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Evaluating Healthcare Workers' Knowledge, Attitudes, and Practices Regarding Language Access Services in the Clinical Setting

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By

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Abstract

Background: Barriers to accessing and understanding healthcare can place patients with low English proficiency at an increased risk of poor health outcomes. Language-based inequities in healthcare exist due to lack of interpretation and translation services available, lack of healthcare workers' knowledge of resources, and/or perceptions that these services require too much time or effort. Failing to address barriers affecting this population leaves them vulnerable in the healthcare setting.

Purpose: The purpose of this DNP project was to educate nurses, providers, and staff on an inpatient unit at a rural hospital of the language interpretation resources available, best practices for implementation, and the importance of proper use.

Methods: This project used a quasi-experimental pretest-posttest design. Participants were voluntarily gathered via a convenience sample and remained anonymous. The pretest, educational intervention, and posttest were distributed through the employee email listserv. Non-identifying demographic data including age, sex, certification, and years of experience were gathered to help determine how individual characteristics impacted results. Retrospective and prospective chart reviews were completed to identify non-English speaking patients presenting to the unit and the documentation of interpreter use pre- and post-education.

Results: There were improvements in all areas of interest including knowledge, attitudes, comfort, and satisfaction after implementation of an educational video. There was a statistically significant improvement in respondents' intent to offer services ($p = .02$). Documentation of use of an interpreter was low in the retrospective chart review (24%) and in the prospective chart review (27%).

Conclusion: An educational video can be an effective way to improve knowledge regarding language access services. Education, in addition to the availability of a secondary method of communication, leads to improved intent to use. Consistent, standardized documentation is needed to verify increased rates of use.

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Background & Significance

Problem Statement

A person's ability to communicate does not define their worth nor should it impact their health care, yet millions of Americans fall victim to poor health outcomes and higher rates of mortality related to their inability to understand or speak English (Ahrens & Elias, 2023; Agency for Healthcare Research and Quality, 2020; Castro et al., 2022; Diamond et al., 2019; Gold et al., 2020; Jacobs et al., 2020; Karliner et al., 2017). Language-based inequities in healthcare exist primarily because of the lack of interpretation services available, healthcare workers' lack of knowledge of these resources, the belief that these services are not valuable, or the perception that these services require too much effort (Blay et al., 2019; Rayburn, 2017). Failing to address barriers to access and utilization of interpretation resources with the low English proficiency (LEP) population leaves them particularly vulnerable in the healthcare setting.

Context, Scope, and Consequences

Research supports that LEP patients are at an increased risk of poor health outcomes as a direct result of the barriers to accessing and understanding healthcare in an English-dominated system (Ahrens & Elias, 2023; AHRQ, 2020; Diamond et al., 2019; Karliner et al., 2017). Poor outcomes include increased incidence of medical and medication errors resulting in harm, longer hospital stays, increased rates of readmission, increased risk of falls, and increased risk of surgical infections (AHRQ, 2020; Kwan et al. 2023; Shiaffino et al., 2020). Predictably, LEP patients may have difficulty with understanding discharge instructions, knowing when to follow up or return for further treatment, knowing how to take their medications, and understanding the complexities of managing their health condition(s) (AHRQ, 2020). Not only is this problematic for the individual patient, but also for the healthcare system. Ethically, negative health outcomes

resulting from poor communication call into question the organization's responsibility to do no harm, keep individuals safe from inappropriate treatment, and support the autonomy of the patient (AHRQ, 2020). Financially, there are significant increased costs related to prolonged hospital stays, increased readmission rates, and non-reimbursable "never events" that occur because of subpar care (AHRQ, 2020).

Approximately 1 in 5 people living in the United States speak a language other than English at home. Inequities rooted in lack of language access services reach far and wide, negatively impacting millions of Americans (Diamond et al., 2019; Karliner et al., 2017; Rayburn, 2017). Some of the most frequently spoken languages include Spanish, Chinese, French, Tagalog, and Vietnamese (Diamond et al., 2019). Of the estimated 58 million Americans who speak languages other than English, approximately 25 million are reported to have low English proficiency, meaning they speak English "less than very well" (Diamond et al., 2019). With languages like Spanish that are frequently taught in American schools, it is often easier to locate an in-person interpreter than it is for a language less-commonly spoken. However, since Spanish is more widely spoken, some organizations have engaged in poor practices, such as allowing staff who are not properly trained in medical Spanish to interpret (Ahrens & Elias, 2023; AHRQ, 2020). The use of individuals who are not formally trained in medical interpretation can lead to significant miscommunications which lead to clinical mistakes (AHRQ, 2020). Poor practices are proving to be increasingly problematic, because not only is the LEP population continuing to grow at a fast rate, but it is also becoming more diverse (AHRQ, 2020).

The site where this project was conducted identified with many of the same issues reported in the literature. Until recently, this inpatient unit, located in a rural hospital that includes Labor and Delivery, Postpartum, and a NICU, only had one method of interpretation

immediately available, a telephone number called the Language Line, which can be used to contact medical interpreters of a variety of languages. An iPad with the Language Line downloaded to it existed within the hospital, but it was not stored on the unit and therefore could not be easily accessed. An additional resource, although not a substitute for an interpreter, included the ability to print patient education in a variety of languages. Staff members on the unit were frequently confused about what resources were available to them and how to use them properly. This led to inconsistencies in using interpretive services and in offering them to patients. If the main method of interpretation failed, there was no easily accessible backup plan. In addition, educational materials provided upon discharge were not always available in the proper language. Both patients and staff have reported difficulties and concerns with navigating the language gap. As many of these challenges resulted from a lack of knowledge, an educational intervention was devised as part of the solution.

Existing Interventions & Strategies

Practices and services that have been shown to be effective when communicating with LEP patients include hiring bilingual staff, hiring trained interpreters, the use of telephone interpreter lines, and the presence of iPad or computer-based services (Blay et al., 2019; Diamond et al., 2019; Garlock, 2016; Karliner et al., 2017; Kasten et al., 2020; Kwan et al., 2023; Lee et al., 2014). In addition, providing continued education to healthcare workers regarding proper interpretation practices, using accessible pre-approved translation apps, and distributing bilingual discharge instructions to patients are supportive practices that help bridge the communication gap (Douglas et al., 2014; Kasten et al., 2020; Lopez-Bushnell et al., 2020; “Strategies for Overcoming Language Barriers,” 2018). Not only have these services and interventions improved clinical outcomes, but they have also served to improve patient

comprehension, compliance, and satisfaction with their medical care (Diamond et al, 2019; Kasten et al., 2020).

Purpose & Objectives

The purpose of this project was to educate nurses, providers, and staff on an inpatient unit in a rural hospital about the language interpretation resources available, best practices for their implementation, and the importance of their proper use. This inpatient unit is unique in that patients are seen consistently for nine months in an outpatient setting prior to presenting to the hospital for delivery. The providers working inpatient are the same ones seeing these patients in their outpatient offices, meaning that the following objectives would also translate to the outpatient setting:

1) Identify barriers to the use of interpretive services.

2) Increase staff and provider awareness, knowledge, and comfort regarding the use of language access resources including an iPad interpretation device,

3) Increase the intent to use and actual use of interpretive services, and

4) Increase staff and provider satisfaction related to the use of these services.

