

# Patient Satisfaction with Different Interpreting Methods: A Randomized Controlled Trial

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**BACKGROUND:** Growth of the foreign-born population in the U.S. has led to increasing numbers of limited-English-proficient (LEP) patients. Innovative medical interpreting strategies, including remote simultaneous medical interpreting (RSMI), have arisen to address the language barrier. This study evaluates the impact of interpreting method on patient satisfaction.

**METHODS:** 1,276 English-, Spanish-, Mandarin-, and Cantonese-speaking patients attending the primary care clinic and emergency department of a large New York City municipal hospital were screened for enrollment in a randomized controlled trial. Language-discordant patients were randomized to RSMI or usual and customary (U&C) interpreting. Patients with language-concordant providers received usual care. Demographic and patient satisfaction questionnaires were administered to all participants.

**RESULTS:** 541 patients were language-concordant with their providers and not randomized; 371 were randomized to RSMI, 167 of whom were exposed to RSMI; and 364 were randomized to U&C, 198 of whom were exposed to U&C. Patients randomized to RSMI were more likely than those with U&C to think doctors treated them with respect (RSMI 71%, U&C 64%,  $p < 0.05$ ), but they did not differ in other measures of physician communication/care. In a linear regression analysis, exposure to RSMI was significantly associated with an increase in overall satisfaction with physician communication/care ( $\beta$  0.10, 95% CI 0.02–0.18, scale 0–1.0). Patients randomized to RSMI were more likely to think the interpreting method protected their privacy (RSMI 51%, U&C 38%,  $p < 0.05$ ). Patients randomized to either arm of interpretation reported less comprehension and satisfaction than patients in language-concordant encounters.

**CONCLUSIONS:** While not a substitute for language-concordant providers, RSMI can improve patient satisfaction and privacy among LEP patients. Implementing RSMI should be considered an important component of a multipronged approach to addressing language barriers in health care.

**KEY WORDS:** immigrant health; satisfaction; language.

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## BACKGROUND

Growth of the foreign-born population in the United States has led to increasing numbers of limited-English-proficient (LEP) patients. The LEP population (defined as speaking English less than very well) increased from 14 million in 1990 to 21.4 million in 2000.<sup>1</sup> Language discordance between patients and their medical providers is a major factor impeding effective provision of health care.<sup>2–10</sup>

Communication barriers can adversely affect health services access, health outcomes, and patient satisfaction.<sup>2,3,11,12</sup> LEP patients are less likely to have a usual source of medical care<sup>4</sup> and have lower utilization of preventive services,<sup>5,6</sup> higher usage of unnecessary diagnostic testing,<sup>7</sup> and worse adherence with medical advice<sup>9</sup> and follow-up care.<sup>8</sup> Baker et al. showed that Latino patients in emergency care who were unable to get an interpreter were less satisfied with their providers.<sup>13</sup> Dissatisfied patients are less likely to follow their medical regimens,<sup>11,14–16</sup> whereas satisfaction appears to have a positive impact on clinical outcomes<sup>17–20</sup> and continuity of care.<sup>21–24</sup>

No studies have sufficiently examined how patient satisfaction varies by interpreting method. Medical interpreting can be either consecutive or simultaneous. In consecutive interpreting, the interpreting occurs after the speaker has completed speaking,<sup>25</sup> necessitating that the speakers pause for the interpreter. In simultaneous interpreting, the interpreter interprets at the same time as s/he is hearing the original speech.<sup>25</sup> Interpreting can also be proximate or remote. Proximate interpreting involves an interpreter who is physically present at the encounter. In remote interpreting, the interpreter is outside the room of the encounter. Medical interpreting is usually proximate consecutive (PCMI) or over-the-telephone consecutive [remote consecutive medical interpreting (RCMI)]; less commonly utilized is the newer method of remote simultaneous (so-called United Nations-style) medical interpreting (RSMI).

RSMI has not yet been widely utilized, as it has only recently been made commercially available. Currently, the service is being provided to three hospitals and their satellite facilities in New York City. RSMI is similar to a voice-over; the interpretation is provided within milliseconds of the original speech. The trained medical interpreters are located remotely and communicate via wireless headsets with microphones worn by the provider and the patient. The wireless headsets and microphones offer mobility to the patient and provider but are not necessary. The same interpreting method can be accomplished using two regular phone lines. The current wait time to be

connected is comparable to any commercially available telephone service (RCMI), as are the per-minute rates. Privacy is potentially increased because of the remote, audio-only, nature of the interpreting method.

Regardless of the interpreting method, use of professionally trained interpreters yields higher patient satisfaction than use of nonprofessionals.<sup>26-28</sup> An earlier randomized controlled study of RSMI, involving families during a well-baby visit, showed high levels of satisfaction with this interpreting method.<sup>25</sup> Patients were randomized to either RSMI or PCMI for the initial visit and then alternated experimental and control methods in four follow-up visits. An exploratory study that compared patient satisfaction across professional interpreting services found that, generally, patients were most satisfied when the interpreting method was perceived to decrease waiting time and delay.<sup>29</sup> Patients indicated higher satisfaction with the increased sense of privacy conveyed by RSMI but dissatisfaction when technical glitches occurred.

As the health care system decides how to best spend its limited medical interpreting dollars, studies evaluating patient satisfaction, effectiveness, and costs of the various methods are needed. RSMI, by virtue of its simultaneous nature, has the promise to provide a more efficient form of interpreting, but there is a lack of adequate data with regard to patient satisfaction. This study, to our knowledge the first randomized controlled trial of RSMI in adult care, addresses this knowledge gap.

## METHODS

This trial was conducted at the primary care clinic and the urgent care center of the emergency department (ED) at a large New York City municipal hospital. More than half of the hospital's patients prefer to communicate in languages other than English. Spanish, Mandarin, and Cantonese are the most widely spoken languages. Approval for this study was obtained from both the New York University School of Medicine Institutional Review Board and the Hospital Center Research Protocol Group.

### Participants

Primary care clinic patients were recruited between November 2003 and June 2005. Eligible patients were all English-, Spanish-, Mandarin-, and Cantonese-speaking adults (over 18 years old) who presented between the hours of 9 A.M. and 5 P.M. Patients were only eligible to enroll in the study if they were new patients being seen for the first time at the clinic. ED patients were recruited between October 2003 and December 2004. Eligible ED patients were all English and Spanish speaking adults who presented between 9 A.M. and 5 P.M. with symptoms of lower back pain, urinary-tract infection, sore throat, ear pain, or musculoskeletal pain. Patients with these conditions were more likely to be treated in urgent care (rather than critical care) and therefore more likely to be able to fully participate.

Eligible patients were identified by trained bilingual research assistants prior to their encounters with the provider. Bilingual research assistants determined Spanish or Chinese concordance by asking patients if they preferred an interpreter for their medical visit that day. This question was first asked in English, then in Mandarin, Cantonese, or Spanish, to ensure the patient understood the question. If a patient stated that

he/she was comfortable speaking English, the patient encounter was categorized as language-concordant, and the patient was not randomized to an interpreting method. Non-English-speaking patients who were scheduled to see providers fluent in their primary language, determined by provider self-assessment, were also deemed language-concordant and not randomized. All study participants consented to voluntary, uncompensated participation.

### Study Procedure and Measures

This study investigated patient satisfaction with RSMI, the experimental method, compared with usual and customary (U&C) interpreting methods. RSMI interpreters participate in a 60 hour simultaneous medical interpreting training conducted by the Center for Immigrant Health at New York University School of Medicine. U&C methods included PCMI and RCMI. PCMI methods included both trained interpreters (e.g., hospital interpreter services) and ad hoc interpreters (i.e., family, friends, untrained hospital staff, and volunteers). The RCMI method used by study participants was a commercial language line accessed via a landline telephone.

Language-discordant encounters were randomized to RSMI or U&C interpreting, using SPSS v.12 for Windows. We selected several variables to stratify the randomization according to expected variability and strong association with our outcomes of interest. Primary Care Clinic patients were stratified by primary language (Spanish, Mandarin, or Cantonese), health insurance coverage (yes or no), and English fluency. ED patients were stratified by English fluency and insurance coverage. English fluency was determined using the question "How well do you speak English?,"<sup>30</sup> and responses were grouped into two categories "very well"/"well" and "not well"/"not at all". Patients and providers were not aware of allocation, and research assistants were required to call the central study office to determine allocation each time a new patient was enrolled. Providers were informed of patient participation, and their consent was obtained. Research assistants gave the physician a set of RSMI headsets if the patient was randomized to RSMI. If a patient was randomized to U&C, the physician selected an interpreter, or decided not to use one, as he/she usually would. He/she called the hospital interpreter service, called the commercial over-the-telephone interpreting service, found an ad hoc interpreter, or proceeded with the encounter without an interpreter.

An 80-item demographic questionnaire was administered to all study patients prior to their encounters with the provider. After their medical encounters, participants were surveyed by a bilingual research assistant on their satisfaction with their provider, medical care, and interpreter and interpreting method (if used). Data were also collected on the actual method of interpretation received, and, if the interpreting method allocated by randomization was not used, the reasons why. All patient study interviews were conducted in the patients' primary language by bilingual interviewers using study instruments in that language.

To assess satisfaction with physician communication/care, patients were asked (yes/no) if physicians listened to them carefully, if time spent with physicians was adequate, and if they would recommend their physician to a friend. They rated on a four-point scale how well they thought their physicians understood them, understanding of physician instructions

and explanations, and overall quality of medical care. They rated on a five-point scale the level of respect from the physician and overall physician care. For satisfaction with interpretation, patients were queried on a four-point scale about how well the interpreter understood them, how well the interpreter interpreted, and how well patient privacy was protected by the interpreting method. They were asked via a five-point scale about the level of respect from the interpreter. Patients were also queried (yes/no) about whether the interpreter listened to them carefully, whether they would recommend the interpreter used during the visit to a friend, and if they would recommend the method of interpretation to a friend. Where questions involved responses along a scale, a four- or five-bar graph was presented to patients with bars of different heights for each response. This enabled patients to visualize the interval between response choices.

### Statistical Analysis

Analyses were performed according to the interpreting method to which the patient was randomized (intent-to-treat analysis) and according to the interpreting method the patient actually received (analysis of actual interpreting method received). The Chi-square test was used to test for sociodemographic differences between (a) the randomized groups (RSMI and U&C) to

establish the validity of the randomization process, (b) the two randomized arms and the language concordant group to determine whether there were other factors that differed across groups, and (c) the five groups in the analysis of actual interpreting method received (RSMI, U&C trained interpreters only, U&C untrained interpreters, English concordant, and non-English concordant).

As in other patient satisfaction studies,<sup>31</sup> our results were generally skewed towards the higher end of a scale. We therefore grouped all responses other than the highest level together. The Chi-square test was used to test for statistical significance; the Fisher's exact test was used when cell sizes were less than 5.

To create multi-item satisfaction scales to efficiently test the impact of interpreting method, a factor analysis was conducted using the 16 satisfaction items. The factor analyses were run on all 16 items together and separately on those items specific to physicians (nine items) and interpreters (seven items). Two prominent factors were identified, one specific to interaction with the physician and one to interpreter interactions. The composite score for satisfaction with physician communication/care combined five items (How well did you understand your doctor's explanation of medical procedures and test results? How well did you understand your doctor's instructions about follow-up care? How would you rate your doctor in treating you with respect?

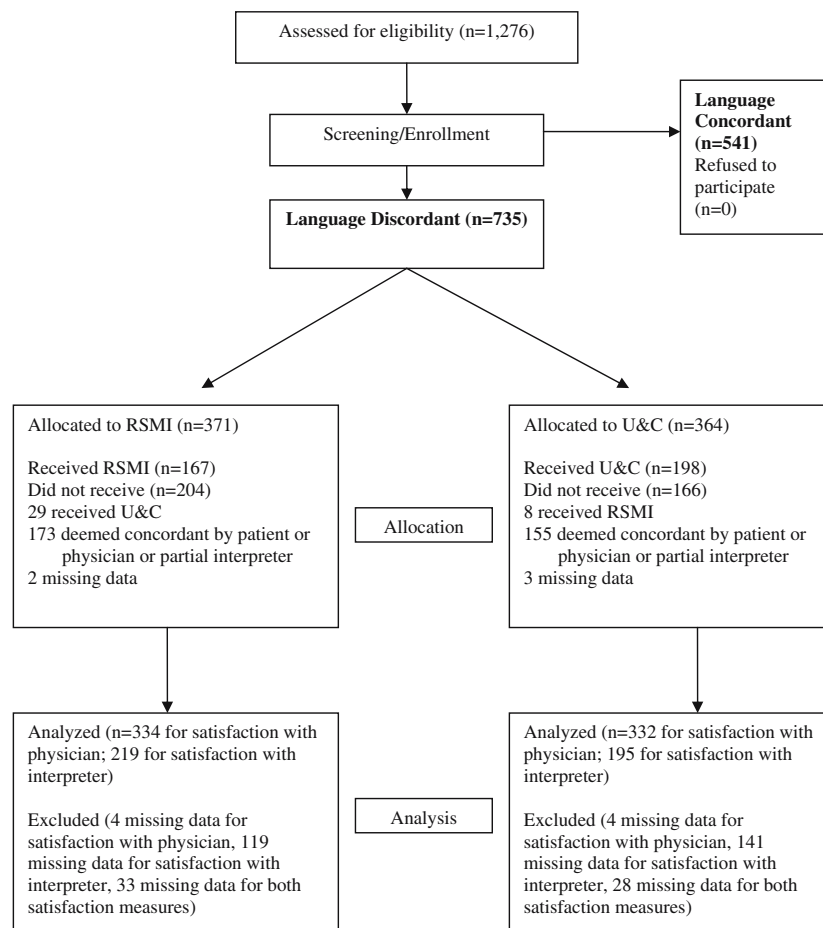


Figure 1. Flowchart: patient enrollment, randomization, and analysis

How would you rate your doctor overall? Overall how satisfied are you with the quality of your medical care today?), which had a Cronbach's alpha coefficient of 0.7692.

Similarly, the composite interpreter score combined four items (How well do you think your interpreter understood you? How would you rate your interpreter in treating you with respect? How well did the interpreter interpret your visit with the doctor? How well do you think this method of interpretation protected your privacy during this visit?), which had a Cronbach's alpha coefficient of 0.7394. Physician or interpreter composite scores were considered missing if two or more questions in the four- or five-item scale were missing. Composite scores were created as sums of individual item scores divided by the highest possible sum (range 0–1). A maximum of one item was permitted to be missing; score denominators were the sum of highest possible scores for all nonmissing items.

In the intent-to-treat analysis of satisfaction measures, RSMI was compared with U&C. In the analysis of actual interpreting method received, the three groups that were compared were RSMI, U&C (trained interpreters only), and language concordant. The U&C untrained group was excluded to avoid biasing the results towards RSMI, which was administered by trained interpreters only.

