Disparity in Nurse Discharge Communication for Hospitalized Families Based on English Proficiency

Angela Y. Choe, MD, MSc,[a,b] Joanna E. Thomson, MD, MPH,[c,d] Ndidi I. Unaka, MD, MEd,[c,d] Vanessa Wagner, BA,[e] Michelle Durling, MEd,[c] Dianna Moeller, BA,[c] Emelia Ampomah, MPH,[c] Colleen Mangeot, MS,[f] Amanda C. Schondelmeyer, MD, MSc[c,d,g]

ABSTRACT

OBJECTIVES: Effective communication is critical for safely discharging hospitalized children, including those with limited English proficiency (LEP), who are at high risk of reuse. Our objective was to describe and compare the safety and family centeredness of nurse communication at hospital discharge for English-proficient (EP) and LEP families.

METHODS: In this single-center, cross-sectional study, we used direct observation of hospital discharges for EP and LEP children. Observers recorded quantitative and qualitative details of nurse-family communication, focusing on 3 domains: safe discharge, family centeredness, and family engagement. Patient characteristics and percentages of encounters in which all components were discussed within each domain were compared between EP and LEP encounters by using Fisher's exact tests. We used field notes to supplement quantitative findings.

RESULTS: We observed 140 discharge encounters; 49% were with LEP families. Nurses discussed all safe discharge components in 31% of all encounters, most frequently omitting emergency department return precautions. Nurses used all family-centered communication components in 11% and family-engagement components in 89% of all encounters. Nurses were more likely to discuss all components of safe discharge in EP encounters when compared with LEP encounters (53% vs 9%; $P < .001$; odds ratio: 11.5 [95% confidence interval 4.4–30.1]). There were no differences in family centeredness or family engagement between LEP and EP encounters.

CONCLUSIONS: Discharge encounters of LEP patients were less likely to include all safe discharge communication components, compared with EP encounters. Opportunities to improve nurse-family discharge communication include providing written discharge instructions in families' primary language, ensuring discussion of return precautions, and using teach-back to optimize family engagement and understanding.

[a]Division of Hospital Medicine, Children's Hospital Los Angeles, Los Angeles, California; [b]Department of Pediatrics, Keck School of Medicine, University of Southern California, Los Angeles, California; [c]Division of Hospital Medicine and [g]James M. Anderson Center for Health Systems Excellence, Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio; and [f]Division of Epidemiology, Departments of Environmental and Public Health Sciences and [d]Pediatrics and [e]College of Medicine, University of Cincinnati, Cincinnati, Ohio

Address correspondence to Angela Y. Choe, MD, MSc, Division of Hospital Medicine, Children's Hospital Los Angeles, 4650 Sunset Blvd, Mailstop #94, Los Angeles, CA 90027. E-mail: anchoe@chla.usc.edu

For hospitalized children and their families, the discharge process is inherently complex. Hospital discharge involves an extensive exchange of information between providers and families and offers an opportunity to bolster caregiver understanding of and confidence in executing postdischarge care plans.[1–3] Ideally, all information critical to a patient's safe discharge is accurately and thoroughly reviewed, including the discharge diagnosis, home instructions, follow-up appointments, return precautions, and discharge medications.[2,3] Information should be reinforced via written discharge documentation in the family's preferred language that is readable and understandable.[3,4] Finally, communication should be family centered to optimize understanding, engagement, and collaboration, which are crucial for an effective discharge.[3,5,6]

Discharge communication challenges are likely amplified for families with limited English proficiency (LEP) because language barriers put them at increased risk for communication failures. In fact, LEP patients experience more frequent emergency department (ED) revisits[7] and medication dosing errors.[8] Despite multiple regional and federal efforts focused on improving access to interpreters,[9–12] providers' use of interpreters and communication with LEP families remain suboptimal, and up to 57% of pediatricians rely on English-speaking family members to communicate with LEP families.[9] Furthermore, LEP parents report being less knowledgeable about care plans and perceive that medical staff spend less time with them than with their English-proficient (EP) counterparts.[13]

Despite known health care disparities for hospitalized LEP families, little is known about provider behavior and communication practices at the time of discharge. Characterizing communication practices at discharge is an important first step toward promoting a safer and more family-centered discharge process for LEP families. Thus, we aimed to describe and compare the safety and family centeredness of nurse communication and the level of family engagement during the discharge process for EP and LEP families.

