in the past, and one had also used telephone interpreting. Two patients said that they did not care what type of interpreting that they used next time. Three said they would prefer to use videoconferencing, and one said that he would like to use face-to-face. One patient did not answer this question.

Out of the three remote modes, three of the four physicians were most satisfied with videoconferencing interpreting. The fact that it provided visual cues, and also easily afforded patient privacy, was a recurring theme among the physicians. The fourth provider, who ranked videoconferencing interpreting below telephone interpreting, said that videoconferencing felt more uncomfortable and less personalized to him than does telephone or face-to-face interpreting. For the physicians, videoconferencing seemed to be one of the more promising of the new technologies used for this project.

Only one of the nurses had much experience using videoconferencing interpreting. Two out of the three nurses (including the one with the most experience using the mode) said that it was their favorite of the remote modes. In general, the nurses said that they liked videoconferencing because it was efficient and easy to set up and use. The nurses said they did not like the fact that some of the patients seemed a bit anxious and uncomfortable using the video camera.

Videoconferencing Interpreting

The interpreters said that they found videoconferencing very easy to use, and nearly all of them said that they liked being able to see the appointment, and have visual cues, without actually having to travel to the appointment.

All of the interpreters who had the opportunity to use all of the remote modes said that videoconferencing was their favorite of the remote modes. They said that they found it very easy to use, and nearly all of them said that they liked being able to see the appointment, and have visual cues, without actually having to travel to the appointment. Interpreters said that they did not like the fact that not all of the providers knew how to use the equipment, the fact that they ran into some technical difficulties with the equipment, and that some patients did not feel comfortable in front of the camera.

Videoconferencing interpreting: Summary of what we found

- Many study participants thought that videoconferencing interpreting maintained an ability to communicate that was similar to face-to-face interpreting
- Provides visual cues: allows for gestures, pointing, expressions, can possibly help the interpreter to understand more about the patient and help with cultural brokering.
- Privacy can be given when needed by turning or covering the camera
- Easy to use
- Can be moved around, but equipment that we used was not immediately portable
- Felt more personable than the other remote modes to many participants
- Interpreter felt more distant/removed to some of the participants, as compared to face-to-face interpreting.
- Equipment was too big for the small exam room
- Some people found it easier to navigate around a standing object than have an additional person in the exam room
- Some patients may be camera shy
- Some patients may fixate on the TV, and not look at the provider

D. Remote Simultaneous Medical Interpreting (RSMI)

Technical issues:

Using the system that we were using, we ran into quite a few technical difficulties with RSMI. Some of these difficulties were due to everyone in our system being unfamiliar with the equipment. Some were due to the type of equipment that we were using. We feel that RSMI is the most technically complicated of the remote modes that we used, and as such, there is a lot that can go wrong.

Some of the most common complaints that we encountered from study participants included:

- Some providers and patients did not like “having something on their head” (the headset.)

- All of the providers who used RSMI, as well as several of the patients, said that they found the headsets and cords uncomfortable and cumbersome to use.

- Both providers and patients complained about being able to hear each other talking at the same time that the interpreter was interpreting. They said that this made it difficult to hear the interpreter, and was confusing. This may have been due to the disposable headsets that we were using, for hygiene reasons, as is further discussed below.

- It was difficult for patients to get undressed while wearing the headset/telephone apparatus, and they were unsure about what to do with the telephone while on the exam table.

- Nearly everyone who used RSMI, including providers, patients, and interpreters, complained about the high amount of noise and interference that they encountered, which disrupted the conversation and made it difficult to hear.

We learned a variety of things while using RSMI. These included:

- Because of hygiene issues, the Alliance’s infection control officer told us that we needed to either sterilize the headsets after each patient or use different headsets for each of the patients. Because of this hygiene concern, which was first brought to our attention by the nurses in the clinic, we used disposable headsets. These headsets did not block sound well, and, although cheaper than other types of headsets, were still fairly expensive.

- Because RSMI requires such intense concentration, it is more difficult for interpreters to trouble-shoot a technical problem while using RSMI than it is when using other, non-simultaneous modes.

- Interpreter and provider familiarity with the equipment is important for all of the modes, but is especially important for RSMI, due to the fact that it is the most technically complicated of the modes, it is the most unfamiliar to most people, and it is simultaneous.

- Interpreters need to be well trained, and need to practice simultaneous interpreting to maintain their skills. Not all interpreters are able to do RSMI, as it takes certain skills, both innate and acquired. One advantage of RSMI that was cited by some interpreters is that, unlike consecutive interpreting, you don’t need to rely so extensively on short-term memory.

- A private interpreter station is needed while using RSMI in order to protect the patient’s privacy.

Note: Although all of the remote modes that we used took a period of adjustment, RSMI, being the most complicated by far of the modes, took the most getting used to. This, coupled with the fact that we ran into so many technical problems, had an effect on participants’ perceptions of RSMI.

Best ways to use Remote Simultaneous Interpreting:

Situations where RSMI worked well: We found that RSMI worked very well for three-way conference calling (where the provider is calling the patient at home, or some other remote location, and neither the patient nor the provider needed to use headsets).

Both providers and interpreters said that they thought that RSMI would work particularly well for long appointments, especially those where there is a long interview process, or other long conversation, since simultaneous interpreting is faster than consecutive interpreting.

The logistics of RSMI were simplified when a provider needed to use an interpreter for a number of appointments in a row, especially when all of the appointments could use the same interpreter.

Situations where RSMI didn't work well: RSMI was difficult to use for exams where the provider needs to examine the patient's head, face, or neck because of the headsets and equipment.

Providers must remove their headsets in order to use a stethoscope while using RSMI.

As will be discussed in further detail later, only one provider and one patient could participate in the appointment at a time because the equipment we used had two headsets in the exam room. Therefore, RSMI was not appropriate to use in situations where there were friends or family members accompanying the patient, where the patient was a child, or when there were multiple providers attending to the patient.

Many providers and interpreters felt that RSMI would be inappropriate for emergency situations, although we did not actually test RSMI in any such situations.

There were also many interpreters and providers who felt that RSMI might not be appropriate for mental health appointments. They gave several reasons, which include the lack of non-verbal cues for the interpreter and the fact that the provider is unable to hear the patient's voice, and thus pick up on affect and tone. They were also concerned that it may be harder for the interpreter to manage the turn taking between patient and provider, which is often challenging in mental health interpreting. They noted that using RSMI could especially be a problem for psychotic patients who believe that they are hearing voices.

They thought that RSMI would also greatly reduce the interpreter's ability to serve as a culture broker and patient advocate in mental health settings.

On the other hand, two providers and one interpreter thought that RSMI could be advantageous in certain mental health settings because it would increase patient privacy and could allow for a more direct connection between patient and provider, as well as decreasing the length of the appointment.

Once again, we did not actually use RSMI for any mental health appointments. It should be noted, however, that all of our interpreters are experienced in mental health interpreting, including interpreting for psychiatric emergencies and psychiatric inpatient care.

Quality of communication:

One advantage of RSMI that was cited is that simultaneous interpreting can allow for a better flow of communication than consecutive interpreting, as the patient and provider don't have to stop and wait for the interpreter to translate.

Nearly all of the interpreters said that they found RSMI to be very fast and very efficient. We did, however, hear many complaints from both providers and patients that they could hear the other party speaking at the same time that the interpreter was speaking, and that this was distracting. This seemed to be more of a problem for patients who understood some English, or for providers who understood some of the patient's language. They then tended to try to listen to the other person speaking, as opposed to focusing fully on the interpreted communication that was coming through the headset.

RSMI does not allow for the interpreter to pick up on non-verbal communication. Also, because the interpretation is simultaneous, interpreters pointed out that there was less chance for them to process what they are saying, and thus catch any mistakes that they had made. Also, the provider and patient don't get to hear what the other party is saying and thus catch possible interpreting mistakes in that way. Two providers who speak some of the interpreted languages said that it made them uncomfortable to feel that they were not able to do some "quality control."

The fact that they were not able to directly hear the patient's voice, and thus pick up on affect and tone of voice, also concerned most of the providers, who said they were afraid that they were missing something because of this.

Observations on how this mode of interpreting affects provider/patient /interpreter relationships:

One problem that we encountered with RSMI was that, with only two sets of headsets in the exam room, only two people could participate in the conversation at one time. This was a problem both for the providers and for the patients. In our teaching hospital, for instance, it was not possible to use RSMI if medical students or residents accompanied the provider. The nurses noted that, using RSMI, they were left out of the appointment more often, either because a third party could not participate in the appointment, or because it often seemed like too much trouble to transfer the headsets over to the nurse for a short period of time. Thus, in some situations such as wound care teaching, where the nurse would usually interact with the patient, the physician ended up providing the care him or herself.

If patients brought friends or family members to the appointment with them, then those people were not able to hear the interpreter. This was especially problematic when the patient was a child, and the provider had to choose whether to give the headsets to the parent or the child.

We received comments from several interpreters that RSMI allowed for a more direct provider/patient relationship. One interpreter said that RSMI allows the two parties to "feel like they are talking to each other," while another said "there's no one else to interfere [in the appointment]." We did not, however, hear this reaction from any providers or patients.

> *"When using RSMI there's no one else to interfere in the appointment."*
>
> *-Interpreter*

We did, on the other hand, receive many comments from providers that they felt disconnected from the patients when using RSMI. One physician said, "the equipment felt like a barrier between me and the patient." Another said, "I couldn't forget about the interpreting the way that I usually do," while another said that he felt isolated and that "you feel a little like you've entered another world."

> *"You feel a little like you've entered another world."*
>
> *-Provider talking about RSMI*

A provider also commented that he felt that with RSMI, some element of the personal was lost, and he cited the fact that he felt that RSMI makes it harder to translate jokes, and other such nuances of interpersonal communication.

