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From In-Person to Technology-Based Interpreting: Evolution and the Need for Flexible, Community-Based Standards

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Abstract

This study examines the significance of language access in healthcare and the transformative impact of technology-based interpreting modalities. Language barriers in healthcare can lead to misunderstandings and negative health outcomes for Limited English Proficiency (LEP) patients. The case study presents a Safety Net hospital, Hennepin Healthcare System (HHS), which successfully transitioned from in-person to a hybrid model utilizing Video Remote Interpreting (VRI) and Over-the-Phone Interpreting (OPI). Data analysis revealed improved productivity, reduced wait times, and surplus budget. The study challenges misconceptions around technology-based interpreting and recommends standardized protocols, interpreter documentation, and interhospital collaboration. By embracing technology and cultural understanding, healthcare organizations can enhance language access, improve outcomes, and reduce disparities among vulnerable populations.

Background: Effective language access services are crucial in healthcare settings to provide quality care and better health outcomes for patients with limited English proficiency (LEP). With over 25 million LEP individuals in the US, language barriers pose significant challenges for accessing healthcare. Federal and state laws mandate language assistance for LEP patients to address healthcare disparities.
Purpose: This paper aims to explore the unregulated and understudied medical interpreter career, especially in the context of technology-based language services during the COVID-19 pandemic. The goal is to develop flexible, patient-centered, and community-based standards for language access.
Problem and PICO question: The lack of community standards for interpreter modalities in medical encounters during the pandemic is perplexing. The PICO question is: What medical encounters should utilize which interpreting modality?
Methods: The study surveyed four hospital systems in the Twin Cities metro area in 2021, gathering data on their interpreter services departments, including total LEP patient encounters, the proportion of in-person vs. technology-based modalities, and criteria for prioritizing in-person interpreting. HHS interpreter productivity data was also obtained with permission for use in a master's paper and publications. Literature review involved selecting articles discussing interpreter modalities from Google Scholar and PubMed.
Conclusions: The pandemic shifted the language service industry towards technology-based modalities, but the lack of community standards remains a challenge.
Key Words: Video Remote Interpreter (VRI), Technology-based interpreters, In-person Interpreter modality, teleinterpreting, phone interpreting, interpreter modality, telehealth for language access.

Introduction

“I will not let you operate on my boy! I need to be with him!” Hani, a Somali refugee, insisted when the doctor told her that her son needed surgery to remove a portion of his intestine injured during a bike accident. Obviously, she could not go into the OR with her son. She looked at me and said, “He will go with him, then.” As the interpreter and cultural liaison, I accepted her offer to end the stalemate. The surgeon agreed after I explained the inherent distrust towards Western medical providers in the Somali refugee community due to a fear of organ harvesting—a reality many migrants have faced in developing countries.

When I think about Hani’s story, I can’t help but remember the shock of coming to America and going to my first clinical encounter as a teenage Somali refugee. Arriving in the US, my entire family was mandated to have a medical exam. However, in Somalia, there are no medical facilities, only traditional medicine, so from the moment we arrived at the hospital, every experience was foreign, confusing, and disorienting —from the automatic sliding doors and unintelligible language to the inappropriate hand gestures. We were not even sick; I cannot imagine how much harder this would be for people whose child or loved one was suffering a life-threatening injury or illness.

For me and my family, the chaos of the hospital system coalesced into clarity the moment Mahad—our medical interpreter—stepped into the exam room. His presence is all I remember from that medical encounter. Sharing our language, culture, and skin color, we suddenly felt at ease as he interpreted for the medical staff, who seemed to fade into the background. While this is not what we strive for now in medical interpreting, the reality is that they are the source of safety and comfort, especially in that first experience in the American medical system. Though the memory of that medical encounter remains blurry, the impact of the medical interpreter's assistance remains crystal clear. Mahad was a community liaison, telling us what to do, normalizing the experience, and guiding us towards understanding and care. Ultimately, he became a mentor to me in the US and the healthcare system. The role of a medical interpreter cannot be understated. They not only facilitate communication but also provide a sense of belonging and dignity.

Hani’s story, my story, is not unique. I can think of thousands of patients just like Hani in the ten years I have spent in interpreter services. It is these limited English proficient (LEP) patients that led me to become a leader in interpretive services as a manager and supervisor. When patients began asking me for medical advice that I was not qualified to provide, I remembered where my journey began—as a CNA, before being recruited to interpret for patients—and decided to take the next step in my career journey to become a physician assistant (PA) and provide medical care to refugee, LEP, and marginalized communities. Having completed my didactic PA training, I recognize the need to help providers and healthcare administrators establish more efficient and sustainable systems for language access. The goal for language access is for patients to have meaningful access that is quick, suitable for each patient, useful, and preferred.

