

Parental Language and Return Visits to the Emergency Department After Discharge

Margaret E. Samuels-Kalow, MD, MPhil,* Anne M. Stack, MD, †
Kendra Amico, MD, MPhil, ‡ and Stephen C. Porter, MD, MPH§||

Objective: Return visits to the emergency department (ED) are used as a marker of quality of care. Limited English proficiency, along with other demographic and disease-specific factors, has been associated with increased risk of return visit, but the relationship between language, short-term return visits, and overall ED use has not been well characterized.

Methods: This is a planned secondary analysis of a prospective cohort examining the ED discharge process for English- or Spanish-speaking parents of children aged 2 months to 2 years with fever and/or respiratory illness. At 1 year after the index visit, a standardized chart review was performed. The primary outcome was the number of ED visits within 72 hours of the index visit. Multivariable logistic regression was used to examine the relative importance of predictor variables and adjust for confounders.

Results: There were 202 parents eligible for inclusion, of whom 23% were Spanish speaking. In addition, 6.9% of the sample had a return visit within 72 hours. After adjustment for confounders, Spanish language was associated with return visit within 72 hours (odds ratio, 3.49; 95% confidence interval, 1.02–11.90) but decreased risk of a second visit within the year (odds ratio, 0.28; 95% confidence interval, 0.12–0.66).

Conclusion: Spanish-speaking parents are at an increased risk of 72-hour return ED visit but do not seem to be at increased risk of ED use during the year after their ED visit.

Key Words: return visits, Spanish language, high frequency utilization

(*Pediatr Emer Care* 2015;00: 00–00)

Return visits to the emergency department (ED) within 72 hours are a frequently used marker of the quality of care.¹ Return visits within 72 hours have been estimated to account for 2.7% of all ED visits,² and 1 study found that up to 10.4% of children with febrile illness make a nonscheduled return visit to the ED within 7 to 10 days.³ Return visits are usually unscheduled and often do not result in significant new diagnoses.⁴

Previous studies have identified multiple, and occasionally conflicting, factors associated with a return visit to the pediatric ED. These include presence of chronic disease, Medicaid insurance, acuity,⁵ age, time of arrival, recent hospital discharge, region of residence,^{2,6} need for testing, and availability of care.⁷ Limited English proficiency is associated with increased risk of return and admission, and this relationship remained significant after controlling for age, acuity, and time of day.⁸ Insurance, access to care,^{9,10} and health literacy¹¹ have also been associated with increased return visits and increased ED use. However, the relationship

between communication factors, short-term return visits, and overall ED use has not been well characterized.

The goal of this analysis was to examine the relationship of parental language, 72-hour return visits, and overall ED use during the subsequent year.

METHODS

This is a planned secondary analysis of a prospective cohort study that examined ED discharge processes.¹² English- or Spanish-speaking parents of children aged 2 months to 2 years with fever and/or respiratory illness were enrolled from November 2010 through May 2011 in a single tertiary care pediatric ED.¹² Families were eligible for inclusion if the child had no more than 1 major medical problem and had a low acuity triage (Emergency Severity Index [ESI] of 3–5 or provider identification, as appropriate for the study). This study was approved by the Committee on Clinical Investigation (protocol no. X09-09-0484).

Parents completed a demographic survey, questions about their preferred language, and the short Test of Functional Health Literacy (sTOFHLA) in their choice of English or Spanish.¹³ With the exception of the sTOFHLA, all questions were administered verbally to the parent by a bilingual research assistant in the parent's preferred language.

Parents were asked to identify their child's primary pediatrician, and a research assistant called all offices to find out about evening and weekend availability for visits. At 1 year after the index visit, a standardized chart review was performed, abstracting data on each visit that had occurred during that year. The primary outcome was the number of ED visits within 72 hours of the index visit, and the secondary outcomes were hospitalization at the return visit and the total number of ED visits for the year. Given previous data demonstrating the difficulty of ascertaining the necessity of ED care from chart review of diagnosis,¹⁴ we chose to report number of visits alone without codifying the diagnosis and appropriateness of each visit.