Linear regression analyses were performed on both composite satisfaction scores. If a given case was missing data for one of the covariates in the regression, it was dropped from the analysis. Regression analyses were performed using both the category of interpreting method to which the patient was randomized (intent-to-treat analysis) and as the category the patient actually received during the encounter (analysis of actual interpreting method received). The conventional  $p < 0.05$  significance level was used.

## RESULTS

Among 1,276 patients screened for enrollment in the randomized controlled trial, 541 were deemed by our protocol to be language-concordant with their provider and, hence, were not randomized to either interpreting method (Fig. 1). Among the 371 who were randomized to RSMI, 167 (45%) actually received RSMI; among the 364 patients randomized to U&C, 198 (54%) actually received U&C. Most of those who did not receive their randomized interpreting method were deemed language-concordant by the treating physician (either the patient spoke English or the physician spoke Spanish, Mandarin, or Cantonese), and consequently proceeded without an interpreter. Interpreter satisfaction data for these patients were not collected.

Randomized patients were mostly younger than age 65, had not completed high school, had resided in the U.S. for 10 years or less, spoke primarily Spanish or English, and had "good" to "fair" self-reported health status. There were no significant differences in sociodemographic characteristics between the randomized groups (Table 1). Sociodemographic characteristics of patients by actual interpreting method received [RSMI ( $n=175$ ), U&C trained interpreters ( $n=165$ ), U&C untrained ( $n=185$ ), English-concordant ( $n=460$ ), non-English-concordant ( $n=291$ )] differed in that English-concordant patients were more highly educated (54% were college-educated vs. 26–39% in the other groups,  $p < 0.05$ ) and more likely to report "excellent" or "good" health status (57% vs. 29–34% in the other groups,  $p < 0.05$ ).

**Table 1. Sociodemographic Characteristics of Enrolled Patients—ED and Primary Care Clinic, Randomized and Language Concordant,  $n$  (%)**

	Randomized Patients ( $n=735$ )		Language-Concordant Patients ( $n=541$ )
	RSMI ( $n=371$ )	U&C ( $n=364$ )	
Gender			
Female	208 (56)	197 (54)	244 (45)*
Male	155 (42)	162 (45)	280 (52)
Age			
17–34	138 (37)	124 (34)	216 (40)
35–64	198 (53)	204 (56)	287 (53)
65+	16 (4)	18 (5)	15 (3)
Education			
<8th	73 (20)	65 (18)	45 (8)*
<HS	110 (30)	111 (30)	73 (13)
HS Grad	52 (14)	55 (15)	112 (21)
College	113 (30)	114 (31)	271 (50)
Years in U.S.			
<1	9 (2)	13 (4)	8 (1)*
1–5	144 (39)	113 (31)	65 (12)
6–10	68 (18)	73 (20)	69 (13)
11+	128 (35)	140 (38)	143 (26)
U.S.-born	4 (1)	4 (1)	125 (23)
Primary language			
Spanish	278 (75)	260 (71)	162 (30)*
Chinese	70 (19)	86 (24)	41 (8)
English	3 (1)	2 (1)	289 (53)
Fluency (speaks English...)			
Very well	0 (0)	1 (0)	139 (26)*
Well	10 (3)	16 (4)	120 (22)
Not well	176 (47)	180 (49)	75 (14)
Not at all	155 (42)	150 (41)	26 (5)
Enrollment site			
Clinic	271 (73)	279 (77)	255 (47)*
ER	100 (27)	85 (23)	286 (53)
Self-reported health status			
Excellent	16 (4)	23 (6)	77 (14)*
Good	104 (28)	100 (27)	209 (39)
Fair	156 (42)	156 (43)	150 (28)
Bad	51 (14)	36 (10)	50 (9)
Very bad	8 (2)	17 (5)	13 (2)

Percentages may not add up to 100% because of missing values. No significant differences found between RSMI and U&C, at a level of  $p < 0.05$ . \*Significant differences at a level of  $p < 0.05$  across all three categories.

## Results by Intention to Treat

For satisfaction with physician communication/care, patients randomized to receive RSMI were more likely than those receiving U&C to rate their physicians "very well" in treating them with respect (71% RSMI vs. 64% U&C,  $p < 0.05$ ) (Table 2). Patients also rated RSMI as better than U&C at protecting their privacy (RSMI 51% vs. U&C 38%,  $p < 0.05$ ) (Table 3). The mean satisfaction with interpreter score was higher for patients in the RSMI group (RSMI 0.528 vs. U&C 0.462,  $p < 0.05$ ) as well. There were no other significant differences between the groups.

## Results by Actual Interpreting Method Received

In the analysis of satisfaction with physician communication/care by actual interpreting method received, patients in the RSMI group were more likely than those in the U&C trained interpreter group to rate their physicians "very well" in treating them with respect (70% RSMI vs. 57% U&C trained,  $p < 0.05$ ).

**Table 2. Satisfaction with Physician Communication/Care, by Interpreting Method**

	Intent-to-treat Analysis (by randomization mode)		Actual Interpreting Method Received		
	U&C	RSMI	U&C Trained	RSMI	Language Concordant
n	364	371	165	175	751
Did your doctor listen carefully?					
Yes	324 (96)	336 (98)	145 (95)	165 (99)	697 (99)*
Did your doctor spend enough time with you?					
Yes	316 (94)	325 (96)	145 (95)	161 (98)	656 (96)
How would you rate your doctor in treating you with respect?					
Very well	213 (64)	242 (71)†	85 (57)	115 (70)‡	527 (75)*
How well do you think your doctor understood you?					
Very well	132 (39)	150 (45)	57 (37)	79 (49)‡	454 (64)*
How well did you understand your doctor's explanation of medical procedures and test results?					
Very well	125 (38)	128 (39)	52 (35)	62 (39)	404 (59)*
How well did you understand your doctor's instructions about follow-up care?					
Very well	125 (38)	134 (41)	48 (33)	60 (38)	436 (63)*
How would you rate your doctor overall?					
Very well	178 (54)	195 (59)	72 (48)	91 (56)	436 (63)*
Would your recommend your doctor to a friend?					
Yes	287 (95)	287 (95)	125 (94)	140 (97)	615 (96)
Overall, how satisfied were you with the quality of your medical care?					
Very well	155 (47)	169 (51)	72 (48)	93 (57)	396 (57)
Composite satisfaction with physician communication/care score					
Mean (SD)	0.478 (0.340)	0.514 (0.355)	0.436 (0.330)	0.518 (0.351)‡	0.628 (0.350)*

Denominators for percentages exclude missing values.  
 \*Actual interpreting method received, significant differences between all three groups at a level of  $p < 0.05$ .  
 †Intent-to-treat analysis, significant difference between RSMI and U&C at a level of  $p < 0.05$ .  
 ‡Actual interpreting method received, significant differences between RSMI and U&C trained.

and to think their physicians understood them “very well” (45% RSMI vs. 35% U&C trained,  $p < 0.05$ ) (Table 2). The mean composite satisfaction with physician communication/care score was also higher for patients in the RSMI group (RSMI 0.518 vs. U&C trained 0.436,  $p < 0.05$ ). For most measures of satisfaction with physician communication/care, however, patients in the language-concordant group rated physicians more highly than patients in both the RSMI and U&C trained groups.

For interpreter satisfaction, patients felt RSMI protected their privacy better than U&C trained interpreters (49% RSMI vs. 35% U&C trained,  $p < 0.05$ ). There were no significant differences between the groups among the other measures. (Table 3)

Tables 4 and 5 show composite physician communication/care and interpreter satisfaction scores regressed on the randomized method of interpretation, and on actual interpreting method received. The intent-to-treat analysis, which included patients who did not work with any interpreter, did

**Table 3. Satisfaction with Interpretation, by Interpreting Method**

	Intent-to-treat Analysis (by randomization mode)		Actual Interpreting Method Received	
	U&C	RSMI	U&C Trained	RSMI
n	364	371	165	175
Did your interpreter listen to you carefully?				
Yes	192 (99)	214 (98)	149 (99)	158 (99)
How would you rate your interpreter in treating you with respect?				
Very well	99 (51)	129 (58)	71 (48)	88 (54)
How well do you think your interpreter understood you?				
Very well	95 (48)	111 (50)	70 (45)	73 (45)
How well do you think your interpreter interpreted your visit with the doctor?				
Very Well	98 (50)	124 (56)	76 (50)	90 (55)
How well do you think this method of interpretation protected your privacy?				
Very Well	73 (38)	104 (51)*	52 (35)	74 (49)†
Would you recommend the interpreter to a friend?				
Yes	175 (97)	200 (97)	136 (96)	147 (99)
Would you recommend this method of interpretation to a friend?				
Yes	178 (93)	204 (96)	136 (94)	151 (97)
Composite satisfaction with interpreter score				
Mean (SD)	0.462 (0.368)	0.528 (0.393)*	0.449 (0.365)	0.502 (0.395)

Denominators for percentages exclude missing values and those for whom the response was not applicable (i.e., those who did not receive interpreter services).

\*Intent-to-treat analysis, significant difference between RSMI and U&C at a level of  $p < 0.05$ .

†Actual interpreting method received, significant differences between RSMI and U&C trained at a level of  $p < 0.05$ .

not illustrate a significant association between RSMI and the composite physician communication/care satisfaction score (Table 4). Actual receipt of RSMI, however, was significantly associated with increased satisfaction with physician communication/care compared to receipt of U&C trained interpretation (Table 5). Controlling for other potential explanatory factors (such as a patient's gender, primary language, self-reported health status, or enrollment site) did not significantly reduce this association (coefficient=0.100,  $p = 0.010$ ). The coefficient in this context means that an encounter utilizing RSMI should lead to a satisfaction score that is 10 points higher out of 100 than the average encounter utilizing PCMI or RCMI with trained interpreters. There were no significant differences between groups in satisfaction with interpreter

**Table 4. Linear Regression Analysis of Satisfaction with Physician Communication/Care and Satisfaction with Interpretation Scores, Intent-to-treat Analysis**

	Satisfaction with Physician Communication/Care		Satisfaction with Interpreter	
	Score (m, SD)	$\beta$ (95% CI)*	Score (m, SD)	$\beta$ (95% CI)*
U&C	0.478 (0.340)	Referent	0.462 (0.368)	Referent
RSMI	0.514 (0.355)	0.041 (-0.013, 0.094)	0.528 (0.393)	0.071 (-0.004, 0.145)

\*Adjusted for gender, primary language, self-reported health status, enrollment site

**Table 5. Linear Regression Analysis of Satisfaction with Physician Communication/Care and Satisfaction with Interpretation Scores, by Actual Interpreting Method Received**

	Satisfaction with Physician Communication/Care		Satisfaction with Interpreter	
	Score (m, SD)	$\beta$ (95% CI)*	Score (m, SD)	$\beta$ (95% CI)*
U&C Trained	0.436 (0.330)	Referent	0.449 (0.365)	Referent
RSMI	0.518 (0.351)	0.100 (.024, 0.176)	0.502 (0.395)	0.070 (-0.015, 0.155)
Language concordant	0.628 (0.350)	0.142 (0.076, 0.208)	N/A	N/A

\*Adjusted for gender, primary language, self-reported health status, enrollment site

scores in either the intent-to-treat analysis (Table 4) or in the analysis of actual interpreting method received (Table 5).

## CONCLUSIONS

With the large growth of the foreign-born population in the United States, the study of interpreting strategies outcomes for language-discordant encounters is of great importance. The introduction of RSMI, with its potential for more efficient interpreting because of its simultaneity, compelled studying its impact in relation to U&C interpreting.

In this randomized controlled trial of RSMI vs. U&C interpreting, there were a few areas in which patients in the RSMI group were more satisfied than in the U&C group. Patients felt they were treated with more respect by their physicians and that their privacy was better protected. The exposure analysis revealed similar outcomes. Exposure analysis results are relevant, as patients usually did not receive the randomized method because of language concordance with their physicians, not because of interpreting method preference.

Alarming, all groups reported poor satisfaction with important aspects of doctor-patient communication, in particular, feeling understood by the physician, understanding physicians' explanations of procedures and results, and understanding instructions for follow-up care. However, this was much worse for patients in the interpreted medical encounter, indicating that current interpreting strategies still do not approximate a language-concordant encounter. Among language-concordant patients, dissatisfaction may have been due in part to physician "false fluency", with physicians overestimating their language abilities; to patients' overestimating their English-speaking ability; or to other shortcomings in doctor-patient communication. In a separate study, we found a significantly lower error rate with RSMI compared with U&C interpreting in Spanish-English language-discordant encounters.<sup>32</sup> However, comprehension was still perceived to be poor in our study, suggesting that technical accuracy alone is not sufficient. More studies are needed encompassing other languages and settings to further assess accuracy, efficiency, and patient satisfaction with the different methods of interpretation.

Patient satisfaction in cross-cultural patient-physician interactions is likely related to a constellation of factors, including socioeconomic, culture, race and ethnicity, time, and the logistics and quality of the interpreting method. In previous studies, satisfaction has been shown to have a positive impact on clinical outcomes.<sup>17-20</sup> The results of this study, therefore, have important implications.

RSMI may be particularly useful in clinical situations where sensitive topics are discussed and patient privacy is paramount. The mental health encounter, the discussion of sexual behavior, and the evaluation of sexually transmitted diseases, for example, require a high level of patient comfort with their providers and assurance of privacy.<sup>33,34</sup> The absence of a third party from the actual exam room during an RSMI (or RCM) encounter may remove one potential barrier to patients' willingness to disclose sensitive information.

Our findings suggest that RSMI could be an important component of a multipronged approach to improving patient satisfaction in the interpreted encounter, but also that much more work needs to be done. Professional interpreters, physicians, and patients need more training and education on how best to facilitate the interpreted medical encounter. Further studies need to be conducted on interpreting modalities, and should examine errors, medical outcomes, and costs. Physician-related factors should also be assessed, including physician satisfaction and barriers to utilization. We also need qualitative data to learn more about what specifically detracts from patient satisfaction with interpreting so that appropriate interventions can be developed to address the dissatisfaction documented in this study. Future studies should include additional technology-based interpreting delivery systems, including video and computer-assisted linguistic access.

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**Conflict of Interest:** Two of the authors (FG, JC) have ownership in a company that provides technology solutions for remote simultaneous medical interpreting.

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# The Impact of an Enhanced Interpreter Service Intervention on Hospital Costs and Patient Satisfaction

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**BACKGROUND:** Many health care providers do not provide adequate language access services for their patients who are limited English-speaking because they view the costs of these services as prohibitive. However, little is known about the costs they might bear because of unaddressed language barriers or the costs of providing language access services.

**OBJECTIVE:** To investigate how language barriers and the provision of enhanced interpreter services impact the costs of a hospital stay.

**DESIGN:** Prospective intervention study.

**SETTING:** Public hospital inpatient medicine service.

**PARTICIPANTS:** Three hundred twenty-three adult inpatients: 124 Spanish-speakers whose physicians had access to the enhanced interpreter intervention, 99 Spanish-speakers whose physicians only had access to usual interpreter services, and 100 English-speakers matched to Spanish-speaking participants on age, gender, and admission firm.