Review of Literature

Search Strategies

To understand the current research findings pertinent to the attitudes and practices pertaining to language access services, a literature review was performed to explore existing perceptions, barriers, and outcomes of use. The review of literature also helped identify strategies to improve comfort, satisfaction, and rates of use. The search was guided by identifying the population (staff working in Labor and Delivery, Postpartum, and NICU), the intervention (a presentation on the existing telephone “Language Line” and newer iPad “Language Line”), and

the outcomes of interest (attitudes, perceptions, and understanding regarding available language access services). The databases PubMed and CINAHL were used to perform the search.

Key Words

The search strategy included the use of key words to pull articles pertinent to the topic. For the population, the terms "nursing staff" OR nurse* OR doctor* OR provider* were searched. For the intervention, the terms interpreter* OR "language access service*" OR translator* were searched. For the outcome, the terms attitude* OR perception* were searched. A final search was conducted by combining the previous three searches with the qualifier "AND."

Inclusion & Exclusion Criteria

The following inclusion criteria were then applied: studies conducted in the United States, those occurring internationally, and studies involving inpatient and outpatient care. The exclusion criteria for this literature review were studies in languages other than English, studies greater than 10 years old (except for one study published in 2009), and studies without full text. After the application of inclusion and exclusion criteria, 170 articles from PubMed and 128 articles from CINAHL met criteria. After evaluation of these articles, elimination was performed of the research that did not pertain specifically to inpatient or primary care patients, did not result in conclusive data, or did not directly relate to the desired topics. A final review focusing on existing practices as well as attitudes and perceptions of healthcare workers left me with five studies from PubMed and 16 studies from CINAHL for analysis.

Synthesis & Summary of Evidence

Nine studies included in the literature review focused on the attitudes, beliefs, perspectives, and experiences of nurses, healthcare staff, and providers working with LEP patients and interpreter services. The evidence shows that professionals understand the

importance of clear communication and its impact on safe patient care (Ali & Watson, 2018; Granhagen et al., 2019). Satisfaction among workers was higher when a consistent service was available, as this led to efficient and dependable care (Mottelson et al., 2018). Additional training for how to use services was mentioned as a need (Silva et al., 2022; Watts et al., 2018).

Nine studies discussed past and current services, while also comparing what has proven most effective. Traditionally, in-person interpretation (or none at all) was the cornerstone of practice. However, in recent years, training for medical interpreters has become more stringent, leading to clearer and more concise communication (Attard et al., 2015; Bischoff, 2020). Additionally, technology has allowed for tools such as telephone and video interpretation, apps, and picture boards to be accessible and widely used. In-person and video interpreters stand as the "favorite" and most accurate practices supported by research (Anttila et al., 2017; Feiring & Westdahl, 2020; Gutman et al., 2018; Kynoe, et al., 2020; Marcus et al., 2020; Myers et al., 2022). The final three studies addressed the need for evidence-based guidelines and official training of staff using the services. Evidence-based guidelines and training initiatives were shown to lead to consistent, effective communication with the LEP population (Bischoff, 2020; Fukui et al., 2023; Teunissen et al., 2017). Additionally, trust and tolerance increased between patients and providers (Teunissen et al., 2017).

In summary, the existing research supports the need for accessible medical interpretation for LEP patients. When possible, in-person interpreters or video interpreters are most effective. Telephone interpreters and healthcare specific translation apps may also be used (Feiring & Westdahl, 2020; Gutman et al., 2018; Kynoe, et al., 2020; Marcus et al., 2020; Myers et al., 2022). Training of staff members who utilize interpretive services with their patients led to better

rates of use and improved patient outcomes. Additionally, staff members were more satisfied after proper training (Bischoff, 2020; Teunissen et al., 2017).

Gaps & Implications

The information gleaned from this research review highlights the need for access to interpreter and translation services, standardization of regulations and requirements, and additional education for staff regarding the available resources. More information is needed regarding the best communication method for LEP patients based on area of practice, how to standardize care across organizational lines, and long-term impacts of improved communication between patients and healthcare workers. For the unit, this research proved particularly important. Prior to the beginning stages of this project, the only device available for immediate use was the telephone interpreter. The use of this resource was not consistent, and many nurses were unsure of how to access it. The back-up service consisted of an iPad stored in a different department, meaning accessibility took time and staff were not familiar with its use. In addition, other methods such as body language or using family members as interpreters were being used instead. As a result, miscommunications occurred, and patient care had the potential to suffer.

Theoretical Framework / Process Improvement Model

The model that was used to guide this project was the Iowa Model. This evidence-based practice model was designed in the 1990s to stand as a seven-step process for use by nurses to "improve patient outcomes, enhance nursing practice, and monitor healthcare costs" by implementing evidence-based research (Taylor-Piliae, 1999). The steps are: 1) Identifying an issue 2) Stating the purpose 3) Forming a team 4) Assembling, appraising, and synthesizing a body of evidence 5) Designing and piloting a practice change 6) Integrating and sustaining a practice change 7) Dissemination of knowledge (Cullen et al., 2022). The Iowa Model was

chosen for this project, as it can be easily applied to the identified issue—lack of knowledge surrounding interpretation services and lack of substitute language access services on the inpatient Birthplace unit. Additionally, the Iowa Model allows for implementation of a "pilot program." An added goal of this project beyond educating staff was to identify an effective interpretation service that could be used as an alternative or backup to the existing Language Line. Using the model as a guide, the issue at hand was addressed through use of a pretest, educational intervention, implementation of an alternative Language Line in the form of an iPad, and posttest. This was proven feasible and effective, meaning the service could be extended hospital wide and into the outpatient setting as resources allow.

Methods

Project Design

This was a quality improvement project guided by a quasi-experimental one group pretest-posttest design to assess healthcare professionals' knowledge, attitudes, perceived barriers, intentions of use, and practices regarding the language access service available on an inpatient unit in a rural hospital. This project design allowed for the identification and exploration of staff members' comfort levels, feelings, and understanding of the Language Line and its importance. Furthermore, this design supported the identification of how an educational training module covering the Language Line impacted the nurses, providers, and staff members who received it.

The project began with the distribution of a pretest to help identify staff and providers' thoughts and feelings regarding the current Language Line, barriers to its use, and desired changes. This helped to guide the creation of the educational video provided prior to the posttest.

Following the pretest, the educational video and posttest were distributed and remained open for one month to allow time for viewing and responses.

In addition to the aforementioned project design, retrospective and prospective chart reviews were completed. The retrospective chart review identified all non-English-speaking patients who presented to the chosen inpatient unit during the three months prior to the start of the project, and the prospective chart review examined the three months following the close of the project. Once applicable patients were identified, patient charts were reviewed for documentation of the need and use of an interpreter. Pre- and post-intervention interpreter use and documentation were compared.

Setting

The setting for this project was an inpatient unit in a rural hospital located in central Kentucky. The inpatient unit includes Labor and Delivery, Postpartum, and a Level II NICU. This facility is one of eight locations within the organization. It is a 300-bed hospital that serves approximately 400,000 residents within 10 central Kentucky counties. Staffing on the unit included 6 OBGYNS, 3 rotating neonatologists, 38 labor and delivery nurses, 40 NICU nurses, 2 lactation consultants, 6 nursing care technicians, and 5 OB surgical technicians at the start of this project. Additionally, this unit staffs multiple rotating OBGYN hospitalists and works closely with the area's pediatricians. Patients presenting to this unit are seen outpatient in two separate OBGYN offices.