> *"With RSMI, some element of the personal is lost, and RSMI makes it harder to translate jokes."*
>
> *-Provider*

Both providers and interpreters said that in RSMI, the provider and patient don't have a relationship to the interpreter, whose only function is to serve as a conduit, in most cases.

Participant satisfaction:

Eight patients were interviewed about RSMI. Three of the patients said they didn't like the inconvenience and the confusion caused by technical problems. Six of these patients had used face-to-face interpreting in the past, and one had also used videoconferencing. Three patients said that the next time they need to use an interpreter they would like to have a face-to-face interpreter, citing that they liked the ability to use hand gestures, or to physically display their feelings. Two patients said that face-to-face or RSMI would be fine, and two said they preferred RSMI, one because it was faster, and one because of increased privacy. One person did not answer this question.

Out of all of the modes, participating physicians seemed least happy with RSMI. In noting their dislike of RSMI, it is important to point out that the doctors themselves said that perhaps with some time to grow accustomed to the technology their feelings might change. They complained about the many technical problems that were encountered with RSMI. They also were unhappy about the logistics of getting the appointment started, as four telephone calls were required before all of the connections were established. Other concerns included not being able to communicate with anyone in the room besides the patient, the difficulty of moving around while wearing the headsets, missing visual cues, and not being able to directly hear the patient’s voice. Two of the physicians were unable to note anything that they liked about RSMI, and two said that they liked its speed.

One of the nurses did not use RSMI at all, while the other two said that they did not really like using it, and that it was their least favorite of all the modes. The biggest complaint that the nurses had with using RSMI was the fact that because only one provider could participate in the appointment at a time, they were very often completely left out of the visit.

The complicated logistics required in getting the appointment started, as well the awkwardness of the equipment, were also cited as disadvantages, while increased patient privacy was given as an advantage of RSMI.

All of the interpreters who used RSMI during the project said that they liked using this mode. They said that they liked the fact that it was quick, and they felt that it was more reliable, since they were relying less on their short-term memory. Three of the interpreters liked the fact that they felt that RSMI simulated a same-language appointment for the patient and provider, and two said that they liked the fact it challenged them, and pushed their interpreting skills.

Remote simultaneous interpreting: Summary of what we found

- ☐ Takes out ‘middle-man’: may allow for more direct provider-patient relationship
- ☐ Speeds up communication during the appointment, especially for longer appointments
- ☐ Increases patient privacy
- ☐ Lack of visual cues
- ☐ Technical problems using the telephone-based system
- ☐ Awkwardness of using equipment
- ☐ Disposable headsets did not completely block out sound and were fairly costly
- ☐ Felt isolating to some participants
- ☐ No more than one provider and one patient could participate in the appointment at a time

E. Face-to-face Medical Interpreting

Technical issues:

An advantage of face-to-face interpreting that came up in many of the interviews is the flexibility that it affords. If the patient and provider need to go into a different room, or the patient needs help filling out a form, or directions to another part of the hospital, or if the provider needs the interpreter for a private conversation, the interpreter is present to do this. Also, if there is some down time, either before or during the appointment, the interpreters can choose to spend this time either with the patient, or can excuse themselves, and do other tasks. On the other hand, one interpreter commented that he felt like there was less down time during appointments using the remote modes, as providers felt more of a need to be efficient with the interpreter's time when using an interpreter remotely.

One common refrain that we heard from both providers and interpreters is that compared to the remote modes, face-to-face interpreting is easy to do. It doesn't require any equipment, or any special training on equipment and equipment-handling protocols, and there are no extra logistics related to getting the appointment started using the mode--the interpreter simply has to show up for the appointment.

On the other hand, as has already been discussed, it is precisely this need to show up for the appointment that is a downside to face-to-face interpreting, and necessitates the need for the use of other, remote modes. Walking around a large hospital, or, in some cases, traveling lengthy distances to another site in the same system, requires a lot of interpreter time.

Another comment that we heard about face-to-face interpreting is that it can be a problem in small exam rooms to have that extra person in the room. Many providers liked the fact that some of the remote modes took up less space in the room or, at least, did not require as many people in the room.

Best ways to use face-to-face interpreting:

<u>Situations where face-to-face interpreting worked well, and didn't work well:</u> For the most part, interpreters, providers and managers feel that face-to-face interpreting works well for all types of appointments, when it is logistically feasible. Although personal taste may dictate a preference for using one of the remote modes, no one in the study was able to cite any instances where they did not think that it would be appropriate to use face-to-face interpreting, as compared to one of the other modes.

Quality of communication:

One very important aspect of face-to-face interpreting is that it allows for complete visual information. Therefore, the interpreter is able to see, and participate in, all non-verbal communication that occurs, such as gestures, pointing, expressions, demonstrations, etc. Being physically present at the appointment also allows the interpreter to serve as a culture broker, or patient advocate, as needed.

Several providers commented that they felt that they got more information from the patient when the interpreter was present face-to-face; one nurse commented that she felt like she gets more accurate information when the interpreter is present because the interpreter can "pull more information" from the patient. Providers also felt that the interpreter was better able to learn and understand more about the patient when they were doing face-to-face interpreting, as opposed to the other modes, and that this, in turn, helped the provider in working with the patient. As one nurse said, for “patient care, I think face-to-face is ideal. I think you get so much more out of the patient.” Another nurse said that when using a face-to-face interpreter, she feels more relaxed and confident that the information is being relayed.

Observations on how this mode of interpreting affects provider/patient /interpreter relationships:

All of the participating providers and interpreters agreed that face-to-face interpreting allows the interpreters to have a much more personalized relationship with both the patient and the provider than they do when using any of the remote modes. Whether or not a person prefers to be able to build this type of relationship depends very much on the individual. Interpreters, for instance, said that at times patients may try to get too personal, and so the interpreter has to work to keep some distance. Some interpreters said that they liked the fact that when using the remote modes, they don’t have to address interpersonal issues that they don’t want to deal with. These ranged from personality issues to challenges to professional boundaries. Other interpreters, on the other hand, much prefer to have this personal interaction.

We also heard from some interpreters that they preferred to be able to keep a greater distance between themselves and the provider and liked the ability that the remote modes gave them to do that. They had various reasons for preferring to not be in the exam room. One was discomfort with some of the providers' requests, such as walking a patient from the clinic to another area of the hospital when they felt that the patient could probably get there on their own. Another was a sense that the providers were asking them to offer information beyond their area of expertise.

Patients may find the physical presence of the interpreter to be intimidating or inhibiting, and may prefer the increased privacy of the remote modes, or they may prefer the presence of the interpreter. Providers commonly believed that the patients always feel more comfortable when they have an interpreter present—we found, however, that this wasn’t necessarily true, and preference for having an interpreter either physically present or remote varied greatly according to the individual.

Providers in this study said that they like the interaction that they have with the interpreter in face-to-face interpreting, as opposed to the remote modes, because it’s "the most personalized," and that it "feels like a team taking care of the patient.” Providers said that face-to-face feels more flexible, and “the interpreter is rarely just doing straight interpreting.”

Participant satisfaction:

Seven patients were interviewed on their face-to-face interpreting experience. Two people said they felt more comfortable and secure having an interpreter present, and two said that they felt uncomfortable having the interpreter in the room with them, and would prefer to have increased privacy. All seven of the patients had used a face-to-face interpreter before, and two had also used telephone interpreting, while one had used videoconferencing. Of the seven, four said that they would like to use face-to-face the next time that they had an interpreter. One said he would prefer to use telephone, one would like to use RSMI, and one said that it didn’t matter to him which mode was used.

Overall, the participating physicians seemed very satisfied with face-to-face interpreting, and all four of them said that they preferred to use it over any of the remote modes. Reasons given for this preference included that face-to-face interpreting is more personalized, that interpreters can better help patients navigate through their appointments, and that it is possible to pick up on visual cues with face-to-face interpreting. Delay and wait times for face-to-face interpreters seemed to have the greatest influence on satisfaction among the doctors in the study, who noted that if technology could reduce their wait time, it would be a factor in increasing their satisfaction with using it. As one of the participating physicians said, “I think what makes me happy is waiting the least amount of time. And then what makes me next happiest is to relate to someone visually.”

Like the physicians, all three of the nurses said that they preferred face-to-face interpreting over any of the remote modes. They gave many of the same reasons as the doctors for their preference, including the fact that the interpreter can best pick up on visual cues when using face-to-face interpreting, and that it feels more personal. Lack of patient privacy and lack of space in the exam room emerged as two disadvantages of face-to-face interpreting among the nurses who participated.

Three of the interpreters said that they preferred using face-to-face interpreting over any of the remote modes. The other two said that they liked face-to-face, but did not prefer it over the remote modes. All of the interpreters said that they liked the fact that they were able to completely pick up on all visual cues when using face-to-face interpreting. They also said that they liked having personal contact with the patients and providers, that they liked staying active and moving from appointment to appointment, and that they liked the fact that there was not any special equipment to deal with in face-to-face interpreting. All of the interpreters said that there were times that they did not like the amount of walking that they had to do when using face-to-face interpreting. They also all said that there were times when it was difficult in face-to-face interpreting to maintain a professional distance with the patient, and that using the remote modes could make that easier.

F. General Findings on the Remote Modes

This section consists of some of the general themes that emerged around remote interpreting during this study:

Satisfaction:

- ❑ There was the general perception by providers and patients that use of the remote modes would decrease waiting time and interpreter delay. Of course, this is dependent on the type of scheduling system that is in place when using the remote modes, and where the modes are used.

- ❑ Patient perception of the modes seemed to be influenced by age, education-level, and country of origin. In general, those patients who were older and less educated seemed to have lower satisfaction levels with the remote modes.

- ❑ Similarly, provider satisfaction seemed to be influenced by the age of the provider, number of years that they had been practicing, and their past experiences using face-to-face interpreting.