**MEASUREMENTS:** Patient satisfaction, hospital length of stay, number of inpatient consultations and radiology tests conducted in the hospital, adherence with follow-up appointments, use of emergency department (ED) services and hospitalizations in the 3 months after discharge, and the costs associated with provision of the intervention and any resulting change in health care utilization.

**RESULTS:** The enhanced interpreter service intervention did not significantly impact any of the measured outcomes or their associated costs. The cost of the enhanced interpreter service was \$234 per Spanish-speaking intervention patient and represented 1.5% of the average hospital cost. Having a Spanish-speaking attending physician significantly increased Spanish-speaking patient satisfaction with physician, overall hospital experience, and reduced ED visits, thereby reducing costs by \$92 per Spanish-speaking patient over the study period.

**CONCLUSION:** The enhanced interpreter service intervention did not significantly increase or decrease hospital costs. Physician-patient language concordance reduced return ED visit and costs. Health care providers need to examine all the cost implications of different language access services before they deem them too costly.

**KEY WORDS:** language barriers; interpreter services; hospital costs; patient satisfaction.

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The conversation between physician and patient has long been recognized to be of diagnostic import and therapeutic benefit. Unfortunately, many patients in the United States cannot benefit from this fundamental interaction because of language barriers. According to Census 2000, more than 46 million people in the United States do not speak English as their primary language and more than 21 million speak English less than "very well".<sup>1</sup> Many of these residents do not receive needed health care or the standard of care because most health care organizations provide inadequate interpreter services.<sup>2-8</sup> Many health care providers do not provide adequate interpretation because of the perceived financial burden.<sup>9,10</sup> However, they neglect to take into account the cost of the consequences of failing to provide adequate interpretation or the potential benefits of improving communication with patients. This may be due in part to the paucity of data documenting these costs and benefits.

We know of only 6 studies to date that have directly set out to measure these costs and benefits. Two studies found that the use of ad hoc interpreting by employees has an opportunity cost for institutions in the form of staff time lost to interpreting.<sup>11,12</sup> Another study, in a pediatric emergency department (ED), found that the presence of a language barrier between physician and parents accounted for a \$38 increase in charges for testing and a 20-minute longer ED stay compared to encounters in which there were no language barriers.<sup>13</sup> Three additional studies have investigated the direct costs and potential cost-savings of providing professional interpreter services. They have found that the cost of these services is quite low relative to most health care costs<sup>14</sup> and that they can reduce the cost of care provided in the ED<sup>15</sup> and follow-up visit charges after ED evaluation.<sup>16</sup> There is still a need for investigations that compare the costs of providing adequate linguistic access services to the cost of *not* providing them, especially in the inpatient setting.

Using a conceptual model developed by the U.S. Department of Health and Human Services' Office of Minority Health to guide research efforts about the costs of language barriers in health care,<sup>17</sup> we undertook a study to (1) provide data on the costs of failing to provide adequate interpreter services and (2) measure the direct costs and cost-offsets of enhanced interpreter services use in the care of Spanish-speaking hospitalized patients. We define adequate interpreter services as those provided by trained and tested interpreters available on-site in a timely manner. Our overall hypothesis was that hospitalized Spanish-speaking patients who cannot readily and adequately communicate with their providers would generate higher inpatient costs compared to those who are able to communicate with their clinicians through the assistance of readily available, trained professional interpreters. Our secondary hypotheses were that Spanish-speaking patients who cannot readily and adequately communicate with their clinicians will be less satisfied with their hospital stay and physician-patient communication; will have higher rates of post discharge ED utilization and hospitalization; and will have poorer adherence with scheduled outpatient visits than patients who had the assistance of a readily available, professional interpreter.

## METHODS

### Setting

The study took place from January 19, 2005 to June 30, 2005 and involved the Internal Medicine service of a large public hospital in the City of Chicago, IL. The Internal Medicine service is organized into 3 firms; the firms consist of equal numbers of attending and resident physicians who work together, on a monthly rotating basis, to care for patients assigned to their firm when they are admitted to the hospital. In any given month, each firm has 4 teams of 5 physicians each (1 attending, 2 residents and 2 interns) who admit patients to the hospital every fourth night. Patients admitted to the medicine service of the hospital are assigned to be under the care of 1 of the 3 firms based on which team is next in line for an admission. This assignment is nonpurposeful and based only on the order of admission. Patients are admitted to the next available hospital bed so there are no geographical firm boundaries.

Two of the 3 firms were randomly selected to participate in the study and an enhanced interpreter intervention was randomly assigned to 1 of these 2 firms. We did not randomize patients to receive the interpreter intervention because it would have been logistically difficult for the interpreters to work across firms and we did not want the intervention to influence the physician practice for those patients not assigned to receive the intervention.

### Study Participants

All patients who were admitted to the study firms during this time period and had a Hispanic surname, or were identified as needing an interpreter by hospital staff were approached by bilingual research staff. These patients were invited to participate if they were 18 years of age or older and stated that they spoke only Spanish or had difficulty communicating in a language other than Spanish. We also recruited English-

speaking (ES) patients admitted to the study firms and matched them to Spanish-speaking participants on gender, age, week of admission, and firm. ES patients were used to control for firm effects not related to the enhanced interpreter services intervention. Patients were excluded from participation in the study if they were unable to consent to participation because of cognitive or mental impairments. All participants received \$20 upon discharge from the hospital. The Institutional Review Board of the Cook County Bureau of Health Services approved the study.

### Enhanced Interpreter Service Intervention

The enhanced interpreter service intervention consisted of 2 trained Spanish medical interpreters assigned to work with Spanish-speaking patients and their caregivers throughout their hospital stay. Both interpreters graduated from a year-long, intensive, community college interpreter training program including instruction on medical vocabulary, standards, ethics of interpreting, patient confidentiality, and triadic communication. Both completed a 120-hour internship. A single interpreter was available 7:30 A.M. to 3:30 P.M. daily during the study period. One interpreter was available Monday through Friday and the other was available during the weekend. The interpreters rounded with the intervention firm physicians each morning and were paged by the physicians, nurses, and patients when needed. The chart of each Spanish-speaking patient cared for by the intervention team had a note alerting all staff of the availability of the interpreter.

Spanish-speaking patients cared for by the nonintervention team who spoke Spanish received the usual care: no interpretation or use of ad hoc interpreters (family, friends, and untrained bilingual staff), telephonic interpreters, or the usual hospital interpreter service. The usual hospital service is not sufficiently staffed to meet the current demand for Spanish-speaking interpreters, resulting in significant delays (sometimes up to several hours) between requesting an interpreter and arrival of the interpreter at a patient's bedside. As a result, clinical staff frequently relies on ad hoc interpreters to communicate with their Spanish-speaking patients. In addition, not all hospital interpreters are trained, and those that are had more limited training than the intervention interpreters.

### Measurements

Baseline patient variables included age, gender, country of birth, years lived in the United States, language ability, education, marital status, household income, and numbers of times they had seen a physician or had been hospitalized in the past year. All participants were asked in what language they usually read, thought, and spoke and chose from the following response categories; only Spanish, Spanish better than English, both equally, English better than Spanish, or English only. Education was categorized as elementary school or less, middle school, some high school, high school or GED, or greater than high school. Insurance status was categorized as private insurance, Medicare, Medicaid, no insurance, or other. Marital status was categorized as single/never married, married, not married but living with a committed partner, or separated/divorced/widowed. Household income was categorized as <\$10,000, \$10,000–24,999, and \$25,000 or more. Diagnoses

included in the patient's electronic medical record (EMR) discharge summary were used to calculate the Charlson comorbidity index (CCI) scores for each participant.<sup>18</sup>

The following outcome variables were abstracted from the EMR. Length of stay (LOS), number of specialty consultations and radiology tests during the hospital stay, ED visits and hospitalizations in the 3 months after hospital discharge, and adherence to follow-up outpatient visits scheduled at discharge. Patients were considered adherent if they went to at least 1 follow-up visit.

Satisfaction with the hospital stay was measured using the Hospital Consumer Assessment of Healthcare Providers and Systems (H-CAHPS), a previously-validated 24-item instrument available in English and Spanish.<sup>19</sup> Participants completed the survey at discharge with the help of the research assistant (RA) or, if they were discharged outside of the RA's working hours, completed it over the phone in response to RA questioning, or mailed it in. We analyzed items from the H-CAHPS that would likely be affected by communication, including satisfaction with nursing care (4 items), satisfaction with physicians (4 items), and overall satisfaction with the hospital stay (2 items).

We also collected information on attending and resident physicians' Spanish fluency. We tested the physicians who indicated that they spoke Spanish with hospitalized patients and who had not trained in or practiced in a Spanish-speaking country. Physicians deemed proficient on a test modeled on the American Council on the Teaching of Foreign Languages' oral proficiency interview,<sup>20</sup> and physicians who had trained in or practiced in a Spanish-speaking country were included in the "Spanish-speaking physician" category.

Costs were calculated using the average costs of care provided at the study institution in 2000, the most current year for which this information was available, and the costs of providing the interpreter service intervention during the study period. Both included overhead costs. The intervention costs include interpreter salaries, which were constant throughout the study, regardless of how many encounters were interpreted each day.

## Statistical Analyses

Analyses were conducted to test our hypotheses that LOS, inpatient service utilization, and post discharge events would be lower and post discharge follow-up and satisfaction higher for Spanish-speaking patients whose physicians had access to the intervention (SS-I) compared to Spanish-speaking patients whose physicians had access only to usual care (SS-U). For each outcome, we fitted regression models with variables for Spanish-speaking patient group (SS versus ES), for firm (intervention versus usual care), and for their interaction. The interpreter services effect is given by the interaction, as it measures the difference between the effect of the firm for the SS (SS-I versus SS-U) and for ES patients, thereby isolating differences between SS-I and SS-U attributable to the enhanced interpreter services intervention. Demographic variables were included for adjustment, as was an indicator for SS patients having a Spanish-speaking attending physician. For those outcomes with a significant Spanish-speaking attending effect, a second model was fitted with the interaction between the interpreter services intervention and Spanish-speaking attending terms. These models permit investigation as to

whether the attending effect is stronger or weaker in the presence or in the absence of enhanced interpreter services.

Because satisfaction variables were sums of Likert-scale responses and patients, in general, reported a high level of satisfaction, the resulting scores were not normally distributed. We modeled them with ordinal probit regression.<sup>21</sup> The regression coefficients comparing groups have the convenient interpretation as adjusted "effect sizes" for latent satisfaction, i.e., the mean difference between groups, divided by the within-group standard deviation. For the number of ED visits, number of hospital readmissions, LOS, and numbers of radiology tests and specialty consultations, we used Poisson regression. The regression coefficients, when exponentiated, are interpreted as adjusted relative values of the mean response (e.g., number of hours in hospital, number of tests) comparing 1 group to another. We employed robust standard errors to protect against incorrect variance assumptions.<sup>22</sup> For binary adherence to follow-up, we used logistic regression. Analyses were conducted using STATA, v.9.0.

## RESULTS

The sample included 323 adult inpatients: 124 Spanish-speakers whose physicians had access to the intervention (of 148 eligible and approached; SS-I), 99 Spanish-speakers whose physicians only had access to usual interpreter services (of 144 eligible and approached; SS-U), and 100 English-speakers (of 212 eligible and approached; Table 1). There were no significant differences between the SS-I and SS-U groups or between intervention and control firm English-speakers in any sociodemographic characteristic, history of health care utilization, self-rated health, or Charlson comorbidity index (Table 1). Nevertheless, in the regression models, we adjusted for variables exhibiting modest differences between firms in either the SS and/or the ES groups.

Thirty-two attending physicians cared for patients on the intervention firm and 26 on the usual care firm. Significantly, more attending physicians on the intervention firm were proficient in Spanish ( $n=9$ ; 28%) than on the usual care firm ( $n=4$ ; 15%,  $p<0.001$ ). Forty-four residents cared for patients on the intervention firm and 44 on the usual care firm. The firms had similar numbers of residents proficient in Spanish (24 and 26, respectively).

All study participants reported high levels of satisfaction. The SS-I and SS-U groups had similar unadjusted mean nursing (18.8 [SD=3.5] vs 18.6 [SD=3.3]), physician (20.6 [SD=1.9] vs 20.2 [SD=2.5]), and overall hospital satisfaction scores (13.0 [SD=2.0] vs 13.0 [SD=2.0]). In the adjusted probit regression analyses using English-speaking patients to control for firm effects, there was no significant impact of the intervention on any of the 3 satisfaction scores (Table 2). However, having a Spanish-speaking attending physician positively and significantly impacted Spanish-speaking patients' satisfaction with the doctor and with the hospital stay (Table 2). This effect is more strongly driven by patients whose physicians did not have access to the intervention (Table 3), although the effect of Spanish-speaking attending physician on patient satisfaction was not significantly different when comparing the SS-U and SS-I groups (Table 3).

There was a significant difference in unadjusted mean patient LOS between the SS-I (5.00 days [SD=4.06]) and SS-

Table 1. Patient Characteristics

	Spanish intervention firm (n=124)	Spanish usual care firm (n=99)	English intervention firm (n=52)	English usual care firm (n=48)
Age, mean (SD)	51 (16)	47 (17)	46 (15)	47 (12)
Female (%)	50	59	42	52
Ethnicity (%)				
Mexican	80	87	7	10
Caribbean	4	3	3	2
Central/South American	16	10	1	2
Black	0	0	76	73
White/other	0	0	13	13
Years in US, mean (SD)	13 (13.3)	12 (11.3)	NA	NA
Language (%)				
Spanish only	84	83	2	2
Spanish > English	16	15	3	2
Both equally	0	2	3	6
English > Spanish	0	0	1	2
English only	0	0	91	88
Education (%)				
Elementary	52	56	6	6
Middle school	11	8	2	4
Some high school	18	17	12	26
High school or GED	10	10	29	28
Some or > college	8	9	51	36
Income (%)				
<\$10,000	60	61	57	45
\$10,000–24,999	24	26	28	36
\$25,000 or more	4	1	15	18
Do not know	12	12	0	1
Insurance (%)				
None	89	92	69	66
Public	6	5	23	25
Private	1	0	4	7
Other	4	3	4	2
Seen physician in the last year (%)	75	68	73	75
Hospitalized in the last year (%)	46	38	66	50
Fair/poor health status (%)	76	69	69	75
Charlson comorbidity index, mean (SD)	1.7 (1.9)	1.5 (1.8)	1.7 (2.1)	1.4 (1.7)

There were no significant differences at  $p < 0.05$  in the sociodemographic characteristics or health care measures between Spanish-speaking patients on the intervention and usual care firms or between English-speaking patients on the intervention and usual care firms.