The organization's mission and vision specifically promote the provision and coordination of care to improve community health. The values through which they guide their care include integrity, respect, excellence, collaboration, compassion, and joy. These goals and principles directly align with the purpose of this project. While this project focused on staff and

provider attitudes and education, the end goal was to positively impact a population that remains vulnerable within healthcare—the LEP population. Education detailing why these individuals are susceptible to poor health outcomes (in general and specifically on the identified unit), how we can provide them with equitable care, and guidance on remaining respectful and upholding their integrity directly aligns with the organization's mission, vision, and values.

Stakeholder engagement was crucial to the success of this project. The department's director, manager, staff educator, and resource registered nurse hold positional power. This group of four women serves as the managerial team and needed to have a full understanding of the proposed project's importance. This included what subject matter the educational intervention covered, how it was to be distributed, how this would impact the unit, anticipated deadlines for staff and provider involvement, and reassurance that the content matter aligned with the organization's mission and values. Additional stakeholders included the individuals who participated in this project such as nurses, physicians, lactation, surgical technicians, and nursing care technicians. Without their buy-in and honest participation, the project would not have been successful. An additional group of stakeholders are the LEP patients (both during the project and after) who choose to use interpretation services, as this project will directly impact the care they receive. These patients, alongside their families, were and continue to be imperative as active participants. Lastly, IT and the medical interpreters employed by the Language Line were essential stakeholders.

In preparation for a successful intervention and project, facilitators and barriers specific to the site were identified. The facilitators included the following: a supportive management team, a project that aligned with the organization's mission and goals, success of additional interpretation services in other units of the hospital, staff who have identified struggles with

interpretation during past patient encounters, and a history of potentially dangerous situations in which interpretation was not easily accessible. The barriers were as follows: existing practices being seen as sufficient, the small number of non-English speaking patients making it challenging to prove the importance of the project, finances required to fund a new interpretation service, and staff being uncomfortable or unwilling to learn a new technology.

Sample

The target population of interest was healthcare workers who provide direct care to LEP or non-English speaking patients. The inclusion criteria for the target population were nurses, doctors, and staff who provide direct patient care; employment on the hospital's Labor and Delivery Unit, Postpartum Unit, or NICU; and experience with LEP or non-English speaking patients. Exclusion criteria for the target population were staff who do not provide direct patient care; pediatricians who are not employed by the hospital; and new staff members who have yet to set up an employee e-mail.

Procedure

IRB Submission Process

Prior to the creation of the project application, a letter of support was obtained from the hospital's Project Resource and Development Council. Once their permission was obtained, the research application was submitted to the Institutional Review Board through the E-IRB website, the University of Kentucky's link blue-secure web-based system. Approval was received on September 21, 2023. After receiving a letter of approval from the University of Kentucky, the research application was submitted to the hospital organization's IRB and received approval on October 10, 2023. Two modifications were submitted and approved by the IRBs. The first modification was a request to remove the pretest demographic question inquiring about

participants' race, as this could have inadvertently identified respondents. The second modification was to change the length of the educational video from three-to-five minutes to six minutes. In addition, the final video product was submitted for approval with this modification request.

Evidence-based intervention

The literature demonstrates that interpreters are being under-used in the healthcare setting (Cheng et al., 2021; Granhagen Jungner et al., 2019; Origlia et al., 2019). The reason for this is multifactorial including lack of resources, insufficient training of staff, time constraints, overconfidence in one's language skills, and variable family dynamics of patients (Feiring & Westdahl, 2020; Marcus et al., 2020; Bischoff, 2020; Tam et al., 2020). A reoccurring theme seen in the literature is that the provision of education on language access services leads to increased use, comfort, and satisfaction (Feiring & Westdahl, 2020; Silva et al., 2022; Bischoff, 2020; Bohlin et al., 2022). Furthermore, the availability of a video interpreter in addition to a telephone interpreter leads to better compliance, as users often prefer the video method (Feiring & Westdahl, 2020; Marcus et al., 2020).

The planned intervention involved a pretest in the form of a survey, an educational module, and a posttest in the form of a survey. The pretest asked questions regarding demographic data of the respondent as well as the healthcare professional's knowledge, comfort, understanding, attitudes, perceived barriers, and frequency of use regarding the existing language access service. The educational module, which was created to address the identified gaps in knowledge on the pretest, provided evidence-based information regarding interpretive practices, patient outcomes related to the use of these services, the agency's current practices and protocol, ways to overcome barriers, proper use of the language services offered at the hospital, and proper

documentation of these services. This included specific education detailing a secondary service in the form of a mobile iPad with the Language Line program downloaded to it, as this has recently become more accessible to the unit but has not yet become common practice. Clear education was provided on the iPad's function and usability. The posttest included the same questions from the pretest, aside from repeating demographic questions, which enabled comparison of the results pre- and post- educational intervention. It also included an evaluation question that allowed participants to provide feedback on the educational intervention to be used as guidance for the future.

Measures & Instruments

Qualtrics was used to create an anonymous pretest and posttest to measure outcomes of interest including knowledge, attitudes, and use or intent to use language access services. The pretest included an open-ended question inquiring about the barriers experienced by those using language access services with patients. The posttest included an embedded educational video that appeared at the top of the screen, intended to be viewed prior to advancing to the questions. This video included solutions to the barriers identified in the pretest. Canva was used to design the six-minute video presentation with voiceover. The first question on each survey asked that the respondent state their favorite color and the name of the street they grew up on. This question was included with the intention of matching results from the pre- and posttest. Demographic data was collected including age, gender, credentials, and years of experience. Reponses submitted on the pretest prior to the educational intervention were then compared to responses submitted to the posttest after viewing the education.

Seven of the 13 content questions on the pretest and seven of the 11 content questions on the posttest were directly compared and statistically analyzed after the completion of the project.

The four questions pertaining to participants' attitudes and knowledge regarding low English proficiency patients and language access services were "Providing interpretive services to LEP patients is important," "Providing interpretive services to LEP patients improves patient outcomes," "I know when it is appropriate to offer or use the Language Line with my patient," and "I know what to do if the Language Line does not work." They were assessed on a 5-point Likert scale with 1 meaning "strongly disagree" and 5 meaning "strongly agree." One question evaluated how often participants offered the Language Line to appropriate patients (pretest) versus how often they intended to offer the Language Line to appropriate patients (posttest). Responses were assessed on a 4-point Likert scale with 1 meaning "I rarely offer" and 4 meaning "I always offer" on the pretest and 1 meaning "I do not intend to offer unless asked" and 4 meaning "I intend to always offer" on the posttest. The two questions assessing participants' comfort and satisfaction were "I am comfortable accessing and using the Language Line" and "I feel that the Language Line is a satisfactory way to communicate with my LEP patients." These were also assessed on a 5-point Likert scale with 1 meaning "extremely uncomfortable" or "strongly disagree" and 5 meaning "extremely comfortable" or "strongly agree" respectively.

The goal of both tests was to assess healthcare professionals' knowledge, practices, perceived barriers, attitudes, comfort, satisfaction, and their intention to use the preexisting language access service available to them as well as the newer resource in the form of the iPad. Responses from before the educational intervention were compared to the responses after the educational intervention to assess for change.

Data Collection Plan

Qualtrics survey responses were stored on a password-protected computer and did not include identifying information. The retrospective and prospective chart reviews were performed

manually. The electronic medical record was queried for all patients who presented to the unit and reported speaking a language other than English. This information was used to generate a list of patient names/MRNs. Charts were audited for the documentation of use of an interpreter. The data gained from both chart reviews was de-identified using a crosswalk and stored on an encrypted, password-protected computer in possession of the PI.

