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Identifying and Addressing Language Needs in Primary Care: a Pilot Implementation Study

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Abstract

Background—Medical interpreters improve care for patients with Limited English Proficiency but are underused. Protocols to improve interpreter use in primary care are needed.

Methods—Medical Assistants (MAs) screened patients for language needs and arranged for telephone interpreters during rooming in two pilot clinics (PCs). We interviewed MAs and providers and analyzed interviews using modified grounded theory, linking themes to the

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Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflicts of interest.

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study.

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Promoting Action on Research Implementation in Health Services (PARiHS) framework categories of Context, Evidence, and Facilitation. Providers in PCs and four comparison clinics were surveyed.

Results—Context themes included issues with the telephone interpreter vendor; having established teams, roles and workflows; and difficulty incorporating time-sensitive tasks. Evidence themes included engagement in language screening; preferring in-person interpreters; improving the patient experience; and having mixed responses to the protocol. Facilitation themes included MAs needing more support. PC providers were more satisfied with care (OR = 12.7) and communication (OR = 7.6) than comparison clinic providers.

Conclusions—The protocol may improve patient care and communication, but implementation was inconsistent. Language screening is a complex process and further research is needed to improve screening questions and procedures. Future interventions should capitalize on team members' drives to improve patient care and control costs but also need to consider the impacts of health system changes, and to consider the culture, training needs, roles, and relationships of team members.

Keywords

Interpreters; Communication barriers; Language; English proficiency; Implementation; Pilot projects; Cultural competency

Introduction

The population of individuals with limited English proficiency (LEP) is expanding at a faster rate than the general population, growing from just under 14 million individuals in 1990 to 25 million individuals in 2013 [1, 2]. In 2011, 8.5% of the US population met criteria for having LEP, rivaling Diabetes Mellitus in prevalence (9.5% of the population) [2, 3]. With the expected continued growth of this population, attention to how to provide high-quality care across language differences is crucial.

Having LEP is associated with disparities in healthcare access [4–10], satisfaction with care and communication [7, 11–13], receipt of preventive care [5, 14–16], receipt of health education [17], blood pressure control [18], and risk of drug complications [19, 20]. While physician-patient language concordance is ideal and improves care [17, 21, 22], language diversity among physicians is limited and language concordance is not always possible. Using professional medical interpreters (PMIs) can also improve care and is associated with improved patient satisfaction [23–25], fewer utilization disparities [25, 26], and more receipt of preventive care [24, 27]. Yet, PMIs are underused [8, 28–37]. Barriers to using PMIs include reliance on ad hoc interpreters (i.e., untrained bilingual individuals) [28, 29, 31–34, 36, 38, 39], reliance on providers' limited language skills [28, 38, 40], under-recognition of patients' language needs [38], time constraints [29, 32], and inconvenience [39].

Caring for patients across language differences is an important component of delivering culturally competent healthcare, and interventions to improve cultural competency have been proposed as a way to reduce or eliminate healthcare disparities [41]. While studies have examined interventions to improve access to PMIs when there is language discordance

between patient and provider [42], little research has examined other “structural cultural competence” [41] interventions to improve clinicians’ use of already-available PMIs. We therefore piloted the implementation of a protocol designed to encourage the use of available PMIs by better identifying LEP patients and facilitating the process of accessing PMIs. We used mixed methods to evaluate barriers and facilitators to implementation of the protocol to better understand how to improve language screening and PMI use.

Methods

Intervention and Implementation Strategy

We developed a protocol to be performed during the rooming process of a primary care visit, implemented it in two primary care clinics, and used mixed methods to evaluate barriers and facilitators to implementation. The protocol’s goals were to have Medical Assistants (MAs) identify patients requiring interpretation as part of the rooming process and to have telephone PMIs already on the phone for providers at the start of their visits; i.e., MAs were trained to preemptively trigger the interpreter phone service without waiting for the physician to do so. Specifically, MAs were instructed to ask all patients what language they spoke at home, followed by a screener for patients who spoke a non-English language at home. The screen included questions recommended by the Joint Commission and Institute of Medicine [43, 44]:

Question 1: What is your preferred language to use for your visit today?

Question 2: How well do you speak English? (Very Well, Well, Not Well, or Not At All)

Question 3: What is your preferred language for written healthcare information?

If patients had LEP (defined as speaking English less than “Very Well”) [43, 45] or preferred a non-English language, MAs were instructed to call a telephone PMI during the rooming process.