U groups (5.97 days [SD=5.31];  $p=0.03$ ). There were no other significant differences between the SS-I and SS-U groups in the unadjusted mean number of radiology tests per person (2.07 [SD=3.11] vs 2.39 [SD=2.73];  $p=0.18$ ) or consultations

per person (0.46 [SD=0.63] vs 0.58 [SD=0.66];  $p=0.17$ ) while hospitalized; ED visits (0.15 [SD=0.47] vs 0.08 [SD=0.37];  $p=0.06$ ); or hospitalizations (0.34 [SD=0.80] vs 0.35 [SD=0.71];  $p=0.70$ ) per person in the 3 months after discharge; or percentage of patients adhering to follow-up (68% vs 69%;  $p=0.82$ ). In the adjusted Poisson regression analyses, again using the English-speaking patients to control for firm effects,

Table 2. Impact of Interpreter Service Intervention and Spanish-speaking Attending Physician on Satisfaction Among Spanish-speaking Patients

	Intervention*	Spanish-speaking attending†
Satisfaction with nursing	-0.41 (-0.97, 0.15)	0.12 (-0.23, 0.48)
Satisfaction with physicians	-0.31 (-0.90, 0.29)	0.42 (0.03, 0.81)
Satisfaction with hospital stay	-0.48 (-1.1, 0.13)	0.55 (0.12, 0.99)

Three separate regression models, each including controls for gender, age, racial/ethnic identification, education, marital status, number of times seen by a physician in the past year, number of hospitalizations in the last year, self-rated health, and CCI score.

Figures are probit regression coefficients (95% CIs), which are equivalent to effect sizes for:

\*The difference between SS-I and SS-U groups attributable to interpreter services intervention, in units of within-group standard deviation, controlling for Spanish-speaking attending.

†The difference between Spanish-speaking patients with and without a Spanish-speaking attending, controlling for physician team and interpreter services intervention.

Table 3. Impact of Spanish-speaking Attending on Spanish-speaking Patients' Satisfaction in the Intervention and Usual Care Groups

	Intervention group	Usual care group
Satisfaction with nursing	0.05 (-0.59, 0.69)	0.16 (-0.27, 0.58)
Satisfaction with physicians	0.34 (-0.13, 0.80)	0.62 (-0.11, 1.4)
Satisfaction with hospital stay	0.51 (0.00, 1.02)	0.67 (-0.19, 1.5)

Three separate regression models, each including controls for gender, age, racial/ethnic identification, education, marital status, number of times seen by a physician in the past year, number of hospitalizations in the last year, self-rated health, CCI score, and physician team.

Figures are probit regression coefficients (95% CIs), which are equivalent to effect sizes for difference between Spanish-speaking patients with and without a Spanish-speaking attending, stratified by receipt of interpreter services intervention.

there was no significant impact of the intervention on mean LOS, number of ED visits or hospitalizations after discharge, radiology tests or consultations while hospitalized (Table 4). Similarly, there was no significant impact of the intervention on adherence to follow-up in the adjusted logistic regression analyses using English-speaking patients to control for firm effects (Table 4). Having a Spanish-speaking attending also showed no impact on utilization outcomes, except in the case of ED visits. Having a Spanish-speaking attending significantly reduced the number of ED visits after discharge for Spanish-speaking patients in both firms ( $p=0.03$ ; Table 4). Expected adjusted ED visits per Spanish-speaking patient with a Spanish-speaking attending were 0.034 visit/patient compared to 0.166 visit/patient for those without a Spanish-speaking attending. We were unable to assess whether or not this impact was different in the SS-I versus SS-U groups because there were no ED visits for the patients in the SS-I group who had a Spanish-speaking physician.

We could not evaluate the cost-savings of the enhanced interpreter intervention, as the intervention did not significantly impact any hospital or post discharge service utilization. The cost of the enhanced interpreter intervention was \$234/person in the intervention group (\$34,581 for 148 eligible SS-I patients). There was a significant reduction of ED visits for Spanish-speaking patients who had a Spanish-speaking physician. Comparing the expected adjusted ED visits per Spanish-speaking patient with (0.034 visit/patient) and without (0.166 visit/patient) a Spanish-speaking attending using the model in Table 4, this represents a cost-savings of \$92.02 (\$700.03/visit $\times$ 0.131 visit) per Spanish-speaking patient in the study. There was no additional cost of hiring or retaining Spanish-speaking attending physicians at the study institution, so these savings came without additional expenditure.

## Discussion

We found no significant impact of the enhanced interpreter service intervention on any of our measured outcomes

**Table 4. Impact of Interpreter Service Intervention and Spanish-speaking Attending Physician on Length of Stay and Health Care Utilization Outcomes among Spanish-speaking Patients**

	Intervention*	Spanish-speaking attending†
Length of stay	1.00 (0.72, 1.42)	0.90 (0.75, 1.08)
Consults	1.24 (0.64, 2.41)	0.85 (0.55, 1.30)
Radiology tests	1.46 (0.90, 2.35)	0.96 (0.71, 1.29)
ED visits after discharge	3.09 (0.81, 11.7)	0.21 (0.05, 0.86)
Hospitalizations after discharge	0.55 (0.15, 2.00)	0.97 (0.46, 2.02)
Adherence to follow-up appointments‡	0.99 (0.18, 4.6)	0.95 (0.43, 2.1)

Separate regression models, each including controls for gender, age, racial/ethnic identification, education, marital status, number of times seen by a physician in the past year, number of hospitalizations in the last year, self-rated health, and CCI score.

\*Ratio of mean values for each outcome, measuring the difference between the SS-I and SS-U groups attributable to interpreter services intervention, controlling for Spanish-speaking attending.

†Ratio of mean values for each outcome, comparing Spanish-speaking patients with and without a Spanish-speaking attending, controlling for physician team effects and interpreter services intervention.

‡Logistic regression controlling for variables as described above; effects are odds ratios rather than ratios of means

for Spanish-speaking patients. However, having a Spanish-speaking physician improved Spanish-speaking patients' satisfaction with physician care and with the hospital stay overall. This increase in satisfaction was more pronounced among patients admitted to the usual care firm, suggesting that the enhanced interpreter services intervention did have an important impact on patients' satisfaction with physician communication and hospital stay. In addition, having a Spanish-speaking attending significantly reduced the number of ED visits Spanish-speaking patients had after discharge.

Whereas the study did not demonstrate that providing enhanced interpreter services results in cost-savings, it provides information on the cost of enhanced interpreter services in the context of a hospital stay. Using the mean LOS (5 days) of Spanish-speakers and mean cost of 1 day (\$2,900) in the study hospital, we found that the cost of enhanced interpreter services represents 1.5% of the overall cost of patient care. This relatively small expenditure for enhanced language access services is very similar in magnitude to that found in an Office of Management and Budget report in 2002.<sup>9</sup> The per patient cost of this service is likely an overestimate, as cost would have been lower were the intervention not restricted to a small set of patients; in practice, the 2 study interpreters could have served many more patients. Our study also found that Spanish-speaking attending physicians reduced costs of care by lowering return ED visits without additional expenditure by the study hospital. There may be a cost to other hospitals, however, of providing Spanish-speaking providers as some institutions pay a signing bonus or provide additional salary to bilingual physicians.

There are a number of reasons why we may not have found a clear impact of the enhanced interpreter intervention on the cost and quality of hospital care. First, large firm effects may be masking the effect of the enhanced interpreter intervention. Second, this study compared enhanced interpreter services available 8 hours a day with usual care that included the hospital interpreter services available 10 hours a day. Whereas we know that our enhanced interpreter services were superior to the hospital interpreter services in interpreter training and accessibility, it may be that the enhanced services were not accessed more frequently than the usual hospital services, blunting the impact of the intervention. It is also possible that the intervention influenced nurse practice since the firms are not constrained to caring for patients on specific medicine wards, thus all nurses were exposed to the intervention. However, it is unlikely that a nurse crossover effect limited our ability to detect a difference as a result of the intervention because, anecdotally, the nurses were not frequent users of the enhanced interpreter services. Third, a large proportion of attending and resident physicians at the study institution is fluent in Spanish. It may be that the interpreters did not add to the impact of attending and resident physicians who were already providing language access in both firms. Fourth, our interpreter service intervention may not have been robust enough. Interpreters were only available 8 hours/day and their use depended on nurses, physicians, and other staff voluntarily calling for their services or patients' requesting the services verbally or through a bedside card. Greater integration of interpreter services into the care routine may have had a greater impact. Interpreters may not have as great an impact on a hospital stay where patients are closely monitored over time versus a setting like an ED where physicians have to make decisions about whether or not it is safe to release a

patient. Finally, the satisfaction measure we used may not have been sensitive enough to measure the impact of the interpreter services on communication in the hospital.

In addition to these limitations, this study has several strengths. First, we included English-speakers in our study to control for firm effects and thus isolate the impact of our intervention on satisfaction and hospital service utilization. If we had not done so, we would have erroneously concluded that the enhanced interpreter service intervention reduced the LOS instead of identifying this difference as a result of firm differences. Second, whereas not a randomized controlled trial, the assignment of the patients in the study to firm was independent of patient or firm characteristics, resulting in study groups that were very similar across sociodemographic and other characteristics. Third, we measured physician Spanish language fluency. This not only allowed us to control for the impact of physician language concordance on our study outcomes, it provided us with the only data we are aware of on how Spanish language concordance between physicians and patients impacts hospital service utilization and cost.

These strengths allowed us to provide useful information on the cost of providing enhanced inpatient interpreter services relative to the total cost of a hospital stay. We consider \$240 a small price to pay to ensure that hospital professional staff are able to provide the standard of care to all patients—to be able to understand and speak to them. The fact that we did not see an impact of this enhanced communication on our chosen outcome measures does not mean that interpreters are not essential to the provision of high quality care to patients with limited English proficiency. It indicates that more research needs to be done in settings where language concordant physicians and other linguistic access services are not as readily available as they were in our study setting. It also highlights the valuable contribution bilingual physicians make to the provision of health care in our increasingly diverse society, underscoring the importance of efforts to increase the ethnic and linguistic diversity of the medical profession.

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# Errors in Medical Interpretation and Their Potential Clinical Consequences in Pediatric Encounters

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**ABSTRACT.** *Background.* About 19 million people in the United States are limited in English proficiency, but little is known about the frequency and potential clinical consequences of errors in medical interpretation.

*Objectives.* To determine the frequency, categories, and potential clinical consequences of errors in medical interpretation.

*Methods.* During a 7-month period, we audiotaped and transcribed pediatric encounters in a hospital outpatient clinic in which a Spanish interpreter was used. For each transcript, we categorized each error in medical interpretation and determined whether errors had a potential clinical consequence.

*Results.* Thirteen encounters yielded 474 pages of transcripts. Professional hospital interpreters were present for 6 encounters; ad hoc interpreters included nurses, social workers, and an 11-year-old sibling. Three hundred ninety-six interpreter errors were noted, with a mean of 31 per encounter. The most common error type was omission (52%), followed by false fluency (16%), substitution (13%), editorialization (10%), and addition (8%). Sixty-three percent of all errors had potential clinical consequences, with a mean of 19 per encounter. Errors committed by ad hoc interpreters were significantly more likely to be errors of potential clinical consequence than those committed by hospital interpreters (77% vs 53%). Errors of clinical consequence included: 1) omitting questions about drug allergies; 2) omitting instructions on the dose, frequency, and duration of antibiotics and rehydration fluids; 3) adding that hydrocortisone cream must be applied to the entire body, instead of only to facial rash; 4) instructing a mother not to answer personal questions; 5) omitting that a child was already swabbed for a stool culture; and 6) instructing a mother to put amoxicillin in both ears for treatment of otitis media.

*Conclusions.* Errors in medical interpretation are common, averaging 31 per clinical encounter, and omissions are the most frequent type. Most errors have potential clinical consequences, and those committed by ad hoc interpreters are significantly more likely to have potential clinical consequences than those committed by hospital inter-

preters. Because errors by ad hoc interpreters are more likely to have potential clinical consequences, third-party reimbursement for trained interpreter services should be considered for patients with limited English proficiency. *Pediatrics* 2003;111:6-14; *language, interpreters, medical errors, children, pediatrics, Hispanic Americans, quality.*

ABBREVIATIONS. LEP, limited in English proficiency; SD, standard deviation.

According to the 2000 census, ~45 million people in the United States speak a language other than English at home, and ~19 million are limited in English proficiency (LEP).<sup>1</sup> Five percent of school-aged US children (or ~2.4 million) are LEP, an 85% increase since 1979.<sup>2</sup> Language barriers affect multiple aspects of health care for the LEP patient, including access to care, health status, and use of health services.<sup>3</sup> Studies document that LEP patients often defer needed medical care,<sup>4</sup> have a higher risk of leaving the hospital against medical advice,<sup>5</sup> are less likely to have a regular health care provider,<sup>6</sup> and are more likely to miss follow-up appointments,<sup>7</sup> to be nonadherent with medications,<sup>7</sup> and to be in fair/poor health.<sup>6</sup>

A medical interpreter is an essential component of effective communication between the LEP patient and the health care provider. Medical interpreters may be professional hospital interpreters employed by a health care institution, or ad hoc, untrained individuals, such as family members, friends, non-clinical hospital employees, and strangers from waiting rooms. Previous work has shown that family members<sup>8</sup> and untrained bilingual nurses<sup>9</sup> who provide ad hoc interpretation can commit many errors of interpretation. Not enough is known, however, about the frequency and categories of medical interpreter errors that occur in clinical encounters, whether such errors potentially have clinical consequences, and if the use of hospital rather than ad hoc interpreters produces a higher quality of medical interpretation. The goals of this study, therefore, were to: 1) determine the frequency, categories, and potential clinical consequences of errors committed by medical interpreters; and 2) compare the quality of interpretation by professional hospital versus ad hoc interpreters.

## METHODS

We audiotaped pediatric encounters in which a Spanish interpreter was used in the pediatric outpatient clinic of an urban

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Massachusetts hospital over a 7-month period. All study parents had identified themselves as LEP. A bilingual research assistant was present during the encounter only to record the interaction, and did not act as an interpreter, nor take part in subsequent production of transcripts or data analysis. A bilingual verbatim transcript was prepared from the audiotape of each encounter by a professional transcriptionist fluent in both English and Spanish. To ensure accuracy and reliability of the transcripts, each transcript was reviewed 3 times for errors, once by a bilingual physician whose first language is English (G.F.), a second time by a bilingual sociologist whose first language is English (M.B.L.), and a third time by a bilingual physician whose first language is Spanish (M.A.).

The encounters analyzed for this study represent all pediatric visits with Spanish interpreters that occurred in a larger study of patient-physician communication, which consisted of a convenience sample of 153 audiotaped visits in the pediatric outpatient clinics of an urban Massachusetts hospital. Of the 153 participants in this larger study, 110 of the children and their families were Latino. Among these 110 Latino participants, there were 74 mothers/adult caregivers who were LEP, for which 38 visits occurred in Spanish with Spanish-speaking clinicians, 13 visits included a Spanish interpreter, and 25 occurred in English without an interpreter. Although this larger study used a convenience sample, the sample was obtained to reflect a reasonable spectrum of outpatient pediatric visits experienced by Latino families, and has no obvious selection biases other than respondent refusal, which was rare (only 2 potential subjects refused to participate). Participants from the larger study were sampled to capture visits from the full range of daily office hours and all 5 clinic days (Monday-Friday) during the work week. Pediatric encounters included walk-in, sick, and routine health care maintenance visits at the pediatric primary care clinic, and initial and follow-up visits at the outpatient lead and failure-to-thrive clinics. Both pediatricians and pediatric nurse practitioners provided care to study patients, and patient care was in no way altered by the study, except for the presence of the research assistant and tape recorder. The patients and their families, clinicians, and interpreters were told only that this was a study of patient-physician communication, and they were not aware that errors of medical interpretation would be analyzed.