Despite rapid advances in utilizing technology-based solutions post-COVID-19 pandemic, there is still a need to develop a more adaptable hybrid model that utilizes interpreting resources to the

benefit of all stakeholders--patients, providers, hospitals, and interpreters. The question is, how do we develop standards. Do we need standards? Has the switch to technology fixed all our problems? What are the limitations of technology-based interpreting? Is it appropriate for all patients? Is it cost effective; is it worth the investment/up-front costs? How do we best utilize it? Are there inefficiencies that still need to be addressed?

Background

In America, there are over 25 million LEP individuals that require adequate language accommodations for effective healthcare [4, 6-8]. Multiple laws (Title VI in 1964, plus American Disability, Joint Commission and the Executive Order 13166 of August 11, 2000) require public healthcare facilities to provide meaningful access to language services [6, 8-9]. Medical education often fails to provide adequate awareness and training on how to work with interpreters and the laws that govern these services. This puts both the healthcare systems and providers at risk of lawsuits and losing their medical licensing. The failure to provide language access is not only illegal, but also results in negative health outcomes for LEP patients and builds distrust in communities.

Researchers have shown that LEP patients face significant challenges in accessing healthcare due to language barriers [4, 6-7]. Ji et al. examined the existing literature and concluded that result in misunderstandings of both diagnosis and therapeutic plans in clinical encounters leading to:

- Medication omission
- Missed appointments
- Dissatisfaction of care
- Wasteful resource utilization, including:
    - increased emergency room visits
    - excessive testing
    - misdiagnoses
    - unnecessary invasive procedures
    - inappropriate medication and intervention
    - increased hospitalization [7]

Medical literature also highlights the significant impact of trained professional interpreters in reducing medical errors, making access to medical interpreters with continued medical education essential. In a study conducted by Flores et al, the results demonstrated that encounters with professional interpreters had significantly fewer errors of potential consequence (12%) compared to ad hoc (22%) and no interpreters (20%). Moreover, among professional interpreters, those with more than 100 hours of training made significantly fewer errors, with their proportion of errors of potential consequence being much lower (2% versus 12%). These findings underscore the importance of ensuring that medical interpreters receive comprehensive training and ongoing education to improve patient safety and enhance the quality of care for LEP patients in healthcare settings.

Hani's story goes even further than the literature to illustrate that the consequences of miscommunication could lead to increased rates of mortality. If I had not been there as a trusted cultural liaison and interpreter, her son would have died because a piece of his intestine was dead

and he was nearly septic. These barriers not only hinder the provision of quality care but also contribute to health disparities among vulnerable populations.

As a refugee who has personally experienced the challenges of language barriers in healthcare, my journey has led me to a career dedicated to bridging these gaps. Starting as a medical interpreter and progressing to the role of Supervisor and Manager in one of the largest hospital-based interpreter departments at Hennepin Healthcare System (HHS), I have witnessed firsthand the transformative power of language access. Now, as a PA student, I am passionate about exploring how healthcare providers and organizations can leverage different technologies to further enhance cultural understanding and overcome language barriers.

While working for the Interpreter Services Department (ISD) at HHS, I conducted a survey to gather data from our system and three others in the Twin Cities metro area. This data will be utilized to demonstrate the change and evolution in technology use and in-person interpreting before and after the COVID-19 pandemic. These metro hospitals provide a good model for how to deliver quick and robust language access for LEP individuals utilizing technology. However, the current challenge is that there is no expectation or rules that automatically prioritize the type of interpreter service modality that a patient should receive. I will utilize the survey data and case studies from my experiences as an interpreter to illustrate both the challenges and the opportunities for developing flexible, patient-centered, community-based standards.

Interpreter Services Department at Hennepin Healthcare System

HHS is the largest Safety Net organization in Minnesota. [With] only 73.5% of ambulatory encounters in these clinics were performed with English as the primary language, HHS has one of the largest LEP patient populations in Minnesota [10]. Additionally, 20-30% of this trauma one hospital's patients requires a language interpreter. HHS patients utilize over 7.4 million interpretation minutes each year with over a 100 staff interpreters and vendor partners providing over 90 languages with an annual budget of about $10M. The top language serviced at HHS is Spanish, followed by Somali, comprising 89% of total languages serviced, however, the remaining 11% is composed of multiple rare and unique languages, which are difficult to provide timely interpreter services (Figure 1).