We conducted a training session with MAs to review and practice the protocol. We gave each MA a reference card that attached to their identification badges and included the screening questions and criteria for PMI use. We checked-in with the MAs over the first 2 months of implementation to provide encouragement and address challenges. We announced protocol implementation to providers at a meeting and via email.

Setting and Participants

The study was conducted in six primary care clinics at an urban safety net hospital; two clinics were used as pilot clinics (PC) and four clinics as usual care clinics (UCC). The six clinics were similar in patient population, were located within the same building, and all had dual handset interpreter phones in every exam room. Each clinic had approximately 10 to 12 attending physicians and nurse practitioners (referred to collectively as “providers”), and approximately three MAs. Around a third of patients at this urban safety net hospital have LEP. The primary languages spoken by patients were Spanish, followed by Haitian Creole, and Cape Verdean (Portuguese Creole). Assignment of the clinics to usual care clinic (UCC)

or pilot clinic (PC) was based on agreement of practice managers, which was based on whether the intervention would conflict with other newly implemented programs taking place in some of the clinics (e.g., behavioral health screening).

Data Collection

We used mixed methods to assess barriers and facilitators to implementation.

Surveys

We surveyed providers in the PCs and UCCs before implementation and 5 months after implementation. To maximize response rate, we emailed the surveys, put paper copies in mailboxes, and gave paper copies during conferences. Pre- and post-implementation surveys included questions about the providers' clinical experience, second-language skills, and use of interpreters. Surveys also included questions on satisfaction with care and communication with LEP patients, efficiency with LEP patients, confidence in communication with LEP patients, satisfaction regarding interpreter access, and frequency of interpreters being available at the start of visits. These questions had responses on a five-point Likert scale. Pre-implementation surveys inquired about the acceptability of the protocol, opinions regarding who should be responsible for assessing language and calling interpreters, and modalities of interpretation used. Post-implementation surveys inquired about providers' opinions regarding the protocol's components and future plans for the protocol. Providers' pre- and post-implementation surveys were linked using a de-identified code. A statement of consent was included on all surveys.

Interviews

Qualitative interviews were conducted 2 to 4 months after implementation. All PC MAs were invited to participate in in-person interviews arranged at a time during which they had no clinical responsibilities. Interviews were semi-structured and addressed language screening, calling interpreters, and overall reflections. Interviews lasted 30 min and were conducted by a physician (DW) with neither clinical nor administrative responsibilities in the clinics.

We also invited providers in the PCs to participate in in-person interviews. Provider interviews addressed observed changes in interpreter services, access to and use of professional interpreters, impact of the protocol, and overall reflections. Providers were invited to interview until we reached thematic saturation. Interviews lasted 20 min and were performed by a physician (JM) with experience working in the clinics.

Written informed consent was obtained in-person before all interviews. All interviews were audio-recorded and transcribed verbatim for analysis.

Data Analysis

The data were analyzed using standard qualitative and quantitative research methods. We analyzed the qualitative interviews using a modified grounded theory approach. Two coders (JM and DW) coded all interviews using data-driven codes [46], met to review coding and

establish agreement, and then each coded the remainder of the interviews independently. NVivo software version 11.3.2 was used for data management and analysis.

Following identification of themes pertaining to barriers and facilitators of implementation, we organized themes into the categories of Evidence, Context, and Facilitation based on the Promoting Action on Research Implementation in Health Services (PARIHS) framework [47]. The category of Evidence refers to a combination of “research, clinical experience, and patient preferences;” context refers to the implementation setting, including the “prevailing culture, the nature of human relationships as summarized through leadership roles, and the organization’s approach to routine monitoring of systems and services;” and facilitation includes techniques and people who “help others towards achieving particular goals, encourage others, and promote action” [47].

We calculated descriptive statistics for all survey questions. For Likert scale questions, we dichotomized survey responses (e.g., “Completely Agree” or “Somewhat Agree” versus all other responses). We compared pre- and post-implementation responses from providers in the UCCs and PCs using chi-square and Fisher’s exact tests. We also examined the association between providers in PCs versus UCCs and favorable post-implementation survey responses (i.e., answers of “Completely Agree” or “Somewhat Agree”). Specifically, we performed adjusted logistic regression analyses for each survey question, testing models that examined whether practicing in a PC versus UCC was an independent predictor of favorable post-implementation survey responses, controlling for pre-implementation survey responses to the same question.