Study data were managed using REDCap electronic data capture tools hosted at Children's Hospital Boston.¹⁵ Parents were defined as Spanish speaking if their answer to "What language do you speak primarily?" was "Spanish" or "Other, but fluent in Spanish." Standard cut points were used to divide sTOFHLA scores into inadequate, moderate, and adequate health literacy.¹⁶ Primary care pediatricians (PCPs) were considered to have extended hours if they were open until 7 PM on at least 1 weekday or open at least 1 weekend day. Acuity was measured using the 5-level ESI triage system, which was then collapsed into 2 categories—emergent/urgent (ESI, 2 or 3) and nonurgent (ESI, 4 and 5). High use was defined as 4 or more ED visits within the study year.¹⁷

Chi-square tests were used to examine univariate associations between potential predictor variables and the outcomes of interest. Multivariable logistic regression was used to examine the relative importance of predictor variables and adjust for pre-specified confounders including acuity, insurance status, PCP availability, and age of the child. We collected data on health literacy because of our initial intent to include it in the model, but

From the *Children's Hospital of Philadelphia, Philadelphia, PA; †Children's Hospital Boston; and ‡Harvard Affiliated Emergency Medicine Residency (BWH/MGH), Boston, MA; and §The Hospital for Sick Children; and ||Department of Pediatrics, University of Toronto, Toronto, Canada.

Disclosure: The authors declare no conflict of interest.

Reprints: Margaret Samuels-Kalow, MD, MPhil, Division of Emergency Medicine, Children's Hospital of Philadelphia, 3400 Civic Center Blvd, Philadelphia, PA 19104 (e-mail: samuelskalowm@email.chop.edu).

Supported by the Program for Patient Safety and Quality, Children's Hospital Boston.

Presented at PAS and SAEM 2013.

Copyright © 2015 Wolters Kluwer Health, Inc. All rights reserved.

ISSN: 0749-5161

because of the limited distribution of health literacy scores (Table 1), we were not able to include it in the final analysis. Analyses were completed in STATA version 13.¹⁹

RESULTS

The original study screened 259 patients of whom 202 were eligible, consented, and discharged on the initial visit. Forty-six (23%) were Spanish speaking. Ninety-one (45%) of the patients had only a single (index) ED visit. There were 38 patients (18.8%) with 2 visits, 32 (15.8%) with 3 visits, and 41 (20.4%) with 4 or more visits.

The mean age of children in the study was 11.2 (SE, 0.46) months. Ninety-four (56%) were triage level 4 or 5. Seven (4%) parents had marginal or inadequate health literacy. Sixty-two (30.7%) had private insurance, and 146 (72%) of the patients had access to a PCP with extended hours. There were 4 patients (2%) for whom we were unable to reach the PCP and 3 (1.5%) who reported no PCP. Those patients were considered not to have access to PCP with extended hours. Table 1 shows the demographics of the study population by primary language.

Of the 202 patients in the cohort, 14 (6.9%) had a second visit within 72 hours. Eight of the 156 English-speaking families returned within 72 hours versus 6 of the 46 Spanish-speaking families. Spanish language was not associated with return visit within 72 hours on univariate analysis (odds ratio [OR], 2.76; 95% confidence interval [CI], 0.91–8.46). After adjustment for age, acuity of initial visit, insurance, and availability of extended hours, Spanish language was associated with return visit within 72 hours (OR, 3.49; 95% CI, 1.02–11.90).

For the patients with a return visit within 72 hours, Spanish language was not associated with admission on return visit (OR, 1.67; 95% CI, 0.19–14.27) on univariate analysis. Because of small sample sizes, we were unable to construct a multivariate model for admission among the subset of patients with a second visit in 72 hours (n = 14).

Overall, 111 (55%) of the 202 patients had a second ED visit at any point during the year. Spanish language was not significantly

associated with any revisit on univariate analysis (OR, 0.62; 95% CI, 0.32–1.19). After adjustment for age, acuity, insurance, and extended hours, Spanish language was associated with a decreased risk of a second visit within the year (OR, 0.28; 95% CI, 0.12–0.66).

Forty-one (20%) of 202 of the cohort had 4 or more visits to the ED during the study year and were therefore defined as having high use of ED services. Of those, 10 (24%) of 41 spoke Spanish. Spanish language was not associated with high use of ED services (OR, 1.12; 95% CI, 0.51–2.50) on univariate analysis, nor after adjustment for age, acuity, insurance, and extended hours (OR, 0.54; 95% CI, 0.19–1.49).

DISCUSSION

In this cohort of young patients with an initial presentation of fever and/or respiratory illness, Spanish language was associated with return visit within 72 hours after adjustment for potential confounders. However, Spanish language was not associated with hospital admission on 72-hour return visit, increased overall likelihood of having a second visit within 1 year, or high use of the ED. In fact, Spanish language was associated with a decreased risk of a second ED visit during the study year. Taken together, these data suggest a period of short-term vulnerability after ED discharge rather than a pattern of high use of ED services.

