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Improving Interpreter Access in the Pediatric Emergency Department: A Quality Improvement Initiative

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Abstract

Background: An increasing proportion of the population in the United States have limited English proficiency (LEP). Hospitals that receive federal funding must offer interpreter services. However, access is often lacking for patients. Patients with LEP are at higher risk for adverse events, and the Emergency Department is a particularly high-risk environment for these events. **Methods:** This quality improvement initiative took place from April 2021 to August 2022 in an urban, tertiary care Pediatric Emergency Department. A driver diagram informed four Plan-Do-Study-Act cycles, and data were collected through medical record review, patient surveys, and staff surveys. We tracked outcomes using run and control chart data. **Results:** During the study period, the proportion of patients with LEP reporting "always" having an interpreter was unchanged (no centerline shift—control chart rules). Documentation of interpreter use for encounters with patients with LEP improved. Preferred language documentation and documentation of the need for an interpreter in the electronic medical record showed no change. Process measure data for staff-reported use of professional interpreters significantly increased, and the use of ad hoc interpreters decreased significantly. Length of stay did not change for English or LEP patients. **Conclusions:** This quality improvement initiative improved appropriate documentation of LEP and decreased use of nonqualified interpreters, although no change occurred in the proportion of patients who reported always having an interpreter. Patient satisfaction was unaffected. *(Pediatr Qual Saf 2024;9:e748; doi: 10.1097/pq9.0000000000000748; Published online July 10, 2024.)*

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INTRODUCTION

An estimated 25 million individuals in the United States have limited English proficiency (LEP), which is defined as speaking English less than "very well" by the US Census Bureau.[1–3] The identification of LEP and subsequent utilization of interpretive services are essential for effective communication within healthcare.[4–7] By law, institutions that receive federal funding must make interpreter services available.[8] However, data suggest that adequate access to interpreter services is lacking and that resources are inconsistently used.[9–13] One recent study of an emergency department (ED) in a large pediatric hospital found that professional interpreters were used appropriately in only 36% of encounters with patients with LEP.[10]

Processes for identifying patients with LEP are suboptimal. In one study, providers misclassified 27% of self-identified Spanish-speaking patients as English-proficient.[14] Additionally, qualitative research demonstrated that patients with LEP often "settle for getting by" in English.[15] Patients are concerned about being a "burden" and sometimes hesitate to identify as having LEP for fear of limiting "access to good medical providers."[15,16] Patients with LEP also experience higher rates of adverse events during hospitalization.[17]

Once a patient with LEP has been identified, clinical staff should, based on federal and state regulations, access qualified language service providers (QLSP), including professional in-person, telephonic, and video-remote interpreters, unless they are approved bilingual providers in that language. However, in-person interpreters are rarely available within the required time period for ED emergent cases and during off-hours. Although telephone and video-remote interpretation are increasingly common, they are not universal. Thus, healthcare providers continue to use non-QLSP individuals as interpreters[6,7,18] even though the use of QLSP is associated with decreased disparities in ED utilization, testing, and admissions.[19,20]

The ED represents a high-risk environment for adverse events for patients with LEP.[21] Patients with LEP in the ED have a longer "time-to-first-contact" with a provider, which can negatively impact the treatment of acute illness.[14,22] In addition, patients with LEP are more often under-triaged (defined as having a low triage score but ultimately requiring hospital admission), require significant ED resources, or experience return visits requiring admission.[23] ED encounters without QLSP are associated with lower patient satisfaction, greater costs, and higher risk of hospitalization.[19,20] Finally, barriers to partnering with interpreter services, such as time constraints and patient acuity, continue to disrupt the quality of care that LEP patients receive in the ED.[22]

Other teams have improved language access for pediatric patients in the ED, including changing the electronic medical record (EMR) tracking board, triage screening, templates for documentation, and staff education.[24–26] Having recognized similar challenges in our PED, our team undertook a quality improvement initiative with the following primary aim: To increase the proportion of encounters with LEP patients whereby patients/guardians reported *always* having access to an interpreter when needed during their PED visit to greater than 70% within 14 months.