Personnel who provided medical interpretation were classified as: 1) hospital interpreters, professional interpreters (ie, those receiving financial compensation) employed by the study hospital's department of interpreter services; and 2) ad hoc interpreters, who could include family members, friends, nonclinical hospital employees, strangers from waiting rooms, and hospital clinical staff (including nurses and social workers) who had received no formal medical interpreter training or screening. During the period when the study was conducted, all Spanish hospital interpreters who had been hired had undergone some level of screening and evaluation for language proficiency in Spanish and English. There was, however, no ongoing training or formal performance evaluation in the hospital for interpreters. Low-intensity, voluntary formal interpreter training was sporadically available at various community sites, but it was not known what proportion of interpreters took advantage of these voluntary community opportunities.

For each audiotaped encounter, analysis consisted of identification of the frequency and categories of interpreter errors. An "interpreter error" was defined as any misinterpretation of an utterance that occurred in the clinical encounter, including those committed by the designated medical interpreter, as well as those made by health care providers (such as when a physician with limited Spanish proficiency made errors in Spanish while talking to the mother after the designated interpreter had departed). Errors by health care providers were classified as interpreter errors because the study focus was on errors of interpretation made by any staff member acting as a medical interpreter during a clinical encounter, and we found that certain providers often would attempt to interpret when the designated medical interpreter departed or was temporarily unavailable.

Five categories were used to classify interpreter errors, based on 4 categories used in previous work,<sup>10,11</sup> supplemented by an additional category (false fluency). These categories are as follows:

**Omission:** The interpreter did not interpret a word/phrase uttered by the clinician, parent, or child.

**Addition:** The interpreter added a word/phrase to the interpretation that was not uttered by the clinician, parent, or child.

**Substitution:** The interpreter substituted a word/phrase for a different word/phrase uttered by the clinician, parent, or child.

**Editorialization:** The interpreter provided his or her own personal views as the interpretation of a word/phrase uttered by the clinician, parent, or child.

**False Fluency:** The interpreter used an incorrect word/phrase, or word/phrase that does not exist in that particular language.

In addition to being classified into 1 of these 5 categories, an interpreter error was also considered to have potential clinical consequences if it altered or potentially altered 1 or more of the following: 1) the history of present illness; 2) the past medical history; 3) diagnostic or therapeutic interventions; 4) parental understanding of the child's medical condition; or 5) plans for future medical visits (including follow-up visits and specialty referrals).

Medical jargon, idiomatic expressions, and contextual clarifications may occasionally require medical interpreters to not interpret a phrase word-for-word. Thus, any deviations from word-for-word interpretation in transcripts that were attributable to jargon, idioms, or contextual clarifications were not classified as interpreter errors. Because medical interpreters may also act as a cultural broker or advocate, any utterances that could be interpreted as cultural explanations or patient or family advocacy were not classified as interpreter errors. A separate analysis of the relationship of the number of verbal exchanges, the interlocutor, and the quality of the interpretation will be reported elsewhere in a separate paper.

The validity of the analytic method for identification and classification of interpreter errors was assessed as follows: 2 transcripts (cases 26 and 153) were first subjected to preliminary error analysis using simple definitions of each error type and category. The 2 transcripts were scored by 3 observers, a bilingual physician whose first language is English (G.F.) and 2 bilingual physicians (M.A. and L.M.) whose first language is Spanish. To avoid the introduction of bias, the latter 2 observers were blinded to the study goals and hypotheses. Each of the observers was assessed as being highly fluent in their second language based on years of experience providing primary care to Spanish-speaking patients in a Pediatric Latino Clinic (G.F.), 7 years as a research associate on studies of English-speaking populations in the United States (M.A.), and years of teaching high school to English-speaking students in the Massachusetts school system (L.M.). Interobserver variability for the 3 observers was assessed using agreement matrices and by calculating the percentage of agreement in 2 separate analyses, 1 for overall interpreter errors, and the second only for errors of potential clinical consequence. The Kappa Index was also determined for errors of clinical consequence. It was not possible to derive a Kappa Index for overall errors, as transcripts could not be accurately scored for 1 of the 4 cells (cell d): when neither observer identified an error, there was no reliable way to determine whether one should count by words, phrases, transcript lines, or utterances.

The preliminary error analysis of the 2 test transcripts revealed a mean percentage of agreement ( $\pm$  standard deviation [SD]) among the 3 observers on the overall errors of 60%  $\pm$  19, with a range of 31% to 82%. Disagreements were primarily attributable to either overlooked errors or unintended differences in the line numbering of the transcripts analyzed by different observers. After line numbering corrections, refinements, and meeting for consensus purposes, there was complete agreement among the 3 observers on the number and type of overall interpreter errors. The mean percentage of agreement ( $\pm$  SD) among the 3 observers on errors of potential clinical consequence in the preliminary analysis was 83%  $\pm$  12, with a range of 72% to 97%. The mean  $\kappa$  ( $\pm$  SD) for errors of potential clinical consequence in the preliminary analysis was 0.57  $\pm$  0.3 (considered a moderate strength of agreement by the guidelines of Landis and Koch<sup>12</sup>), with a range of 0.21 to 0.97 (from fair to almost perfect agreement by the Landis and Koch guidelines<sup>12</sup>). Because the mean percentage of agreement and  $\kappa$  were considered unacceptably low, the error categories and types were further refined. After refinement, there was mean agreement of 99%  $\pm$  1.7 (range: 97%–100%) and a mean  $\kappa$  of 0.99  $\pm$  0.03 (range: 0.94–1.0 [almost perfect by the Landis and Koch guidelines<sup>12</sup> for both the mean and range]) regarding interpreter errors of potential clinical consequence on the 2 test transcripts. The remaining 11 transcripts were analyzed by the first

author, using the refined error categories, types, and analytic approaches.

To analyze the statistical significance of differences between hospital and ad hoc interpreters in the proportion of errors made, the Yates-corrected  $\chi^2$  test was used, with  $P < .05$  considered statistically significant.

Institutional review board approval was obtained from the participating institution to conduct this study, and written informed consent was obtained from each participating parent.

## RESULTS

Thirteen clinical encounters with Spanish interpreters present were audiotaped, yielding 6 hours of audiotapes, 474 pages of transcripts, and 49 513 words that were exchanged. Hospital interpreters were present in 6 of 13 encounters; in the remaining 7 encounters, the ad hoc interpreters included a nurse for 3 encounters, a social worker for 3 encounters, and an 11-year-old sibling for 1 encounter. The number of words uttered per encounter averaged 3781, and there was no statistically significant difference in the mean number of words uttered per encounter by interpreter type (mean words uttered = 3919 when hospital interpreters were present vs 3663 when ad hoc interpreters were present, with  $P > .5$  by the 2-tailed Student  $t$  test). The visit type, clinician present, patient age, and number of interpreter errors in each clinical encounter are summarized in Table 1.

There were 396 interpreter errors noted in the 13

clinical encounters (Table 2). The mean number ( $\pm$  standard error) of interpreter errors per clinical encounter was  $30.5 \pm 3.6$ , with a range of 10 to 60. There was no statistically significant difference between hospital and ad hoc interpreters in the mean number of errors committed per clinical encounter.

The proportions of interpreter errors by category were: omission, 52%; false fluency, 16%; substitution, 13%; editorialization, 10%; and addition, 8%. There were no statistically significant differences between hospital and ad hoc interpreters in the proportion of errors by specific category (Table 2), except for false fluency errors, which occurred more often during encounters with hospital than ad hoc interpreters (22% vs 9%,  $P = .001$ ). Additional analysis of false fluency errors occurring in encounters with hospital interpreters revealed that health care providers made 76% of the false fluency errors, and 58% of these errors occurred while the interpreter was out of the room or on the phone, whereas the remaining 42% of errors were made by the provider without any correction by the interpreter. Health care providers were >11 times more likely (relative risk: 11.4; 95% confidence interval: 1.7–76.2) to make false fluency errors when a hospital interpreter was involved, committing 76% of the false fluency errors with trained interpreters, compared with only 7% of false fluency errors when untrained interpreters were in-

**TABLE 1.** Selected Features of Study Encounters

Case	Visit Type	Clinician Present	Patient's Age	Interpreter Type	Interpreter's Relationship to Patient, if Ad Hoc Interpreter	No. of Interpreter Errors in Encounter	No. (%) of Interpreter Errors of Potential Clinical Consequence in Encounter
13	Well-child visit at pediatric primary care clinic	Nurse practitioner	7 y	Hospital	—	45	16 (36%)
19	Sick visit at pediatric primary care clinic	Attending pediatrician	9 mo	Ad hoc	Nurse	10	9 (90%)
24	Sick visit at pediatric primary care clinic	Nurse practitioner and attending pediatrician	1 mo	Hospital	—	44	29 (66%)
26	Sick visit at pediatric primary care clinic	Pediatric resident	2 y	Ad hoc	11-year-old sibling	58	49 (84%)
77	Sick visit at pediatric primary care clinic	Attending pediatrician	2 mo	Ad hoc	Nurse	24	20 (83%)
83	Sick visit at pediatric primary care clinic	Attending pediatrician	8 mo	Ad hoc	Nurse	18	12 (66%)
84	Follow-up at failure to thrive clinic	Attending pediatrician	12 mo	Ad hoc	Social worker	21	13 (62%)
88	Walk-in for immunizations at pediatric primary care clinic	Attending pediatrician	7 y	Hospital	—	14	5 (36%)
106	Follow-up at failure to thrive clinic	Attending pediatrician	11 mo	Ad hoc	Social worker	24	16 (67%)
120	Follow-up at failure to thrive clinic	Attending pediatrician	13 mo	Ad hoc	Social worker	10	8 (80%)
153	Well-child visit at pediatric primary care clinic	Nurse practitioner	5 y	Hospital	—	45	23 (51%)
165	Well-child visit at pediatric primary care clinic	Nurse practitioner	7 y	Hospital	—	23	16 (70%)
176	Initial visit to lead clinic	Attending pediatrician	18 mo	Hospital	—	60	34 (57%)

**TABLE 2.** Summary of Errors of Medical Interpretation Observed in Clinical Encounters in the Study

Interpreter Type	No. (%) Errors by Error Category					No. (%) Errors of Potential Clinical Consequence	Total Errors
	Omission	Substitution	Addition	Editorialization	False Fluency		
Hospital (N = 6)	117 (51%)	27 (12%)	17 (7%)	20 (9%)	50 (22%*)	123 (53%+)	231
Ad hoc (N = 7)	90 (55%)	26 (16%)	15 (9%)	19 (12%)	15 (9%*)	127 (77%+)	165
Totals	207 (52%)	53 (13%)	32 (8%)	39 (10%)	65 (16%)	250 (63%)	396

\*  $P = .007$  by Yates-corrected  $\chi^2$  test for comparison between hospital versus ad hoc interpreters.

†  $P < .001$  by Yates-corrected  $\chi^2$  test for comparison between hospital versus ad hoc interpreters.

volved ( $P < .001$ ). Nevertheless, health care providers committed only ~10% of all errors observed in this study. About three quarters (73%) of the false fluency errors committed by hospital interpreters involved medical terminology, including not knowing the correct Spanish words for “level,” “results,” and “medicine,” and using the Puerto Rican colloquialism for mumps, which could not be understood by a Central American mother.

There were 250 errors (63% of all errors) that had potential clinical consequences (Table 2). The mean number ( $\pm$  standard error) of errors with potential clinical consequences per encounter was  $19 \pm 3.2$ , with a range of 5 to 49. Errors made by ad hoc interpreters were significantly more likely to have potential clinical consequences than those made by hospital interpreters, at 77% vs 53% ( $P < .0001$ ). When an 11-year-old sibling was used as an interpreter, for example, 84% of the 58 errors she committed had potential clinical consequences, and when an

untrained staff nurse interpreted, 90% of his 10 errors had potential clinical consequences. Indeed, the lowest proportion of errors of potential clinical consequence committed by an ad hoc interpreter was 62%.

Interpreter errors of potential clinical consequence included: 1) omitting questions about drug allergies; 2) omitting key information about the past medical history (a mother’s statement that her child had been hospitalized at birth for a renal infection); 3) omitting crucial information about the chief complaint and other important symptoms (Fig 1); 4) omitting instructions about antibiotic dose, frequency, and duration; 5) instructing a mother to give an antibiotic for 2 instead of 10 days (Fig 2); 6) erroneously adding that hydrocortisone cream must be applied to an infant’s entire body, instead of solely to a facial rash (Fig 3); 7) telling a mother to give soy formula to her infant, instead of a physician’s instructions to breast-feed only; 8) omitting instructions on the amount, frequency, and type of rehydration fluids for gastro-

**Pediatrician:** “So [he vomited] five times between 1:00 and 3:00? And after that he hasn’t thrown up?”

**Interpreter:** “*Que si desde eso él no ha vomitado?*”

**Mother:** “*No. Ahora tiene como dolor de oído y eso.*”

**Interpreter:** “Yes, he havin’ pain”

**Mother:** “*Dile que él tiene algo en la boca. Dile.*”

[SILENCE]

**Pediatrician:** “How old is he now?”

**Interpreter:** “Three.”

“That if since that [time] he has not vomited?”

“No. Now he has like pain in the ear and so on.”

“Tell her [the pediatrician] that he has something on his mouth. Tell her.”

**Fig 1.** Multiple omission errors of potential clinical consequence committed by an ad hoc interpreter (the patient’s 11-year-old sister) during a sick visit to a pediatrician by a 2-year-old child for vomiting and dehydration (case 26). Note that the pediatrician never receives a response about how many times the child has vomited before the visit, and the interpreter omits the mother’s statements about the child’s ear pain and oral lesion.

**Pediatrician:** “So probably this rash is from the Augmentin.”

**Interpreter:** “*Probablemente, es de la medicina, por eso va a cambiarla. Y ahora ella puede comenzar a tomar otra medicina, por dos días. What else did you want me to tell her?*”

“Probably, it’s from the medicine, and therefore she’s going to change it. And now she can start to take another medicine, for two days. What else did you want me to tell her?”

**Pediatrician:** “Ten days on the new medicine. Don’t give the old medicine anymore. Plenty to drink. Treat the fever.”

**Interpreter:** “*Okay. Dice que no toma la medicina, la otra medicina, y ... es importante que ella bebe bastante , y ¿tiene Tylenol?*”

“Okay. She says that she isn’t taking the medicine, the other medicine, and ... it’s important that she drink enough, and, do you have Tylenol?”