METHODS
Study Design

We conducted a cross-sectional study using direct structured observation of discharge encounters to characterize and compare nurse communication to a purposive sample of hospitalized EP and LEP pediatric patients and their parents at the time of discharge. This study design allowed us to (1) directly assess behavior in real time without relying on individual patient or nurse recollection, which may be subject to bias, and (2) examine the use of interpreters without having to assume quality interpretation or rely on an interpreter to gain that information.

Setting

This study was conducted at both the main and satellite campuses of a large children's hospital in the Midwest with >600 registered beds. Approximately 7000 pediatric patients are discharged with common pediatric diagnoses each year; of those, ~5% have LEP. Three interpretation modalities (in-person, video, and phone) are available, and written discharge instructions can be translated to an LEP family's primary language by request. At the time of discharge, bedside nurses review written discharge instructions and the after-visit summary (AVS), prepared by the primary medical team, with patients and parents and address the family's questions and concerns.

Study Population

We included EP and LEP discharge encounters for patients between the ages of 0 and 18 years hospitalized with common pediatric diagnoses (eg, asthma, dehydration, and appendicitis). Although the discharge process involves multiple stakeholders (ie, physicians, nurse practitioners, bedside nurses, interpreters, and language access services), for the purposes of our study, a discharge encounter was defined as the discrete period of time when the nurse reviews the discharge instructions and AVS with the family. The family was defined as the patient

and/or the patient's parents, whereas parents included family members or other individuals with an active role in the patient's care after discharge. LEP families were defined as families who required use of an interpreter for medical communication at any point during the hospitalization. If a patient had both EP and LEP parents present at the time of discharge, the encounter was categorized as LEP. All languages and interpretation modalities were included to capture language and/or modality-specific communication challenges. Patients with complex chronic conditions and technology dependence (eg, chronic ventilator support or gastrostomy tube) were excluded because these discharges are prohibitively complicated to adequately capture with our observation method, given the involvement of multiple subspecialists, extensive care coordination, and patient education that is often segmented and dispersed throughout hospitalization (eg, tracheostomy teaching).[14] This study was approved by the hospital's institutional review board.

Measures

Patient demographics and clinical characteristics (age, sex, primary language, length of stay, insurance type, and discharge diagnosis) were extracted from the electronic health record (EHR). Quantitative measures of discharge communication were developed a priori from a review of the literature,[2,3,5,15] local needs assessment,[16] and local physician and nursing peer review to establish face validity. These measures included 3 domains: safe discharge, family centeredness, and family engagement. Definitions and examples of these measures are included in Fig 1. Qualitative data, including details about each encounter (eg, relevant clinical context, details about parents, and medical providers present) were collected as field notes to supplement quantitative findings. For LEP encounters, the observer recorded the presence of the interpreter, modality of the interpreter, language, and detail on interpreter-provider interactions, when appropriate. Questions from the observation checklist are included in Supplemental Fig 2.

Data Collection

Between June 21, 2018, and May 25, 2019, we prospectively identified potentially eligible patients ready for discharge using the anticipated discharge date and discharge criteria entered at each patient's admission into our EHR,[17] followed by confirmation with the charge nurse, primary physician team, and bedside nurse. We used purposive sampling with a targeted approach to capture the variety of age ranges and diagnoses that were matched between EP and LEP patients. On the basis of preliminary observations revealing 80% of EP encounters discussed all safe discharge components, we aimed to observe 62 encounters per group to provide the power of 80% to detect a 25% between-group difference for this component. A subset of observations had duplicate observations to test interobserver reliability ($\kappa \geq 0.7$; Supplemental Table 3). Trained observers (A.Y.C., E.A., V.W., M.D., and D.M., consisting of 1 physician, 1 medical student, and 3 trained research assistants) collected observation data using a structured form in a secure Web-based Research Electronic Data Capture database.[18] To supplement structured observation findings, observers recorded detailed field notes and prompted nurses to provide clarifying comments or reflections after each encounter. Of note, the nurse and family were aware that the observer was evaluating the discharge process but were unaware of the specific objectives or data collected.

Analysis

Demographic data, patient characteristics, and discharge communication components were assessed by using descriptive statistics. Diagnoses were categorized by using the Clinical Classifications Software.[19] Comparison of EP and LEP encounters were conducted by using Fisher's exact test for categorical variables and Wilcoxon rank test for continuous variables. Odds ratios were developed by using logistic regression, with each of the component outcome variables and EP and LEP group as the predictor variable (SAS version 9.4; SAS Institute, Inc, Cary, NC). The study team reviewed field notes to supplement and provide context for quantitative findings.