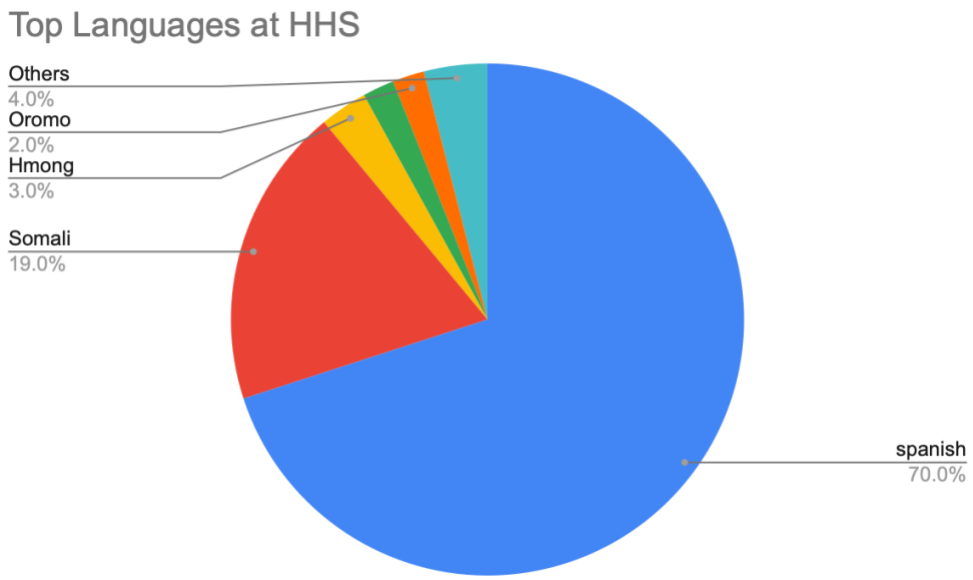

Figure 1: Percentage of languages serviced at HHS. [2.G] Other languages include French, Mandarin, Mina, Ewe, Swahili, Kisii, andAmerican Sign Language (ASL).

To meet the tremendous demand for language services and comply with language access requirements, ISD provides qualified professional interpreters in three modalities: over-the-phone (OPI), video remote (VRI), and in-person interpreting. These modalities are integrated in a seamless manner, allowing medical providers and patients to quickly access their preferred mode of interpretation according to their needs. The integration of these modalities has enabled the organization to effectively meet the high demand for language access in a sustainable, cost-effective, and equitable manner. HHS is now considered to have one of the premier interpreter services departments in the U.S. HHS's success has served as a model for other large hospitals. It is the result of a decade of innovation in various approaches.

Transitioning from In-Person to Tele-Interpreting: Challenges and Opportunities

In 2012, when I joined the ISD, we had over 130 full-time equivalents (FTE) and the only modality of interpreting was in-person. The department had been over budget by $1.5M every year for over a decade, which prompted the higher leadership to pressure the middle management to make necessary budget cuts. Yet, medical providers and patients frequently complained about long wait times for interpreters. Interpreters and their union complained that they were overworked and tired walking from clinic to clinic or waiting for patients and providers that were not ready to start the visit. We quickly realized that this model of in-person interpreting was not sustainable and that we had to search for a language access model that supports our staff in delivering care in a timely, effective, efficient, and equitable manner while not compromising our patient safety.

We set up an interpreter-stakeholder committee consisting of interpreters, IT, providers and department leaders to utilize the Lean problem-solving strategies to not only identify modifiable

gaps, but also propose practical solutions. We also visited many organizations to search and learn the best particles in providing language access. Finally, after a long tedious process, we settled for the following strategy to create a hybrid model that provides VRI, OPI and in-person utilizing our 130 FTE but also partners up with other similar hospitals in order to share interpreter resources.

The HHS leadership team decided to implement, and I gradually executed over the next decade the following changes:

- Create a Language Center (LC) located within HHS and staffed with some of our interpreters who could take video and phone calls from the 100s of iPad-on-carts (also known as VRI units) that were deployed to patient care areas throughout the hospital.
- Join a network of LCs across 50 hospitals—Health Care Interpreter Network (HCIN)—to share interpreters when idling too long due to low demand.
- Prioritize some of our in-person interpreters for acute areas.
- Implement an on-demand dispatching system for in-person interpreters instead of pre-scheduling to eliminate inefficiencies due to patient no-shows.

The immediate benefits of implementing this strategy, such as quick and diverse language modalities, were evident. This was a win all around: interpreters were more productive; demand for services were met; patients and providers were more satisfied with having access to better qualified and higher quality, medically-trained interpreters; and HHS saved money.

Achieving full implementation, however, took several years due to challenges that arose when attempting to integrate in-person interpreters into the language center to handle video and phone calls. Some healthcare providers, in solidarity with the interpreter union, expressed concerns that technology would replace their jobs and profession. This group wrote petition letters to the hospital CEO, protesting against the implementation of these remote technologies.