Fig 2. Substitution, addition, and omission errors of potential clinical consequence committed by an ad hoc interpreter during a sick visit to a pediatrician by a 9-month-old child for fever, vomiting, and a rash (case 19).

enteritis; 9) editorializing to a mother that she should not answer personal questions asked by her physician about sexually transmitted diseases and drug use; 10) explaining that an antibiotic was being prescribed for the flu; 11) omitting a mother’s clear explanation that a child had already been swabbed rectally for a stool culture; 12) omitting and substituting for a mother’s description of her child’s abnormal behavioral symptoms (Fig 4); and 13) instructing a mother to put oral amoxicillin into her child’s ears to treat otitis media (Fig 5).

## DISCUSSION

### Implications for Practice, Training, and Research

Errors in medical interpretation were found to be alarmingly common in this study, averaging ~31 per clinical encounter. In addition, there was no statistically significant difference between hospital and ad hoc interpreters in the mean number of errors committed per encounter. Although errors made by hospital interpreters were significantly less likely to be of potential clinical consequence than those made by ad hoc interpreters, over half of hospital interpreter errors had potential clinical consequences. These findings support the conclusion that most hospital interpreters do not receive adequate training at their

institution.<sup>13</sup> Fewer than one fourth of hospitals nationwide provide any training for medical interpreters.<sup>13</sup> Only 14% of US hospitals provide training for volunteer interpreters, and in half of these hospitals, the training programs are not mandatory.<sup>13</sup> Even when hospitals provide training to medical interpreters, the training may be limited to short orientation sessions or shadowing more seasoned interpreters.<sup>13</sup> Our study findings and these national data suggest that additional research and policy work is needed to determine what type of medical interpreter training is most effective in reducing interpreter errors. Specific issues that need to be addressed include whether training of medical interpreters should be mandatory, and which training approaches are most effective in eliminating common errors of potential clinical consequence and in improving accuracy and understanding medical terminology.

The categories of interpreter errors noted in this study indicate areas where more training is needed for medical interpreters. Omissions by far were the most common type of interpreter error, accounting for more than half of all errors. This finding suggests that a principal focus of interpreter training should be the faithful transmission of each and every utterance by clinicians, patients, and patients’ families.

**Nurse Practitioner:** “And then what I’m going to do is give mom an ointment. It’s a steroid ointment to put on the baby’s **face** two times a day just for three or four days, and then stop. I want her to use hydrocortisone cream, okay? Twice a day.”

**Interpreter:** “*Esa crema también se la pasas por el **cuerpo**, la que te van a escribir ahí.*”  
*Esa se la puedes comprar en la tienda, en la farmacia.*”

“That cream also you put on his **body**, that which they’re going to write for you there.  
That you can buy in the store, in the pharmacy.”

**Nurse Practitioner:** “She’s going to put this on twice a day, just for three or four days.”

**Interpreter:** “*En cuatro días, okay?*”

“**In** four days, okay?”

**Fig 3.** Multiple errors of omission and substitution of potential clinical consequence committed by a hospital interpreter during a sick visit to a pediatric nurse practitioner by a 1-month-old male infant for seborrhea and an upper respiratory illness.

**Pediatrician:** “In the past four months, how has he been doing?”

**Interpreter:** “*Los últimos cuatro meses, ¿cómo sigue él?*”

“The last 4 months, how has he been doing?”

**Mother:** “*Se ponía así mareado, todo pálido, y trataba de morder.*”

“He’s gotten like that, dizzy, completely pale, and he’s been trying to bite.”

**Interpreter:** “Very aggressive.”

**Fig 4.** Omission and substitution errors of clinical consequence committed by an ad hoc interpreter during an 18-month-old boy’s visit to a pediatrician in the lead clinic (case 176).

Simultaneous remote or on-site interpretation (as is done in the United Nations) has the potential to increase the number of utterances and reduce the number of errors,<sup>11</sup> but concerns can be raised about the costs of training and implementation, and difficulties with acceptance by interpreters. Most false fluency errors committed by hospital interpreters

(73%) involved medical terminology. This finding indicates that medical interpreter training should include a detailed review of medical terms, with attention to linguistic issues such as variation among cultural subsets of a single linguistic group. In addition, periodic performance evaluation, including monitoring of false fluency errors, may be an important

**Nurse Practitioner:** “And she’s going to have 1 teaspoon 3 times a day for 10 days.”

**Interpreter:** “*Entonces para la amoxicilina por los oídos... entonces le vas a dar una cucharadita tres veces al día.*”

“So for the amoxicillin— **in the ears**... so you are going to give her 1 teaspoonful 3 times a day.”

Fig 5. Addition and omission errors of clinical consequence made by an ad hoc interpreter during a visit to a pediatric nurse practitioner by a 7-year-old-girl diagnosed with otitis media (case 165).

means of quality improvement for medical interpreter services, indicating when additional training in medical terminology is needed.

The categories of interpreter errors noted in this study also indicate that more training is needed for clinicians in the use of medical interpreters. Clinicians commit most false fluency errors when the interpreter leaves the room or is taking a telephone call, and clinicians are 11 times more likely to make false fluency errors when hospital interpreters participate in the clinical encounter. These findings are consistent with studies that show that most hospital staff receive no training on working with interpreters,<sup>13</sup> and most medical schools do not provide adequate instruction on linguistic and cultural issues in clinical care.<sup>14</sup> For example, only 23% of US hospitals provide any training for their staff on the use of medical interpreters, and such training may consist of nothing more than policies and procedures for requesting interpreters.<sup>13</sup> These studies and our results suggest that clinicians should receive skills training on the proper technique for working with medical interpreters, especially the risk of false fluency errors associated with clinicians with limited foreign language fluency. It is recommended that interchanges between such clinicians and patients (and their families) in a foreign language should be limited to when the medical interpreter is present and not distracted; if such interchanges occur without an interpreter, the clinician should consider repeating the interchange when the interpreter is available once again. The limited foreign language skills of a clinician can prove to be an asset, however, in that they can provide a means of verifying the quality of medical interpretation. For example, if the clinician hears a patient utter a word or phrase that was not translated by the interpreter, the clinician could bring this to the interpreter’s attention, and reemphasize the importance of faithful message transmission of each and every utterance. Conversely, because 42% of false fluency errors committed by clinicians occurred in the presence of an interpreter and went uncorrected, medical interpreters probably should be taught that it is reasonable and appropriate to correct clinician false fluency errors.

#### Medical Errors and Quality of Care

The study findings suggest that interpreter errors of potential clinical consequence could be a previ-

ously unrecognized possible root cause of medical errors. Although a recent Institute of Medicine report<sup>15</sup> has drawn much attention to medical errors, errors of medical interpretation have not generally been included in the discussion of sources of medical errors. In this study, several documented common mechanisms for medical errors<sup>16,17</sup> were observed among the interpreter errors of clinical consequence, including being told to use the wrong dose, frequency, duration or mode of administration of drugs and other therapeutic interventions, and omitting relevant clinical information on drug allergies and the past medical history. These findings suggest that for LEP patients, providing qualified, trained medical interpreters may be an important means of reducing medical errors and improving the quality of medical care. It also seems reasonable that as part of ongoing quality improvement efforts, medical institutions might consider periodically audiotaping or videotaping a representative subsample of clinical encounters where medical interpreters are used, to identify and monitor the overall number and categories of interpreter errors, the number of interpreter errors of potential clinical consequence, and medical errors that result from interpreter errors.

#### Study Limitations

Several limitations of this study should be noted, along with their implications for future research. Our sample size was relatively small; studies of errors of medical interpretation on a larger scale are needed. Only 1 observer analyzed 11 of the transcripts, so interpreter errors potentially may have been missed that could have been identified had multiple observers analyzed these transcripts. Single-observer transcript analysis was performed, however, only after refinements of the analytic technique were instituted as a result of multiple-observer testing and validation. It also seems unlikely that identification and inclusion of potentially overlooked errors would have substantially altered the principal study findings, but additional study of this interpreter error analytic tool is warranted. This study was limited to pediatric encounters; similar studies of adult LEP populations need to be conducted, particularly given that interpreter errors may have an even greater effect on adults because of their generally greater morbidity, comorbidity, and mortality. Similarly, we examined only outpatient encounters with Spanish

interpreters, and studies are needed of interpreter errors and their clinical consequences in other languages and in the emergency department and inpatient settings. The hospital interpreters in this study had little to no training (although the study institution has subsequently initiated extensive training of their hospital interpreters). Replication of this study with hospital interpreters who have received extensive, consistent training compared with ad hoc interpreters may reveal more substantial differences in the number and categories of errors. Because LEP patients who need interpreters sometimes obtain medical care without interpreters, more research is needed comparing health care quality and satisfaction with care when LEP patients have trained hospital versus ad hoc versus no interpreters.

### Policy Implications

The study finding that errors made by ad hoc interpreters are significantly more likely to have potential clinical consequences—coupled with a fairly extensive literature documenting that LEP patients tend to receive poorer quality medical care—would seem to constitute a strong argument for third-party reimbursement for trained medical interpreter services. Studies demonstrate a wide range of adverse effects that limited English proficiency can have on health and use of health services, including impaired health status,<sup>6,18</sup> a lower likelihood of having a usual source of medical care,<sup>6,18,19</sup> lower rates of mammograms, pap smears, and other preventive services,<sup>20,21</sup> nonadherence with medications,<sup>7</sup> a greater likelihood of a diagnosis of more severe psychopathology and leaving the hospital against medical advice among psychiatric patients,<sup>5,22</sup> a lower likelihood of being given a follow-up appointment after an emergency department visit,<sup>23</sup> an increased risk of intubation among children with asthma,<sup>24</sup> a greater risk of hospital admissions among adults,<sup>25</sup> an increased risk of drug complications,<sup>26</sup> longer medical visits,<sup>27,28</sup> higher resource utilization for diagnostic testing,<sup>28</sup> lower patient satisfaction,<sup>18,29,30</sup> and impaired patient understanding of diagnoses, medications, and follow-up.<sup>31,32</sup> Latino parents consider the lack of interpreters and Spanish-speaking staff to be the greatest barriers to health care for their children, and 1 out of every 17 parents in one study reported not bringing their child in for needed medical care because of these language issues.<sup>4</sup> On the other hand, recent studies indicate that trained professional medical interpreter services are associated with improvements in the delivery of health care services to LEP patients,<sup>33</sup> but do not increase the mean duration of medical visits.<sup>34</sup>

The lack of trained hospital interpreters is not uncommon for the millions of LEP patients in the United States: one study found that no interpreter was used for 46% of LEP patients, and when an interpreter was used, 39% had no training.<sup>31</sup> In a guidance memorandum, the Office of Civil Rights stated that the denial or delay of medical care for LEP patients because of language barriers constitutes a form of discrimination, and requires that any recipient of Medicaid or Medicare must provide ade-

quate language assistance to LEP patients.<sup>35</sup> A Presidential Executive Order also has been issued on improving access to services for persons with Limited English Proficiency.<sup>36</sup> Concerns have been raised by medical associations about physicians having to cover the costs of complying with the Office of Civil Rights guidance memorandum,<sup>37</sup> but the issue could be resolved by having third-party reimbursement for interpreter services. Although additional research on the cost effectiveness of third-party reimbursement for interpreter services would be helpful, mounting evidence suggests that additional studies of the issue may not be needed, including a successful \$71 million lawsuit over a misinterpreted word in the emergency department,<sup>38</sup> a report of a prolonged hospitalization for perforated appendicitis that might have been avoided if an interpreter had been called,<sup>39</sup> and a report of children placed in state custody for mistaken child abuse because of a misinterpreted word and failure to initially call an interpreter.<sup>39</sup> Legal liability and medical errors may be important factors in considering whether investment in third-party reimbursement of interpreter services is a reasonable strategy for assuring that LEP patients receive high-quality, equitable care.

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## COLLEGE STUDENTS AND THE INTERNET

“The report, ‘*The Internet Goes to College: How Students Are Living in the Future With Today’s Technology*,’ was produced by the Pew Internet and American Life Project in Washington, and provides a snapshot of an emerging young digital class.

One fifth of today’s college students began using computers from the ages of 5 to 8, the authors state, and an overwhelming 86% of them had gone online compared with 59% of the general population; 72% check e-mail messages at least once a day. . . . Nearly 75% of college students say they use the Internet more than they use the library to look for information; just 9% said they used the library more.”

Schwartz J. *New York Times*. September 16, 2002

Noted by JFL, MD

## Errors in Medical Interpretation and Their Potential Clinical Consequences in Pediatric Encounters

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## HOW CAN STATES GET FEDERAL FUNDS TO HELP PAY FOR LANGUAGE SERVICES FOR MEDICAID AND SCHIP ENROLLEES?

Federal funding to help states and health care providers pay for language services is primarily available through Medicaid and the State Children’s Health Insurance Program (SCHIP).<sup>1</sup> This federal funding offers states a valuable opportunity to help providers ensure language access. However, the programs have technical requirements and vary from state to state. This document provides a brief overview to assist you in evaluating the best way for your state to offer language services reimbursement. For specific information on your state, *see* <http://www.statehealthfacts.kff.org/>.

### What are Medicaid and SCHIP?

Medicaid and the State Children’s Health Insurance Program (SCHIP) are health insurance programs for certain low-income individuals operated jointly by the federal and state governments.<sup>2</sup> Both programs operate as federal-state partnerships – they are jointly administered and jointly funded. Medicaid provides health insurance to over 44 million individuals, SCHIP to over 3 million.

To be eligible for Medicaid or SCHIP, you must be low-income and fit within an eligible group. Medicaid primarily serves four groups of low-income Americans: the elderly, people with disabilities, parents and children. Medicaid is an “entitlement” program – everyone who meets the eligibility requirements must be provided health care and has the right to obtain needed services in a timely manner. SCHIP primarily covers children and sometimes others, such as parents and pregnant women. SCHIP is not an entitlement – its funding is limited to pre-set amounts determined by Congress.

### How does the federal government pay its share of Medicaid and SCHIP costs to the states?

The federal government pays states in three ways for their Medicaid and SCHIP expenses:

- **Covered Service** – States get federal reimbursement for “covered services” provided to enrollees, such as a visit to a doctor or in-patient hospital stay. States must cover certain “mandatory” services, but they also have the option of covering certain additional services, such as language services.
- **Administrative Costs** – States also get federal funds to assist with the administrative costs of the program (e.g. costs of staff to determine eligibility and oversee contracts, and computer costs).
- **Disproportionate Share Hospitals** – States also get federal funding for payments made to “disproportionate share hospitals” – hospitals that serve a disproportionate share of Medicaid and uninsured patients.<sup>3</sup>

#### OTHER OFFICES

## **Why can states get (draw down) federal reimbursement for language services?**

In 2000, the Centers for Medicare & Medicaid Services (CMS), a part of the federal Department of Health and Human Services and the agency overseeing Medicaid and SCHIP, reminded states that they could obtain federal “matching” funds for language services provided to Medicaid and SCHIP enrollees. In a letter to state health officials, CMS reminded states that

Federal matching funds are available for states’ expenditures related to the provision of oral and written translation administrative activities and services provided for SCHIP or Medicaid recipients. Federal financial participation is available in State expenditures for such activities or services whether provided by staff interpreters, contract interpreters, or through a telephone service.<sup>4</sup>

## **Why don’t all states cover language services for Medicaid/SCHIP enrollees?**

While each healthcare *provider* who receives federal funds must provide meaningful language access, *states* do not have to reimburse providers for these expenses. Each state determines if and how it will provide reimbursement for interpreters. Individual providers cannot seek reimbursement unless their state has set up a mechanism to do so. Only twelve states and the District of Columbia directly reimburse providers for language services.<sup>5</sup> States have an obligation, however, to ensure language access at Medicaid and SCHIP eligibility offices.