Domains	Components	Definitions and Examples
Safe discharge 7 components	Nurse:	
	• Reviewed diagnosis	• Discharge diagnosis or admission reasons: "You have asthma" or you were here for difficulty breathing"
	• Reviewed medications	• Included discussion of medication name, dose, route, frequency, or duration
	• Reviewed follow-up appointments	• "See your pediatrician in 2 days" or "you have an appointment on Monday"
	• Reviewed discharge instructions	• "Change dressing three times a day" or "suction the nose prior to feeding"
	• Reviewed reasons to call primary outpatient providers	• "Call your pediatrician if your child develops a new fever"
	• Reviewed reasons to return to EDs	• "Return to emergency department or call 911 if your child turns blue"
	• Provided written discharge instructions in preferred language	• Spanish instruction for those who use Spanish for medical communication
Family centeredness 6 components	Nurse:	
	• Invited family to actively ask questions	• "What questions do you have about your child's medications?"
	• Used teach- and show-back	• Teach- and show-back on any discharge components: "Can you tell me what you need to do before gym class?"
	• Used lay terms[a]	• Such as "oral" instead of "PO"
	• Used simple structure short sentences[a]	• Using sentences that are easy to understand and straight forward, avoiding long or complex sentences that require multiple pauses to complete when speaking or that results in requests for clarification from family or interpreters
	• Used appropriate pace and pauses[a]	• Speech not rushed or pressed; pauses in between sentences to allow for interpretation if needed
	• Used first-person language to address family directly[a]	• Addressing primary speaker directly when speaking by using direct first- or second-person (instead of third-person) pronouns: "I recommend that you call your pediatrician" instead of "can you tell her to call her pediatrician"
Family engagement 3 components	Family:	
	• Asked questions and/or asked for clarification	• Family's active participation in dialogue, asking relevant questions about child's illness or process
	• Was included in all discussions[a]	• No side conversation or whispering among staff members in the family's presence; no extensive discussion outside of the room
	• Appeared engaged during the encounter	• Family frequently used nonverbal communication, such as head nods, eye contact, and note-taking, or showed efforts to minimize potential distractions, such as cellphone use; if family appeared engaged > 50% of the time, the encounter was categorized as "engaged"

FIGURE 1 Measures of quality discharge communication: definitions and examples. [a] Initial data were recorded on a 4-point Likert scale: never, occasionally or sometimes, majority or most of the time, or all the time. PO, by mouth.

RESULTS

Demographics and Clinical Characteristics

A total of 140 discharges were observed, which involved 87 nurses. A total of 72 discharge encounters were categorized as EP, and 68 were categorized as LEP. The median patient age was 3.5 years (interquartile range [IQR] 0.4–10.2), and most patients were boys (59%), non-Hispanic (64%), and publicly insured (65%; Table 1). The most common primary diagnoses involved the respiratory (31%) and digestive (12%) systems; diagnoses were similar between the EP and LEP groups. The median length of stay was 42 hours (IQR 29–68), and the median encounter duration was 9 minutes (IQR 7–13). Of the 68 LEP encounters, Spanish was as the primary language in 34%, and an interpreter was used in 63%. The LEP discharge encounters were significantly longer than the EP encounters (11 minutes [IQR 9–16] vs 8 minutes [IQR 5–1]; $P < .01$).

LEP families, compared with EP families, were mostly Hispanic (71% vs 1%) and less likely to be insured privately (10% vs 42%). Additional demographic characteristics are summarized in Table 1.

Safe Discharge

In the safe discharge domain, nurses discussed all 7 components in 31% of encounters, most often omitting discussion of ED return precautions (missing in 56%; Table 2). Nurses discussed all 7 components of safe discharge in 53% of EP encounters versus 9% of LEP encounters ($P < .001$; odds ratio [OR]: 11.5; 95% confidence interval [CI] 4.4–30.1). Nurses discussed return precaution to the ED less frequently in LEP encounters compared with EP encounters (43% of LEP encounters versus 68% of EP encounters; $P = .004$). Although written discharge instructions were provided in all encounters, only 27% of LEP patients, compared with 99% of EP patients, received discharge instructions in their primary language ($P < .001$). Field notes revealed that nurses relied heavily on written instructions for the order and content of the safe discharge components discussed with families.