The fear of this new technology isn't particularly new or specific to HHS. Marshall et al. evaluated the process of implementing VRI in a hospital that already used in-person and OPI. The study examined the impact on the utilization of language services, efficiency, and costs, as well as implementation challenges. "After overcoming initial challenges, VRI implementation, as part of the provision of comprehensive language services, can potentially yield several benefits, including immediate extensive use, decreased OPI, reduced wait times for language services, rapid uptake in clinics previously lacking in-person interpreter access, and increased average minutes per encounter by in-person interpreters." [6] Despite its clear benefits in both increasing access and decreasing costs, the greatest barrier to its full implementation was the discomfort with change.

In March 2020, everything changed overnight. We were in the middle of union contract negotiations where the sticking point was putting limits on tele-interpreting (VRI & OPI) because they were afraid it would replace their jobs. All of this resistance was erased overnight. I was literally in a meeting with the union when the hospital chief nursing officer (CNO) called to inform us that, due to COVID-19, we would be shutting down all ambulatory areas and that all ancillary staff must go home due to limited PPE availability.

Many hospitals were laying off their interpreting staff. Concerned with the uncertainty of contracting the deadly virus and hoping to avoid layoffs, we sent about 30% of our staff interpreters home with video phones. The others worked from our language center, which already met the infection prevention requirements of social distancing. In response, the union representatives changed their opposition to VRI. Ironically, the reality was that tele-interpreting saved their jobs.

As the leader of interpretive services, the thought of the impact layoffs would have on our valuable staff, their families, and our vulnerable LEP patients, who were disproportionately affected by the virus, was sickening. I quickly urged our organization's upper management for support in expanding the language center's capacity to handle technology-based interpreting by adding an additional 100 OPI/VRI stations. I will forever be grateful for their unequivocal support and their resounding "yes" to my proposal.

Due to the low demand for patient care, we shared 100% of our interpreters with HCIN, taking calls for other hospitals. This turned out to be a pivotal moment, as providers, interpreters, and patients came to accept technology-based interpreting and telehealth in general as safe and effective alternatives. As a result, interpreter productivity drastically improved, and wait times for interpreters virtually disappeared (Figure 2 and Table 1). Financially, the department went from being chronically over budget by $1.5M each year to making over a $900K surplus. While the changes were already in process towards a more efficient and economical system utilizing technology-based solutions for 80% of encounters, the pandemic served as a catalyst to achieving our goals.

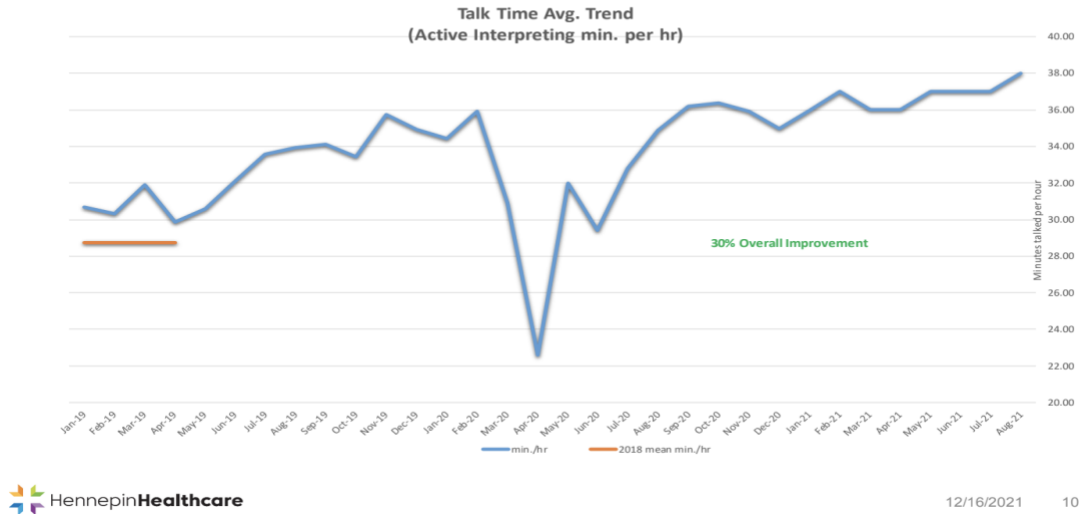

Figure 2: Productivity of interpreters from 2018-21 talk time interpreting in minutes

Table 1. Comparison of Interpreting Modality Efficiencies

	VRI	OPI	In-Person
Average Encounter Time (min)	14	12	32
Average Wait Time (min)	On-demand	On-demand	19 (highly variable) [3]

Our staff productivity, defined as the number of minutes interpreted per hour for LEP patients and providers, increased by 30% compared to 2018 (Figure 2). In 2021, internal data analysis revealed that a HHS remote interpreter (VRI and OPI modalities) was more than twice as productive as an in-person interpreter; the average duration of an in-person encounter, excluding walking time, was approximately 32 minutes, while a VRI encounter lasted around 14 minutes (Table 1). The improvements in productivity illustrate the increased efficiencies of implementation of technology-based interpreting modalities.