The reasons states do not offer direct reimbursement vary, and you may need to take different steps to educate policymakers depending on the reason in your state. For example, some state officials do not know that federal funding is available. Informing them may be sufficient to build their interest in offering reimbursement. Faced with tight budgets, some states may not designate state funds to pay their share of the Medicaid/SCHIP match. In these states, you may want to educate policy makers about the costs of non-compliance with federal requirements (such as Title VI), and the indirect costs of not providing language assistance to LEP patients (such as more medical errors, reduced quality of care, and unnecessary diagnostic testing). Finally, some states view language services as part of providers’ costs of doing business, and bundle the cost of language services into the providers’ general reimbursement rates, regardless of providers’ actual costs. In these states, changing state policies may require providing information about the utilization of language services, the actual costs of interpreters, and why a bundled payment rate is insufficient to cover these costs.

## **How much would my state get from the federal government for language services?**

This depends on the state, the program, and how the state chooses to be reimbursed.

**Covered Services** -- For covered services, the state pays part of the costs and the federal government pays the remainder. Each state has a different federal “matching” rate – that is, the percentage of the provider reimbursement for which the federal government is responsible. The federal contribution varies from 50% to 83%, depending upon a state’s per capita income (states

with higher per capita income receive less federal funding). States also have different matching rates for Medicaid and SCHIP; SCHIP services are reimbursed at a higher rate. For example, Iowa receives a 63.50% federal match for Medicaid services and 74.45% for SCHIP services. For information on your state, *see* Kaiser Family Foundation's State Health Facts Online, <http://www.statehealthfacts.kff.org/>.

***Administrative Costs*** -- Some states may choose to cover the costs of language services as an administrative expense, rather than as a covered service. For administrative expenses, all states receive a 50% federal match for both Medicaid and SCHIP.<sup>6</sup> In SCHIP, however, states can only spend 10% of their total federal allotment on administrative expenses. For states that are at or near their 10% administrative cap, it may thus be preferable to consider language services as a “covered service” rather than as an administration expense.

### **How does my state start drawing down federal reimbursement for language services?**

***Covered Services*** -- States that wish to get federal funding as a “covered service” must add language services to their Medicaid “state plan.” The state plan is the document that outlines how each state’s Medicaid program works, including what services it covers. The state must submit this request – a “state plan amendment” or “SPA” – to CMS. Until a service is added to the “state plan” and approved by CMS, the state cannot receive federal reimbursement. In many states, because of the financial costs of covering a new service, the state legislature must approve the SPA prior to submission to CMS.

***Administrative Costs*** -- States that seek reimbursement for language services as an administrative expense do not need prior CMS approval. Thus, while the federal matching rate for administrative expenses may not be as high as the rate for covered services (e.g. 50% as opposed to 63.5% for Medicaid covered services in Iowa), a state may choose this option because it is easier to implement. However, this decision is also affected by the differing matching rates for Medicaid and SCHIP. In some states, the federal matching rate for Medicaid covered services is 50%, the same as for administrative expenses. In these cases, the state does not have a financial incentive to add a covered service to its Medicaid state plan. But while a state’s Medicaid matching rate might be 50%, its SCHIP rate is always higher, at least 65%. In addition, states are not allowed to spend more than 10% of their SCHIP allotment on administrative expenses. So deciding to cover language services as an administrative expense in SCHIP may produce fewer federal dollars, and also create conflicts with other administrative priorities.

***Disproportionate Share Hospital Costs*** -- States can also use federal funding available for “disproportionate share hospitals” (DSH) – that is, hospitals that serve a disproportionate share of Medicaid and uninsured patients – to help pay for language services. States determine which hospitals are considered DSH and how much funding to distribute to them. States could consider a hospital’s language services expenses in determining the allocations of DSH money.

## **Which providers can get reimbursed for language services?**

Each state determines which Medicaid and SCHIP providers can obtain reimbursement. States may choose to reimburse all providers or only some—for example, only “fee-for-service”<sup>7</sup> providers, or hospitals, or managed care organizations. Most states that provide reimbursement do so for fee-for-service providers. Two states reimburse hospitals. One state has added money to the “capitation rate” it pays to managed care organizations for each enrolled patient to cover the costs of providing interpreter services.<sup>8</sup>

The decision of which providers to reimburse will vary state by state. Factors to consider include whether a provider uses a staff member or contract interpreter, whether staff interpreters interpret full-time or have other job responsibilities, and whether bilingual providers are competent to provide services in a non-English language and should be compensated for their language skills.

## **How can my state reimburse providers who receive pre-set rates for services?**

Some states set payment rates that “bundle” all of the costs of providing services to a patient into a single fee; the fee includes the costs of medical tests or procedures, as well as of other services and items – for example, consultation, medical supplies and medications. The payment rate also includes reimbursement for a share of the facility’s overhead costs – salaries, utilities, maintenance of physical plant, etc. Such bundling is particularly common for inpatient hospital services. The federal Medicare program bundles fees into “diagnosis related groups,” or DRGs. Some states pay for inpatient hospital stays based on DRGs, while others pay on a per-case or per-diem basis. The cost of language services is implicitly included in whatever bundling method a state employs. For other health care providers, such as doctors operating small group practices, many states include all administrative and overhead costs – including language services – in the provider's payment rate. Federally qualified health centers receive bundled payments through a “prospective payment system,” an advance payment that estimates the health centers’ costs.

Since states set the Medicaid/SCHIP payment rates for each service, states can modify the rates to add on direct reimbursement for interpreters when they are used.<sup>9</sup> States can have a separate “billing code” with a payment rate specifically for interpreters – each time a provider uses an interpreter, the provider receives both the payment rates for the covered service and for the interpreter. States can also add a “modifier” for an existing rate – each time a provider uses an interpreter, the modifier increases the payment rate by either a percentage or a specific amount. The rates or modifiers can vary by language (frequently encountered versus less frequently encountered), type of interpreter (staff interpreter, contract interpreter, bilingual provider, telephone language line), or other factors.

Many states include requirements to provide access to language services in their contracts with managed care organizations. If a state chooses to directly pay managed care organizations for the costs of these language services, they have two options – pay for language services separately from the managed care capitation rate<sup>10</sup> (i.e. “carve out” language services from the

set of services the managed care organization must provide) or increase the capitation rate to include language services.

### **How much should the state pay for interpreters?**

When a state decides to reimburse providers for language services, it determines the payment rate. Those currently in use vary from \$12 to \$190 per hour. The rates should reflect labor costs in the state and consider training or certification requirements. When setting the payment rate, the state should also consider travel time, waiting time, and other activities associated with providing interpretation; these circumstances vary by state, and often by region. For example, in rural areas where travel times can be lengthy, a state should evaluate whether the interpreter can receive reimbursement for travel time. (A state also needs to determine if and what to pay in a variety of circumstances: for example, what happens if the interpreter arrives but the provider or patient cancels the appointment.) To encourage the use of interpreters, it is important that states set a rate that will cover at least the interpreter's actual costs. The state should also set an adequate reimbursement rate to ensure that a sufficient number of interpreters to meet the needs of its LEP population are willing to participate in the program.

### **How can states offer reimbursement?**

Currently, states that provide reimbursement for language services use four payment models:

- require providers to hire interpreters and submit for reimbursement
- pay interpreters directly
- use “brokers” or language agencies – providers can call these designated organizations to schedule an interpreter; the state reimburses the broker/agency which in turn pays the interpreter
- provide access to a telephone language line for providers.

For more information on these models, see *Medicaid and SCHIP Reimbursement Models for Language Services* in this Action Kit.

### **What about language services for individuals not enrolled in Medicaid/SCHIP?**

Federal funding is only available for language services for Medicaid and SCHIP enrollees (or to parents of Medicaid/SCHIP enrolled children). It is also available for patients who receive Medicaid-covered emergency services.

Health care providers who receive federal funds, however, must ensure language access for *all* of their patients, not just Medicaid and SCHIP enrollees. Thus, a gap exists between existing federal funding and the need for services. States could use state funds to provide language services for other individuals. Once a state has established a language assistance program for its Medicaid and SCHIP beneficiaries and invested the initial resources necessary to implement it, the additional costs to expand the program to other LEP patients would probably be minimal.

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<sup>1</sup> The Community Health Centers Reauthorization Act includes language services demonstration programs but funding has not yet been provided.

<sup>2</sup> For more information on these programs, see [www.healthlaw.org](http://www.healthlaw.org), <http://www.kff.org/content/2001/2248/2248.pdf> (*Medicaid: A Primer*) or <http://cms.hhs.gov/medicaid/mover.asp> (*Medicaid: An Overview*).

<sup>3</sup> Currently, hospitals that serve a “disproportionate share” of Medicaid and uninsured patients are eligible to receive supplemental Medicaid payments through the Disproportionate Share Hospital (DSH) program. In many states the DSH program represents one of the most significant sources of federal funding to support health care for the uninsured and Medicaid beneficiaries. More than 10% of all Medicaid funding is through DSH, amounting to more than \$15.8 billion combined federal and state spending in 2001.

<sup>4</sup> This letter is available at <http://www.cms.hhs.gov/smdl/downloads/smd083100.pdf>.

<sup>5</sup> These twelve are the District of Columbia, Hawaii, Idaho, Kansas, Maine, Minnesota, Montana, New Hampshire, Utah, Vermont, Virginia, Washington and Wyoming. For more information on the models these states are using, see *Medicaid/SCHIP Reimbursement Models for Language Services: 2007 Update*, available at [www.healthlaw.org](http://www.healthlaw.org).

<sup>6</sup> Limited exceptions exist to the administrative matching rate. For example, states can receive 90% federal funding for upgrading computer systems or providing family planning services and supplies; 75% federal funding to cover the costs of medical and utilization review; and 100% for expenses in implementing and operating an immigration status verification system.

<sup>7</sup> “Fee-for-service” generally refers to services not provided through a hospital, managed care organization, or community health center. Providers agree to accept a state-set fee for the specific service provided to a Medicaid/SCHIP enrollee.

<sup>8</sup> For more information on the models these states are using, see *Medicaid/SCHIP Reimbursement Models for Language Services: 2007 Update*, available at [www.healthlaw.org](http://www.healthlaw.org).

<sup>9</sup> States cannot, however, increase their Medicaid/SCHIP reimbursement rates above Medicare reimbursement rates.

<sup>10</sup> The “capitation rate” is the amount a state pays the managed care organization for each enrollee per month, which compensates the managed care organization for all the services covered by the contract. It is a set amount that does not vary depending on how many or few services the enrollee utilizes.



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# MEDICAID AND SCHIP REIMBURSEMENT MODELS FOR LANGUAGE SERVICES

2007 UPDATE

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**MEDICAID/SCHIP REIMBURSEMENT MODELS  
FOR LANGUAGE SERVICES  
2007 UPDATE**

In 2000, the Centers for Medicare & Medicaid Services (CMS) reminded states that they could include language services as an administrative or optional covered service in their Medicaid and State Children's Health Insurance Programs, and thus directly reimburse providers for the costs of these services for program enrollees. Yet only a handful of states are directly reimbursing providers for language services. Currently, the District of Columbia and 12 states (Hawaii, Idaho, Kansas, Maine, Minnesota, Montana, New Hampshire, Utah, Vermont, Virginia, Washington, and Wyoming) are providing reimbursement. Three states have initiated discussions about reimbursement. Connecticut and Texas enacted legislation requiring reimbursement but they have not yet been implemented. North Carolina expects to provide reimbursement after establishing interpreter credentialing. And California has a Task Force established by the Department of Health Services that is identifying methods of initiating reimbursement.

The remainder of this issue brief outlines existing state mechanisms for directly reimbursing providers for language services for Medicaid and SCHIP enrollees.<sup>1</sup> (For more information on funding for Medicaid and SCHIP services, see *How Can States Get Federal Funds to Help Pay for Language Services for Medicaid and SCHIP Enrollees?*<sup>2</sup>). While only some states currently provide reimbursement, the examples below can help you identify promising ways to evaluate and establish reimbursement mechanisms to meet your state's needs and goals.

**STATES CURRENTLY PROVIDING REIMBURSEMENT**

State	For which Medicaid and SCHIP enrollees?	Which Medicaid and SCHIP providers can submit for reimbursement?	Who does the State reimburse?	How much does the state pay for language services provided to Medicaid/SCHIP enrollees?	How does the state claim its federal share – as a service or administrative expense <sup>3</sup> ?	What percentage of the state’s costs does the federal government pay (FY 2006) <sup>4</sup> ?
<b>DC</b>	Fee-for-service <sup>5</sup> (FFS)	FFS practice < 15 employees	language agencies <sup>6</sup>	\$135-\$190/hour (in-person) \$1.60/min (telephonic)	Admin	50%
<b>HI</b>	Fee-for-service (FFS)	FFS	language agencies	\$36/hour (in 15 min. increments)	Service	Medicaid (MA) – 57.55% SCHIP – 70.29%
<b>ID</b>	FFS	FFS	providers	\$12.16/hour	Service	MA – 70.36% SCHIP – 79.25%
<b>KS</b>	Managed care	not applicable (state pays for language line)	EDS (fiscal agent)	Spanish – \$1.10/minute; other languages – \$2.04/minute	Admin	50%
<b>ME</b>	FFS	FFS	providers	reasonable costs reimbursed	Service	MA – 63.27% SCHIP – 74.29%
<b>MN</b>	FFS	FFS	providers	lesser of \$12.50/15 min or usual and customary fee	Admin	50%
<b>MT</b>	all Medicaid	all <sup>7</sup>	interpreters	lesser of \$6.25/15 minutes or usual and customary fee	Admin	50%
<b>NH</b>	FFS	FFS	interpreters (who are Medicaid providers)	\$15/hour \$2.25/15 min after first hour	Admin	50%
<b>UT</b>	FFS	FFS	language agencies	\$28-35/hour (in-person) \$1.10/minute (telephonic)	Service	MA – 70.14% SCHIP – 79.10%
<b>VA</b>	FFS	FFS	Area Health Education Center & 3 public health departments	reasonable costs reimbursed	Admin	50%
<b>VT</b>	All	All	language agency	\$15/15 min. increments	Admin	50%
<b>WA</b>	All	public entities	public entities	50% allowable expenses	Admin	50%
<b>WA</b>	All	non-public entities	brokers; language agencies	brokers receive administrative fee language agencies receive \$33/hour (\$34 as of 7/1/07)	Admin	50%
<b>WY</b>	FFS	FFS	interpreters	\$11.25/15 min	Admin	50%

## **District of Columbia**

Beginning in March 2006, the District of Columbia's Medical Assistance Administration (MAA) began providing access to a telephone language line that fee-for-service Medicaid/SCHIP providers could use – at MAA expense – to obtain an interpreter. Only fee-for-service primary care providers who employ less than fifteen (15) persons are eligible to use this language line. All FFS providers with fifteen (15) or more employees must provide and pay for interpreter services themselves.