Family Centeredness

In the family-centeredness domain, nurses used all 6 components in only 11% of encounters, primarily because of the infrequent use of teach-back. There was no significant difference between EP and LEP encounters for the use of all components (10% vs 12%; $P = .788$; OR: 0.8; 95% CI 0.3–2.4; Table 2). Teach-back was used in 11% of encounters. Nurses were observed to use lay terms, appropriate pace, and pauses in all EP and LEP encounters. First-person language, defined as addressing the primary speaker directly, whether it be patients or parents, and active invitation of family members to ask questions and participate were used in the vast majority of encounters. Field notes, however, revealed that nurses' use of first-person language was dependent on the audience and content; nurses spoke to parents when discussing reasons to return to ED and spoke to patients when discussing activity restrictions. Nurses were also observed highlighting, circling, and writing in

TABLE 1 Patient Demographics and Clinical Characteristics Within Observed Discharge Encounters

Characteristic	Overall ($n = 140$)	EP ($n = 72$)	LEP ($n = 68$)	P[b]
Patient demographics				
Male sex, n (%)	83 (59)	40 (56)	43 (63)	.392
Age, median (IQR), y	3.5 (0.4–10.2)	4.1 (0.3–12.6)	2.6 (0.7–8.4)	.591
Race, n (%)				<.001
White	65 (46)	54 (75)	11 (16)	—
Black or African American	19 (14)	15 (21)	4 (6)	—
Other[b]	56 (40)	3 (4)	53 (78)	—
Ethnicity, n (%)				<.001
Hispanic	49 (35)	1 (1)	48 (71)	—
Non-Hispanic	90 (64)	70 (97)	20 (29)	—
Unknown	1 (1)	1 (1)	0 (0)	—
Primary insurance, n (%)				<.001
Public	91 (65)	36 (56)	30 (75)	—
Private	36 (30)	27 (42)	4 (10)	—
International	1 (1)	0 (0)	1 (2)	—
Other or unknown	12 (9)	2 (3)	10 (15)	—
Patient clinical characteristics, n (%)				
Primary diagnosis type				.084
Infectious and parasitic	5 (4)	3 (4)	2 (3)	—
Endocrine and immunity	9 (6)	6 (8)	3 (4)	—
Blood	1 (1)	1 (1)	0 (0)	—
Mental	1 (1)	1 (1)	0 (0)	—
Nervous system	8 (6)	3 (4)	5 (7)	—
Circulatory	1 (1)	1 (1)	0 (0)	—
Respiratory	43 (31)	21 (29)	22 (32)	—
Digestive	17 (12)	4 (6)	13 (19)	—
Genitourinary	9 (6)	4 (6)	5 (7)	—
Skin and subcutaneous	11 (8)	9 (13)	2 (3)	—
Musculoskeletal and connective	6 (4)	4 (6)	2 (3)	—
Congenital anomalies	2 (1)	0 (0)	2 (3)	—
Perinatal	12 (9)	9 (13)	3 (4)	—
Injury and poisoning	9 (6)	3 (4)	6 (9)	—
Others	6 (4)	3 (4)	3 (4)	—
Length of stay, median (IQR), h	42 (29–68)	42 (32–57)	4 7(28–78)	.381
Discharge encounter characteristics, n (%)				
Family members present[c]				.217
Primary female parent only	55 (39)	32 (44)	23 (34)	—
Primary male parent only	15 (11)	9 (13)	6 (9)	—
No caregiver present	1 (1)	1 (2)	0 (0)	—
Multiple people present	69 (49)	30 (42)	39 (57)	—
Encounter languages (patient and family)				<.001
English only[d]	72 (51)	70 (97)	2 (3)	—
Spanish	48 (34)	0 (0)	48 (71)	—
Other languages[e]	20 (14)	2 (3)	18 (27)	—
Campus				.028
Main	107 (76)	61 (85)	46 (68)	—

TABLE 1 Continued

Characteristic	Overall (*n* = 140)	EP (*n* = 72)	LEP (*n* = 68)	*P*[a]
Satellite[f]	33 (24)	11 (15)	22 (32)	—
Encounter duration, median (IQR), min	9 (7–13)	8 (5–11)	11 (9–16)	<.001

—, not applicable.

[a] *P* values are from χ^2 or Fisher's exact test for categorical variables and Wilcoxon rank test for continuous variables.

[b] Included Middle Eastern, Asian American, Hispanic, and unknown as denoted in the EHR.

[c] The primary female parent includes biological mom, grandmother, or other primary female legal guardians or caregivers; the primary male parent includes biological dad, grandfather, or other primary male legal guardians or caregivers.