- ❑ For patients, greater satisfaction with one mode rather than others seemed to be, in large part, an issue of preferences about privacy and distance. Some patients preferred an interpreter to be there in person, while others preferred the privacy and distance that was given by the remote modes.

- ❑ For interpreters, satisfaction with the modes often related to preserving elements of their job that satisfied them. For example, some interpreters said they would always prefer face-to-face, because their favorite part of the job was its person-to-person aspect. Other interpreters were excited by the prospect of widening their interpreting skills on-the-job and taking on challenges like doing RSMI.

- ❑ Provider satisfaction with remote modes seemed to depend in part on how the provider viewed the role of the interpreters as a part of the health care team. For example, some providers may feel that it is advantageous to patient care to have the interpreter physically present, while others may prefer to have less of a middleman.

Interpreters' impressions of the remote modes:

- ❑ Interpreters found that having previous experience interpreting in the medical specialties setting was helpful when using the new modes there. Several of the interpreters commented that they found that it was useful to be able to picture the appointment and the provider, and to prepare themselves for what was likely to happen next.

- ❑ Nearly all of the interpreters commented that they felt like use of the remote modes brought the patient and provider closer together, since the interpreter was not physically present. A couple of interpreters said that they felt like use of the remote modes could better simulate an appointment where the provider and patient spoke the same language. We did not hear this reaction from any of the providers in the study.

- Interpreters said that it became more difficult to interpret using the remote modes when interpreting for someone who had an unfamiliar accent, and that this was especially difficult with RSMI.

- All of the interpreters liked the idea of having some variety in their workday. Although the percentage of their day that they would like to spend using the remote modes, versus using face-to-face interpreting, varied, all of the interpreters said that they would like the chance to use the remote modes, at least on occasion.

- The interpreters also said that they liked the fact that the remote modes enabled them to walk/travel less, especially at the end of a long day, or during bad weather. Most of the interpreters in our system spend a lot of time walking, or otherwise traveling, from one location to the next.

Doctors' and nurses' impressions of the remote modes:

- Providers felt that remote appointments went smoother when the provider, patient and interpreter already knew each other, because there was a pre-existing relationship.

- Nearly all of the providers said that they missed having the interpreter physically present at the appointment.

- Providers said that they felt a little bit more inhibited when they were using the remote modes than when using face-to-face interpreting.

- Providers said that they missed the opportunity to talk privately with the interpreter, and get extra hints about cultural issues from the interpreter, and other such input, outside of that directly related to the interpreter's role in the appointment. As one provider said, he knows that he could call the interpreter back after the appointment, but he felt that he was much less likely to do that than he would be to talk to the interpreter if he or she was there in person.

G. General Observations about Using Remote Interpreting

- All of the remote modes require a lot of use before everyone in the system is fully comfortable with and knowledgeable about using them. Many of the problems and barriers that were encountered during this study were a result of a lack of experience on the part of the providers and interpreters. With practice, many of the technical, logistical, and practical problems will be solved, which may, in turn, have an effect on user satisfaction.

- All employees within the health system that would be using the new modes need to be thoroughly trained on the equipment before they start to use it. Protocols need to be developed for such items as how to go about getting the connection between patient, provider, and interpreter established as smoothly as possible; what to do when there is a technical problem; what to do to give the patient privacy; and what happens when the provider needs to leave the room.

- Interpreters and providers agreed that using remote modes requires some patient-related decision making before the appointment. Patient issues ranging from hearing problems to psychosis can affect whether or not a particular mode is appropriate for that appointment. For this reason, it is important for providers either to know something about the patient before starting use of the remote modes, in order to determine whether or not their use is appropriate, or for patients to have the chance to express whether or not they would be willing to use them.

- Room layout needs to be carefully considered when deciding on the type and placement of the new equipment. We encountered many problems that had to do with where the equipment was placed in the room, something that, for various reasons, we could not entirely control in this project. For instance, the set-up of the videoconferencing equipment in one of the rooms did not allow the providers to comfortably write notes, look at the patient, and see the interpreter on the video screen at the same time. In another example, the storage cabinet for the RSMI equipment was placed in a position where it was in the way of people's heads. In one room, a computer was placed in front of the telephone, blocking the flow of sound.

- All of the remote modes seemed to be a little more difficult to use when the patient spoke some English, or when the provider understood some of the patient's language, than when patient and provider were completely dependent on the interpreter. Speakerphone interpreting was especially problematic in this regard, as the patient and provider would sometimes start to answer each other, without the translation, but the interpreter, without visual cues, was unable to follow what was happening, and sometimes a great deal of confusion would ensue. Videoconferencing made this type of situation easier, as it does allow for visual cues, but a couple of interpreters and providers mentioned that it was still slightly harder for the interpreter to figure out when they needed to interpret, and when they did not. Participants who understood some of the other party's language reported more difficulties with RSMI, too, as they said that they found themselves struggling to hear the other person talking, as well as the interpreter.

- All of the remote modes seemed to be more difficult to use than face-to-face interpreting when there was a lot of distraction or noise in the background (e.g. if there were children accompanying the patient, if special equipment was being used for a medical procedure, etc).

- Remote modes, especially the non-visual ones, allow for increased privacy, which may be especially helpful if the patient and interpreter are from small communities, and may know each other.

Note on measuring delay:

Although one of the principle reasons for implementing the new modes within our system would be to reduce interpreter delay, we were not able to accurately measure delay in this study. The study created an artificial environment, quite different from every day access to interpreters for the Medical Specialties clinic.

Interpreters may have been more readily available to interpret using the remote modes for several reasons, including the fact that sometimes their time was set aside to use the modes, and that some were very eager to practice the new modes. On the other had, delay time was sometimes increased due to such factors as the limited number of interpreters that were participating in the project, or technical problems with the modes.

Telephone Interpreting

Pre- and Post-test Acceptability of Technology Survey Results:

(See complete results in Appendix F)

Prior to participating in the study, both the physicians and the interpreters indicated that they had had the greatest amount of experience using face-to-face interpreting, followed by telephone interpreting, with little to no experience using videoconferencing and remote simultaneous interpreting. After the study, both groups of participants indicated that they had gained some experience in using all of the modes, saying that they felt as if they now had 'some' experience with all three of the remote modes, and 'a lot' of experience using face-to-face interpreting.

Both groups of participants indicated that they were already comfortable using face-to-face and telephone interpreting before the study began. At the start of the study, the comfort level scores for both the interpreters and physicians were highest for the use of the speakerphone, out of all of the remote modes, and they continued to be highest for speakerphone at the end of the study. The greatest increase in comfort level over the course of the study, however, was in using videoconferencing interpreting.

The physicians and the interpreters also perceived that the patients' comfort level when using speakerphone and videoconferencing increased over the course of the study.

In general, both the providers and the interpreters seemed to become more receptive to the idea of remote interpreting over the course of the study. The interpreters felt more strongly that remote methods of interpreting can be effective than the physicians did. On the other hand, at the end of the study period participants also seemed to feel more strongly that face-to-face is the best form of interpreting in some clinical situations than they did before beginning the study.

When compared with face-to-face interpreting, both groups of participants found it harder to address cultural issues and non-verbal communication using telephone and remote simultaneous interpreting. At the same time, they found ease of addressing cultural issues and non-verbal communication to be about the same in videoconferencing interpreting as in face-to-face interpreting.

VII. Next Steps

VII. Next Steps

A. Our Plans for the Future

Our next steps will be to look for opportunities to make the most appropriate use of videoconferencing and telephone interpreting, where those remote modes can save interpreting costs and reduce interpreter delay without hurting quality of patient care, patient satisfaction, or provider satisfaction. We have decided to not use remote simultaneous interpreting, except for conference calls, and only when providers are willing.

Our plans for the future include:

- ☐ Trial all-remote interpreting at a neighborhood health center
- ☐ Train our providers to use videoconferencing and telephone interpreting, and to identify which mode of interpreting will be appropriate for a patient visit
- ☐ Expand use of videoconferencing interpreting at our three hospitals and several neighborhood health centers
- ☐ Further expand our use of telephone interpreting using upgraded speaker phones
- ☐ Continue to closely monitor patient and provider satisfaction as we implement these changes
- ☐ Maintain our face-to-face interpreting, while growing in clarity about when other modes can meet the clinical need while maintaining satisfaction
- ☐ Provide more written translations
- ☐ Provide more cultural competency training for our providers

1. Trial of all-remote interpreting

We would like to conduct a study using a combination of remote interpreting methods in one of our primary care clinics. Specifically, we would use a dual handset telephone at the front desk (one handset for the patient, one handset or headset for the front desk staff). The interpreter, interpreting by telephone, would assist with registration and scheduling. Inside the exam room we would use videoconferencing interpreting. This combination would seem to make the best use of these two remote modes.

2. Expand use of videoconferencing interpreting

Currently several of our staff interpreters are driving between sites, none of which, individually, has a high enough interpreting volume to merit a full time interpreter. Also, at any given time one of our hospitals may have more demand than they have interpreters available -- while, at the same time, there are interpreters available at one or both of the other hospitals. If we establish videoconferencing interpreting stations at all three hospitals, we can share high quality interpreting -- with all the visual cue benefits of videoconferencing -- across our system without having the interpreters actually travel between the sites. This should increase patient and provider satisfaction with our service and reduce delay.

We will also be working with our Information Technology Department to pilot videoconferencing interpreting via our existing PC network, avoiding both the costs and the space needs of the TV monitors and carts that we used for this project.

3. Carefully expand use of telephone interpreting

Following the finding that telephone interpreting works well for simple interpreting without complex messages to convey, a large psychological component, or a significant communication need for visual cues, we are looking for appropriate clinical settings where we can use more telephone interpreting as a first choice. Examples include registration, appointment scheduling, completing medical history and other forms (patient and interpreter on telephone, interpreter completes copy of form and faxes back to clinic for patient signature), and certain fairly routine appointments.