Previous studies have reported approximately 3.5% return visit rates within 48 hours⁴ and 5.2% within 72 hours.⁶ Understanding the etiology of these return visits and reducing those that are preventable could therefore have a significant impact on ED use. Previous literature suggests that patients frequently do not understand their discharge instructions and may not recognize comprehension deficits.²⁰ Written instructions at an appropriate health literacy level are an important baseline.^{21,22} However, written instructions alone seem inadequate to decrease the number of unneeded return visits,²³ suggesting an important role for verbal communication at the time of discharge. Standardized verbal instruction has been shown to improve comprehension in the pediatric ED,²⁴ but studies of ED communication show that verbal discharge instructions are frequently incomplete and very brief.²⁵ Our previous work has shown significant differences in comprehension between English- and Spanish-speaking parents after ED discharge that remained despite adjustment for interpretation.¹²

Previous literature has suggested that families who do not contact their PCP before hospitalization are at increased risk of a preventable hospitalization,²⁶ and access to care may be associated with decreased ED use.⁹ More recent work has shown an association between low density of primary care and increased rates of nonurgent ED visits.²⁷ However, intensive ED efforts to link patients to a PCP have not resulted in reduced numbers of ED visits^{28,29} or improvement in outcomes.²⁸ In this cohort, Spanish language was associated with return visit within 72 hours, after adjustment for confounders and the availability of extended hours at the PCP. Our results suggest that access to a PCP alone is insufficient to mediate the relationship between ED discharge and post-ED visit vulnerability.

The cohort we report on here allows for an important advance in understanding how communication and access to primary care influence return visits for emergency care. Unlike the administrative data that have primarily been used to examine ED revisits, we are able to directly examine the contribution of parental self-reported language, rather than relying on a language flag in a medical record or documentation of interpreter usage, which may not well reflect underlying language preferences and fluency. We are also able to link patients to their identified PCP and the availability of extended hours at that practice as a measure of access to primary care.

TABLE 1. Study Population

		English Speakers		Spanish Speakers		P
		Mean	SE	Mean	SE	
Age of child, mo*		11.2	0.52	11.4	0.90	0.71
		N	%	N	%	
Acuity	ESI, 4 or 5	71	54.4	23	65.7	0.191
	ESI, 2 or 3	62	46.6	12	34.3	
Insurance status	Private	58	37.2	4	8.7	<0.001
	Public or no insurance†	98	62.8	42	91.3	
PCP	Extended hours	108	69.2	38	82.6	0.075
	No extended hours, no PCP, or unable to reach	48	30.8	8	17.4	
Health literacy	Adequate	135	98.5	32	86.5	0.004
	Marginal	1	0.73	3	8.1	
	Inadequate	1	0.73	2	5.4	

*Two-sample Wilcoxon rank sum (Mann-Whitney) test.

†There was only 1 patient without insurance/using free care. (This is consistent with the 99.8% coverage of children reported in Massachusetts.)¹⁸

As this study was a secondary analysis of an existing cohort, the analysis is limited by small sample size and inability to conclusively determine whether the visit within 72 hours was related to the index visit complaint. We also were unable to characterize attempts to access PCP before use or report on measures of attachment to PCP. Patients with limited English proficiency have been previously found to be at increased risk of 72-hour return visit with admission,⁸ which was not replicated in our age and diagnosis-defined cohort, potentially because of small numbers or preferential recruitment of lower acuity patients. It is also worth noting that Massachusetts has a smaller portion of uninsured children than many other states,¹⁸ which may affect use practices.

Previous interventions to reduce 72-hour return visits have met with mixed success.^{23,30} These data suggest a potential important role for communication at the time of discharge, given the association between language and short-term return visits in patients who are not at increased risk for overall ED visits or high ED use. Further investigations should target improvements in ED communication practices as a potential method of decreasing unnecessary return visits.

CONCLUSIONS

Spanish-speaking parents are at an increased risk of 72-hour return ED visit but do not seem to be at increased risk of ED use during the year after their ED visit. Interventions to address ED revisits should address communication factors including parental language.