This project was approved by the Boston University Medical Center Internal Review Board.

Results

Study Sample

We interviewed six of the seven PC MAs and nine of the 22 PC providers. We received surveys from 21 (95%) PC and 40 (87%) UCC providers pre-implementation, and 19 (86%) PC and 37 (80%) UCC providers post-implementation.

Barriers and Facilitators to Implementation

We identified eight themes regarding barriers and facilitators to implementation of the program that we categorized into the PARIHS framework domains of Context, Evidence, and Facilitation [47]. Under Context, themes included: (1) issues with the telephone PMI vendor; (2) established teams, roles, and workflows; and (3) difficulty incorporating time-sensitive tasks. Under Evidence, themes included: (1) engagement in language screening, (2) preferring in-person PMIs, (3) improving the patient experience, and (4) having otherwise mixed responses to the protocol. And under Facilitation, we identified one theme: needing more support. Several of these themes were supported by the results of the survey analysis; these quantitative results are presented along with the qualitative theme they support.

Context

Pre-implementation surveys and three themes provided insight into the context of the protocol's implementation. These themes were: (1) issues with the telephone PMI vendor; (2) established teams, roles, and workflows; and (3) difficulty incorporating time-sensitive tasks.

Pre-Implementation Survey Results Regarding Context

Table 1 describes the 21 providers included in the pre-implementation survey sample. Providers ranged in years of experience and 43% reported fluency in a second language. Only 29% believed that MAs should be responsible for assessing language, with more individuals believing that staff involved with registration (57%) and/or scheduling (52%) should carry this responsibility; however, most believed it was acceptable for MAs to assess patient language (81%) and to initiate calls with PMIs (76%).

Issues with the Telephone PMI Vendor

The medical center changed its primary telephone PMI vendor and changed each exam room's dual handset phone 6 weeks before the implementation. This transition was unrelated to the current project, but its negative impact was an important theme discussed by nearly every participant.

First, the new phones had problems with the volume and with the speakerphone. Providers had particular difficulty communicating with elderly and hearing-impaired individuals and were forced to use the handheld phones, which were cumbersome and difficult to juggle. MAs described how the problems with the phone volume interfered with their ability to room patients: "Like I can't move the scale and talk to the interpreter [via speakerphone] at the same time because that's making too much noise" (MA 3).

Second, the new phones required additional steps. Providers were frustrated at having to answer multiple prompts at the beginning of the call including typing the MRN and hearing a prerecorded message that could not be skipped. In addition, interpreters were sometimes not available in patients' languages, leading to delays in care. Providers even described the interpretation provided by the new vendor as "slow" and of "questionable" quality (Provider 2). Because of these issues, providers wanted to avoid using the telephone interpreters.

The changeover to the new phones, and the new vendor is, as everyone recognizes, a giant step backwards. It went from bad to worse. "I don't know why anybody thinks it's okay to talk on the phone while you're talking to a patient" (Provider 1).

Established Teams, Roles, and Workflows

Providers and MAs described high-functioning clinical teams, with established roles, relationships, and workflows for team members. While these characteristics of a team were reflected on positively, they sometimes served as a barrier to implementation.

Continuity with providers and knowledge of their workflows impacted how often MAs tried to call interpreters. Some MAs knew their providers' workflows well and this facilitated

their efforts to call the interpreter; however, if MAs knew a provider frequently ran late, this knowledge could serve as a barrier to calling an interpreter; MAs knew it might be too difficult to time the phone call appropriately and so would not try. One provider who described his/her tendency to run late thought that this may have been the reason for his/her limited experience with having the interpreter on the phone: “I think there may have been a deliberate decision not to call the phone interpreter” (Provider 4).

MAs also described their own roles and workflows. They viewed their roles as primarily getting vitals done and keeping clinic flow moving, and described developing routines to get these jobs done. Several MAs felt they could easily adapt routines to incorporate the new workflow: “But I think if you know how to manage your time, you’ll be okay...It becomes like second nature to you” (MA 2). But for others, routines were not easily changed and MAs sometimes defaulted to doing “[their] own thing” (MA 5) and doing “what [they] have to do” (MA 1). And one MA even expressed negativity towards the protocol when performing it interfered with MAs’ primary role of managing clinic flow:

But the time it takes to dial the phone, get someone where I’m doing it at times, it’s not appropriate. It’s not—it holds me back. If I’m asked—you know, trying to do a lot of patients in the morning, to keep the morning flow going (MA 1).