Data Analysis Plan

IBM SPSS statistical software was used to analyze the collected data. Questions were worded to provide quantitative data through use of a Likert Scale and yes/no responses. A paired t-test was used to assess changes in knowledge, attitudes, and intentions. For knowledge-based questions, mean results were reported. For the chart reviews, frequencies were conveyed.

Results

Of the 24 participants who began the pretest, 23 completed it. Eight participants viewed the educational video and completed the posttest. Ages of respondents ranged from 18-64 years old, with the majority indicating they are 35 years or older (63%; See Table 1). All participants were female (100%). The majority were registered nurses (71%), while years of experience ranged from less than one year (4%) to greater than 20 years (29%), with most reporting six years or more of experience (63%).

Barriers

The pretest revealed that over one-third (39%) of participants either were not aware of the Language Line or were not aware of both devices, while the posttest indicated that 100% of participants were aware of both the telephone and iPad Language Line. Thirty-five percent of pretest respondents reported in an open-ended question that they had experienced barriers when using the Language Line including Wi-Fi or connectivity issues, the desire for a specific

gendered interpreter, lack of specific language availability, patient or family refusal, difficulties cultivating therapeutic communication, and lack of time to adequately communicate.

Attitudes & Knowledge Questions

Four questions on the pre- and posttest inquired about healthcare workers' attitudes and knowledge pertaining to language access services. The first question, which inquired about the importance of interpretive services, had a mean score increase from 4.87 (SD = 0.46) to 5.00 (SD = 0.00; p = .43; See Table 2). The second question, which inquired about patient outcomes, had a mean score increase from 4.83 (SD = 0.49) to 5.00 (SD = 0.00; p = .10). The third question, which asked if users knew when to offer the service, had a mean score increase from 4.61 (SD = 0.50) to 4.88 (SD = 0.35; p = .12). The fourth and final attitudes and knowledge question, which assessed if users knew of a backup method, had a mean score increase from 2.61 (SD = 1.31) to 3.50 (SD = 1.31; p = .12).

Current Practice versus Intent Question

One question specifically asked, "I offer the Language Line to my patients" (pretest) and compared answers to, "I intend to offer the Language Line to my patients" (posttest). Responses were assessed on a 4-point Likert scale with 1 meaning "I rarely offer" and 4 meaning "I always offer". On the posttest, 1 meant "I do not intend to offer unless asked" and 4 meant "I intend to always offer". The mean score increased from 3.30 (SD = 0.88) to 3.88 (SD = 0.35; p = .02) indicating a statistically significant change (See Table 3).

Comfort & Satisfaction Questions

Two questions inquired about participants' comfort and satisfaction when using the Language Line. The comfort question mean score increased from 4.09 (SD = 0.79) to 4.13 (SD =

0.64; p = .90; See Table 4). The satisfaction question's mean score increased from 4.48 (SD = 0.67) to 4.75 (SD = 0.46; p = .30).

Retrospective & Prospective Chart Reviews

A total of 3,078 patient visits were reviewed with 1,627 of them included in the retrospective review and 1,451 included in the prospective review. The retrospective chart review showed 30 patient visits where English was not the primary language spoken, 29 of which indicated need for an interpreter (2% of total visits). The prospective chart review showed 46 visits where English was not the primary language, 30 of which requested an interpreter (3% of total visits). However, when looking at documentation in the EMR, the use of an interpreter was only charted 24% of the time in the retrospective chart review and 27% of the time in the prospective chart review. There were a variety of languages spoken including Arabic, Filipino, Gujarati, Haitian, Hindi, and Spanish. Spanish was the predominant language spoken, accounting for 67% of the total 76 non-English patient visits.

Discussion

This project evaluated healthcare workers' knowledge, attitudes, and practices regarding language access services on an inpatient unit in a rural hospital. It is evident that practices pertaining to the LEP population have a history of being inconsistent, leading to dissatisfaction and poor outcomes. An important piece of this project was identifying barriers that hindered use of language access services and increased inconsistencies. By addressing the barriers identified by participants on the pretest, effective solutions were created, including storing an iPad on the unit, which allowed for its immediate access. The iPad Language Line was not only preferred by users as proven on the posttest, but it also served as a back-up if the telephone line wasn't sufficient, helped foster therapeutic communication, and made ASL interpretation a possibility.

Beyond addressing barriers, it was discovered that providing a short educational intervention to healthcare professionals can lead to improvements in the identified areas of interest including knowledge, attitudes, practices, comfort, and satisfaction. This aligns with the available research which supports routine, standardized education (Bischoff, 2020; Fukui et al., 2023; Teunissen et al., 2017). Additionally, the teaching led to a statistically significant improvement in participants' intent to offer the Language Line to patients in the future, which further highlights the importance of education for workers.

An issue that hadn't been immediately apparent upon starting this project pertained to the inconsistencies surrounding documentation. The retrospective and prospective chart reviews proved that staff were great at asking about language preferences and noting this in the patient chart. However, rates of interpreter use appeared very low due to the lack of documentation. Prior to the educational intervention, documentation of use of an interpreter was 24%, and after, rates only increased to 27%. While these statistics do not illustrate a meaningful improvement in rates of documentation after implementation of the education, this may be explained by the low viewing rate. Only eight of the 24 original respondents proceeded to the educational video and posttest. Both the existing research and results of this project support the need for standardization when it comes to offering language access services, using them with patients, and documenting their use. Otherwise, it is impossible to know if patients are receiving the support they require.

Implications for Practice, Education, Policy, & Research

Based on the findings of this project, certain changes to practice warrant consideration. For example, although every healthcare worker at this organization receives language access education during onboarding for their position, many respondents reported they weren't aware of the resources available to them for use with their patients. This indicates that the education may

need to be improved upon, but that it may also need to be repeated on a yearly basis as area demographics, practices, and services change. Regardless of organization, healthcare professionals providing care to LEP patients should have an awareness regarding the available services and how to use them. In addition, patients need to be educated on the availability of interpreters, as this allows patients to advocate for themselves. By teaching patients and families that the use of interpreters helps provide clear communication leading to improved patient care, they may be more likely to agree to their usage (Teunissen et al., 2017).

This project also showed that ease of access led to improved intent to use. Respondents identified lack of time and lack of knowledge regarding where to find interpreters as two of the biggest challenges. The importance of having more than one tool, storing those tools in a known area, and communicating what and where those tools are illustrates how simple it can be to navigate barriers and improve compliance. For future practice, maintaining two or more forms of the available language access service, as well as updating all users on where to quickly access the devices, could lead to improved rates of use, the ability to access a back-up device, and increased satisfaction for users. This aligns with the current research that supports in-person or video interpreters as being most effective (Feiring & Westdahl, 2020; Gutman et al., 2018; Kynoe, et al., 2020; Marcus et al., 2020; Myers et al., 2022).

An additional problem uncovered by this project was the inconsistency with documenting patient language preferences and interpreter usage. At this specific site, staff were diligent when charting the patient's preferred language. However, sometimes a patient was noted to be non-English speaking but then documented as not in need of an interpreter. Furthermore, use of an interpreter was rarely documented in the patients' charts, making it hard to track whether language access services were being implemented. This is particularly problematic in urgent

situations or in instances where poor outcomes occurred, as it cannot be proven that patients received proper communication. Expanding recurring education to include reminders of adequate charting would help healthcare workers remain compliant with the organization's policy which requires the documentation of offering, using, or denial of the service.