Researchers elsewhere have found that efficiencies in remote interpreting vs in-person extend beyond the length of the encounter. Burkle et al. found that the mean wait time for “an in-person interpreter request until their arrival was 19 min...but the range extended out to 100 min," demonstrating a high variability [3]. When factoring in the walk time and the average talk time of in-person interpreters, their productivity is 3.6 times lower compared to technology-based interpreters. Inefficiencies like these, Ji et al. stated, are why “healthcare workers are often ‘getting by,’ which is thought to be due to the current models of interpreter delivery, namely the time and effort required to request an interpreter, as well as inflexible scheduling.” They concluded, “Mobile applications [VRI] may be used to facilitate access to medical interpreters with high clinician and patient satisfaction” [7].

By the end of 2021, our goals were met with approximately 80% of the total interpreter demand met through remote modalities, while the remaining 20% involved in-person interpretation. On the surface, this looked like a win; however, several concerns and questions were raised.

The Pendulum Swing: Going Too Far with Remote Modality

The HHS leadership team met regularly through 2021 to monitor our progress through data and feedback from our stakeholders. Though our goals for relative proportions of interpreting modalities were met, two primary areas of concern came to the surface. Complaints from unions, patients, and providers highlighted the reality that, in some ways, the remote modalities had swung too far. Two specific areas of concern were raised: vulnerable patients and inadvertent inefficiencies.

It is essential to determine which vulnerable patients will benefit more from in-person interpretation versus technology-based. For example, medical teams may unintentionally default to technology-based modalities for all their LEP patients, potentially overlooking the needs of those who require in-person interpreters. Some LEP patients are more vulnerable due to their factors such as age or disabilities and may not be best served by remote technology. Some

medical conditions or cases would best be served using the physical presence of an in-person interpreter to ensure effective communication and understanding between healthcare professionals and patients.

The consequences of too much access can cause inadvertent inefficiencies. We have witnessed unintentional "double-dipping" when two interpreters—in-person and technology-based—were requested for a single patient. While this may appear to provide greater access to language services from the medical team's perspective, it creates inefficiencies from the interpreter's standpoint.

In reflecting on these concerns, it becomes apparent that healthcare workers are uncertain how to balance and prioritize specific interpreter modalities (in-person or remote). This points to the lack of clear guidelines regarding when and where each modality should be accessed, further complicating the interpretation process and hampering efficiency. This is not a new problem. Schiaffino et al. noted "a lack of uniformity in the need and offering of language services, which varied by hospital location and ownership". Additionally, Schiaffino et al stated, "the offering of language services remains inconsistent: Fewer than two out of three US hospitals provided language services to patients living in their service areas" [5, 14].

Realizing that there are no guidelines nor research on this topic, let alone benchmarking to help guide the budget for ISD, I decided to conduct a survey with the goal of comparing HHS to other local hospitals and developing unofficial community standards to help guide decisions and priorities in our hospital and region.

Methods

Four hospital systems in the Twin Cities metro area were surveyed via email. Three out of the four hospital systems provide most of the LEP patient care, averaging over 360K contacts yearly. Permission and support letters to publish their data have been obtained in 2023.

The survey included the following questions:

1. How many total LEP patient contact/encounters do you handle on an annual basis?
2. What is the relative proportion/breakdown of in-person vs technology-based modalities (%)?
3. Do you have criteria for prioritizing in-person for certain medical encounters?
4. What modalities do you prioritize in your pediatric area?

Results

The results of the hospital survey are shown in Table 2, which highlights the different approaches of four major hospitals in the Twin Cities and how they leverage technology and innovation to meet and prioritize communication access for our diverse patient population. I was consistently impressed with my colleagues and their creativity and dedication to utilizing technology-based solutions for the betterment of their patients. On average, the hospitals met 79% of language access demand with remote technology and 21% with in-person. It is well

known that this is a big shift from majority in-person utilization pre-COVID. The managers that were surveyed indicated that they will continue the current status due to efficiencies and cost effectiveness realized through use of this technology. One hospital shared that they saved about $3M and was planning to build a brand new language center for their staff.