METHODS

Setting and Patient Population

This QI initiative took place from April 2021 to August 2022 in the PED (22 beds) of an urban, tertiary medical center with an average volume of 25,000–30,000 patient encounters per year. Patients and families with LEP account for approximately 28% of all encounters hospital-wide. In-person interpreter services were available with daytime/weekday availability of Spanish (55% of interpreter encounters), Haitian Creole (13%), Portuguese (9%), Cape Verdean Creole (5%), Vietnamese (4%), American Sign Language (3%) and French (1%), and night/weekend availability with Spanish, Haitian Creole, French, Cape Verdean Creole, and Portuguese. Thirty languages were available via iPad video-remote services, and 250 languages were available via phone. Clinical providers in the PED included: attending physicians, fellows, resident physicians (pediatrics, emergency

medicine, family medicine, and psychiatry), advanced practice providers, nurses, medical assistants, and child life specialists. Ninety percent of patients are seen by a trainee and attending, as opposed to an attending or advanced practice provider alone.

We obtained institutional review board exemption from Boston University before study initiation.

Data Collection

Data were collected from the EMR on PED encounters every 2 weeks and stored in a secure database. Data included: preferred spoken language, need for interpreter (Y/N), QLSP use documented by the primary clinician in the "ED Provider Note" (Y/N), length of stay (LOS) from registration to discharge in minutes (LOS), and patient primary phone number.

Postencounter patient surveys of a random sample of patients were conducted by a research assistant (RA) via phone every 2 weeks. At least 10 patients/guardians were contacted per two-week block, including at least five who preferred a language other than English. A number generator identified which patients to call. If an insufficient number of patients with non-English preferred language were sampled, the RA would continue down the list of random numbers to identify more patients with non-English preferred language. We used a professional phone interpreter to conduct interviews for those indicated as having LEP in the EMR or who requested an interpreter. The RA scripted and read interview questions, and sufficient time was allowed for effective interpretation. We recorded the interview answers securely in REDCap.[27] Patients' caregivers completed interviews unless the patient was 18 years or older. The team asked participants about their preferred spoken language and their interactions/satisfaction with interpreters and staff during their most recent PED visit (**Supplemental Digital Content 1**, which shows Patient Survey, **http://links.lww.com/PQ9/A572**).

Provider surveys were co-designed with PED staff and administered at baseline and every 4–6 months after that. Questions assessed challenges with interpreter access and interaction, use of QLSP and non-QLSP, and suggestions for improvement for the QI project. (**Supplemental Digital Content 2**, which shows Provider Survey, **http://links.lww.com/PQ9/A573**).

Outcome, Process, and Balancing Measures

The primary outcome measure was the proportion of patients with LEP who reported *always* having access to an interpreter when needed during their visit. This was measured by dividing the number of patients who responded "Always" to "During this emergency room visit, how often did you have an interpreter when you needed one?" during a postencounter phone survey (hereafter "the survey") by the total number of patients with self-identified LEP each month.

Primary process measures were: (1) the proportion of patients with LEP for whom preferred spoken language

was concordantly reported on telephone survey and in the EMR (number of patients whose EMR preferred language was concordant with that identified during the survey divided by the total number of patients with LEP surveyed that month) and (2) proportion of encounters with patients with LEP during which the primary clinician obtaining the history documented QLSP use in their note (number of ED Provider Notes documenting interpreter use divided by all ED Provider Notes for patients with LEP each month).

The team assessed secondary process measures. Compliance with PDSA #1 registration processes was calculated by reviewing EMR charts to determine the proportion of patients with LEP with correct documentation for the need for interpreter services (number with correct documentation divided by total number of patients seen each month). Correct documentation was defined as having "Yes" selected under "Needs interpreter" for patients who self-identified in a non-English preferred language. Additionally, qualitative report of interpreter type (QLSP versus non-QLSP) was defined by staff self-report on surveys and analyzed via pre/postintervention Fisher exact test.

We assessed two balancing measures. First, the team assessed patient satisfaction with the experience of working with interpreters using survey responses from a convenience sample of patients with LEP. Secondly, the PED length of stay (LOS) was analyzed and calculated in minutes as the time between Registration and departure from the ED.