In consideration of these findings, future studies are warranted to examine language access services in other settings such as in the outpatient realm. A question of interest includes whether implementation of language access services would come more easily in an outpatient setting, as often there is a greater level of planning and predictability as opposed to the inpatient setting. If patients are comfortable using interpreters in the outpatient setting, they may feel more confident requesting them while inpatient. In addition to availability, the identification of a "gold standard" service requires further investigation. As the population diversifies and technology becomes more advanced, it would be beneficial to know how an in-person interpreter compares to video interpreters that provide access to hundreds of languages. Furthermore, education has been shown to be effective when provided to those using language access services, but additional research is needed to evaluate what type of education is best and how frequently it should be distributed (Bischoff, 2020; Fukui et al., 2023; Teunissen et al., 2017). Lastly, further exploration of the attitudes, preferences, and barriers faced by LEP patients is needed.

In addition to practice and research implications, this project sparks discussion surrounding the existing laws and policies in place today. The Civil Rights Act of 1964 outlaws discrimination based on race, color, religion, sex, or national origin (U.S. Equal Employment Opportunity Commission, n.d.). Language access services fall under protection of national origin. Additionally, Executive Order 13166, signed in the year 2000 by President Bill Clinton, further mandates availability of interpreters in healthcare institutions who receive federal funding

(U.S. Department of Justice Civil Rights Division, 2022). This facility has complied by putting in place policies that directly align with the Civil Rights Act of 1964 as well as Section 504 of the Rehabilitation Act of 1973, Title III of the Americans with Disabilities Act, the Age Discrimination Act of 1975, and Section 1557 of the Patient Protection and Affordable Care Act. However, research supports the idea that the legal requirement of interpretive services should be expanded to all healthcare organizations regardless of funding.

Limitations

There were some limitations of this project. There was a lower response rate on the posttest versus the pretest. While every effort was made to streamline the process and keep the educational component concise, many of the individuals who completed the pretest never proceeded to viewing the education or potentially viewed the education but did not complete the posttest. Additionally, the project's small sample size, single-site involvement, and 100% female demographic all decrease the generalizability of its findings. While there were MDs, DOs, surgical technicians, nursing care technicians, nurse interns, and lactation consultants who participated, most of the respondents were registered nurses, further limiting generalizability. Lastly, due to a lack of standardization in documentation, it was difficult to know the true impact of the educational video as it related to interpreter use. Improvements in standardized documentation would not only serve to protect healthcare workers but would also make validating impact more feasible.

Conclusion

Significant changes in participants' intent to use as well as improvements in knowledge, attitudes, comfort, and satisfaction regarding language access services demonstrate the effectiveness of providing education on interpretive services and LEP patients. After viewing the

educational video, participants better understood the importance of these resources, how and when to use them, and were more willing to offer them to patients. While many people agree that the use of these services is beneficial, various barriers can prevent consistency in their use. By inviting feedback from those that use the services and making plans to overcome barriers, implementation becomes much more realistic and feasible.

In addition, neglecting to properly document can make it challenging to verify use of services. This is problematic, as any care rendered to patients requires documentation within their electronic medical record. Focusing on regular educational interventions for healthcare workers including practices and documentation, offering a variety of aids, improving accessibility, and promoting open communication between patients and staff is imperative to increasing utilization of language access services. This is important because use of these services is crucial to improving health outcomes, promoting trust between patients and providers, and reducing unnecessary costs. As a result, the biggest impact will be felt by the LEP population who continues to remain vulnerable within the healthcare setting.

References

Agency for Healthcare Research and Quality [AHRQ] (2020). Chapter 1: Background on patient safety and LEP populations. https://www.ahrq.gov/health-literacy/professional-training/lepguide/chapter1.html

Ahrens, E. & Elias, M. (2023). Effective communication with linguistically diverse patients: A concept analysis. *Patient education and counseling*. doi: 10.1016/j.pec.2023.107868. PMID: 37480794.

Ali, P., & Watson, R. (2018). Language barriers and their impact on provision of care to patients with limited English proficiency: Nurses' perspectives. *Journal of Clinical Nursing*, 27(5–6), e1152–e1160. https://doi-org.ezproxy.uky.edu/10.1111/jocn.14204

Anttila, A., Rappaport, D., Tijerino, J., Zaman, N., & Sharif, I. (2017). Interpretation modalities used on family-centered rounds: Perspectives of Spanish-speaking families. *Hospital Pediatrics*, 7(8):492-498. doi: 10.1542/hpeds.2016-0209. PMID: 28705913.

Attard, M., McArthur, A., Riitano, D., Aromataris, E., Bollen, C., & Pearson, A. (2015). Improving communication between health-care professionals and patients with limited English proficiency in the general practice setting. *Australian Journal of Primary Health*, 21(1), 96–101. https://doi-org.ezproxy.uky.edu/10.1071/PY13095

Bischoff, A. (2020). The evolution of a healthcare interpreting service mapped against the bilingual health communication model: a historical qualitative case study. *Public Health Rev*iews, 41:19. doi: 10.1186/s40985-020-00123-8. PMID: 32774991; PMCID: PMC7401237.

Blay, S., Morris, J., Holters, G., Ioannou, S., Thomas, V., & Everett, B. (2019). Interpreter provision and hospital-associated outcomes within the limited English proficiency

population: Analysis of administrative data. JGIM: *Journal of General Internal Medicine*, 34(6), 820–822. https://doi-org.ezproxy.uky.edu/10.1007/s11606-019-04852-8

Bohlin, V., Nolbris, M., & Wigert, H. (2022). Child health care nurses' experiences of language barriers during home visits. *Public Health Nursing*, 39(1), 146–152. https://doi-org.ezproxy.uky.edu/10.1111/phn.12977

Castro, M., Schwartz, H., Hernandez, S., Calthorpe, L., Fernández, A., Stein, D., Mackersie, R., Menza, R., & Bongiovanni, T. (2022). The association of limited English proficiency with morbidity and mortality after trauma. *Journal of Surgical Research*, 280:326-332. doi: 10.1016/j.jss.2022.07.044. PMID: 36030609.

Cheng, J., Wang, C., Jhaveri, V., Morrow, E., Li, S., & Rosenthal, J. (2021). Health care provider practices and perceptions during family-centered rounds with limited English-proficient families. *Academic Pediatrics*, 21(7), 1223–1229. https://doi-org.ezproxy.uky.edu/10.1016/j.acap.2020.12.010

Cullen, L., Hanrahan, K., Edmonds, S., Reisinger, H., Wagner, M. (2022). Iowa implementation for sustainability framework. *Implementation Science*.,17(1):1. doi: 10.1186/s13012-021-01157-5. PMID: 34983585; PMCID: PMC8725573.

Diamond, L., Izquierdo, K., Canfield, D., Matsoukas, K., & Gany, F. (2019). A systematic review of the impact of patient-physician non-English language concordance on quality of care and outcomes. *Journal of General Internal Medicine*., 34(8):1591-1606. doi: 10.1007/s11606-019- 04847-5. PMCID: PMC6667611.

Douglas, M., Rosenkoetter, M., Pacquiao, D., Callister, L., Hattar-Pollara, M., Lauderdale, J., Milstead, J., Nardi, D., & Purnell, L. (2014). Guidelines for implementing culturally

competent nursing care. *Journal of Transcultural Nursing*, 25(2), 109–121. https://doi-org.ezproxy.uky.edu/10.1177/1043659614520998

Feiring, E., & Westdahl, S. (2020). Factors influencing the use of video interpretation compared to in-person interpretation in hospitals: a qualitative study. *BMC Health Services Research*, 20(1). https://doi-org.ezproxy.uky.edu/10.1186/s12913-020-05720-6

Fukui, N., Partain, D., Yeow, M., Farfour, H., Prokop, L., & Barwise, A. (2023). Learning to collaborate with medical interpreters in health professions education: A systematic review of training programs. *Medical Teacher*, 1-15.