The survey findings make clear that face-to-face interpreters may be more suitable for complex medical encounters involving noise and multiple care team members. Examples of such encounters include Trauma Emergency Rooms (Stab room), light sedation procedure rooms (such as interventional radiology, GI, and eye surgery ORs), CT and MRI scans, emotionally complex cases like end-of-life care conferences, ICUs, and challenging diagnoses like new cancer diagnoses. While valuable information was obtained, it is not the whole story.

We can show how many LEP patients received language services and the proportion of interpreting modalities used; however, we cannot tell you which specific patients were served and which were not. For instance, there is currently no data indicating the percentage of LEP patients who rely on family members, bilingual providers, medical interpreters, or no interpreter at all. The problem is that there is no requirement and no system for providers to track how each LEP patient's language needs were met. The lack of interpreter documentation not only poses potential risks to patient outcomes but also exposes the medical team to legal jeopardy.

Despite laws that encourage tracking data on language access, there is no requirement forcing providers to document in the electronic systems. This points back to the need for flexible community standards for the use of interpreter services because we have to have data to develop and monitor benchmarks, hold hospitals accountable, and continuously improve and innovate. Further research is necessary to establish standardized protocols for accessing interpreters in a medical setting.

Table 2: 2021 Benchmarking data on interpreter utilization in four major hospitals in the metro Twin Cities area. To maintain anonymity and utilize aggregated data, the hospitals have been labeled A-D. Permission and support letters for publishing the data have been obtained.

2021 Remote vs In-person Benchmhark Categories	A	B	C	D
Total Patient Contacts	363058	334000	46000	385000
% remote	79%	67%	80%	90%
% in-person	21%	33%	20%	10%
How is your out-patient Pediatric Clinic covered? In-Person or Remote?	Mixed (67% remote and 33% in-person)	Mixed, 13 and under all in-person. Remote dependent upon visit-type for over 13 years, percent unknown	100% remote, unless staff specifically request in-person interpreson due to reasons such as cognitive delays or had-of-hearing	Not a tracked metric
Criteria for In-person for your system?	ED Stabilization room All OR locations Procedures (i.e., IR & Cath Lab, Radiology with Contrast, CT, and MRI) Care Conferences (End of Life) Complex Clinic ICU units Patients who are hard of hearing Pediatric & Pedo Dentistry	New patients Patients 13 and younger Deaf patients MRI Consults Care Conferences Procedures Consents determvisit typesit-type and department, defaulted in Epic	MRI (Magnetic Resonance Imaging) Interventional radiology neuropsychic evaluations Video Speech swallow study Nuclear medicine HVI Stress Test Stab room (ED trauma room per staff request only Pulmonary function test Cardiac Rehab Palliative (per Palliative team request only)	Safe and Healthy Kids, Audiology, Rehab Evaluation Visits, Care Conference, Labor and Delivery, MRI, Neuropsych Evals, Autism Clinic, Inpatient Chemical Dependency, Cath Lab, Gamma Knife, All procedures with conscious sedation (Peds Sedation, Endoscopy, Colonoscopy, etc.)

Analysis: The Case for a Adaptable Hybrid Model

As a former manager of the ISD at HHS who was also on the front line interpreting, I have personally experienced and gathered feedback from various stakeholders including medical providers, patients, and hospital administrations regarding interpreter modalities. There is a range of perspectives, including those from the interpreter union and language access activists who often advocate for in-person interpretation over technology-based options. However, literature shows that there is no significant difference in patient satisfaction between in-person, VRI, and OPI [Joseph et al.] I want to address the persisting misconceptions about technology-based interpreting that I want to address utilizing case studies from my experiences as an interpreter.

One misconception is that meaningful connections with patients are only possible through in-person interpreters. While a prevailing assumption, this is far from true. The success of virtual interpreting lies in the medical provider's willingness to adapt and their comfort working with both virtual and in-person interpreters. While at HHS, I facilitated a conversation between caring parents from Los Angeles and the medical team using VRI. The parents sought to discuss an experimental medical trial for their child's incurable condition, still awaiting FDA approval.

During the emotionally charged and intricate two-hour encounter, I worked diligently to explain the concept of experimental treatment to these recent immigrants who were unfamiliar with the term "experimental drug." The lead medical provider employed the "teach back" method to ensure the parents comprehended the treatment plan, including its benefits and potential side effects. The parents articulated the plan, including their comprehension of the benefits and potential side effects of the experimental therapy, demonstrating their willingness to proceed. The family expressed gratitude towards the medical team for their kindness and compassion. In a profound moment, they expressed to me, the interpreter, "We are so glad you are part of our community."