Interventions:

A key driver diagram outlined drivers affecting appropriate engagement with interpreter services (Fig. 1). Gemba walks were performed before study initiation (January 2021)

to gain insight into baseline processes. We sought feedback from providers regarding barriers to interpreter use via four qualitative surveys distributed every 4-6 months. Based on the *Model for Improvement*, the QI team completed four "Plan-Do-Study-Act" (PDSA) cycles incorporating interventions to address barriers and drivers (**Supplemental Digital Content 3**, which shows PDSA Cycles, **http://links.lww.com/PQ9/A574**). Baseline data collection occurred from April to the beginning of June 2021; however, the baseline mean (centerline) was calculated using the first 6 months of data up until the start of PDSA #2.

PDSA #1 (June 2021) standardized documentation of preferred language and need for an interpreter during patient registration upon arrival to the PED. Registration personnel were re-trained to inquire about preferred language and assess English fluency (spoken/written). Patients were asked, "How well do you speak and understand English?" and "How well are you able to read/write in English?" with answers from "very good" to "not at all." Anyone rating spoken English fluency as less than "very good" was documented as needing an interpreter for clinical communication, translating into the EMR for clinician viewing. We based this change on recommendations by the Health Research and Educational Trust, Agency for Healthcare Research and Quality, and National Quality Forum.[28,29]

PDSA #2 (October 2021) focused on enhancing staff education regarding the current disparities in care and the importance of identifying patients with LEP. A QI team leader presented baseline data including rates of QLSP versus non-QLSP interpreter use, and evidence related to disparate patient outcomes for patients with
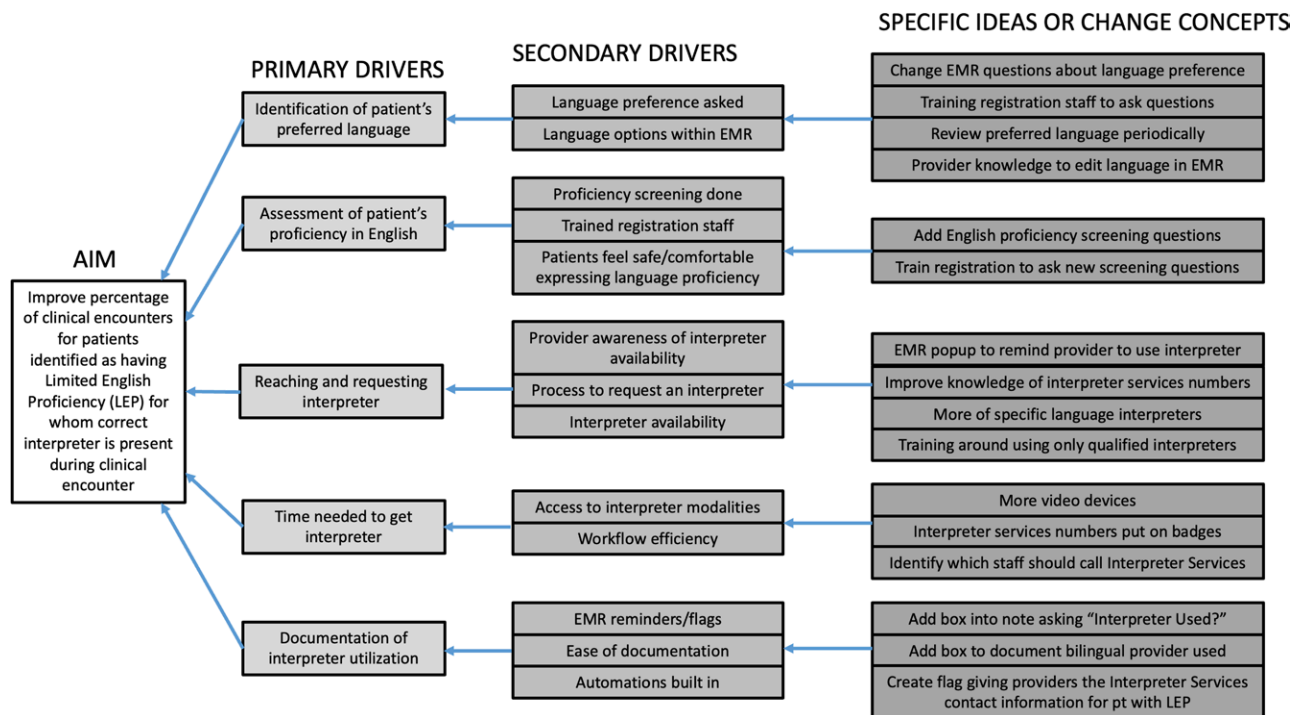

Fig. 1. Driver diagram.