Garlock, A. (2016). Professional interpretation services in health care. *Radiologic Technology*, 88(2), 201–204. https://search-ebscohost-com.ezproxy.uky.edu/login.aspx?direct=true&db=ccm&AN=119047668&site=ehost-live&scope=site.

Gold, J., Rossen, L., Ahmad, F., Sutton, P., Zeyu Li, Salvatore, P., Coyle, J., DeCuir, J., Baack, B., Durant, T., Dominguez, K., Henley, S., Annor, F., Fuld, J., Dee, D., Bhattarai, A., & Jackson, B. (2020). Race, ethnicity, and age trends in persons who died from COVID-19 - United States May-August 2020. *MMWR: Morbidity & Mortality Weekly Report*, 69(42), 1517–1521. https://doi-org.ezproxy.uky.edu/10.15585/mmwr.mm6942e1

Granhagen Jungner, J., Tiselius, E., Blomgren, K., Lützén, K., & Pergert, P. (2019). Language barriers and the use of professional interpreters: A national multisite cross-sectional survey in pediatric oncology care. *Acta Oncologica*, 58(7), 1015–1020. https://doi-org.ezproxy.uky.edu/10.1080/0284186X.2019.1594362

Gutman, C., Cousins, L., Gritton, J., Klein, E., Brown, J., Scannell, J., & Lion, K. (2018). Professional interpreter use and discharge communication in the pediatric emergency

department. *Academic Pediatrics*, 18(8), 935–943. https://doi-org.ezproxy.uky.edu/10.1016/j.acap.2018.07.004

Hudelson, P. & Vilpert, S. (2009). Overcoming language barriers with foreign language speaking patients: A survey to investigate intra-hospital variation in attitudes and practices. *BMC Health Services Res*earch, 9:187. doi: 10.1186/1472-6963-9-187. PMID: 19832982; PMCID: PMC2770464.

Jacobs, Z., Prasad, P., Fang, M., Abe-Jones, Y., & Kangelaris, K. (2020). The association between limited English proficiency and sepsis mortality. *Journal of Hospital Medicine*, 15(3):140-146. doi: 10.12788/jhm.3334. PMID: 31891556; PMCID: PMC7064297.

Karliner, L., Pérez-Stable, E., & Gregorich, S. (2017). Convenient access to professional interpreters in the hospital decreases readmission rates and estimated hospital expenditures for patients with limited English proficiency. *Medical Care*, 55(3), 199–206. https://doi-org.ezproxy.uky.edu/10.1097/MLR.0000000000000643

Kasten, M., Berman, A., Ebright, A., Mitchell, J., & Quirindongo-Cedeno, O. (2020). Interpreters in health care: A concise review for clinicians. *American Journal of Medicine*, 133(4), 424. https://doi-org.ezproxy.uky.edu/10.1016/j.amjmed.2019.12.008

Kynoe, N., Fugelseth, D., & Hanssen, I. (2020). When a common language is missing: Nurse–mother communication in the NICU. A qualitative study. *Journal of Clinical Nursing*, 29(13/14), 2221–2230. https://doi-org.ezproxy.uky.edu/10.1111/jocn.15212

Kwan, M., Jeemi, Z., Norman, R., & Dantas, J. (2023). Professional interpreter services and the impact on hospital care outcomes: An integrative review of literature. *International Journal of Environmental Research and Public Health*, *20*(6), 5165. doi: 10.3390/ijerph20065165

Lee, S., Sulaiman-Hill, C., & Thompson, S. (2014). Overcoming language barriers in community-based research with refugee and migrant populations: Options for using bilingual workers. *BMC International Health & Human Rights*, 14(1), 1–22. https://doi-org.ezproxy.uky.edu/10.1186/1472-698X-14-11

Lopez-Bushnell, F., Guerra-Sandovall, E., & Schutzman, E. (2020). Increasing communication with healthcare providers for patients with limited English proficiency through interpreter language services education. *MEDSURG Nursing*, 29(2), 89–95. https://search-ebscohost-com.ezproxy.uky.edu/login.aspx?direct=true&db=ccm&AN=142593299&site=ehost-live&scope=site.

Marcus, J., Clark, P., MacMillan, D., & Ketchie, M. (2020). Nurses' perceptions of technology used in language interpretation for patients with limited English proficiency: Nurses prefer video remote interpretation to telephone-based technology. *AJN American Journal of Nursing*, 120(9), 48–58. https://doi-org.ezproxy.uky.edu/10.1097/01.naj.0000697652.73975.37

Migration Policy Institute. (2022). State immigration data profiles, Kentucky. https://doi.org/10.18128/D010.V14.0

Mottelson, I., Sodemann, M., & Nielsen, D. (2018). Attitudes to and implementation of video interpretation in a Danish hospital: A cross-sectional study. *Scandinavian Journal of Public Health*, 46(2):244-251. doi: 10.1177/1403494817706200. PMID: 28673130.

Myers, M., Annis, I., Withers, J., Williamson, L., & Thomas, K. (2022). Access to effective communication aids and services among American Sign Language users across North

Carolina: Disparities and strategies to address them. *Health Communication*, 37(8), 962–971. https://doi-org.ezproxy.uky.edu/10.1080/10410236.2021.1878594

Origlia Ikhilor, P., Hasenberg, G., Kurth, E., Asefaw, F., Pehlke-Milde, J., & Cignacco, E. (2019). Communication barriers in maternity care of allophone migrants: Experiences of women, healthcare professionals, and intercultural interpreters. *Journal of Advanced Nurs*ing, 75(10):2200-2210. doi: 10.1111/jan.14093. PMID: 31172543; PMCID: PMC6852258.

Rayburn, R. (2017). Lost in translation: Current clinical issues with medical interpretation in pediatric nursing. *Pediatric Nursing*, 43(5), 247–249. https://search-ebscohost-com.ezproxy.uky.edu/login.aspx?direct=true&db=ccm&AN=125833580&site=ehost-live&scope=site.

Rifai, E., Janlöv, A., & Garmy, P. (2018). Public health nurses' experiences of using interpreters when meeting with Arabic-speaking first-time mothers. *Public Health Nursing*, 35(6), 574–580. https://doi-org.ezproxy.uky.edu/10.1111/phn.12539

Schiaffino, M., Ruiz, M., Yakuta, M., Contreras, A., Akhavan, S., Prince, B., & Weech-Maldonado, R. (2020). Culturally and linguistically appropriate hospital services reduce Medicare length of stay. *Ethnicity & Disease*, 30(4), 603–610. https://doi-org.ezproxy.uky.edu/10.18865/ed.30.4.603

Silva, M., Adelman, R., Singh, V., Gupta, R., Moxley, J., Sobota, R., Tsai, S., Abel, B., & Reid, M. (2022). Healthcare provider perspectives regarding use of medical interpreters during end-of-life conversations with limited English proficient patients. *American Journal of Hospice & Palliative Medicine*, 39(2), 220–227. https://doi-org.ezproxy.uky.edu/10.1177/10499091211015916

Strategies for overcoming language barriers in healthcare. (2018). *Nursing Management (Springhouse), 49* (4), 1-1. doi: 10.1097/01.NUMA.0000532145.60778.12.