[d] In 2 LEP encounters, only English was used despite the presence of an LEP family member or existing nursing concern about limited comprehension due to language barrier.

[e] Included Chinese, Korean, Japanese, Arabic, Russian, French, Nepali, Burmese and/or Hakha Chin, and German; 2 EP families were fluent in multiple languages as hence categorized under "other languages."

[f] Most physicians work at both the main and satellite campuses; the nurses typically work only at 1 campus. None of the nurses observed in either campuses were certified bilingual providers (certified by language access services to communicate with families without the use of a professional interpreter).

additional information (eg, time of next dose) on the AVS to enhance family understanding.

Family Engagement

In the family-engagement domain, all 3 components were present in 89% of encounters, with no significant difference between EP and LEP encounters (86% vs 91%; *P* = .430; OR: 0.6; 95% CI 0.2–1.8; Table 2). Families' active participation (proactively asking questions and providing clarification) was present in 89% of encounters. Families were observed to appear engaged (exhibiting nonverbal cues, including nodding and eye-contact) in all EP and LEP encounters. Field notes revealed that families asked questions about follow-up appointments and return to school and, additionally, provided unprompted clarification about home pharmacy and home equipment. Some clarifying questions from the family required further action by the nurse (eg, asking the medical team to answer the family's question). Field notes also revealed that when parents of differing English proficiency were in the room, nurses spoke almost exclusively to the English-speaking parent and exhibited limited engagement with the LEP parent. English-speaking parents were used as ad hoc interpreters in these encounters.

DISCUSSION

Through observation of nurse-family discharge communication, we identified opportunities to improve communication with hospitalized pediatric patients and their parents for nurses who review the discharge instructions and, also, for the primary medical team who prepares those written instructions. Our assessment of safe discharge communication revealed that nurses often omit discussion of ED return precautions and medical providers often failed to provide written discharge instructions in a family's primary language. These failures were more pronounced with LEP families than with EP families. Additionally, although use of communication practices that promote family centeredness and family engagement were frequently observed, teach-back was underused regardless of the family's English proficiency. These findings add a detailed and novel understanding of discharge communication between medical providers and pediatric patients and families based on their English proficiency.

For a successful transition home, an accurate and thorough discussion of discharge instructions is critical. This should include a discussion of follow-up appointments, return precautions, and discharge medications.[2,3] Particularly, understanding when to return to the ED after a hospital discharge and how to recognize potentially significant clinical changes in a timely manner are crucial for all patients and caregivers.[20,21] However, in previous ED-based literature, it is suggested that information exchanged at discharge is often incomplete and return precautions

are, often, not discussed.[22] In our findings, it is suggested that discussion of return precautions may also be lacking from inpatient discharges, which may have negative implications for recently hospitalized children who often have not yet returned to a baseline state of health at the time of discharge. Moreover, return precautions were discussed less frequently in LEP encounters. This is concerning because LEP patients and families not only face challenges in communicating with health professionals and navigating the health system because of language and cultural barriers but, also, experience more frequent adverse events and reuse compared with EP patients.[23,24]

Ideally, all of the information components critical to a patient's safe discharge should be reinforced with written discharge documentation that is not only accurate and complete but, also, readable, understandable, and written in the patient's primary language.[3,4] Written discharge instructions improve information recall for ED patients but are likely to play an even greater role after a hospitalization[2,3] because families are overwhelmed with information and emotional stress during inpatient stays[6] and may feel inadequately prepared to continue self-care at home.[4,25] In our observations, 73% of LEP families were discharged with written instructions in English only. This is problematic, given LEP patients and families more often have limited health literacy,[23] face language and cultural barriers that prevent them from navigating the health system effectively,[26,27] and are at an increased risk for worse health outcomes.[24,28] In our study, we found a frequent lack of written instructions in the family's primary language, coupled with a significantly lower number of LEP families being instructed on reasons to return to the ED, which leaves families with critical knowledge gaps regarding postdischarge care plans. Targeted efforts that ensure providers prioritize verbal and written review of return precautions is essential.