LEP. This presentation was given to nurses and attending PEM physicians via Zoom conference. The presentation lasted approximately 20 minutes. Although attendance was not required, the presentation was during a scheduled monthly staff meeting where 70% of providers were in attendance. Slides were distributed via email by PED leadership. (**Supplemental Digital Content 4**, which shows Slides for Staff Education on Working with Patients with LEP, **http://links.lww.com/PQ9/A575**.)

At study initiation, we surveyed PED staff regarding their experience with interpreter services. Responses highlighted limited access to video-remote interpretation (only one video-remote device was available in the PED). Phone interpretation quality was another barrier to timely, consistent QLSP use. Therefore, PDSA #3 (February 2022) involved securing institutional grant funding to purchase two additional video-remote devices dedicated to the PED. Thus, we could permanently place one device in the nurse triage room, with two others available for providers within the PED.

PDSA #4 (May 2022) addressed resident physician education. The PED hosts rotating residents from multiple institutions and specialties, many for 2–4 weeks annually. Due to the high provider turnover rate, awareness of workflow and best practices related to interpretation resource use was variable. Therefore, we added information to the introductory email sent to every rotator at the start of each 2-week block, including information on locating a patient's preferred language in the EMR and how to access each type of interpretation available in the PED.

Data Analysis
We collected data every 1–2 months, stored it in Microsoft Excel[30] within Box,[31] and analyzed it using control chart functions within Excel. The team created a baseline using the first six points of data, equating to six months; this extends beyond PDSA #1 due to an earlier-than-expected implementation of this cycle. Control chart rules for detecting nonrandom signals were used and indicated in the Results section.[32,33]

RESULTS
Study Population
We contacted a total of 611 families by phone, with 312 completing survey questions (51%); 136 spoke a language other than English. A total of 62 providers responded to four staff surveys.

Primary Outcome Measure
During the study period, patient reports of "always having an interpreter when needed" did not significantly improve. The mean remained at 54% (Fig. 2).