Telephone Interpreting

4. Keep face-to-face interpreting for some functions, making some changes

Face-to-face interpreting is a very efficient way to provide interpreting if the following are in place:

- The site has enough interpreting volume to warrant stationing a full time interpreter at that site or interpreters are multitasking.
- Interpreter time is scheduled as part of the appointment scheduling.
- Bilingual staff are present to assist with the communication that does not require the skills of a medical interpreter (registration, scheduling appointments, etc.) This leaves the medical interpreter free to focus on the work that fully utilizes his special skills: providing medical interpreting for the patient and provider.

Based on what we know so far, we believe that there is particular value in having the interpreter in the room with the patient and provider in certain situations. For instance:

- When patients have difficulty speaking loud enough so that their voice could be picked up by the equipment
- When it would be especially beneficial for the interpreter to be physically present to manage the turn taking in the conversation between the patient and provider so there is time to interpret. Examples include a patient with pressured speech, family meetings with several people speaking at once, or a provider who does not leave time for the patient to speak
- Situations when patient advocacy is especially needed
- When the patient can particularly benefit from the caring support of someone with whom they share culture and language (assuming that the interpreter is bicultural as well as bilingual)

These situations come up frequently in Emergency and Acute Psychiatric settings.

We are still exploring when face-to-face interpreting must be provided and when videoconferencing or telephone interpreting will meet the need.

5. We will provide more written translations

As we undertook the TNT project, we also looked more closely at the value of our written translations. Written translations of patient forms, patient education materials, and other documents are required under the Office of Civil Rights Policy Guidance, and we have translated thousands of documents for patients. They improve efficiency in serving a multilingual patient population by saving the interpreter time that would be required to do repeated sight translations.

We believe that translated patient education material, especially instructions for managing or treating illness, also improves compliance with treatment, because the patient has a visual reminder that they can take home with them. It is particularly important to have written translations of forms and patient materials readily available at the clinical site as well as at the interpreting station when the interpreting comes via telephone or videoconferencing. Patients with low literacy can be assisted in completing forms through telephone or videoconferencing interpreting if the remote interpreter also has a copy of the form. The interpreter asks the patients the questions, completes the form, and sends the form back to the clinic, via fax or electronic file.

6. We will provide more cultural competency training to providers

Finally, as we move into using more remote interpreting, we will also expand cultural competency training for providers. Our face-to-face interpreters provide culture brokering as needed. With remote interpreting culture brokering seems to be harder to do well. Cultural competency training will help providers to develop the curiosity, sensitivity, and skillfulness needed to maximize the possibility for developing a therapeutic alliance with the patient. The training will also give them the cultural awareness to prepare them for culturally-informed discussions with their patients to help them to correctly diagnose the problem and negotiate a treatment plan that is likely to work for the patient.

7. We will improve our signage and way finding systems.

Especially at our hospitals, much interpreter time is used in helping patients find their way around the buildings. This is true even though our signage is translated. We need very simple ways to signal the routes between key service areas in the hospitals. An example is putting a line on the floor between the primary care clinic and the pharmacy. These measures would help free crucial interpreting time.

B. Suggestions for Health Care Institutions Beginning to Add Interpreter Services

For hospitals, clinics, and private practices across the country that now need to add interpreter services, we have the following suggestions, stemming from the TNT study, as well as the Cambridge Health Alliance's many years of experience in providing medical interpreting. One cautionary note: as the OCR Policy Guidance points out, every health care setting is different. There is no "one size fits all solution". Resources that are available in one area may not be available in another area. An example that comes immediately to mind is the wealth of trained professional medical interpreters that we have in the Boston area, and the wealth of interpreter volunteers available in Salt Lake City, which has a high number of people with missionary experience.

1. Hire bilingual bicultural providers and staff.

The one universal truth in language access is that the most efficient way to provide patient care in a linguistically diverse health care setting is to avoid the interpreter altogether and provide health services directly in the language of the patient. To ensure that you hire staff with the level of fluency you need in the patient language, include fluency testing in the hiring process.

2. Suggestions of what to do when interpreting is needed

<u>Develop face-to-face interpreting capacity.</u>

- ☐ Train bilingual employees in medical interpreting and test their interpreting skills prior to allowing them to interpret. Make interpreting a job expectation, or pay a bonus for interpreting.
- ☐ As interpreting volume grows, consider creating staff interpreter positions, hiring per diems, or contracting with freelancers or agencies. In all cases, ensure that the interpreters have been trained and tested.
- ☐ Train providers to communicate through interpreters and to draw on them as a cultural resource.
- ☐ Train providers and staff to identify in advance, where possible, which mode of interpreting is required for a particular appointment (face-to-face, telephone, videoconferencing interpreting)
- ☐ Schedule interpreting when you schedule outpatient appointments.
- ☐ Schedule interpreting for inpatients.
- ☐ Develop a way to get interpreters to the Emergency Department quickly.

<u>Become fully prepared to offer telephone interpreting</u>

- ☐ Contract with a reliable telephone interpreting service, such as Language Line or Pacific Interpreters. These services offer many more languages (140) than any institution could access without them. The U.S. population is very mobile, with immigrants coming in from a growing list of countries. It is impossible to predict in advance all the languages that you will need to serve.
- ☐ Purchase full duplex speakerphones for patient exam rooms. These telephones are more expensive, but are necessary in order to carry more than one voice at once, as is needed for telephone interpreting.
- ☐ For inpatients in shared rooms as well as front desk areas in outpatient clinics, get dual handset telephones, so the patient and staff can be on the telephone at the same time with the interpreter. This offers more privacy than a speakerphone in open areas.
- ☐ Teach providers and staff to use the speakerphones and dual handset phones and to communicate with the patient via telephone interpreting.
- ☐ Look for opportunities when you can provide the telephone interpreting less expensively by using staff resources rather than an outside vendor.

Get equipped and fully prepared to offer videoconferencing interpreting

- ☐ Contract with a reliable videoconferencing interpreting service that covers languages that you need, such as Deaf Talk, which covers 24 spoken languages as well as American Sign Language.
- ☐ Access videoconferencing equipment. Some vendors, such as Deaf Talk, require that you lease their equipment.
- ☐ Consider setting up videoconferencing interpreting in-house and/or pooling videoconferencing interpreting with other health care institutions.

Videoconferencing Interpreting

VIII. Cost Considerations In Providing Medical Interpreting

VIII. Cost Considerations In Providing Medical Interpreting

Providing medical interpreting can be expensive. The first part of this section discusses costs related to delivering interpreting services via the different modes we studied in the TNT project. The second part, from the perspective of a larger systems view, looks at how interpreter service choices may relate to patient utilization of the health care institution -- which also has financial implications. Finally there is a brief discussion on efficiency in interpreter service delivery.

A. Costs Related to Each Mode of Interpreting

It was beyond the scope of the study to fully compare the costs of providing interpreting through face-to-face, telephone, videoconferencing and remote simultaneous interpreting. What follows here is a discussion of some of what we learned about costs as we were implementing the different modes. The discussion here is guided by concepts presented in an article by John Hornberger. [8] Dr. Hornberger, interestingly, was involved in developing remote simultaneous medical interpreting (1998:S29).

In a system with high interpreter volume, such as we have at CHA, the highest cost in providing medical interpretation is paid interpreter time. Approximately 45% of our patients require interpreters or a provider who speaks their language. Our current interpreter budget is over two million dollars, and almost all of it is interpreter salary. Because interpreter time is expensive it is important to find ways to use it more efficiently, especially by reducing the percentage of paid time not spent interpreting.

One of our goals in exploring the use of remote interpreting was to see if we could continue to offer quality interpreting while increasing interpreter productivity by reducing interpreter travel time. In face to face interpreting, the cost of interpreter time spent traveling from one patient encounter to another can be very high, even when an interpreter stays at one hospital site. For example, on one of our campuses, walking from the interpreters' office to the eye clinic takes a minimum of seven minutes. The round trip, multiplied several times over the course of the day, can be a significant expense.

On the other hand, RSMI and videoconferencing equipment is expensive. RSMI and videoconferencing require special interpreter’s workstations, adding the cost of dedicated space and special soundproof installations. An additional cost comes from installation of the equipment in every patient care area where it will be used. There is also a cost for training providers and staff to use the equipment.

In some markets, interpreters with simultaneous interpreting skills, which are needed for RSMI, may request higher pay. Simultaneous interpreting skills do not qualify interpreters for higher pay at CHA at this time.

Supervisory costs may differ when using the different modes. Based on our experience with the TNT project, once interpreter equipment is introduced, there is also a need for a supervisor to provide troubleshooting of equipment problems and address staff difficulties in learning how to use it. On the other hand, that time may be offset by less need for supervisory intervention to address teamwork issues that come up occasionally between interpreters and hospital staff with face to face interpreting.

The table below represents some of the costs we have found in using the four modes of interpreting.

Cost Category	Face-to-face	Telephone Interpreting	Video Conferencing	RSMI
Interpreting station	Not required	Not required but recommended	Required	Required
Interpreter's training and skill development	Basic medical interpreting	Basic medical interpreting and brief equipment training	Basic medical interpreting, equipment training and coaching	Basic medical interpreting, simultaneous interpreting, equipment training and coaching
Price of interpreting equipment*	N/A	Cost of telephone for interpreter and speakerphone, preferably full duplex, for the exam room. Full duplex speakerphones cost $400 per unit	$4000 per video-conferencing unit, with one unit in the interpreter station and another unit available to the patient area	$2,425 for equipment for one interpreter station and $630 for one exam room set up (requires two telephone lines)
Cost of troubleshooting needed to solve equipment problems	Low	Low	Medium	High
Traveling expenses - Interpreter's travel time and traveling costs	High, especially in a large site or in a system with several sites	N/A	N/A	N/A
Savings in the speed of conversation	None	None	None	Potential gains of simultaneous interpreting**

*Equipment costs listed for videoconferencing and RSMI are based on the equipment used for this study. Full duplex phones were not installed in the exam rooms used during this study. Prices listed are from the fall of 2002.