Providing family-centered care that optimizes family understanding, engagement, and collaboration is crucial to boost understanding and confidence for

TABLE 2 Quality Discharge Communication Measures: Domains and Components

Characteristics	Overall (n = 140), n (%)	EP (n = 72), n (%)	LEP (n = 68), n (%)	P[a]	OR (95% CI)
Safe discharge					
All components[b]	44 (31)	38 (53)	6 (9)	<.001	11.5 (4.4–30.1)
Diagnosis	99 (71)	52 (72)	47 (69)	.714	NA
Medication[c]	123 (98)	59 (98)	64 (97)	1.000	NA
Home instructions	129 (92)	67 (93)	62 (92)	.760	NA
Follow-up appointments	136 (97)	71 (99)	65 (96)	.356	NA
Reasons to call primary outpatient providers	122 (87)	66 (92)	56 (82)	.131	NA
Reasons to return to ED	78 (56)	49 (68)	29 (43)	.004	NA
Written instructions in primary language	89 (64)	71 (99)	18 (27)	<.001	NA
Family centeredness					
All components	15 (11)	7 (10)	8 (12)	.788	0.8 (0.3–2.4)
Active invitation to family for questions	134 (96)	70 (97)	64 (94)	.432	NA
Teach- and show-back	15 (11)	7 (10)	8 (12)	.788	NA
First-person language[d]	138 (99)	72 (100)	66 (97)	.234	NA
Lay terms[d]	140 (100)	72 (100)	68 (100)	NA	NA
Simple structure, short sentence[d]	140 (100)	72 (100)	68 (100)	NA	NA
Appropriate pace and pauses[d]	140 (100)	72 (100)	68 (100)	NA	NA
Family engagement					
All components	124 (89)	62 (86)	62 (91)	.430	0.6 (0.2–1.8)
Asked questions or provided clarification	125 (89)	62 (86)	63 (93)	.277	NA
Family was included in all discussion[d]	139 (99)	72 (100)	67 (99)	.486	NA
Appear engaged during the encounter	140 (100)	72 (100)	68 (100)	NA	NA

NA, not applicable; —, not applicable.

[a] P values are from χ^2 or Fisher's exact test.

[b] Not all encounters had medications. For encounters with no medications, if the other 6 components were discussed, the encounter was considered to have all components of safe discharge domain.

[c] Fourteen patients did not have discharge medications (N = 126; EP: n = 60; LEP: n = 66).

[d] Initial data were recorded on a 4-point Likert scale that was then dichotomized with the component considered to be present for all the time and majority or most of the time and absent for occasionally or sometime and never.

families to execute postdischarge care plans.[1–3,5] In studies, researchers addressing communication behavior during rounds have identified strategies to improve family centeredness, including the use of lay terms and simple sentence structure, active invitation for questions, and use of teach- and show-back.[5,29,30] These strategies may be particularly relevant at the time of discharge because they empower families to share concerns with the opportunity for medical providers to address concerns in real time. The components of family-centered communication were present in the majority of encounters in our study, with the exception of teach-back. The use of teach- or show-back, an established evidence-based strategy,[31–33] has been associated with improved family comprehension in the hospital during family-centered rounds for all patients.[29]

This strategy, considered helpful by medical providers and interpreters in their communication with families,[16] has the potential to be particularly powerful in communicating with LEP families and could be a target for future endeavors to improve the discharge process for these families.

A perceived lack of engagement from LEP families[16] and decreased participation of LEP families in patient care are often considered as potential drivers of differences in provider behavior.[13,34] With our observations of LEP family engagement at discharge, we add a novel understanding to this topic. We found most families to be actively engaged in the discharge process, with no significant difference between LEP and EP families. Thus, family engagement was not the primary driver of differences seen in communication practices when caring for LEP and EP patients. Although the

overall engagement of families remained high for all patients in our study, LEP parents were observed to be less engaged if they had an English-speaking spouse, and nurses were observed to speak almost exclusively to the parent who was fluent in English. This confirms previously reported findings that medical providers and interpreters perceive LEP parents to be less engaged if they have English-speaking spouses[16] and raises concerns, given the use of family members to interpret in medical settings has, previously, been associated with increased communication errors.[11] In light of this literature, with our findings, we highlight opportunities to better involve all caregivers in the child's discharge communication, particularly when there is a mismatch in English proficiency status among family members.

