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Research Paper

Hospital discharge preparedness for patients with limited English proficiency: A mixed methods study of bedside interpreter-phones

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ABSTRACT

Objective: Assess effects of a bedside interpreter-phone intervention on hospital discharge preparedness among patients with limited English proficiency (LEP).
Methods: Mixed-methods study compared patient-reported discharge preparedness and knowledge of medications and follow-up appointments among 189 Chinese- and Spanish-speakers before (n = 94) and after (n = 95) bedside interpreter-phone implementation, and examined nurse and resident-physician interpreter-phone utilization through focus groups.
Results: Pre-post discharge preparedness (Care Transitions Measure mean 77.2 vs. 78.5; p = 0.62) and patient-reported knowledge of follow-up appointments, discharge medication administration and side effects did not differ significantly. Pre-post knowledge of medication purpose increased in bivariate (88% vs. 97%, p = 0.02) and propensity score adjusted analyses [aOR (adjusted odds ratio), 4.49; 95% CI, 1.09–18.4]. Nurses and physicians reported using interpreter-phones infrequently for discharge communication, preferring in-person interpreters for complex discharges and direct communication with family for routine discharges. Post-implementation patients reported continued use of ad-hoc family interpreters (43%) or no interpretation at all (22%).
Conclusion: Implementation of a bedside interpreter-phone systems intervention did not consistently improve patient-reported measures of discharge preparedness, possibly due to limited uptake during discharges.
Practice implications: Hospital systems must better understand clinician preferences for discharge communication to successfully increase professional interpretation and shift culture away from using family members as interpreters.

1. Introduction

Effective communication and education regarding new diagnoses, medication changes, and follow-up plans through counseling is a critical component of hospital discharge [1]. Immediately after discharge, patients are at high risk of preventable adverse events and hospital readmissions, primarily due to adverse medication events [2,3]. Additionally, early follow-up appointments for patients after hospitalization for chronic medical conditions have been associated with lower risk of hospital readmission [4,5]. While not all adverse events are preventable, poor communication of medication changes and follow-up appointments during hospital discharge is likely to contribute to preventable readmissions.

Over 25 million people in the United States (U.S.) speak English "less than very well" and have limited English proficiency (LEP) [6]; similar language proficiency limitations also affect patients worldwide [7]. Language barriers between clinicians and patients can impede effective communication and patient comprehension of health-related information, placing patients at heightened risk of adverse events after hospital discharge [8,9]. Previous studies demonstrated that hospitalized patients with LEP experience significant disparities in patient safety and outcomes of care. Compared to English-speakers, patients with LEP are more likely to have serious adverse events during hospitalization, particularly due to communication errors [10], and greater risk of 30-day readmission compared with English speakers [11,12]. Patients with

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LEP are also less likely to understand information contained in hospital discharge instructions including medication category and purpose and follow-up appointments [13].

Our prior systematic review found that professional interpreters improved patient-clinician communication for patients with LEP including decreased communication errors, increased patient comprehension and increased patient satisfaction with communication [14]. Professional interpretation at discharge was also associated with equal adherence to emergency department discharge instructions and comparable understanding of hospital discharge instructions compared with English speakers [13,14]. Importantly, professional interpretation, as compared to ad-hoc interpretation, resulted in significantly greater improvements in patient care, approaching the level of care of English speakers.

Regulations from the U.S. Department of Health and Human Services and Office for Civil Rights require hospitals receiving government funding to provide language access, including professional interpreters, for patients with LEP [15]. However, multiple U.S. studies have demonstrated low rates of professional interpreter utilization during hospital encounters [16–20]. Clinician-reported barriers to use of professional interpreters in the hospital include time constraints and lack of immediate interpreter availability [21]. While best practices to overcome these barriers remain unclear, previous studies by our group demonstrated significant improvements in professional interpreter utilization [22], readmission rates [23], and understanding of informed consent [24] among patients with LEP after implementation of dual-handset phones that provided easy access to bedside professional interpretation. By improving access to professional interpreters, bedside interpreter-phones address barriers cited by clinicians and could be an effective method to increase professional interpretation during hospital discharge counseling [23]. Therefore, we investigated the implementation and impact of bedside interpreter-phones on the hospital discharge process, which we hypothesized would result in improved patient-reported preparation for discharge and medication and follow-up appointment knowledge among patients with LEP.