Difficulty Incorporating Time-Sensitive Tasks

Participants described a busy environment: providers have full clinical loads and a tendency to run late and MAs are juggling multiple tasks. It was therefore difficult for MAs to add additional, time-sensitive tasks to their workflows.

Providers felt pressured to stay on time and many had a tendency to run late. MAs therefore had difficulty knowing when the provider would be ready for the next patient and when they should start the phone call process.

It just is hard for us to see what time the doctor will be done so then we can go utilize the phone...It’s hard to see what time, calculate the time the doctor will be done, and be able to get the phone and the interpreter on the phone (MA 5).

Sometimes, the MAs were able to call an interpreter but the interpreter would not want to wait or would hang up before the provider entered the room if they were waiting too long. Therefore, if MAs did not know the provider was ready for the patient, they would not call the interpreter: “but if they’re in the next room with a patient, I don’t call” (MA 3).

MAs also described being short-staffed at times, especially during changes of shift and breaks. During these times, they were juggling demands from multiple providers. When the clinic was busy or understaffed, it was difficult for MAs to add additional tasks, especially time-sensitive tasks, into their busy workflow: “we can’t do everything at the same time... one person to four to five different things? No” (MA 4).

Evidence

We identified four themes regarding the evidence for the intervention and participants’ experiences with it: (1) engagement in language screening, (2) preferring in-person PMIs,

(3) improving the patient experience, and (4) having mixed responses to the protocol. Data from post-implementation surveys and logistic regression analyses provided supporting evidence for these themes.

Engagement in Language Screening

MAs infrequently used the provided language screening questions. MAs reported that they did not think the screening questions were necessary for all patients and reported some difficulty operationalizing the screening questions.

MAs felt like they already knew their providers' patients and knew their language needs. They therefore infrequently used the questions, instead using a variety of methods to determine patients' languages: looking at the patient's name, listening to the patient's accent, or looking in the chart. Determining patients' languages was perceived as fairly easy: "It's pretty simple...they'll come in and they'll automatically tell you what language that they speak" (MA 3).

Patients' responses to the screening questions made it difficult for MAs to screen patients. Some patients did not understand the questions and the MAs did not know other ways to ask about language needs. Other patients seemed confused as to why they were being asked these questions.

Because when you ask them, like they look at you, maybe it's new, they don't ever ask that question, "Are you speaking English in the hospital?" Or they look at you like, "Which kind of question is that?" (MA 4).

Further, MAs also worried about offending patients by asking about their English-speaking ability. And though one MA described how nobody reacted negatively to the questions, another described how "some patients get offended... like 'my English is not good enough for you'" (MA 2). The concern of offending patients prevented MAs from routinely proceeding with the questions.

Some patients get offended when you try talking to them, although their English is very broken. They feel like they are not given the opportunity to express whatever little they might know. So I think that's one part that has prevented me, personally, in just preceding with the question, "Do you need an interpreter? What language do you speak?" Because sometimes we assume and in reality, patients don't need the interpreter services (MA 5).

Preferring In-Person PMIs

Providers strongly preferred in-person interpreters and MAs were aware of this preference: "the phone is no good. The doctors don't want to use the phone. They prefer a live interpreter" (MA 1).

Providers wanted in-person PMIs to be always available. When asked how to improve the protocol, they suggested ways to improve the arranging of in-person rather than telephone PMIs. But providers still saw a role for telephone PMIs as a back-up method when in-person PMIs were not available. This was valued since in-person PMIs had limited availability.

I think there's definitely a role for [the protocol], given that we don't have enough hospital interpreters, so if that's the only way that we could get an interpreter, then that's reasonable (Provider 4).

Surveys provided supporting evidence for this theme. Post-implementation, 17 (94%) PC providers expressed a preference for in-person PMIs but 100% of PC providers reported using telephone PMIs more than other interpreter modalities, including informal/ad hoc interpreters (i.e., bilingual individuals without medical interpreter training), video interpreters, and in-person interpreters.

Improving the Patient Experience

Despite comments relating to the concern of offending patients, participants described the protocol's potential to improve patients' experiences in the clinic.

MAs described a generally positive patient response to the protocol. When asked about the successes of the protocol, one MA stated:

Helping the patients...helping the patients feel comfortable in achieving what they really want to do...like not to be afraid, that it's okay if you don't speak. There is somebody that is always going to help you with your need. And I think that's what we are here for. We're here for the patients (MA 5).