Our study has several limitations. First, this study was conducted in a nonrandom sample of discharge encounters at a single institution with LEP prevalence below the national average, which limits the generalizability of our findings. However, in our observations, which included a large number of nurse participants, we identified several critical gaps in discharge communication that will be important to investigate further at other institutions nationally. Second, we used a novel observation tool that is not yet fully validated, which may have influenced our findings. To ensure identification of relevant domains and elements during tool development, we used an extensive literature search and peer review from nurses and physicians to establish face validity, and, during data collection, observers took extensive field notes to ensure the capture of additional relevant details that could be missed by this newly developed tool. Some of the observed differences could be due to variation in other nonobserved factors this tool is not designed to capture (eg, AVS preparation process or unconscious biases of medical team), which can be the topics of future study. Third, the observer's presence may have influenced participants to behave in what they perceived to be a more socially desirable manner. To minimize this effect, although the nurse and family were aware that the observer was evaluating the discharge process, they were unaware of the specific objectives or data collected. Finally, despite an adequate sample size, there was variability across important factors and insufficient numbers of nonevents to conduct a multivariable analysis to control for potential confounding variables, and we were unable to link observations with patient outcomes (eg, revisits, medication errors after discharge, and family comprehension), which could be a topic of future study.

CONCLUSIONS

Our observations reveal gaps in the safety and family centeredness of discharge communication for hospitalized pediatric patients and their parents. Particularly, we identified opportunities to increase the use of teach-back for all patients as well as deficiencies in discussion of return criteria and the receipt of appropriately translated discharge instructions that disproportionally affected LEP patients. With our work, we highlight a need for focused efforts to improve the discharge process and medical provider communication for patients and families, particularly those with LEP.[35] Future qualitative studies will be important to gain a deeper understanding of the challenges of the discharge process from the perspectives of LEP families. Additional efforts to determine the association of provider communication at discharge with patient outcomes, including reuse and medication errors, will be critical to fully understanding the implications of our findings.

Acknowledgments

We acknowledge nursing and language access services leadership at Cincinnati Children's Hospital Medical Center, including Brenda Demeritt, BSN, RN, MHA, and Andy Schwieter, for partnership critical for recruitment of participants.

REFERENCES

1. Williams MV, Budnitz T, Coleman EA, et al. The Society of Hospital Medicine Project BOOST Implementation Guide to Improve Care Transitions. 2014. Available at: www.hospitalmedicine.org/Web/Quality_Innovation/Implementation_Toolkits/Project_BOOST/Web/Quality___Innovation/Implementation_Toolkit/Boost/First_Steps/Implementation_Guide.aspx

2. Soong C, Daub S, Lee J, et al. Development of a checklist of safe

discharge practices for hospital patients. *J Hosp Med.* 2013;8(8): 444–449

3. Berry JG, Blaine K, Rogers J, et al. A framework of pediatric hospital discharge care informed by legislation, research, and practice. *JAMA Pediatr.* 2014;168(10):955–962; quiz 965–956

4. Unaka NI, Statile A, Haney J, Beck AF, Brady PW, Jerardi KE. Assessment of readability, understandability, and completeness of pediatric hospital medicine discharge instructions. *J Hosp Med.* 2017;12(2): 98–101

5. Subramony A, Hametz PA, Balmer D. Family-centered rounds in theory and practice: an ethnographic case study. *Acad Pediatr.* 2014;14(2): 200–206

6. Solan LG, Beck AF, Brunswick SA, et al; H2O Study Group. The family perspective on hospital to home transitions: a qualitative study. *Pediatrics.* 2015;136(6). Available at: www.pediatrics.org/cgi/content/full/136/6/e1539

7. Gallagher RA, Porter S, Monuteaux MC, Stack AM. Unscheduled return visits to the emergency department: the impact of language. *Pediatr Emerg Care.* 2013; 29(5):579–583

8. Harris LM, Dreyer BP, Mendelsohn AL, et al. Liquid medication dosing errors by Hispanic parents: role of health literacy and English proficiency. *Acad Pediatr.* 2017;17(4):403–410

9. DeCamp LR, Kuo DZ, Flores G, O'Connor K, Minkovitz CS. Changes in language services use by US pediatricians. *Pediatrics.* 2013;132(2). Available at: www.pediatrics.org/cgi/content/full/132/2/e396

10. Flores G. The impact of medical interpreter services on the quality of health care: a systematic review. *Med Care Res Rev.* 2005;62(3): 255–299

11. Flores G, Abreu M, Barone CP, Bachur R, Lin H. Errors of medical interpretation and their potential clinical consequences: a comparison of professional versus ad hoc versus no interpreters. *Ann Emerg Med.* 2012;60(5):545–553

12. Cora-Bramble D; American Academy of Pediatrics. *Culturally Effective Care Toolkit: Providing Culturally Effective Pediatric Care.* Itasca, IL: American Academy of Pediatrics; 2018

13. Zurca AD, Fisher KR, Flor RJ, et al. Communication with limited English-proficient families in the PICU. *Hosp Pediatr.* 2017;7(1):9–15