REFERENCES

- Adekoya N. Patients seen in emergency departments who had a prior visit within the previous 72 h-National Hospital Ambulatory Medical Care Survey, 2002. *Public Health*. 2005;119:914–918.
- Cho CS, Shapiro DJ, Cabana MD, et al. A national depiction of children with return visits to the emergency department within 72 hours, 2001–2007. *Pediatr Emerg Care*. 2012;28:606–610.
- Mistry RD, Stevens MW, Gorelick MH. Short-term outcomes of pediatric emergency department febrile illnesses. *Pediatr Emerg Care*. 2007;23:617–623.
- Alessandrini EA, Lavelle JM, Grenfell SM, et al. Return visits to a pediatric emergency department. *Pediatr Emerg Care*. 2004;20:166–171.
- Jacobstein CR, Alessandrini EA, Lavelle JM, et al. Unscheduled revisits to a pediatric emergency department: risk factors for children with fever or infection-related complaints. *Pediatr Emerg Care*. 2005;21:816–821.
- Goldman RD, Ong M, Macpherson A. Unscheduled return visits to the pediatric emergency department-one-year experience. *Pediatr Emerg Care*. 2006;22:545–549.
- Fieldston ES, Alpern ER, Nadel FM, et al. A qualitative assessment of reasons for nonurgent visits to the emergency department: parent and health professional opinions. *Pediatr Emerg Care*. 2012;28:220–225.
- Gallagher RA, Porter S, Monuteaux MC, et al. Unscheduled return visits to the emergency department: the impact of language. *Pediatr Emerg Care*. 2013;29:579–583.
- Johnson WG, Rimsza ME. The effects of access to pediatric care and insurance coverage on emergency department utilization. *Pediatrics*. 2004;113:483–487.
- Piehl MD, Clemens CJ, Joines JD. “Narrowing the gap”: decreasing emergency department use by children enrolled in the Medicaid program by improving access to primary care. *Arch Pediatr Adolesc Med*. 2000;154:791–795.
- Morrison AK, Myrvik MP, Brousseau DC, et al. The relationship between parent health literacy and pediatric emergency department utilization: a systematic review. *Acad Pediatr*. 2013;13:421–429.
- Samuels-Kalow ME, Stack AM, Porter SC. Parental language and dosing errors after discharge from the pediatric emergency department. *Pediatr Emerg Care*. 2013;29:982–987.
- Parker RM, Baker DW, Williams MV, et al. The test of functional health literacy in adults: a new instrument for measuring patients' literacy skills. *J Gen Intern Med*. 1995;10:537–541.
- Raven MC, Lowe RA, Maselli J, et al. Comparison of presenting complaint vs discharge diagnosis for identifying “nonemergency” emergency department visits. *JAMA*. 2013;309:1145–1153.
- Harris PA, Taylor R, Thielke R, et al. Research electronic data capture (REDCap)—a metadata-driven methodology and workflow process for providing translational research informatics support. *J Biomed Inform*. 2009;42:377–381.
- Nurss JR, Parker RM, Williams MV, et al. *TOFHLA: Test of Functional Health Literacy in Adults*. Snow Camp, NC: Peppercorn Books & Press; 1995.
- Sun BC, Burstin HR, Brennan TA. Predictors and outcomes of frequent emergency department users. *Acad Emerg Med*. 2003;10:320–328.
- Massachusetts Division of Health Care Finance and Policy. *Health Insurance Coverage in Massachusetts: Results from the 2008–2010 Massachusetts Health Insurance Surveys*. 2010.
- Intercooled Stata for Macintosh*. 13th ed. College Station, TX: Stata Corporation.
- Engel KG, Heisler M, Smith DM, et al. Patient comprehension of emergency department care and instructions: are patients aware of when they do not understand? *Ann Emerg Med*. 2009;53:454.e15–461.e15.
- Jolly BT, Scott JL, Sanford SM. Simplification of emergency department discharge instructions improves patient comprehension. *Ann Emerg Med*. 1995;26:443–446.
- Samuels-Kalow ME, Stack AM, Porter SC. Effective discharge communication in the emergency department. *Ann Emerg Med*. 2012;60:152–159.
- Lawrence LM, Jenkins CA, Zhou C, et al. The effect of diagnosis-specific computerized discharge instructions on 72-hour return visits to the pediatric emergency department. *Pediatr Emerg Care*. 2009;25:733–738.
- Isaacman DJ, Purvis K, Gyuro J, et al. Standardized instructions: do they improve communication of discharge information from the emergency department? *Pediatrics*. 1992;89:1204–1208.
- Vashi A, Rhodes KV. “Sign right here and you're good to go”: a content analysis of audiotaped emergency department discharge instructions. *Ann Emerg Med*. 2011;57:315–322.
- Flores G, Abreu M, Tomany-Korman S, et al. Keeping children with asthma out of hospitals: parents' and physicians' perspectives on how pediatric asthma hospitalizations can be prevented. *Pediatrics*. 2005;116:957–965.
- Mathison DJ, Chamberlain JM, Cowan NM, et al. Primary care spatial density and nonurgent emergency department utilization: a new methodology for evaluating access to care. *Acad Pediatr*. 2013;13:278–285.
- Zorc JJ, Scarfone RJ, Li Y, et al. Scheduled follow-up after a pediatric emergency department visit for asthma: a randomized trial. *Pediatrics*. 2003;111:495–502.
- Doran KM, Colucci AC, Hessler RA, et al. An intervention connecting low-acuity emergency department patients with primary care: effect on future primary care linkage. *Ann Emerg Med*. 2012;61:312.e7–321.e7.
- Chande VT, Wyss N, Exum V. Educational interventions to alter pediatric emergency department utilization patterns. *Arch Pediatr Adolesc Med*. 1996;150:525–528.