Other participants, including both providers and MAs, shared similar thoughts regarding improving the "patient experience," making the patient "feel comfortable," and making patients feel "relieved."

Further, providers described that having interpreters on the phone when they entered the room positively changed the tone of the visit by eliminating the awkward minutes of contacting interpreter services at the start of visits. They could jump right into conversation, instead of waiting silently while dialing.

Results from logistic regression analyses of surveys (Table 2) provided supporting evidence for this theme. The percentage of providers who agreed that they "have been satisfied with the quality of care [they are] providing" to LEP patients increased from 44% pre-implementation to 83% post-implementation in PC providers without a comparable change in UCC providers. PC provider had 12.7 times the odds of responding favorably to this question post-implementation compared to UCC providers, even after controlling for pre-implementation survey responses to the same question ($p = 0.005$). Similarly, the percentage of providers who agreed that they "have been satisfied with the communication [they have]" with LEP patients increased from 50% pre-implementation to 83% post-implementation in PC providers without a comparable change in UCC providers. For this question, PC providers had 7.6 times the odds of responding favorably post-implementation compared to UCC providers after controlling for pre-implementation survey responses to the same question ($p = 0.007$).

Having Mixed Responses to Protocol

Survey and interview participants expressed mixed opinions on the protocol's impact including several concerns such as cost and efficiency.

In surveys, 95% of providers believed that MAs should assess patients' language while rooming patients; however, only 79% of PC providers agreed that MAs should call interpreters, and only 53% of PC providers favored continuing the intervention. The remaining 47% either did not answer or answered "I don't know."

While several providers valued saving time by not having to dial the interpreter, this feeling was not unanimous. One provider reported delaying the start of a procedure after being told the interpreter was on the phone for the next patient. The change in workflow was described as disruptive and inefficient. Some providers also expressed a desire to be able to control the timing of when the interpreter gets called. Most others, however, valued any efforts to save even a few minutes of time.

[E]ssentially it really just cut out two minutes of my time. It made it more efficient in that respect...So, what my MA has done on those several occasions is just streamlined it a little bit for me (Provider 3).

Both medical assistants and providers expressed concerns regarding the cost of having the interpreter on the phone for a few extra minutes. And one provider was also concerned regarding the potential negative impact on MAs' workflow:

See if it's affecting their flow at all...they're busy, and we're always asking them to do more things. So, I think that if it slows them down in other areas, that maybe it has to be weighed, the value of it (Provider 5).

Facilitation

We identified one theme pertaining to facilitation: needing more support.

Needing More Support

Despite practice managers' support and presence at the MA training session, MAs felt that they needed more support and encouragement from their "boss."

In addition, MAs wanted more support from providers. "The biggest challenge, not getting enough support from providers themselves or everybody on your team in general" (MA 5).

MAs also reported needing more staff to help cover the additional work to make the protocol successful. "Getting the support that you need meaning, if we're short of staff and you want this service to work, then you have to help us out so we can help you out" (MA 5).

Discussion

We implemented a medical assistant-driven rooming protocol with the goal of improving the use of PMIs by proactively identifying individuals with LEP and arranging for PMIs prior to physician contact; however, implementation of the protocol as intended was inconsistent. Central reasons for implementation failure included poor engagement with language

screening, difficulty timing the interpreter call appropriately, and problems with the interpreter system itself, including issues with the phone hardware and overall dissatisfaction with the newly implemented interpreter vendor.

We did identify several facilitators to implementation that merit discussion: the potential to improve the patient experience and perceived improvements to the quality of communication. MAs clearly recognized the importance of interpreters for doctor-patient communication and that efforts to improve patient communication are valuable. They therefore saw the pilot protocol as a way to improve patient comfort and care. We also heard about this positive impact in provider interviews and saw it quantitatively in our providers' survey responses. While the positive changes in PC provider responses to survey questions about communication cannot definitively be attributed to the protocol, we did not see similar improvement in UCC provider responses. These findings are suggestive of a perceived improvement in quality of care and communication over the study period in the pilot clinics. It is hard to know if this perception is the result of providers appreciating the efforts put forth in this study or if this perception is the reflection of the actual impact of the intervention; however, these results suggest that both providers and MAs are receptive to interventions aimed at improving patient communication. They also suggest that this structural cultural competence intervention may be an effective means of improving patient satisfaction and communication, and thereby improving health disparities related to language; however, formally assessing patient outcomes was outside of the scope of this study.