Despite the physical distance between Minnesota and California, their acknowledgment affirmed that interpreters can establish meaningful connections between providers and patients through stable video communication, transcending physical distances. This experience underscored the significance of healthcare providers embracing and adapting to virtual interpreting technologies and countering the assumption that in-person interpretation is the sole means of establishing genuine connections with patients.

On the other extreme, many believe that telehealth interpreting can be used for anything. One of our fantastic Spanish interpreters shared with me during my time as manager at HHS a story that disproves this assumption. The interpreter came to my office to debrief, telling me:

> “I found myself involved in a telehealth encounter that unfolded in an unsuccessful manner. The video call commenced midway through the encounter, with a PA attending to a 15-year-old girl and her mother at a community clinic. To my surprise, the PA began the conversation abruptly by stating, ‘Yes, the pregnancy test was positive, you are pregnant.’ The ensuing chaos in the room revealed that the mother was unaware of the PA's decision to order a pregnancy test. The atmosphere became fraught with screams, tears from both mother and daughter, and a general sense of distress. I was taken aback

> by the PA's choice to utilize a video interpreter for this highly sensitive encounter, especially when there were available in-person interpreters who could have provided support."

This case demonstrates an example of a time when technology was chosen inappropriately. Due to the sensitivity of this topic, in-person should have been the modality of choice for both the provider and the interpreter. Other factors that should be considered when choosing a modality include cultural considerations, which play a significant role in medical settings. For example, within the Hispanic population, including limited English proficiency individuals, religious beliefs hold great importance. Consequently, a teenage pregnancy can have devastating consequences within their communities and for the patient, specifically.

Another misconception is that the medical team will lose the power of cultural brokering due to a decrease in interactions between the medical provider and the interpreter in a remote setting. This assumes that the only way to have cultural competency is to have the interpreter present in the room. While interacting with interpreters promotes "cultural humility," virtual interpreting does not undermine this aspect. Professional medical interpreters are skilled in transitioning from being a "mouthpiece" for patients and medical teams to becoming cultural brokers if it enhances communication [12-13]. However, there are other models that achieve the same goals.

Effective teaching of cultural humility requires intentional facilitation and the active participation of supervising attending physicians, residents, and interpreters in a culturally conducive environment. A group of emergency medicine providers (Paetow et al.) sought to determine the impact of a brief cultural immersion experience on emergency medicine residents' knowledge, attitudes, and behaviors when caring for Somali patients in HHS' emergency department. A culinary cultural immersion brought small groups of residents together with Somali interpreters to share a meal at a Somali restaurant. The results of this study demonstrated increased knowledge of Somali culture, health care paradigms, and diet. Behavioral changes included adjusting clinical visits to patient expectations and using interpreters as cultural brokers. Positive attitudinal changes were also reported, including an increased acceptance of cultural differences and a sense of connectedness to the Somali population.

What these cases highlight is the pitfalls of all or nothing approaches. It is essential to strike a balance between remote and in-person interpretation to cater to the specific needs of patients and medical encounters. That is why I recommend a hybrid model that is flexible and integrated in its approach. Standards and guidelines must take into account the vulnerability of the patient, the community and cultural needs, the acuity of the medical condition, and the sensitivity of the issue. Certainly, providing language access is a complex process, but the key to success is an administrative culture which encourages innovation through continuous experimentation, failure, and learning.

Recommendations for Flexible, Patient-Centered, Community-Based Standards

The goal for patients is to have very quick access to interpreters that are also suitable (patient-centered) for each patient that is useful that they prefer and provides meaningful access. Could be technology-based or in-person. In-person might be best for patients but it is also resource

intensive and fraught with delays. This is not an easy decision.

It's going to take a lot of work to develop standards, guidelines, and protocols, but once implemented it should be seamless. Create a criteria based on location or type of medical encounter.

1. Researchers must study problems around language access to help develop recommendations and protocols. We need to know more about the connection between language access and health outcomes. We have seen providers making language access decisions based on their preconceptions and the lack of information. Data will help develop better protocols, which will better guide the medical providers.

2. From my experience and the hospital survey, the areas that in-person should be prioritized are complex medical encounters where cognition is an issue, sensitive topics, ER stabilization. Special consideration should be given to patient-preference and provider-preference.

3. Ideally, when choosing an interpreting modality, the process must be collective, utilizing input from all stakeholders—patients, providers, and interpreters.

4. Hospitals must create criteria for when to use in-person and when to use technology-based based on location or type of medical encounter.

5. Hospitals must require modality preferences to be listed in the electronic charts so that it can be used at the time of scheduling appointments, resulting in less confusion about which modality to use at the time of the appointment.