Process Measures
The proportion of encounters in which providers documented interpreter use in the EMR increased from 20% to 32% based on four consecutive points outside the upper control limit (Fig. 3). The average proportion of patients for whom preferred language was appropriately documented in the EMR remained at 83% (Fig. 4).
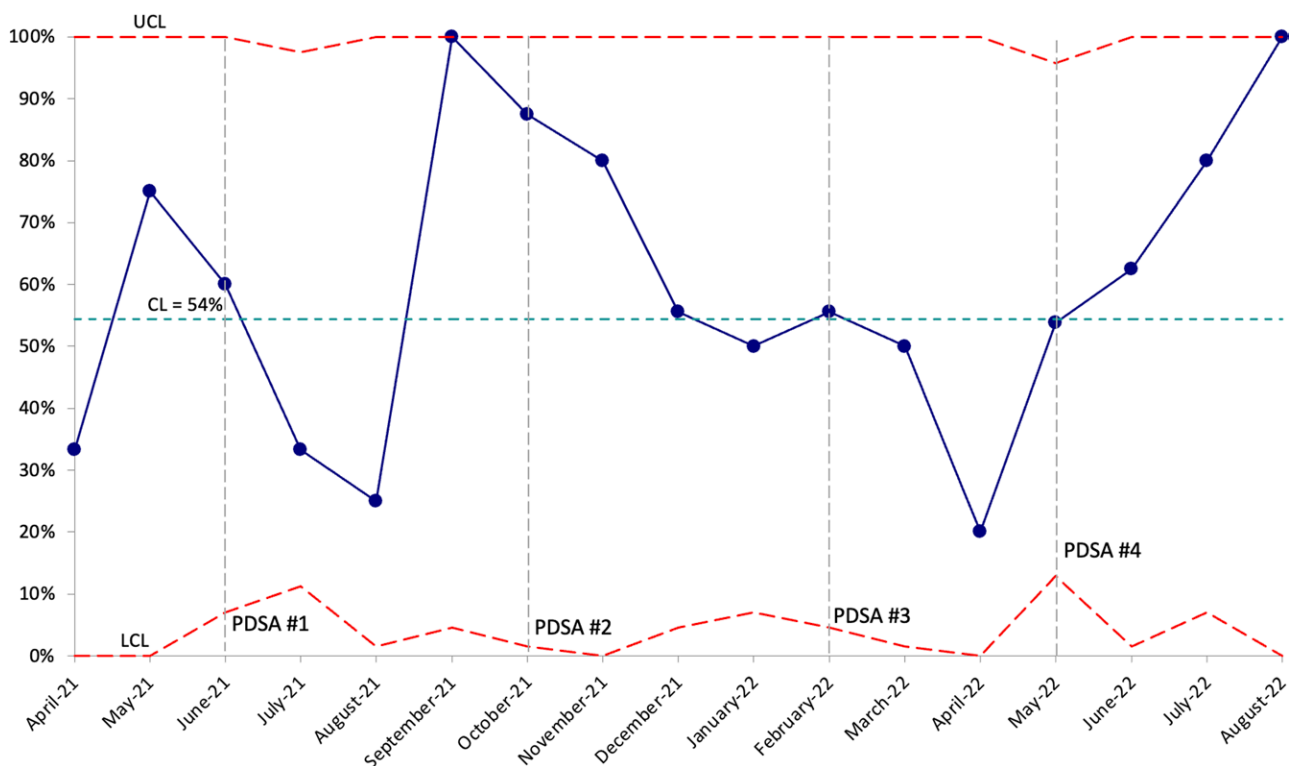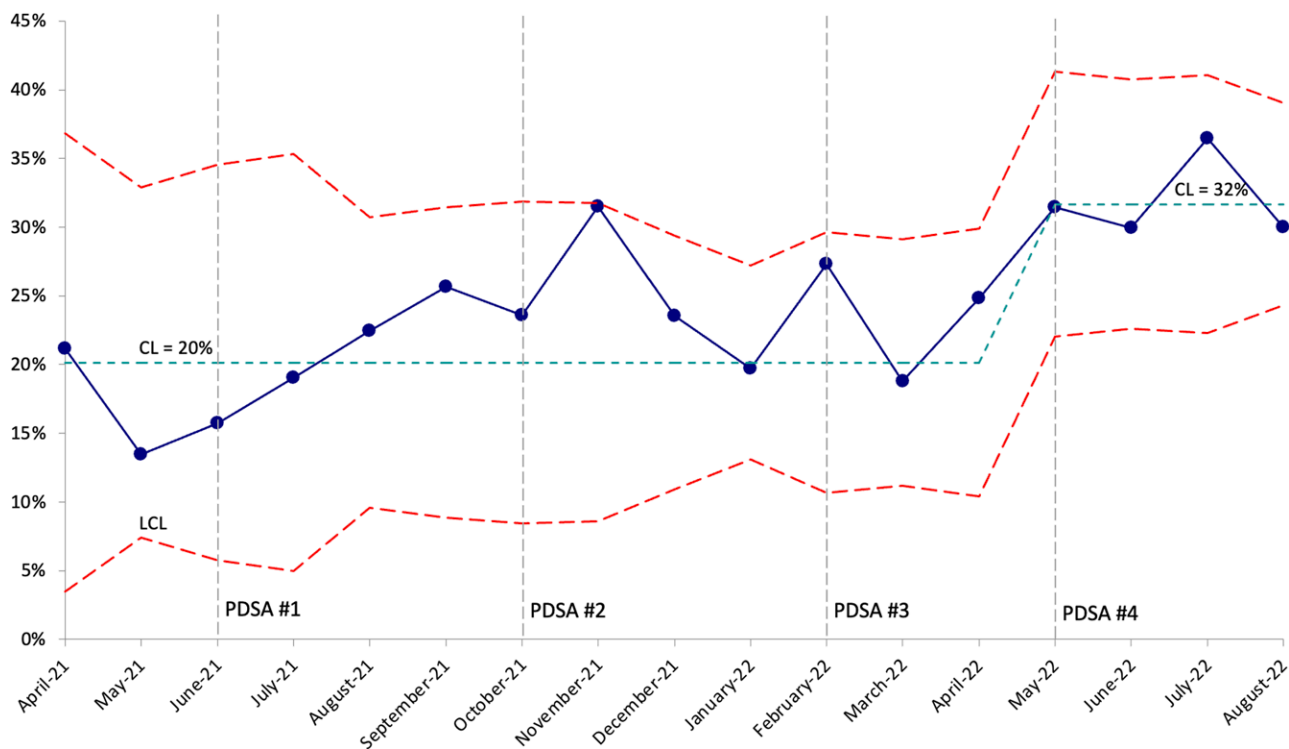