While Providers and MAs generally appreciated the efforts put forth in this study, our data depict feelings of uncertainty regarding whether we should continue the protocol in the future. Part of this uncertainty likely relates to providers' limited experiences having interpreters on the phone; they did not have enough evidence from their own experiences to feel strongly about the protocol's continuation. And part of this likely relates to many of the other barriers identified that limited implementation success. Several of these barriers have been discussed in prior studies; for example, limitations in staffing and resources and resistance to change are common barriers to implementation [48–51]. We also identified several new themes worth further discussion. One of the most commonly discussed barriers to implementation was the change in telephone interpreter vendor, which occurred coincidentally just prior to implementation. Adjusting to change alone is a challenge, but this change was complicated by technology issues, access issues, and quality issues: poor quality of the speakerphone, perceived reduced quality of interpretation, and limited access to interpreters for at least one commonly requested language. Though changing telephones may seem like a trivial change, it had a profound impact on the clinics in this study and this impact has important implications for health systems. Since any changes to the healthcare delivery system have the potential to impact quality of patient care and access to necessary services, it is important to consider the impact of these changes prior to implementation so they can be anticipated and quickly addressed. Implementation frameworks that provide operational models for implementation are often used in implementation research studies [52], but should also be considered for use in health system changes.

Providers and MAs in our study expressed concerns over the cost of the intervention, specifically the cost of having an interpreter on the phone for extra minutes at the start of an encounter. In an era of rising health care costs, it is admirable to see such cost-consciousness and thoughts towards responsible spending. Our study participants expressed an interest in knowing more about the costs of the intervention, which was not something that had been pre-emptively addressed. Future interventions may benefit from more transparency surrounding the costs and potential cost savings associated with the intervention to anticipate the concerns of participating individuals.

We encountered unanticipated difficulties with language screening and limited endorsement of the screening process. MAs feared offending patients and described patients' perceptions that screening seemed out of place. A study integrating language data collection at reception and registration suggested that patients were receptive to screening at those time points [53]; however, rooming is typically a time where clinical rather than demographic information is gathered, so patients may not have understood the relevance of the screening questions at that time. If screening is performed at clinical time points, such as rooming, patients may require additional explanation to understand the role and relevance of the screening questions. To achieve this, MAs likely need additional training, including training in cultural competency, to feel more confident in how to approach screening. In addition to giving them the specific screening questions to use, they may benefit from scripting of how to introduce the screening process to patients.

Our protocol used screening questions recommended by the Joint Commission and Institute of Medicine, including a self-assessment of English proficiency using a question initially developed for the US Census [43, 44, 54]. While these questions are recommended, it remains unclear if they are the best assessment of English proficiency in clinical settings. MAs in our study perceived that patients were confused by these questions. A recent study implementing language screening at reception and registration chose not to include a self-assessment of English proficiency and questions regarding need or preference for an interpreter, worrying that these questions would take too much time, too much explanation, and may encourage patients to "decline an interpreter out of politeness or fear of financial implications" [53]. Another study had success instead using a single screening question focused on "language for healthcare" [55]. This combination of studies suggests that fewer and less complex screening questions may be more amenable to implementation and more acceptable to patients.

We designed our intervention based on an understanding of physicians' behaviors and their barriers to using PMIs. Though prior research has been performed on the topic of physician culture and behavior [56–59], little is known about the professional culture of Medical Assistants, the individuals who performed the intervention. Understanding organizational culture and the professional culture of team members, including the MAs in our study, is important for successful work of this kind and other interventions that utilize MAs [60].

Medical assistants are a growing member of ambulatory care teams [61]. We assigned MAs tasks that fell within their scope of practice [62, 63], including assessing demographics and optimizing providers' workflows through arranging telephone PMIs. Several studies have

documented success with similar clinical initiatives that include MAs [64–67]. For example, Baker and colleagues trained MAs to discuss colorectal cancer (CRC) screening with patients during rooming and to enter preliminary orders for screening tests if a patient was agreeable. This intervention was associated with a 5.1% absolute improvement and 85% relative improvement in CRC screening rates [65]. It is usually fairly clear when a patient is due for CRC screening—in general, they are 50 years or older and are not up-to-date with screening; however, language screening is much more complex and nuanced. English proficiency can be hard to put into categories since it can fall anywhere on a spectrum from no English to fluent English. Determining where a patient falls on that spectrum is not an easy task and requires a judgment call on the part of both the patient and the individual performing the assessment. Further, determining how much English is sufficient for a particular medical encounter takes the complexity a level further and adds a second degree of judgment to language assessment. These qualities of language screening set it apart from many of these other interventions focusing on clinical initiatives, and make it a more difficult and perhaps also more controversial process. This may have contributed to MAs' limited endorsement of language screening in our study and their concerns over embarrassing patients.