**We timed two interpreted conversations using a script and found that simultaneous interpreting was 22 to 28% faster than consecutive interpreting.

Face-to-face Medical Interpreting

Approximately 45% of our patients report that a language other than English is the primary language spoken in the home.

B. Other Cost Considerations in Providing Interpreting

1. Quality interpreter services improves patient care

We know from our experience that quality interpreting is important in order to correctly diagnose patients, improve compliance with treatment, and engage patients in preventive care. It is important to note that our TNT study focused on satisfaction measures for patients, providers, interpreters, and staff. It did not compare the four modes of providing interpreting in terms of their impact on the provider-patient alliance or the quality of communication as they affect diagnosis of the patient, negotiation of the treatment plan, or patient compliance with the treatment plan. This is a fruitful area for future research.

2. Quality interpreter services attracts patients

<u>Interpreters may impact patient revenue</u>

Over the past twenty years the Cambridge Health Alliance has seen a demographic shift, with an increase of patients with limited proficiency in English. Currently, almost half of our patients report a language other than English as the primary language spoken in the home. Many of our patients have learned about our services through the social networks of other patients and/or our interpreters. Our changing patient population includes many who travel from fairly distant towns and cities in Massachusetts to use our services, including some who come in asking for interpreters by name.

Although interpreting is expensive, it allows the health care institution to provide care to patients who otherwise may not come to it. This brings in new patient revenue, if there is a way for the institution to be reimbursed for the cost of the patient visit. At CHA, many patients who use interpreter services qualify for the Massachusetts Uncompensated Care Pool or Medicaid.

Patient satisfaction with the interpreting service is good for business

The Cambridge Health Alliance, which pioneered medical interpreting in Massachusetts, is now surrounded by healthcare institutions that have added interpreter services. What used to be a unique marketing draw is no longer unique. If patients with limited English proficiency were to leave our system, our interpreting volumes and interpreting costs would decrease. However, the loss of patients would be, ultimately, a net financial loss for the institution.

One of the most interesting findings of this study was that a number of the patients said they prefer the privacy of remote interpreting. As we introduce more remote interpreting we will be monitoring satisfaction through patient surveys.

3. Providing interpreter services efficiently

Reducing interpreter unit costs:

Our main motivation for conducting this study was an interest in lowering our unit costs by reducing interpreter travel time. We define unit cost as the total expense of providing the interpreter service divided by the number of interpreter patient contacts. We track the ratio of time spent interpreting to paid interpreter time, and look at the cost of non-interpreting time. We are hoping that remote interpreting can lower unit cost, despite the cost of equipment, by increasing the percentage of paid interpreter time used to interpret. Due to our high volumes, we plan to use our staff interpreters to provide most of our remote interpreting. Other systems, with lower interpreting volume, may opt to contract with outside vendors for these services.

Reducing interpreter delay:

Delay in access to interpreters can be costly for clinics. An interpreter manager can reduce the patients' and providers' waiting time for interpreters in two ways, both of which have associated costs. The first way is by limiting interpreting to only those appointments that have scheduled interpreters in advance, with the schedule taking into account interpreter travel time (for face-to-face interpreting). The second is through having a pool of interpreters (face-to-face or remote) waiting to be called, with staffing levels matching patient volumes (sometimes difficult to predict), and/or using an outside vendor for remote interpreting, with fast connection time. Since hospital-based interpreter programs cover both scheduled and unscheduled needs, a combination of approaches is usually best.

Increasing provider efficiency:

The costliest element in any interpreted medical encounter is not the interpreter's time but the doctor's time. The provider's efficiency in communicating with the patient is an important consideration when comparing the costs related to different modes of interpreting.

To be efficient for a provider, remote interpreting equipment must be easy to learn to use, with trouble-free operation. RMSI, for example, could potentially reduce the length of an appointment through simultaneous interpreting. However, our providers found that the equipment was hard to use and required considerable trouble-shooting.

IX. Appendices

IX. Appendices

Appendix A:

Remote Simultaneous Medical Interpreting Training Curriculum

Remote Simultaneous Medical Interpreting training curriculum developed by the Center for Immigrant Health of the New York University School of Medicine.

30-Hours of Training in Remote Simultaneous Medical Interpretation (RSMI)—Adapted from the original 60-hour curriculum, which also includes a practicum.

(Day 1)	
Unit 1	Orientation, Overview of Interpreting, and Pre-Assessment
Unit 2	Basic Terminology in Interpreting
Unit 3	Skills of the Simultaneous Interpreter
Practical Component: Shadowing Exercise and Simultaneous Interpreting Exercise	

(Day 2)	
Unit 4	The Cultural and Ethical Role of RSMI
Unit 5	The RSMI Concept, Role in the Community, and Standards of Practice
Unit 6	Linguistic Elements and Socio-Linguistics
Practical Component: Dual Tasking Exercise and Role-Playing Exercise	

(Day 3)	
Unit 7	Do We Interpret Words or Ideas?
Unit 8	Ethical and Linguistic Challenges of RSMI
Unit 9	The Dynamics of the Medical Interview/Behavioral Health
Practical Component: Linguistic Issues in RSMI Peculiar to the Different Target Languages, Simultaneous Interpreting Practice	

(Day 4)	
Unit 10	The Needs of the Immigrant Population and Cultural Competency
Unit 11	RSMI Quality Control and Stress Management
Unit 12	Site Visit/Mechanics of RSMI/Post Written Exam
Practical Component: Practice Simultaneous Interpretation at Site, Simultaneous Interpretation Using Quality Control and Self-Evaluation	

(Day 5)	
Unit 13	Final (Post) Practical Exam at Site or at Language Lab

Appendix B:

Observations on Choosing Interpreters to Work in Each Mode

Our project manager, Fernando Novaes, makes the following suggestions based on his experience with this project:

Face-to-face Interpreting:
Mobility – Interpreters have to walk long distances every day if they work, for example, in a hospital on a full-time basis. Interpreters also may have to do a considerable amount of traveling if the hiring organization requires interpreters to work at different sites. Hiring managers should discuss the traveling aspect of the face-to-face mode before hiring interpreters for this mode.
Interpersonal relations – Some interpreters like to interact with the patient and medical professionals more than others. The face-to-face mode promotes more personal interaction than the remote modes. Managers should make an assessment of the interpreter's interpersonal skills.
Patient advocacy – Some interpreters have a strong patient advocacy inclination. Sometimes, the interpreter sees the need for patient advocacy during the conversation between the patient and the provider. On the other hand, some patient advocacy needs may arise from "hallway" conversations between interpreters and patients or from patient complaints. Interpreters seem to have a broader ability to do patient advocacy when they are physically present at the appointment.
Interest in technology – Modes using technology require handling of equipment. In addition, eventual malfunction and troubleshooting require a certain level of technological expertise. Some interpreters prefer not to have to use new technology.

Telephone Interpreting:
☐ **Activity level**- One aspect of telephone interpreting is that it does not have the dynamics of face-to-face interpreting. Some interpreters consider telephone interpreting tiresome and boring. Interpreting managers should assess the willingness of an interpreter to remain stationary while working.
☐ **Interaction with patient/provider** - Telephone interpreting allows limited interpreter/patient/provider interaction.

Videoconferencing Interpreting:
☐ **Outgoing personality** - Interpreters cannot be camera shy. Some people are naturally uncomfortable in front of video cameras. Interpreters have to feel comfortable, and demonstrate that level of comfort to the patient and to the provider.
☐ **Interest in technology** – Videoconferencing equipment is relatively easy to use. Most of the off-the-shelf systems can be operated fairly easily. However, an interpreter working with videoconferencing must understand not only the system's concept, but also the details of its functioning. During a video interpretation, interpreters have to be conscious of the fact that they are the ones in control of the technical issues such as sound volume, camera positioning, system navigation, and possibly, needed troubleshooting.

Remote Simultaneous Medical Interpreting (RSMI):
☐ **Skill in simultaneous interpreting**--The number one challenge in providing RSMI is skill in simultaneous interpreting. Not all interpreters can perform the "parallel processing" brain functioning that is required for simultaneous interpretation. Although interpreters can and should be trained to perform simultaneous interpretation, some interpreters, including excellent consecutive interpreters, cannot interpret simultaneously even with training.
☐ **Experience with consecutive interpreting** – Medical interpreting requires a high level of interpreting knowledge. A great deal of experience with providing medical interpreting in the consecutive mode helps when moving to the much faster pace of the simultaneous mode.

Appendix C:

Preparing Patients for Communication via Remote Interpreting

Based on his experience with the implementation of TNT, our project manager suggests the following in order to prepare the patient for remote interpreting:

Inform patients before the appointment when remote interpreting will be used:

- During the reminder call made by the interpreter to the patient's home
- During the check-in at the front desk or at the exam room, using either telephone interpreting or a bilingual staff member.
- Through printed material that is given to the patient at the front desk
- In English, to patients who demonstrate a limited, but sufficient, capacity to understand English

The information given to the patient should include:

<u>Some facts about privacy and patient rights' issues in using remote medical interpreting including the following:</u>

- Appointments are not recorded.
- There is privacy. The interpreter should mention that he or she is the only person on the other side of the communication, or ask the patient's permission to have someone else present during the communication, such as an interpreter's supervisor. The interpreter needs to identify everyone who has access to the appointment.
- Everything that is said to the interpreter by one party will be interpreted for the other party.