Fig. 2. Control chart: percent of encounters in which patients reported always having an interpreter available.

Fig. 3. Control chart: percent of encounters with interpreter use appropriately documented in EMR.

The proportion of patients with LEP with a documented need for interpreter services by Registration remained at 80%, although frequently reaching 100% in individual months (**Supplemental Digital Content 5,** which shows Control Chart: Percent of encounters in which interpreter need was appropriately documented in EMR, **http://links.lww.com/PQ9/A576**). During the study period, staff and providers reported a nonsignificant change in the use of professional medical interpreters (from 74% to 100%, *P* = 0.13) and decreased use of nonapproved bilingual providers (from 43% to 0%; *P* = 0.02) and family members or friends (from 78% to 38%, *P* = 0.04; Fig. 5).

Balancing Measures
Patient satisfaction with "working with interpreters" remained at an average of 90% throughout the study period (**Supplemental Digital Content 6,** which shows Control Chart: Patient satisfaction with working with an interpreter, **http://links.lww.com/PQ9/A577**). ED LOS remained unchanged for patients with LEP (**Supplemental Digital Content 7,** which shows Control Chart: Length of stay for patients with LEP, **http://links. lww.com/PQ9/A578**). Qualitative themes from provider feedback included a lack of video interpretation devices (addressed in PDSA #3), and reported improvement in access to video interpretation devices by the end of the intervention. There were continued challenges in obtaining access to interpreters for less commonly encountered languages.

DISCUSSION
Using an interdisciplinary, multipronged QI approach, our team showed improvement in secondary measures of EMR documentation of interpreter utilization and use of QLSP compared with non-QLSP. We did not see a statistical change in our primary outcome of increasing the proportion of LEP patients who reported "always having access to interpreters during their PED encounter." The proportion of patients with correct documentation of the need for interpreter services remained stable. Patient satisfaction remained stable for patients with LEP, and LOS for patients with and without LEP was unchanged.