In addition, attitudes regarding language assessment may be more easily influenced by people's own cultural and linguistic backgrounds. This may play an especially important role for MAs given their cultural diversity [68, 69]. In our sample of MAs, all but one spoke a non-English language and reported speaking to patients in their language and occasionally helping with interpretation. Their own experiences with language, including potential personal experiences with limited English proficiency, may shape how they perceive patients' reactions to language screening.

The professional culture of MAs may also impact language screening. A recent study found that the factors that drive MAs include expertise in ensuring patient flow, expertise in acting as a patient advocate, and a desire to make a difference [68]. MAs in our study echoed these same motivations. But these motivations may also have served as a barrier to implementation, specifically around the role of MAs as patient advocates. When patients request an interpreter, MAs can advocate for patients by calling an interpreter. But when patients want to speak English despite having LEP or want to use family members to interpret, the protocol specified that MAs should arrange for a PMI even though this was not the patient's preference. This potential conflict between the protocol's instructions and patients' expressed preferences may have contributed to MAs' lack of endorsement of language screening.

One other important area to consider in organizational culture is the dynamic of power differentials [70]. "Overcoming gaps in power and status" can be one of the greatest challenges facing organizations transforming MAs into clinical leadership roles [71]. Power differentials may have made it difficult for MAs in our study to arrange for telephone PMIs for LEP patients when physicians expressed preferences to not use telephone interpreters [72]. This may have played a particularly important role since MAs knew providers' strong preferences to avoid using the interpreter phones after the vendor change.

The strengths of this study include using mixed methods to triangulate findings and including multiple healthcare team members in the evaluation. While we faced challenges with successful implementation of the rooming protocol, our findings open the door for further research on structural cultural competence interventions to improve use of available language assistance tools. Additional interventions such as electronic alerts to interpreter services to trigger an in-person interpreter, protocols designed to trigger the availability of video interpreter devices, and formal language assessment of patients and providers should be studied to understand if these interventions have the potential to improve language-related health disparities.

There are several limitations to this study. Several members of the research team have ties to the study clinics, which may have positively biased interviewees' responses. Since we received a mix of positive and negative feedback from participants, we feel confident that we elicited honest feedback. Another limitation is the lack of data on patients' experiences with the protocol, which was outside the scope of this study. Third, we are unable to quantify the change in frequency of PMI use as a result of the intervention. We had intended to present data on the number of telephone interpreter calls before and after the intervention; however, the change in interpreter vendor and therefore the change in data collection methods for telephone interpreter phone calls made these data unreliable. Fourth, we did not have the ability to evaluate each provider's facility with the languages spoken by their patients. We did not request providers to identify the languages they spoke to protect their anonymity, and did not have access to providers' patients' languages due to the data limitations mentioned above. Finally, findings from this study may not be transferable to all clinical settings.

Conclusions

Implementation of a medical assistant-driven rooming protocol to improve use of PMIs was largely inconsistent, but our study of its implementation elucidates important themes regarding barriers and facilitators that have implications for future interventions aimed at addressing language-related health disparities. First, any health system changes with the potential to impact patient care should be carefully implemented with special attention to anticipating and minimizing potential challenges and consequences. Second, interventions should carefully consider the professional culture and cultural background of involved individuals, including all members of the healthcare team and their professional relations to each other. Third, while health systems have clear recommendations for how to screen patients for language needs, further research is needed to improve language screening questions and procedures. Finally, it is clear that providers and medical assistants are motivated to improve patient care and communication and to control health care costs; future interventions should capitalize on these motivations to drive change.