Tam, I., Huang, M., Patel, A., Rhee, K., & Fisher, E. (2020). Spanish interpreter services for the hospitalized pediatric patient: Provider and interpreter perceptions. *The Official Journal of the Academic Pediatric Association*, 20(2):216-224. doi: 10.1016/j.acap.2019.08.012. PMID: 31445969.

Taylor-Piliae, R. (1999). Utilization of the Iowa Model in establishing evidence-based nursing practice. *Intensive Critical Care Nursing*, 15(6):357-62. doi: 10.1016/s0964-3397(99)80029-9. PMID: 11868583.

Teunissen, E., Gravenhorst, K., Dowrick, C., Van Weel-Baumgarten, E., Van den Driessen Mareeuw, F., de Brún, T., Burns, N., Lionis, C., Mair, F., O'Donnell, C., O'Reilly-de Brún, M., Papadakaki, M., Saridaki, A., Spiegel, W., Van Weel, C., Van den Muijsenbergh, M., & MacFarlane, A. (2017). Implementing guidelines and training initiatives to improve cross-cultural communication in primary care consultations: A qualitative participatory European study. *International Journal for Equity in Health*, 16, 1–12. https://doi-org.ezproxy.uky.edu/10.1186/s12939-017-0525-y

U.S. Department of Justice Civil Rights Division. (2022). Executive Order 13166. https://www.justice.gov/crt/executive-order-13166

U.S. Equal Employment Opportunity Commission. (n.d.). Title VII of the Civil Rights Act of 1964. https://www.eeoc.gov/statutes/title-vii-civil-rights-act-1964

Watts, K., Meiser, B., Zilliacus, E., Kaur, R., Taouk, M., Girgis, A., Butow, P., Kissane, D., Hale, S., Perry, A., Aranda, S., & Goldstein, D. (2018). Perspectives of oncology nurses and oncologists regarding barriers to working with patients from a minority background:

Systemic issues and working with interpreters. *European Journal of Cancer Care*, 27(2), 1. https://doi-org.ezproxy.uky.edu/10.1111/ecc.12758

List of Tables

Table 1. Demographic characteristics of project participants, (*N* = 24)

	n (%)
Age	
18-24	3 (12.5%)
25-34	6 (25%)
35-44	8 (33.33%)
45-54	5 (20.84%)
55-64	2 (8.33%)
Sex	
Female	24 (100%)
Male	0 (0%)
Role (select all that apply)	
MD	1 (4.17%)
DO	1 (4.17%)
RN	17 (70.83%)
Surgical Technician	2 (8.3%)
Nursing Care Technician	2 (8.3%)
Nurse Intern	1 (4.17%)
Lactation Consultant	1 (4.17%)
Years Credentialed in Position	
< 1 year	1 (4.17%)
1-5 years	8 (33.3%)
6-10 years	5 (20.83%)
11-15 years	3 (12.5%)
> 20 years	7 (29.2%)

Table 2. Attitudes and knowledge pre versus post

	Pre-intervention (n = 23) mean (SD)	Post-intervention (n = 8) mean (SD)	p
Providing interpretive services to LEP patients is important	4.87 (0.46)	5.00 (0.00)	.43
Providing interpretive services to LEP patients improves patient outcomes	4.83 (0.49)	5.00 (0.00)	.10
I know when it is appropriate to offer or use the Language Line with my patient	4.61 (0.50)	4.88 (0.35)	.12
I know what to do if the Language Line does not work	2.61 (1.31)	3.50 (1.31)	.12

*Response options ranged from 1 (strongly disagree) to 5 (strongly agree)

Table 3. Current practice versus intent for future practice pre versus post

	Pre-intervention (n = 23) mean (SD)	Post-intervention (n = 8) mean (SD)	p
I offer/intend to offer the Language Line to my LEP patients	3.30 (0.88)	3.88 (0.35)	.02

*Response options ranged from 1 (I rarely offer) to 4 (I always offer) on the pretest and 1 (I do not intend to offer unless asked" to 4 (I intend to always offer) on the posttest

Table 4. Comfort and satisfaction pre versus post

	Pre-intervention (n = 23) mean (SD)	Post-intervention (n = 8) mean (SD)	p
I am comfortable accessing and using the Language Line	4.09 (0.79)	4.13 (0.64)	.90
I feel that the Language Line is a satisfactory way to communicate with my LEP patients	4.48 (0.67)	4.75 (0.46)	.30

*Response options ranged from 1 (extremely uncomfortable) to 5 (extremely comfortable)

Table 5. Patient language frequencies retrospective versus prospective chart review

Language	Retrospective	Prospective	Total
Arabic	1	0	1
Filipino	0	8	8
Gujarati	9	0	9
Haitian	2	0	2
Hindi	2	3	5
Spanish	16	35	51
Total	30	46	76

Table 6. Need for interpreter retrospective versus prospective chart review

Do you need an interpreter?	Retrospective	Prospective	Total
Yes	29	30	59
No	1	16	17
Total	30	46	76

Table 7. Documentation of interpreter use retrospective versus prospective chart review

Documented in EMR?	Retrospective	Prospective	Total
Yes	7 (24.1%)	8 (26.7%)	15
No	22 (75.9%)	22 (73.3%)	44
Total	29	30	59

List of Appendices

Appendix A. Pretest

Start of Block: Unique Identifier

Q1 This question will be used to match pretest and posttest responses without collecting identifying information. What is your favorite color and the name of the street you grew up on? Example: purple, Andover Drive

_____

End of Block: Unique Identifier

Start of Block: Demographics

Q2 What is your age?

- 18-24 years (1)
- 25-34 years (2)
- 35-44 years (3)
- 45-54 years (4)
- 55-64 years (5)
- 65 years or older (6)

Q3 What is your sex?

- Male (1)
- Female (2)

Q4 What is your certification/licensure? Select all that apply.

- [ ] MD (1)
- [ ] DO (2)
- [ ] RN (3)
- [ ] Surgical Technician (4)
- [ ] Nursing Care Technician (5)
- [ ] Nurse Intern (6)
- [ ] Lactation Consultant (7)

Q5 How many years have you been credentialed in your current position?

- ○ < 1 year (1)
- ○ 1-5 years (2)
- ○ 6-10 years (3)
- ○ 11-15 years (4)
- ○ 16-20 years (5)
- ○ > 20 years (6)

End of Block: Demographics

Start of Block: Pretest

Q6 The following statements are part of the pretest and will pertain to your experience with language access services while providing direct patient care. Please select the response that best represents your thoughts toward the statement.

Q7 Are you familiar with the Language Line and its use?

- ○ No (1)
- ○ I am familiar with the telephone Language Line (2)
- ○ I am familiar with the iPad Language Line (3)
- ○ I am familiar with both versions of the Language Line (4)

Q8 I have used the Language Line (either via telephone or iPad) with a patient.

- ○ Agree (1)
- ○ Disagree (2)

Q9 Have you encountered barriers when using the Language Line?

- ○ No (1)
- ○ Yes (2)

Skip To: Q11 If Have you encountered barriers when using the Language Line? = No

Display This Question:

If Have you encountered barriers when using the Language Line? = Yes

Q10 You indicated experiencing barriers in the past when using the Language Line. What barriers have you experienced specifically with use of the Language Line?