Our primary outcome of increasing the proportion of LEP patients always having access to interpreters did not show significant improvement. Likely, we were not powered to show a statistically significant difference. Because many patients with LEP seek care at our hospital, we may have needed more resources (eg, personnel or equipment) to show a significant change. Furthermore, although overall similar to other PED studies, our primary outcome focused on patient self-report via survey. Given our response rate of 51%, there is likely some selection and recall bias in our data set.[24–26] With the many touch-points in an ED visit, patient perception of *always* having an interpreter may be a challenging outcome to achieve and require further interventions, given that our process measures showed good compliance with interventions. We did not define what *always* should include—for example, a respondent could
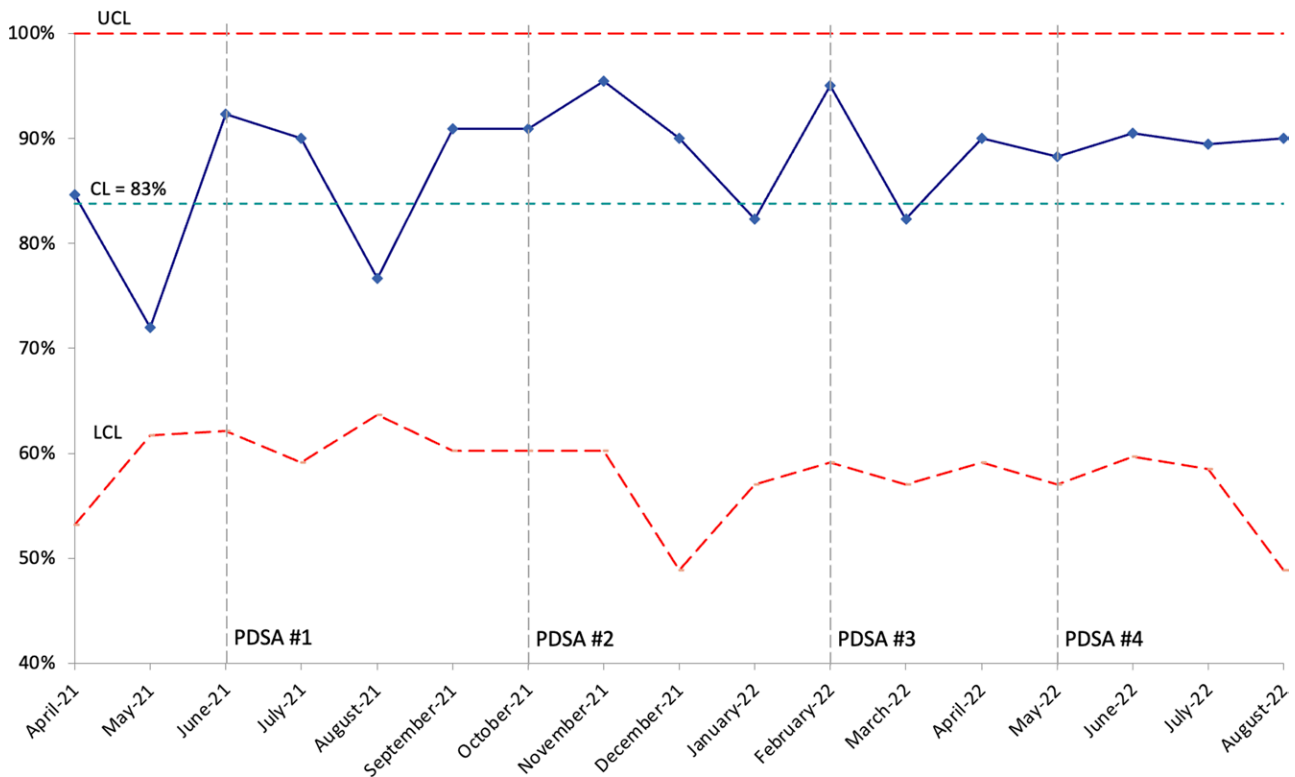
Fig. 4. Control chart: percent of encounters with language correctly identified in EMR.
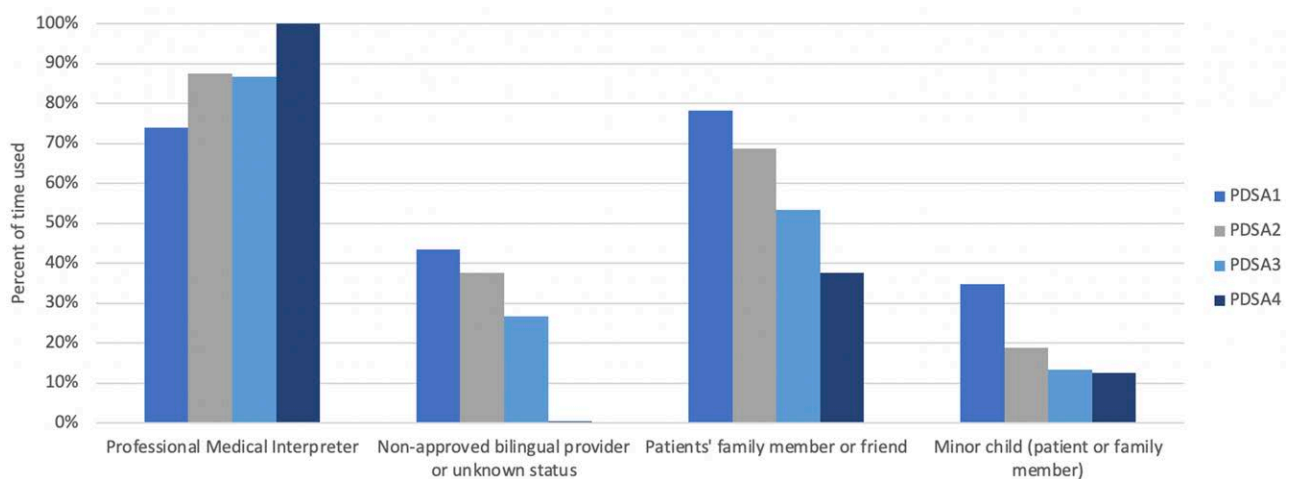