14. Feudtner C, Feinstein JA, Zhong W, Hall M, Dai D. Pediatric complex chronic conditions classification system version 2: updated for ICD-10 and complex medical technology dependence and transplantation. *BMC Pediatr.* 2014; 14:199

15. Auger KA, Kenyon CC, Feudtner C, Davis MM. Pediatric hospital discharge interventions to reduce subsequent utilization: a systematic review. *J Hosp Med.* 2014;9(4):251–260

16. Choe AY, Unaka NI, Schondelmeyer AC, Bignall WJR, Vilvens HL, Thomson JE. Inpatient communication barriers and drivers when caring for limited English proficiency children. *J Hosp Med.* 2019; 14(10):607–613

17. White CM, Statile AM, White DL, et al. Using quality improvement to optimise paediatric discharge efficiency. *BMJ Qual Saf.* 2014;23(5):428–436

18. Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N, Conde JG. Research electronic data capture (REDCap)—a metadata-driven methodology and workflow process for providing translational research informatics support. *J Biomed Inform.* 2009;42(2):377–381

19. Agency for Healthcare Research and Quality; Health Care Utilization Project. Clinical Classifications Software (CCS) for ICD-10-PCS (beta version). Available at: https://www.hcup-us.ahrq.gov/toolssoftware/ccs10/ccs10.jsp. Accessed June 11, 2019

20. Hampers LC, Cha S, Gutglass DJ, Binns HJ, Krug SE. Language barriers and resource utilization in a pediatric emergency department. *Pediatrics.* 1999; 103(6, pt 1):1253–1256

21. Glick AF, Farkas JS, Nicholson J, et al. Parental management of discharge instructions: a systematic review. *Pediatrics.* 2017;140(2):e20164165

22. Gutman CK, Cousins L, Gritton J, et al. Professional interpreter use and discharge communication in the pediatric emergency department. *Acad Pediatr.* 2018;18(8):935–943

23. Sentell T, Braun KL. Low health literacy, limited English proficiency, and health status in Asians, Latinos, and other racial/ethnic groups in California. *J Health Commun.* 2012;17(suppl 3): 82–99

24. Khan A, Coffey M, Litterer KP, et al. Families as partners in hospital error and adverse event surveillance. *JAMA Pediatr.* 2017;171(4):372–381

25. Unaka NI, Statile AM, Choe A, Shonna Yin H. Addressing health literacy in the inpatient setting. *Curr Treat Options Pediatr.* 2018;4(2):283–299

26. Flores G. Language barriers to health care in the United States. *N Engl J Med.* 2006;355(3):229–231

27. Flores G, Tomany-Korman SC. The language spoken at home and disparities in medical and dental health, access to care, and use of services in US children. [published correction appears in *Pediatrics.* 2009;124(4):1265]. *Pediatrics.* 2008;121(6). Available at: www.pediatrics.org/cgi/content/full/121/6/e1703

28. Lion KC, Rafton SA, Shafii J, et al. Association between language, serious adverse events, and length of stay among hospitalized children. *Hosp Pediatr.* 2013;3(3):219–225

29. Lion KC, Mangione-Smith R, Martyn M, Hencz P, Fernandez J, Tamura G. Comprehension on family-centered rounds for limited English proficient families. *Acad Pediatr.* 2013;13(3): 236–242

30. Pickel S, Shen MW, Hovinga C. Look who's talking: comparing perceptions versus direct observations in family-centered

rounds. *Hosp Pediatr.* 2016;6(7): 387–393

31. Starmer AJ, Spector ND, Srivastava R, et al; I-PASS Study Group. Changes in medical errors after implementation of a handoff program. *N Engl J Med.* 2014; 371(19):1803–1812

32. Jager AJ, Wynia MK. Who gets a teach-back? Patient-reported incidence of experiencing a teach-back. *J Health Commun.* 2012;17(suppl 3):294–302

33. Kornburger C, Gibson C, Sadowski S, Maletta K, Klingbeil C. Using "teach-back" to promote a safe transition from hospital to home: an evidence-based approach to improving the discharge process. *J Pediatr Nurs.* 2013;28(3): 282–291

34. Levin AB, Fisher KR, Cato KD, Zurca AD, October TW. An evaluation of family-centered rounds in the PICU: room for improvement suggested by families and providers. *Pediatr Crit Care Med.* 2015;16(9):801–807

35. Lion KC, Raphael JL. Partnering health disparities research with quality improvement science in pediatrics. *Pediatrics.* 2015;135(2):354–361