6. Providers must learn to use the technology to avoid patient care delays. We have experienced providers tending to non-LEP patients before LEP because they are waiting for interpreters. That is an inequity that is avoidable with technology.

7. Hospitals must hire and train interpreters from the community and utilize them in the most effective and efficient manner: a hybrid model.

8. Providers must be trained in how to work with an interpreter, the legal requirements for meaningful language access, how to utilize the technology so they are more proficient and the issue of language access on the whole. The how, why, and the value of using interpreters.

9. Providers should participate in regular, ongoing cultural training with interpreters such as lunch and learns. Topics could include religion, food, traditional medicine such as herbs that act as blood thinners, parenting practices, language nuances such as words that have interchangeable meanings, and other medically-relevant practices such as genital manipulation.

10. Interpreters need regular training, education resources, and support to ensure that they stay on top of best practices and medical knowledge. Ideally, they would learn anatomy and physiology. Interpreters tend to burn out after about five years in the field, so training related to mental health and self-care as well as regular debriefing and counseling will support their success.

11. All stakeholders must advocate for increased investment in language access resources and technologies in healthcare organizations to meet the diverse needs of LEP patients. Medical facilities must have technology-based access to interpreters throughout the hospital. Simply, there needs to be iPAD screens everywhere—welcome area, waiting areas, patient rooms—readily available to LEP patients. In addition, new facilities should be designed with technology-based access from the beginning to avoid the cost of retrofitting.

12. Language access leaders in each community should have at least quarterly, if not monthly, meetings to build their own, community-based standards for language access.

13. To help bring costs down, which reduces barriers to access and provides money to implement new strategies, hospitals must work with insurance and government agencies to get reimbursed for language access costs. This would require hospitals to accurately document language access encounters.

Limitations, Implications, Conclusions

The role of medical interpreters is crucial in providing meaningful access to healthcare for LEP patients. They serve as cultural liaisons, bridging the gap between patients and medical providers, and offering a sense of safety and comfort to vulnerable populations. Language barriers in healthcare can lead to incomplete understanding, miscommunication, and potential negative healthcare outcomes. By ensuring effective communication through interpreters, we can improve patient satisfaction and reduce healthcare disparities.

The use of technology-based interpreting modalities (VRI and OPI) has revolutionized language access, making it more efficient and cost-effective. Adding technology-based solutions to interpretation services has had a positive impact on each stakeholder. However, we know that not all LEP patients' language needs are being met despite the legal requirements, with potential risk to patient outcomes and legal liabilities for healthcare organizations. There are clear limitations to the use of technology-based interpreters. The next phase in the evolution of improving language access in medical settings is to create standardized protocol for accessing interpreters in medical settings. However, to do this effectively, more data is required.

It is crucial for hospitals to implement a mandatory requirement within LEP electronic medical records that medical providers indicate how they access interpreters for each LEP patient. Mandatory interpreter documentation would provide desperately needed data that can be utilized to meet multiple goals. Knowing whether or not medical interpreters were utilized provides insight into legal compliance. The ability to link interpreting modality to patient vulnerability

and medical acuity would allow decision makers to determine the effectiveness of interpreter modalities in specific medical encounters and establish community standards and guidelines for prioritizing in-person or remote interpreting.

Striving towards a balanced, hybrid system of language access modalities requires cultural humility. Immersive experiences and cultural training can strengthen the role of medical interpreters as cultural brokers and educators. Promoting cultural competency training and facilitating interactions between interpreters and medical providers outside the hospital environment develops the empathy and understanding required for effective cross-cultural communication among healthcare providers, interpreters, and patients.

Encouraging collaboration and knowledge-sharing among hospitals and healthcare organizations will improve interpreter resource sharing and reduce inefficiencies in interpreter utilization. Gathering data from other hospital systems in the area was effectively a method of checking the health of our ISD against our neighbors. At HHS, interhospital cooperation and coordination allowed us to build more effective and efficient systems together.

HHS and similar hospital systems have made incredible advances in technology-based solutions for language access, but more work needs to be done. Thinking back to my first experience in the American hospital system, I can imagine a welcome kiosk with multiple languages inviting patients to receive interpreter assistance upon first entering the hospital or medical facility. Beyond that, hospital systems will ideally develop flexible, patient-centered, community-based standards that balance the use of technology and in-person interpreters to provide timely, effective, efficient, and equitable language access without compromising safety. By implementing these recommendations and embracing technology while maintaining the human touch, healthcare organizations can further enhance language access for LEP patients, improve healthcare outcomes, and reduce disparities among vulnerable populations.

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    c. Modality by HHS Pacific HCIN summary 2018-2022 Mar
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