2. Methods

2.1. Study population and procedures

We prospectively recruited hospitalized patients from the cardiovascular, general surgery and orthopedic surgery floors who were primarily Chinese (Cantonese or Mandarin) or Spanish speaking and age 40 or older. Recruitment and baseline interviews were conducted during two time periods: a 6-month period before (June-November 2012) and a 6-month period after (March-August 2013) system-wide implementation of the bedside interpreter-phone intervention, which began in December 2012. Recruitment for the post-intervention phase began 3 months after interpreter-phone implementation to allow for integration of the bedside interpreter-phones into the clinical workflow. For this analysis, we included all enrolled participants discharged (non-deceased) from the hospital who also participated in a follow-up interview 3 weeks after discharge.

Bilingual-bicultural research assistants identified eligible patients daily by reviewing the floor census lists and preferred language in the medical record. Using baseline structured interviews with patients during hospitalization, research assistants administered a screening questionnaire that included patient age, a validated LEP identification algorithm [25], and the Mini-Cog cognitive screen [26]. We excluded patients with cognitive impairment, unless they otherwise met inclusion criteria and a primary caregiver consented to participate in the study as the patient's surrogate, in which case the surrogate was interviewed in their preferred language and answered baseline and follow-up surveys on behalf of the patient. Informed consent for patients and surrogates was obtained in their preferred language.

Outcomes were ascertained through structured follow-up telephone interviews conducted by trained bilingual research assistants after hospital discharge. We attempted up to three contacts with participants starting three weeks post-discharge. If we were unable to reach an individual in the subsequent one month, we stopped calling. If a caregiver surrogate was interviewed at baseline, then the follow-up interview was conducted with the surrogate. If a patient indicated that a non-surrogate caregiver alone was given medication or follow-up appointment instructions, we called that caregiver and used his/her responses to ascertain outcomes. The study was approved by the institutional review board for the participating hospital.

2.2. Bedside interpreter intervention

The bedside interpreter intervention has been previously described [24]. In brief, the intervention consisted of a dual-handset interpreter-phone installed at the bedside in every room with programmed buttons enabling 24-h access to a professional interpreter for more than 100 languages in less than one minute. The dual-handset phones allow a medical team member to speak into one handset and the patient to speak into another handset while a third-party professional interprets the conversation from a remote location. Prior to intervention implementation, in-person staff interpreters could be scheduled during weekdays from 8am to 5pm and one to three dual-handset interpreter-phones were available per floor. The pre-implementation interpreter-phones functioned similarly to the post-implementation phones but were not located at the bedside and had to be brought to the patient's room.

2.3. Measures

Baseline patient-reported covariates included patient age, sex, primary language, educational attainment, health literacy, general health prior to hospitalization, preferred language and English proficiency. Health literacy was defined as inadequate or adequate using a published, validated screening and classification tool [27].

Post-discharge, for patients who reported receiving discharge medication instructions, we asked patients/surrogates about clinician language concordance and professional and untrained ad-hoc interpreter use during those instructions. Medication instruction discussions were categorized as concordant if the patient reported that the healthcare team member spoke their non-English language well or very well. All others were considered discordant.

The patient's principal discharge diagnosis and follow-up appointment information were collected through chart review by trained abstractors; diagnoses were categorized using Healthcare Cost and Utilization Project classifications [28]. Additional variables collected and used for propensity score estimation are listed in the Appendix.

Outcomes included patient-reported measures obtained during the post-discharge follow-up interview. First, we examined the mean score on the 15-item Care Transitions Measure (CTM), which has been validated in multi-ethnic populations and assesses discharge preparedness from the patient perspective [29]. The overall raw CTM score was linearly transformed to a 0–100 scale [30]. Second, we examined single items of the CTM ascertaining understanding of discharge medication purpose, administration and side effects. Single item CTM measures included knowledge of medication purpose, administration, and side effects and were scored in standardized fashion using 4 ordered response options

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