_____

Q11 What barriers, aside from those directly related to the Language Line, have you experienced when caring for patients who do not speak English as their first language (this applies to anywhere you have worked)? Select all that apply.

- ☐ Lack of time to adequately communicate (1)
- ☐ Patient or family refusal to use interpreter (2)
- ☐ Other: (3) _____
- ☐ None of the above (4)

Q12 Providing interpretive services to low English proficiency patients is important.

- ○ Strongly disagree (1)
- ○ Somewhat disagree (2)
- ○ Neither agree nor disagree (3)
- ○ Somewhat agree (4)
- ○ Strongly agree (5)

Q13 Providing interpretive services to low English proficiency patients improves patient outcomes.

- Strongly disagree (1)
- Somewhat disagree (2)
- Neither agree nor disagree (3)
- Somewhat agree (4)
- Strongly agree (5)

Q14 I know when it is appropriate to offer or use the Language Line with my patient.

- Strongly disagree (1)
- Somewhat disagree (2)
- Neither agree nor disagree (3)
- Somewhat agree (4)
- Strongly agree (5)

Q15 I offer to use the Language Line with my low English proficiency patients.

- I rarely offer (1)
- I sometimes offer (2)
- I usually offer (3)
- I always offer (4)

Q16 I am comfortable accessing and using the Language Line.

- ○ Extremely uncomfortable (1)
- ○ Somewhat uncomfortable (2)
- ○ Neither comfortable nor uncomfortable (3)
- ○ Somewhat comfortable (4)
- ○ Extremely comfortable (5)

Q17 I know what to do if the Language Line does not work.

- ○ Strongly disagree (1)
- ○ Somewhat disagree (2)
- ○ Neither agree nor disagree (3)
- ○ Somewhat agree (4)
- ○ Strongly agree (5)

Q18 I feel that the Language Line is a satisfactory way to communicate with my low English proficiency patients.

- ○ Strongly disagree (1)
- ○ Somewhat disagree (2)
- ○ Neither agree nor disagree (3)
- ○ Somewhat agree (4)
- ○ Strongly agree (5)

Q19 Do you have any ideas for improvement?

_____

End of Block: Pretest

Appendix B. Education & Posttest

Q1 This question will be used to match pretest and posttest responses without collecting identifying information. What is your favorite color and the name of the street you grew up on? Example: purple, Andover Drive

_____

Q2 Providing interpretive services to low English proficiency patients is important.

- ○ Strongly disagree (1)
- ○ Somewhat disagree (2)
- ○ Neither agree nor disagree (3)
- ○ Somewhat agree (4)
- ○ Strongly agree (5)

Q3 Providing interpretive services to low English proficiency patients improves patient outcomes.

- ○ Strongly disagree (1)
- ○ Somewhat disagree (2)
- ○ Neither agree nor disagree (3)
- ○ Somewhat agree (4)
- ○ Strongly agree (5)

Q4 I am aware of the current language access service on our unit- the Language Line (including both telephone and iPad versions).

- ○ I am aware of the telephone Language Line (1)
- ○ I am aware of the iPad Language Line (2)
- ○ I am aware of both versions of the Language Line (3)

Q5 I know when it is appropriate to offer or use the Language Line with my patient.

- ○ Strongly disagree (1)
- ○ Somewhat disagree (2)
- ○ Neither agree nor disagree (3)
- ○ Somewhat agree (4)
- ○ Strongly agree (5)

Q6 I am comfortable accessing and using the Language Line.

- ○ Extremely uncomfortable (1)
- ○ Somewhat uncomfortable (2)
- ○ Neither comfortable nor uncomfortable (3)
- ○ Somewhat comfortable (4)
- ○ Extremely comfortable (5)

Q7 I know what to do if the Language Line does not work.

- Strongly disagree (1)
- Somewhat disagree (2)
- Neither agree nor disagree (3)
- Somewhat agree (4)
- Strongly agree (5)

Q8 Do you feel the iPad is or will be easier to use and/or more effective than the telephone Language Line?"

- No (1)
- Yes (2)

Q9 Moving forward, I intend to offer the use of the Language Line with my low English proficiency patients.

- I do not intend to offer it unless asked (1)
- I intend to sometimes offer it (2)
- I intend to usually offer it (3)
- I intend to always offer it (4)

Q10 I feel that the Language Line is a satisfactory way to communicate with my low English proficiency patients.

- ○ Strongly disagree (1)
- ○ Somewhat disagree (2)
- ○ Neither agree nor disagree (3)
- ○ Somewhat agree (4)
- ○ Strongly agree (5)

Q11 I attended an in-person educational session.

- ○ No (1)
- ○ Yes (2)

Q12 How could this education be improved in the future?

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Appendix C. Recruitment Cover Letter

IRB NUMBER: BHL-23-1764
IRB APPROVAL DATE: 10/10/2023
IRB EXPIRATION DATE: 10/09/2024

To Baptist Health Hardin employee:

Researchers at the University of Kentucky are inviting you to take part in a survey about language access resources and their use when providing direct patient care to low English proficiency patients. The purpose of this survey—which will include a pretest, a short educational presentation, and a posttest— is to educate the nurses, providers, and staff on Baptist Hardin's Birthplace unit about the available interpretive resources available while gaining insight into the barriers that exist. The title of this research project is "Evaluating Healthcare Workers' Knowledge, Attitudes, and Practices Regarding Language Access Services in the Clinical Setting".

Although you may not get personal benefit from taking part in this research study, your responses may help us understand more about staff and provider comfort levels when using these resources, what impacts one's intent to use these resources, barriers that may need to be addressed, staff and provider preferences regarding the type of device being used, and how this impacts patient care. Some volunteers experience satisfaction from knowing they have contributed to research that may possibly benefit others in the future.

Researchers will review and collect information from your survey, pretest, and posttest responses. Although some questions will pertain to demographic data, identifiable information will not be recorded as part of the research. All responses will remain anonymous.

If you do not want to participate in the study, but still wish to review the educational presentation, this can be provided to you. Participation in the study is voluntary.

The pretest, educational video, and posttest will take approximately 10 minutes to complete.

There are no known risks to participating in this study.

Your response to the survey is anonymous which means no names, IP addresses, email addresses, or any other identifiable information will be collected with the survey responses. We will not know which responses are yours if you choose to participate.

We hope to receive completed questionnaires from about 30 people, so your answers are important to us. Of course, you have a choice about whether or not to complete the survey/pretest/posttest, but if you do participate, you are free to skip any questions or discontinue at any time. You will not be penalized in any way for skipping or discontinuing the survey.

Please be aware, while we make every effort to safeguard your data once received from the online survey company, given the nature of online surveys, as with anything involving the Internet, we can never guarantee the confidentiality of the data while still on the survey company's servers, or while en route to either them or us.

If you have questions about the study, please feel free to ask; my contact information is given below.

Thank you in advance for your assistance with this important project. To ensure your responses/opinions will be included, please submit your completed survey/questionnaire within four weeks of receiving it.

Sincerely,
Rachel Archibald, BSN, RN
College of Nursing, University of Kentucky
PHONE: 270-735-3412
E-MAIL: rachel.archibald@bhsi.com

Faculty Advisor: Angela Grubbs, DNP, APRN, FNP-C
E-MAIL: angela.grubbs@uky.edu

If you have complaints, suggestions, or questions about your rights as a research volunteer, contact the staff in the University of Kentucky Office of Research Integrity at 859-257-9428 or toll-free at 1-866-400-9428. You may also reach them by e-mail at rs_ORI@uky.edu.