<u>Some instructions for remote interpreting including the following:</u>

- As in face-to-face interpreting, encourage the patient to speak and look directly at the provider. Explain the use of the word "you" instead of "he" or "she" when referring to the provider; the interpreting will be provided using the first person.
- Provide specific instructions for each mode. For example, tell the patient to speak up when using the speakerphone, or into the microphone when using RSMI.

Appendix D:

Remote Interpreting Equipment

Equipment for Telephone Interpreting:

For the TNT study, telephone interpreting for scheduling needs handled at the front desk involved an interpreter on the telephone with the patient and front desk staff passing a handset back and forth. A much better choice is a telephone with two handsets, one for the patient and one for the staff, connecting them both at once with the interpreter while using a single telephone line. This allows for a faster conversation with fuller communication.

Telephone interpreting for the appointment came via speakerphones in the exam room. We learned that speakerphones have different features. The ones we used were half-duplex, and only carried one voice at a time. If more than one person spoke at once, parts of words were cut off. This makes telephone interpreting inefficient and frustrating for all parties. Better quality speakerphones, specifically, full-duplex, carry more than one voice at a time, do not cut off parts of words, and are a much better choice for telephone interpreting.

Equipment for Videoconferencing Interpreting

This project utilized a TCP/IP based system connected to the Cambridge Health Alliance's LAN's (computer network). Our Project Manager chose the equipment with the assistance of the Telecommunication Department of the Cambridge Health Alliance, which had been using the system for other videoconferencing purposes.

The video equipment used in this project is a Polycom® ViewStation FX®. This is a video station with an integrated video camera and a cord connected high digital tabletop microphone. The microphone provides 360º voice, high quality pickup with noise reduction features, and a mute "cough" button. This system processes up to 2 Mbps, offering a 15 to 30 frame rate capability with a near TV-quality 512 Kbps and above. The camera is quiet and can fast pan, tilt, zoom (PTZ), focus and white balance automatically. It was equipped with additional 25mm SRL equivalent wide-angle lens. The system also provides far end camera control. In our project, the interpreter controlled the camera from the interpreting station.

Equipment for RSMI

The console includes the following features:

- ☐ Control of the interpreter's incoming and outgoing volumes. It allows adjustment for optimal hearing volume for the interpreter, providers, and patients.

- ☐ Talk-through volume control. The interpreter can let both the interpreter and provider hear each other. The interpreter controls the talk-through volume. This is helpful, for example, when the interpreter gives instructions to patients. By using the talk-through feature, providers understand that they have not lost the connection with the interpreter.

- ☐ A switch to allow the use of the telephone's handsets, instead of the interpreter's headset.

- ☐ Mute or "Cough" buttons.

- ☐ Monitoring feature. The monitoring feature allows an extra person to participate in the interpretation at the interpreter's side. This feature allows for hearing and speaking capabilities, and it is useful for monitoring and training interpreters.

Cambridge Health Alliance acquired RSMI equipment from Rauch Co. from New Jersey including the interpreter's console, headsets with microphones, the cordless and regular phones, and the cabinets for the exam rooms.

Appendix E:

Protocols for Using the Remote Modes

The following are the protocols for use of the remote modes that were followed by providers and interpreters during the TNT study:

At the Reception Area:

First Scenario:

The patient and the front desk staff do not need an interpreter for the check in. For example, a member of the front desk staff speaks the patient's language, or the patient has sufficient knowledge of English to check in, but still needs an interpreter in the exam room.

The front desk staff calls the interpreter dispatcher, identifies him/herself, and requests an interpreter following these steps:

a) Indicate the language
b) Indicate whether or not the patient has already checked in
c) Indicate the provider
d) Indicate the exam room in which the appointment will take place. Interpreters will have a list of all phone numbers in each exam room

Second Scenario:

The patient and the front desk staff need an interpreter for the check in.
The front desk staff calls the dispatcher in the interpreters' office and requests an interpreter following these steps:

a) Indicate the language
b) Indicate whether or not the patient has checked in already. Tell the dispatcher that an interpreter is necessary for the check in
c) Hang up and wait for the interpreter to call back
d) When the interpreter calls back, give the patient a phone extension (or a handset from a dual handset telephone), and talk to the patient though the interpreter

After the appointment, call back and follow the same procedure when the patient returns to the front desk to schedule a follow up appointment, unless the appointment is face-to-face. In this case, the interpreter will be at the front desk

In the Exam Room:

Face-to-face:

a) Interpreter arrives in the exam room and introduces him/herself
b) Appointment proceeds

Phone Conferencing:

a) Interpreter will call back the extension number of the exam room indicated by the front desk staff
b) Provider answers the call, identifies him/herself
c) Provider puts the call on the speakerphone mode
d) Appointment proceeds

Videoconferencing:

a) Provider makes sure the video equipment is on
b) Provider waits for interpreter to establish the connection
c) Interpreter gives brief instructions related to the use of videoconferencing to the patient
d) Proceed with the appointment

Remote Simultaneous:

a) Provider waits for interpreter to call the provider's phone in the remote simultaneous phone cabinet. During this time, he or she gets the patient ready with the other handset and headset
b) Provider answers the phone and identifies him/herself
c) Provider wears the headset (with the handset in the pocket, or clipped on the belt)
d) Interpreter has interpreting console ready. He/she explains to the patient how the remote simultaneous interpreting equipment works
e) Proceed with the appointment

Appendix F:

Acceptability Survey Pre- and Post-Test Results

The section contains the complete results obtained from the Acceptability of Technology pre- and post-test surveys given to participating physicians and interpreters at the beginning and end of the project period.

1) On a three point scale where 0=None (N), 1=Some (S), and 2=A Lot (AL), the following are the physicians' and interpreters' ratings of their experience using each of the modes in a clinical setting:

A) Face-to-face interpreting:

Physicians (N=4):

	None	Some	A Lot
Pre-test	0	1	3
Post-test	0	0	4

Average Score (0=N, 2=AL): Pre: 1.75 Post: 2.00 **Change: 0.25**

Interpreters (N=3):

	None	Some	A Lot
Pre-test	0	0	3
Post-test	0	0	3

Average Score (0=N, 2=AL): Pre: 2.00 Post: 2.00 **Change: 0.00**

B) Telephone interpreting:

Physicians (N=4):

	None	Some	A Lot
Pre-test	1	3	0
Post-test	0	4	0

Average Score (0=N, 2=AL): Pre: 0.75 Post: 1.00 **Change: 0.25**

Interpreters (N=3):

	None	Some	A Lot
Pre-test	0	1	2
Post-test	0	2	1

Average Score (0=N, 2=AL): Pre: 1.67 Post: 1.33 **Change: -0.34**

C) Remote simultaneous interpreting:

Physicians (N=4):

	None	Some	A Lot
Pre-test	3	1	0
Post-test	0	4	0

Average Score (0=N, 2=AL): Pre: 0.25 Post: 1.00 **Change: 0.75**

Interpreters (N=4)

	None	Some	A Lot
Pre-test	3	1	0
Post-test	0	4	0

Average Score (0=N, 2=AL): Pre: 0.25 Post: 1.00 **Change: 0.75**

D) Videoconferencing interpreting:

Physicians (N=4):

	None	Some	A Lot
Pre-test	4	0	0
Post-test	0	4	0

Average Score (0=N, 2=AL): Pre: 0.00 Post: 1.00 **Change: 1.00**

Interpreters (N=4):

	None	Some	A Lot
Pre-test	4	0	0
Post-test	0	4	0

Average Score (0=N, 2=AL): Pre: 0.00 Post: 1.00 **Change: 1.00**

2) On a 6-point scale where 0=No experience with method, 1=Very low comfort level and 5=Very high comfort level, the following are the physicians' and interpreters' average comfort level ratings using the methods of interpretation listed below:

Physicians (N=4):

	Interpreting in person	**Interpreting remotely**	**Using a speaker phone**	**Wearing a wireless headset**	**Participating in a videoconference**
Pre-Test	5.00	2.50	2.50	2.50	1.00
Post-Test	5.00	4.00	4.25	2.50	3.75
Change	**0.00**	**1.5**	**1.75**	**0.00**	**2.75**

Interpreters (N=4):

	Interpreting in person	**Interpreting remotely**	**Using a speaker phone**	**Wearing a wireless head set**	**Participating in a video conference**
Pre-Test	5.00	2.00	2.33	1.33	0.00
Post-Test	5.00	4.25	4.67	4.33	4.33
Change	**0.00**	**2.25**	**2.34**	**3.00**	**4.33**

3) On a five point scale where 1=Strongly Disagree (SD), 2=Disagree (D), 3=Neither Agree Nor Disagree (NAND), 4=Agree (A), and 5=Strongly Agree (SA), the following are the physicians' and the interpreters' frequency of responses to the statements given below (Average scores are indicated below each chart):

A) The interpreter, the patient and the provider need to see each other to effectively communicate.

Physicians (N=4):

	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
Pre-Test	0	1	2	1	0
Post-Test	0	1	2	1	0
Average Score (1=SD, 5=SA):		Pre: 3.00	Post: 3.00		**Change: 0.00**

Interpreters (N=4):

	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
Pre-Test	1	1	1	1	0
Post-Test	0	4	0	0	0
Average Score (1=SD, 5=SA):	Pre: 2.50	Post: 2.00			**Change: -0.50**

B) The interpreter must be in the same room with the patient and provider to effectively communicate.

Physicians (N=4):

	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Disagree
Pre-Test	0	1	3	0	0
Post-Test	0	2	2	0	0
Average Score (1=SD, 5=SA):	Pre: 2.75	Post: 2.50			**Change: -0.25**

Interpreters (N=4):

	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
Pre-Test	1	1	2	0	0
Post-Test	0	4	0	0	0
Average Score (1=SD, 5=SA):	Pre: 2.25	Post: 2.00			**Change: -0.25**

C) New communication technologies can make a positive contribution to patient care.