Fig. 5. Individuals used for interpretation in the Pediatric Emergency Department over time.

interpret *always* to mean with every interaction with hospital employees or only with medical staff. However, we undertook a novel approach by assessing trends in using non-QLSP interpreters and specifically solicited patient satisfaction with their interpreter experience. Just because interpretation services are activated does not necessarily guarantee effective communication or patient satisfaction.

The data showed improvement in the documentation of interpreter utilization, shown by a centerline shift in May 2022, when all four PDSA cycles were complete (Fig. 3). This occurred in the setting of four consecutive data points outside the upper control limits, which signaled an effect of our interventions. This is consistent with our team's expectations that change would be seen only after all PDSA cycles had been implemented.

Key drivers of success in this QI initiative included close communication/relationships with unit staff and obtaining additional video interpretation devices. In this busy clinical setting, more available video devices allowed multiple team members (eg, nurses, physicians, medical assistants) to use devices concurrently. Although this intervention did require monetary investment at ~$1000 per video device, the number of staff reporting use of QLSP,

versus non-QLSP, increased, suggesting the increased availability was important and could be generalized to other settings. Prior research has also shown increased rates of interpreter use when using video devices and improved understanding of the clinical encounter when using video instead of telephone.[10,34] These data suggest that communication could be improved in units throughout the hospital by investing in video interpretation.

Although considered low-reliability interventions, education sessions like PDSA #2 are simple interventions easily deployable in many clinical settings and likely contributed to a decreased use of non-QLSP. This is important because prior research established that QLSP impacts patient experience. One study suggested that, compared with mistakes made by QLSP, those made by non-QLSP in a pediatric clinic were more likely to have clinically significant consequences for patient care.[35] Decreased non-QLSP interpreter use in our cohort suggests that interventions, especially education and outcomes data sharing with staff, may have improved the culture of patient safety and prioritization of better care over perceived faster care for this vulnerable patient population.

Limitations

This study has several limitations. First, the relatively small sample of patients per data point may not reflect the entire LEP population that presented to the PED. Given the logistics, time constraints, and resources involved in surveying our study population, we were limited in the power we could achieve. Due to earlier implementation of PDSA 1 than initially anticipated, our true baseline was only two months. Therefore, we extended our baseline mean to include the first 6 months of data. Second, this was a single-center study, which could affect generalizability. Selection bias may have been present, given patients and providers had the choice to complete surveys, and using an RA could lead to bias in how questions were asked.

An additional challenge faced during this initiative included fluctuations in PED volume (primarily due to respiratory viruses including COVID-19 and a surge in unhoused families, most of whom had LEP, seeking shelter in summer 2022), which could have strained the availability of interpretation resources.

CONCLUSIONS

An interdisciplinary QI approach improved documentation of interpreter utilization. It decreased the use of non-QLSP in the PED, although it did not meet the primary aim of increasing the proportion of patients who always had an interpreter when needed. Key stakeholder buy-in and close communication with PED staff were important project facilitators. Similar sites can improve the care of patients with LEP by: (1) improving access to video interpretation, and (2) educating staff/providers about unit performance on metrics, disparities in care for patients with LEP, and implications of working with QLSP versus non-QLSP. Future research should correlate QLSP use and patient outcomes and better evaluate the different modalities of interpreter use to establish clear best practices in acute care settings.

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