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Table 1

Characteristics and attitudes of providers prior to implementation

Pre-implementation survey item:	Pilot clinics, n = 21	Usual care clinics, n = 40	p value*
Years practicing, n (%)			
<10 years	7 (33%)	21 (52%)	0.35
10–19 years	6 (29%)	9 (22%)	
> 20 years	8 (38%)	10 (25%)	
Fluent in a second language, n (%)	9 (43%)	12 (31%)	0.51
Used interpreter over the past month, n (%)	21 (100%)	40 (100%)	N/A
Acceptable for MAs to assess patients' language during rooming, n (%)	17 (81%)	37 (92%)	0.39
Acceptable for MAs to call interpreters during rooming, n (%)	16 (76%)	37 (92%)	0.02
Who should assess language?, n (%)			
Registration	12 (57%)	25 (62%)	0.90
Scheduling	11 (52%)	25 (62%)	0.62
Front desk of clinic	7 (33%)	22 (55%)	0.18
Medical assistants	6 (29%)	28 (70%)	<0.01
Nurses	3 (14%)	17 (42%)	0.05
Providers	3 (14%)	20 (50%)	0.01
Other	6 (29%)	6 (15%)	0.31
I do not think we should be systematically assessing patients' language abilities	0 (0%)	0 (0%)	N/A
Frequency of self-reported professional interpreter use when one is necessary, n (%)			
All or most of the time	20 (95%)	33 (82%)	0.24
Half of the time or less	1 (5%)	7 (18%)	
Form of interpreter used most over the past month, n (%)			
Informal interpreters	0 (0%)	3 (7.5%)	0.49
In-person interpreters	0 (0%)	1 (2.5%)	
Video interpreters	0 (0%)	3 (7.5%)	
Telephone interpreters	21 (100%)	34 (85%)	
All forms of interpreters used over the past month, n (%)			

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Pre-implementation survey item:	Pilot clinics, n = 21	Usual care clinics, n = 40	p value*
Informal interpreters	16 (76%)	36 (90%)	0.25
In-person interpreters	15 (71%)	29 (72%)	1.00
Video interpreters	0 (%)	6 (15%)	0.08
Telephone interpreters	21 (100%)	40 (100%)	1.00

* p values based on chi-square test (unless < 5 answers in any category, in which case Fisher test was used)

Paired analysis examining the impact of clinic group on post-implementation survey responses (data in this table are restricted to individuals who completed both pre-implementation and post-implementation surveys). (*n* = 18 Pilot Clinic Providers, *n* = 35 Usual Care Clinic Providers)

Table 2

	Pre-implementation	Post-implementation	AOR ^b (<i>p</i> value)
Post-survey item:	<i>n</i> (%) agree ^a	<i>n</i> (%) agree ^a	
The clinic should be systematically assessing a patient's language abilities and preferences	PC: 17 (94%) UCC: 33 (94%)	PC: 18 (100%) UCC: 35 (100%)	NA
I have been satisfied with the quality of care I am providing to my patients who speak English less than very well	PC: 8 (44%) UCC: 18 (51%)	PC: 15 (83%) UCC: 17 (49%)	12.66 (<0.01)
I have been satisfied with the communication I have with my patients who speak English less than very well	PC: 9 (50%) UCC: 18 (51%)	PC: 15 (83%) UCC: 15 (43%)	7.55 (<0.01)
I am confident that I have clearly understood my patients who speak English less than very well	PC: 7 (39%) UCC: 14 (42%)	PC: 8 (44%) UCC: 19 (54%)	0.68 (0.51)
I am confident that my patients who speak English less than very well have understood my recommendations and instructions	PC: 8 (44%) UCC: 10 (29%)	PC: 8 (44%) UCC: 19 (54%)	0.46 (0.26)
I am satisfied with the ease of accessing interpreters for my patients who speak English less than very well	PC: 4 (22%) UCC: 6 (18%)	PC: 2 (11%) UCC: 6 (17%)	0.48 (0.43)
I feel as efficient with my patients who speak English less than very well as compared to my patients with full English fluency	PC: 2 (11%) UCC: 2 (6%)	PC: 0 (0%) UCC: 3 (9%)	8.17 × 10 ⁻⁹ (1.00)
Post-survey item:	<i>n</i> (%) all/most of the time	<i>n</i> (%) all/most of the time	
How often are interpreters either present or on the phone for patients who speak English less than very well by the time you enter the room?	PC: 0 (0%) UCC: 6 (18%)	PC: 2 (11%) UCC: 8 (23%)	0.58 (0.54)

^aIncludes responses of “Completely Agree” and “Somewhat Agree”

^bOdds of agreement (“Completely Agree” or “Somewhat Agree”) on post-implementation survey question based on being in a pilot clinic versus usual care clinic, adjusting for provider's pre-implementation response to the same survey question