Physicians (N=4):

	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
Pre-Test	0	0	2	2	0
Post-Test	0	0	0	3	1
Average Score (1=SD, 5=SA):	Pre: 3.50		Post: 4.25		**Change: 0.75**

Interpreters (N=4):

	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
Pre-Test	0	0	0	3	1
Post-Test	0	0	0	4	0
Average Score (1=SD, 5=SA):	Pre: 4.25		Post: 4.00		**Change: -0.25**

D) In some clinical situations, face-to-face is the best form of interpreting.

Providers (N=4):

	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
Pre-Test	0	0	1	3	0
Post-Test	0	0	0	2	2
Average Score (1=SD, 5=SA):	Pre: 3.75		Post: 4.50		**Change: 0.75**

Interpreters (N=4):

	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
Pre-Test	0	0	0	3	1
Post-Test	0	0	0	3	1
Average Score (1=SD, 5=SA):	Pre: 4.25		Post: 4.25		**Change: 0.00**

4) On a four point scale where 0=I Don't Know (IDK), 1=Less Effective (LE), 2=About Equally Effective (AEE), and 3=More Effective (ME), the following are the frequency of responses to the statement below:

Compared with consecutive interpretation, simultaneous interpreting is:

Physicians (N=4):

	I Don't Know	Less Effective	About Equally Effective	More Effective
Pre-Test	3	0	0	1
Post-Test	1	1	2	0

Average Score (0=IDK, 3=ME): Pre: 0.75

Post: 1.25

Change: 0.50

Interpreters (N=4):

	I Don't Know	Less Effective	About Equally Effective	More Effective
Pre-Test	1	0	1	2
Post-Test	0	0	4	0

Average Score (0=IDK, 3=ME): Pre: 2.00

Post: 2.00

Change: 0.00

5) On a four point scale where 0=I Don't Know (IDK), 1=Uncomfortable (U), 2=Neutral (N), and 3=Comfortable (C), the following are the physicians' and the interpreters' perceptions of how the patients feel using the different types of equipment:

A) Speakerphone

Physicians (N=4):

	I Don't Know	Uncomfortable	Neutral	Comfortable
Pre-test	2	0	2	0
Post-test	0	0	1	3

Average Score (0=IDK, 3=C): Pre: 1.00

Post: 2.75

Change: 1.75

Interpreters (N=4):

	I Don't Know	Uncomfortable	Neutral	Comfortable
Pre-test	2	0	2	0
Post-test	1	0	1	2

Average Score (0=IDK, 3=C): Pre: 1.00

Post: 2.00

Change: 1.00

B) Wireless headset

Physicians (N=4):

	I Don't Know	Uncomfortable	Neutral	Comfortable
Pre-test	2	0	1	1
Post-test	0	2	2	0

Average Score (0=IDK, 3=C): Pre: 1.25

Post: 1.50

Change: 0.25

Interpreters (N=4):

	I Don't Know	Uncomfortable	Neutral	Comfortable
Pre-test	2	0	2	0
Post-test	3	0	1	0

Average Score (0=IDK, 3=C): Pre: 1.00

Post: 0.50

Change: -0.50

C) Videoconferencing monitor and headphones

Physicians (N=4):

	I Don't Know	Uncomfortable	Neutral	Comfortable
Pre-test	2	0	1	1
Post-test	2	0	2	0

Average Score (0=IDK, 3=C): Pre: 1.25

Post: 1.00

Change: -0.25

Interpreters (N=4):

	I Don't Know	Uncomfortable	Neutral	Comfortable
Pre-test	3	0	1	0
Post-test	1	0	0	3

Average Score (0=IDK, 3=C): Pre: 0.50

Post: 2.25

Change: 1.75

6) On a four point scale where 0=I Don't Know (IDK), 1=Uncomfortable (U), 2=Neutral (N), and 3=Comfortable (C), the following are the physicians' and the interpreters' perceptions of how the patients feel about face-to-face interpreting:

Physicians (N=4):

	I Don't Know	Uncomfortable	Neutral	Comfortable
Pre-test	1	0	0	3
Post-test	0	0	0	4

Average Score (0=IDK, 3=C): Pre: 2.25

Post: 3.00

Change: 0.75

Interpreters (N=4):

	I Don't Know	Uncomfortable	Neutral	Comfortable
Pre-test	0	0	4	0
Post-test	0	0	3	1

Average Score (0=IDK, 3=C): Pre: 2.00

Post: 2.25

Change: 0.25

7) On a four point scale where 0=Not At All Important (NAAI), 1=A Little Important (ALI), 2=Fairly Important, (FI) and 3=Very Important (VI), the following are the physicians' and interpreters' responses to the question: How important it is for an interpreter to assist the provider to address cultural issues?

Physicians (N=4):

	Not At All Important	A Little Important	Fairly Important	Very Important
Pre-test	0	1	2	1
Post-test	0	1	1	2

Average Score (0=NAAI, 3=VI): Pre: 2.00

Post: 2.25

Change: 0.25

Interpreters (N=3):

	Not At All Important	A Little Important	Fairly Important	Very Important
Pre-test	0	0	1	2
Post-test	0	0	1	2

Average Score (0=NAAI, 3=VI): Pre: 2.67

Post: 2.67

Change: 0.00

8) On a five point scale where 1=Much Harder (MH), 2=Harder (H), 3=About the Same (ATS), 4=Easier (E), and 5=Much Easier, the following are the physicians' and interpreters' responses when asked to compare how the different modes compare with face-to-face interpreting in addressing cultural issues with patients:

A) Addressing cultural issues using telephone interpreting:

Physicians (N=4):

	Much Harder	Harder	About The Same	Easier	Much Easier
Pre-test	1	2	1	0	0
Post-test	0	4	0	0	0
Average Score (1=MH, 5=ME): Pre: 2.00 Post: 2.00					**Change: 0.00**

Interpreters (N=3):

	Much Harder	Harder	About The Same	Easier	Much Easier
Pre-test	0	0	3	0	0
Post-test	0	2	1	0	0
Average Score (1=MH, 5=ME): Pre: 3.00 Post: 2.33					**Change: -0.67**

B. Addressing cultural issues using remote simultaneous interpreting:

Physicians (N=4):

	Much Harder	Harder	About The Same	Easier	Much Easier
Pre-test	1	2	1	0	0
Post-test	0	3	0	1	0
Average Score (1=MH, 5=ME): Pre: 2.00 Post: 2.50					**Change: 0.50**

Interpreters (N=3):

	Much Harder	Harder	About The Same	Easier	Much Easier
Pre-test	0	1	2	0	0
Post-test	1	2	0	0	0
Average Score (1=MH, 5=ME): Pre: 2.67 Post: 1.67					**Change: -0.33**

C) Addressing cultural issues using video conference interpreting:

Physicians (N=4):

	Much Harder	Harder	About The Same	Easier	Much Easier
Pre-test	0	2	2	0	0
Post-test	0	1	3	0	0
Average Score (1=MH, 5=ME): Pre: 2.50 Post: 2.00 **Change: -0.50**					

Interpreters (N=3):

	Much Harder	Harder	About The Same	Easier	Much Easier
Pre-test	0	0	3	0	0
Post-test	0	1	2	0	0
Average Score (1=MH, 5=ME): Pre: 3.00 Post: 2.67 **Change: -0.33**					

9) On a three point scale where 1=Unimportant (U), 2=Fairly Important (FI) and 3=Very Important (VI), the following are the physicians' and interpreters' perceptions of the role non-verbal communication (gestures, facial expressions, etc.) plays in the relationship between patient and provider:

Physicians (N=4):

	Unimportant	**Fairly Important**	**Very Important**
Pre-test	0	3	1
Post-test	0	3	1
Average Score (1=U, 3=VI): Pre: 2.25 Post: 2.25 **Change: 0.00**			

Interpreters (N=2):

	Unimportant	**Fairly Important**	**Very Important**
Pre-test	0	1	1
Post-test	0	1	1
Average Score (1=U, 3=VI): Pre: 2.50 Post: 2.50 **Change: 0.00**			

10) On a five point scale where 1=Much Harder (MH), 2=Harder (H), 3=About The Same (ATS), 4=Easier (E), and 5= Much Easier (ME), the following are the physicians' and interpreters' perceptions of how they think the new modes compare with face-to-face interpreting in addressing non-verbal communication between the patient, the provider, and the interpreter:

A) Addressing non-verbal communication using telephone interpreting:

Physicians (N=4):

	Much Harder	Harder	About The Same	Easier	Much Easier
Pre-test	1	3	0	0	0
Post-test	2	2	0	0	0
Average Score (1=MH, 5=ME):	Pre: 1.75		Post: 1.50		**Change: -0.25**

Interpreters (N=4):

	Much Harder	Harder	About The Same	Easier	Much Easier
Pre-test	1	3	0	0	0
Post-test	3	0	1	0	0
Average Score (1=MH, 5=ME):	Pre: 1.75		Post: 1.50		**Change: -0.25**

B) Addressing non-verbal communication using remote simultaneous interpreting:

Physicians (N=4):

	Much Harder	Harder	About The Same	Easier	Much Easier
Pre-test	1	3	0	0	0
Post-test	2	2	0	0	0
Average Score (1=MH, 5=ME):	Pre: 1.75		Post: 1.50		**Change: -0.25**

Interpreters (N=4):

	Much Harder	Harder	About The Same	Easier	Much Easier
Pre-test	1	3	0	0	0
Post-test	2	1	1	0	0
Average Score (1=MH, 5=ME):	Pre: 1.75		Post: 1.75		**Change: 0.00**

C) Addressing non-verbal communication using video conference interpreting:

Physicians (N=4):

	Much Harder	Harder	About The Same	Easier	Much Easier
Pre-test	0	2	1	1	0
Post-test	0	0	4	0	0

Average Score (1=MH, 5=ME): Pre: 2.75

Post: 3.00

Change: 0.25

Interpreters (N=4):

	Much Harder	Harder	About The Same	Easier	Much Easier
Pre-test	0	0	4	0	0
Post-test	0	0	4	0	0

Average Score (1=MH, 5=ME): Pre: 3.00

Post: 3.00

Change: 0.00

11) On a four point scale where 0=I Don't Know (IDK), 1=Uncomfortable (U), 2=Neutral (N), and 3=Comfortable (C), the following are the physicians' perceptions, based on their experiences or expectations on the comfort levels of the following groups of patients for each mode of interpreting (Average scores are indicated below each chart):

A) Face-to-face interpreting:

	I Don't Know	Uncomfortable	Neutral	Comfortable
Portuguese-Speakers (N=4):				
Pre-test	0	0	1	3
Post test	0	0	0	4
Spanish-Speakers (N=2):				
Pre-test	0	0	1	1
Post test	0	0	0	2
Haitian-Creole Speakers (N=4):				
Pre-test	0	0	1	3
Post test	0	0	0	4

Portuguese-Speakers Average Score (0=IDK, 3=C):	Pre: 2.75 Post: 3.00 **Change: 0.25**
Spanish-Speakers Average Score (0=IDK, 3=C):	Pre: 2.50 Post: 3.00 **Change: 0.50**
Haitian-Creole Speakers Average Score (0=IDK, 3=C):	Pre: 2.75 Post: 3.00 **Change: 0.25**

B). Telephone interpreting:

	I Don't Know	Uncomfortable	Neutral	Comfortable
Portuguese-Speakers (N=4):				
Pre-test	2	0	1	1
Post test	1	0	0	3
Spanish-Speakers (N=2):	1	0	1	0
Pre-test	1	0	0	1
Post test	2	0	1	1
Haitian-Creole Speakers (N=4):	2	0	0	2
Pre-test				
Post test				

Portuguese-Speakers Average Score (0=IDK, 3=C):	Pre: 1.25 Post: 2.25 **Change: 1.00**
Spanish-Speakers Average Score (0=IDK, 3=C):	Pre: 1.00 Post: 1.50 **Change: 0.50**
Haitian-Creole Speakers Average Score (0=IDK, 3=C):	Pre: 1.25 Post: 1.50 **Change: 0.25**

C). Remote simultaneous interpreting:

	I Don't Know	Uncomfortable	Neutral	Comfortable
Portuguese-Speakers (N=4):				
Pre-test	3	0	1	0
Post test	1	1	1	1
Spanish- Speakers (N=2):	1	0	1	0
Pre-test	1	0	1	0
Post test	3	0	1	0
Haitian-Creole Speakers (N=4):	3	0	1	0
Pre-test				
Post test				

Portuguese-Speakers Average Score (0=IDK, 3=C):	Pre: 0.50 Post: 1.50 **Change: 1.00**
Spanish-Speakers Average Score (0=IDK, 3=C):	Pre: 1.00 Post: 1.00 **Change: 0.00**
Haitian-Creole Speakers Average Score (0=IDK, 3=C):	Pre: 0.50 Post: 0.50 **Change: 0.00**

D). Videoconferencing interpreting:

	I Don't Know	Uncomfortable	Neutral	Comfortable
Portuguese (N=4):				
Pre-test	3	0	1	0
Post test	0	0	1	3
Spanish (N=2):				
Pre-test	1	0	1	0
Post test	1	0	1	0
Haitian (N=4):				
Pre-test	3	1	0	0
Post test	2	0	1	1

Portuguese Average Score (0=IDK, 3=C):	Pre: 0.50 Post: 2.75 **Change: 2.25**
Spanish Average Score (0=IDK, 3=C):	Pre: 1.00 Post: 1.00 **Change: 0.00**
Haitian Average Score (0=IDK, 3=C):	Pre: 0.25 Post: 1.25 **Change: 1.00**

Appendix G:

Interpreter Job Description for Face-to-Face Staff Interpreter

The following is the interpreter job description used at the Cambridge Health Alliance.

Qualifications/Requirements:

Education/Training: Undergraduate degree preferred. Prior training in Medical Interpreting preferred.

Other requirements: Job requires fluency in spoken and written English and the language of interpreting, with preference for native level fluency in the language of interpreting. Professional level medical interpreting and translation skills required. Interpersonal skills necessary for work in patient care. Ability to discuss key cultural issues related to health care for patients of the language of interpreting and issues of mainstream health care delivery system. Spoken and written fluency will be tested.

Work Experience: A minimum of one year experience in medical interpreting, working in medical or human services setting, or working as an interpreter is required.

Physical Skills:

1. Able to work effectively in a fast-paced, high-pressure, and constantly changing environment.

2. Has sufficient mobility to negotiate the physical plant quickly (able to move from anywhere in the hospital to the Emergency Department in five minutes).

3. Has strength and endurance to perform physically for long periods of time.

4. Able to work long hours between meals or breaks if necessary.

Mental Skills:

1. **Linguistic and cultural competence:**

    1a. Fluent in spoken and written English and the language of interpreting with preferred native fluency in the language of interpreting.
    1b. Able to discuss key issues of the culture of the patients and the mainstream health care delivery system.
    1c. Able to communicate in different levels of sophistication in English and the language of interpreting in order to match the vocabulary of the interpretation to the level of understanding of the patient.
    1d. Able to appropriately use and interpret nonverbal cues in communication in both cultures involved in the interpreting.

2. Demonstrates sensitivity to the diverse backgrounds of patients and coworkers; has an awareness of issues in providing medical care across cultures; and is able to effectively advocate for non-English speaking patients with tact and compassion.
3. Able to process written and spoken language (English and language of interpreting) quickly and accurately.
4. Able to carry out responsibilities with alertness and attention to detail.
5. Able to perform work in a logical, orderly, and skillful manner.
6. Able to prioritize competing responsibilities while under pressure.
7. Able to work in a demanding and stressful environment with sufficient concentration to complete tasks even with interruptions and distractions.
8. Able to work without direct supervision.

Working Conditions and Physical Environment:

1. The interpreter moves around the health care site as needed for patient interpreting.
2. Fluorescent lighting in some areas.
3. Air-conditioned.
4. Patient care environment where there is potential exposure to blood, blood products, bodily fluids and smells, and chemical hazards.
5. Close quartered/shared workspaces.
6. Responds to beeper.

<u>Job-Specific Duties and Responsibilities:</u>

1. Provides direct interpreting services to patients as requested.
2. Acts as an advocate for non-English speaking and bilingual patients, and assists family members in understanding hospital services.
3. Maintains confidentiality of information at all times.
4. Follows prescribed safety rules and regulations. Observes and promotes hospital policies.
5. Communicates effectively and works as part of a team. Displays ability to get along with co-workers, other departments, and the public.

6. Consistently supports the department's team approach to provide quality service to its customers.

7. Adjusts to new, different, or urgent work situations.

8. Maintains professional distance and professional integrity.

9. Recognizes and troubleshoots patient related problems, and forwards them to appropriate personnel.

10. Brings to the hospital's attention needs that emerge in the community, which have bearing on the delivery of culturally sensitive medical care.

11. Participates in performance evaluations.

12. Participates daily in the team effort to efficiently complete all required department work in a timely fashion.

13. Attends and participates in all required department meetings; completes assigned follow up tasks within required deadlines.

14. Provides, in a timely manner, written translations of discharge instructions, patient letters, and other patient-related materials.

15. Uses communication methods appropriate for the patient developmental stage:

    1. Neonate (with parents)
    2. Pediatric
    3. Adolescent
    4. Adult (18-59)
    5. Geriatric (60+)

16. Performs other related duties as assigned or directed.

Organizational Duties and Responsibilities:

1. Is responsible for creating a respectful environment for our patients and our staff.

2. Demonstrates respect for differences in language, culture, race, religion, citizenship, gender, and sexual orientation.

3. Does not discriminate on the basis of income, insurance status, immigration status, or disability.

4. Complies with the Alliance policy on confidentiality of information regarding patients, families, and co-workers.

5. Adheres to dress code; appearance is neat and clean.
6. Completes annual educational requirements and in-service training as required.
7. Wears identification while on duty.
8. Reports to work as scheduled and ready to receive assignments, with minimal unscheduled absences.
9. Attends meetings and participates in committees as required

This job description is intended to describe the general nature and level of work performed by persons assigned to this classification. It is not intended to be an exhaustive list of all responsibilities, duties and skills required of employees who hold this position.

X. Resources and References

X. Resources and References

Selected resources

1. The Massachusetts Department of Public Health website includes their regulations implementing Massachusetts' Interpreter Law, an interpreter poster in 30 languages for display in clinical areas, and a Best Practices document with very helpful information for establishing interpreter services. http://www.state.ma.us/dph/omh/interp/interpreter.htm.

2. National Standards for Culturally and Linguistically Appropriate Services in Health Care, at www.omhrc.gov/clas

3. The diversityrx website, devoted to cutting edge information about medical interpreting and cultural competency in health care, at www.diversityrx.org

4. For a report on another study of videoconferencing medical interpreting, see Videoconferencing Medical Interpretation: The Results of Clinical Trials, by M. Paras, O. Leyva, T. Berthold, and R. Otake, available at www.health-access.org.

5. For a discussion of simultaneous interpreting in a medical setting, see P. Verde, Dialogue simultaneous interpretation in the medical setting: The pilot study: The New York City Health and Hospitals Corporation Interpreters Program. National Conference on Quality Health Care for Culturally Diverse Populations, New York, New York, 1998.

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