According to the MAA transmittal sent to all Medicaid providers, eligible providers must request interpreter services at least seven (7) business days prior to the date of service or appointment. The provider sends the request to MAA's designated language agency. MAA approves or disapproves each request and the language agency then confirms the availability of an interpreter and notifies the requesting provider and Medicaid beneficiary. If emergency interpreter services are required, the provider can contact the language agency directly.

Managed care organizations have a separate obligation to provide language services under both federal law and the terms of DC's Medicaid managed care contract. Health care providers serving Medicaid managed care enrollees must request an interpreter directly from the MCO. The MCO notifies the requesting provider and Medicaid beneficiary of the availability of an interpreter within three (3) business days of the request.

MAA contracts with one language agency and pays between \$130-\$190 per hour. The rate varies based on the language needed and how much advance notice is provided. For example, Spanish interpreters cost MAA \$135./hour if 3-5 business days notice is provided and \$160/hour if less notice is provided; the rates are \$160 and \$190 respectively for Amharic, Chinese, Korean, and Vietnamese interpreters. After the first hour, charges range from \$3-\$5 per minute. All encounters are subject to a \$25. administrative charge. MAA pays \$1.60/minute for telephonic interpretation.

In the first six months the program was operational, MAA spent \$895. on interpreters and \$2723.09 for translation of written materials.

## **Hawaii<sup>i</sup>**

The state contracts with two language service organizations to provide interpreters. The eligible enrollees are Medicaid fee-for-service patients or SCHIP-enrolled children with disabilities. The state pays the language service agency a rate of \$9 per 15 minutes. If an interpreter is needed for more than 1½ hours, a report must be submitted stating the reason for the extended time. Interpreters who are staff or bilingual providers are not reimbursed.

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<sup>i</sup> The information from Hawaii is from 2002. The author made repeated attempts to contact Hawaii agency staff to update this information but received no response.

Interpreters are allowed to charge for travel, waiting time, and parking. The state has guidelines on billing procedures and utilization, and language service organizations are expected to monitor quality and assess the qualifications of the interpreters they hire. The state spends approximately \$144,000 per year on interpreter services for approximately 2570 visits (approximately \$56 per visit). Hawaii receives reimbursement for the interpreter services as a “covered service” (similar to an office visit or other service covered by the state’s Medicaid plan). The state receives federal reimbursement of approximately 57% for Medicaid patients and 70% for SCHIP patients.

The costs of providing interpreters for in-patient hospital stays are included in hospitals’ existing payment rates; separate reimbursement is not allowed. QUEST, the state’s Medicaid managed care program, includes specific funding in its capitated rates for enabling/translation services (based on volume and claims submission data).

## **Idaho**

Idaho began reimbursing providers for the costs of interpreters prior to 1990. The state reimburses for interpreters provided to fee-for-service enrollees and those participating in the Primary Care Case Management program. Providers must hire interpreters and then submit claims for reimbursement. Providers must use independent interpreters; providers can only submit claims for reimbursement for services provided by members of their staff if they can document that the staff are not receiving any other form of wages or salary during the period of time when they are interpreting. No training or certification requirements for interpreters currently exist.

Hospitals may not submit claims for reimbursement for language services provided during in-patient hospital stays. The costs of language services are considered part of the facilities’ overhead and administrative costs.

Idaho reimburses the costs of language interpretation at a rate of \$12.16 per hour (this is the same rate for sign language interpreters). In 2006, the state spent \$87,913. on 7,438 units of interpretive services. These services were for 768 unduplicated clients. In FY 2004<sup>8</sup>, the state spent \$37,621 on language services for 4137 encounters.

## **Kansas**

In 2003, Kansas began offering Medicaid managed care healthcare providers access to a telephone interpreter/language line. The service is provided to primary care providers (for example, individual doctors and group practices, rural health centers, federally qualified health centers, Indian health centers, advanced registered nurse practitioners, and Nurse Mid-wives) and specialists.

The state began providing this service in part because of federal Medicaid managed care regulations and in response to results from a provider survey. The survey results – collected from 87 providers – identified that Spanish is the most frequently spoken language requiring interpretation services. Other languages are less frequently encountered. Nineteen providers reported that they never needed access to an interpreter. Twenty-five providers reported needing an interpreter 1-10 times per month and seven providers responded they needed an interpreter over 100 times per month.

The state's Medicaid fiscal agent, EDS, administers the language line. The provider calls into the Managed Care Enrollment Center (MCEC) and provides a password to the customer service rep (CSR). The CSR then connects to the language line and the provider uses their services. The bill is returned to the MCEC who then passes it on to the state Medicaid agency for reimbursement. The state utilizes two language lines – Propio Language Services for Spanish interpretation (charging \$1.10/minute) and Certified Languages International for other languages (\$2.04/minute).

From January through December 2006, Kansas spent \$46,479.74. Total minutes for calendar year 2006 was 41,193 – 39,951 was Spanish and 1,242 was all other languages.

## **Maine**

According to the National Conference of State Legislatures, interest in adding sign language as a reimbursable service under Medicaid paved the way for adding foreign language interpreters. In January 2001, after public hearings and public comment, Maine revised its Medicaid program manual to add interpreters for sign language and foreign language as covered services.<sup>9</sup>

The state reimburses providers for the costs of interpreters provided to Medicaid and SCHIP enrollees. The selection of the interpreter is left up to the provider. Providers are encouraged to use local and more cost-effective resources first, and telephone interpretation services only as a last resort. Providers then bill the state for the service, in the same way they would bill for a medical visit, but using a state-established interpreter billing code. When using telephone interpretation services, providers use a separate billing code and must submit the invoice with the claim for reimbursement.

The provider must include a statement of verification in the patient's record documenting the date and time of interpretation, its duration, and the cost of providing the service. The state reimburses the provider for 15-minute increments. The reimbursement does not include an interpreter's wait time; travel time is not specifically addressed although its policy states that it will not reimburse an interpreter who is transporting an enrollee. The state no longer has an established reimbursement rate but reimburses "reasonable costs". The provider must ensure that interpreters protect patient confidentiality and have read and signed a code of ethics. The state provides a sample code of ethics as an appendix to its Medical Assistance Manual.

The state is explicit that family members and friends should not be used as paid interpreters. A family member or friend may only be used as an interpreter if: 1) the patient requests it; 2) the use of that person will not jeopardize provider-patient communication or patient confidentiality; and 3) the patient is informed that an interpreter is available at no charge.

Hospitals (for language services provided during an in-patient stay), private non-medical institutions, nursing facilities, and intermediate care facilities for the mentally retarded may not bill separately for interpreter costs. Rather, costs for interpreters for these providers are included in providers' payment rates. (*MaineCare Benefits Manual*, formerly *Medical Assistance Manual*, Chapter 101, 1.06-3.)

## **Minnesota**

In 2001, Minnesota began drawing down federal matching funds for language interpreter services for Medicaid and SCHIP fee-for-service and managed care enrollees. All fee-for-service providers can submit for reimbursement for out-patient services. The state's managed care capitation rate includes the costs of language services.

Under Minnesota's provisions, providers must both arrange and pay for interpretation services and then submit for reimbursement. The state established a new billing code and pays either \$12.50 or the "usual and customary charge" per 15-minute interval, whichever is less.

Providers may only bill for interpreter services offered in conjunction with an otherwise covered service. For example, a physician may bill for interpreter services for the entire time a patient spends with the physician or nurse, and when undergoing tests, but not for appointment scheduling or interpreting printed materials. Providers serving managed care enrollees must bill the managed care plan. The managed care plan has the responsibility, pursuant to its contract with the state, to ensure language access; these costs are included in its payment rate.

Hospitals may obtain reimbursement for interpreter costs provided for out-patient care. The costs of language services in in-patient settings are bundled in the hospital payment rate. This payment rate, called the DRG (Diagnosis Related Group), does include a differential to address the costs of language services. When the DRG rates are set by the state, it considers historical data and makes rate adjustments. Although there are not specific adjustments for language services; these costs are generally assumed to be included in the hospital's overhead costs. But because the state bases the DRG on each hospital's own expenses (rather than peer groups or one DRG for the entire state), if a particular hospital has high language services costs, these should be included in the hospital's overall expenses, resulting in a higher DRG rate to compensate.

In FY 2005<sup>10</sup>, the state spent \$1,644,400 on language services for fee-for-service enrollees. Approximately 15,000 distinct recipients received interpreter services for a total of approximately 42,400 encounters. In FY 2004, the numbers were \$1,637,900 for 15,000 distinct recipients and 43,000 encounters.

Website: <http://www.dhs.state.mn.us>

## **Montana**

Montana began reimbursing interpreters in 1999 following an investigation by the federal HHS Office for Civil Rights. Montana pays for interpreter services provided to eligible Medicaid recipients (both fee-for-service and those participating in the Primary Care Case Management program) if the medical service is medically necessary and a covered service. The interpretation must be face-to-face; no reimbursement is available for telephone interpretation services. The interpreter must submit an Invoice/Verification form signed by the interpreter and provider for each service provided; Montana then reimburses the interpreter directly. Reimbursement is not available if the interpreter is a paid employee of the provider who provides interpretation services in the employer's place of business, or is a member of the patient's family. In addition, the interpreter and provider must attest that the interpreter is qualified to provide medical interpretation.<sup>11</sup>

The reimbursement rate is the lesser of \$6.25 per 15-minute increment or the interpreter's usual and customary charge. Interpreters may not bill for travel or waiting time, expenses, or for "no-show" appointments. The interpreter can bill for up to one 15-minute increment of interpreter time outside the Medicaid provider's office (i.e., at the Medicaid client's home or pharmacy) for each separate interpreter service performed per day. This time is specifically used for the interpreter to exchange information and give instructions to the Medicaid client regarding medication use.

The state does not have any interpreter certification requirements. Thus it is the responsibility of the provider to determine the interpreter's competency. While a state referral service operates for sign language interpreters, no equivalent exists for foreign language interpreters. The state spent less than \$2000. on interpreters in FY 2006.<sup>12</sup>

## **New Hampshire**

New Hampshire has had policies to reimburse sign language and foreign language interpreters since the 1980's. While the state initially reimbursed for interpreters as a covered service, it currently reimburses interpreters as an administrative expense.<sup>13</sup>

Currently, interpreters are required to enroll as Medicaid providers, although through an abbreviated process since they do not provide medical services. Each interpreter has a provider identification number and can bill the state directly for services provided. The state contracts with EDS – a company that oversees all provider enrollment and billing – which also oversees interpreter enrollment. The state reimburses interpreters \$15. for the first hour, and \$2.25 for each subsequent quarter hour (\$25/hour for sign language interpreters).

Interpreters can bill directly or can work for an organization that coordinates interpreter services. Each interpreter, however, must individually enroll as a Medicaid provider regardless of who bills for reimbursement. Currently, interpreters (or language services organizations) can submit claims for reimbursement for language services only for clients of fee-for-service providers; interpreters cannot submit claims for hospital (in- or out-patient services) and community health center clients. At the present time, the state has 76 interpreters enrolled as Medicaid providers; training programs funded in part by the state have helped increase this number. The state is also examining ways to lessen the administrative burdens on interpreters and increase the availability of Medicaid interpreters.

In FY 2006<sup>14</sup>, the state spent \$17,809.75 on interpreters (both foreign language and sign language) for 1,763 encounters serving 331 distinct Medicaid recipients. In FY 2005, the numbers were \$15,334.50, 1,116 encounters, and 233 Medicaid recipients. In FY 2004, the state spent \$9,017 on 157 Medicaid recipients for 605 encounters. In FY 2003, the state spent \$5,870 on interpreters. Eighty-two Medicaid recipients received interpreter services for a total of 310 encounters.

## **Utah**

Utah covers medical interpreter services as a covered service; in FY 2007, the state will receive a 72% federal matching rate for Medicaid interpretations and 80% for SCHIP expenditures. The state pays for interpreters when three criteria are met: 1) the client is eligible for a federal or state medical assistance program (including Medicaid and SCHIP); 2) the client receives services from a fee-for-service provider; and 3) the health care service needed is covered by the medical program for which the client is eligible.

The state contracts with four language service organizations – two provide both in-person and telephonic and two only provide telephonic interpreter services to fee-for-service Medicaid, SCHIP, and medically indigent program patients. The health care provider must call the language service organization to arrange for the service. The language service organizations are reimbursed by the state between \$28-\$35 (with a one-hour minimum). The rates vary by company, time of day (higher rates are paid for after hours services) and less frequently encountered languages. If an in-person interpreter is not available, the provider may use a telephone interpretation service for which the state pays \$1.10/minute.

Providers cannot bill Medicaid directly, and they do not receive any rate enhancements for being bilingual or having interpreters on staff. Rather, interpreters bill the Medicaid agency. Hospitals can utilize Medicaid-funded interpreters for fee-for-service Medicaid enrollees for all services covered by Medicaid, both in- and out-patient. Hospitals may not use the Medicaid language services for Medicaid managed care enrollees. For enrollees in managed care, Utah requires health plans to provide interpretation services for their patients as part of the contract agreements. For services covered by Medicaid but not the health plan,<sup>15</sup> the state will pay for interpreters.

Utah does not have training or certification for interpreters but does require the contracting language assistance service organizations to provide information on quality assurance measures, including ethics standards, confidentiality, cultural competence and training in medical terminology.<sup>16</sup>

In FY 2003, Utah spent \$46,700 for interpretation although the amount nearly doubled in FY 2004 to \$87,500. (Utah's costs for sign language interpretation were approximately \$8,000 in FY 2003 and \$13,000 for FY 2004 although these figures include non-Medicaid expenses as well). In calendar year 2006, the state spent approximately \$263,000 on interpreting of which \$180,000 was for foreign language interpreters and \$83,000 for sign language interpreters.

Website: <http://health.utah.gov/medicaid/html/interpreter.html>,  
<http://health.utah.gov/medicaid/pdfs/InterpretGuide10-06.pdf>

## **Vermont**

Vermont began reimbursing for interpreters provided to Medicaid clients a few years ago. Medicaid providers hire interpreters and can submit the costs of interpreters along with the medical claim. Reimbursement is limited to \$15. for each 15-minute increment. The state does not reimburse for travel or waiting time. Further, reimbursement is not allowed for bilingual staff that serves as interpreters.

While providers may hire any interpreter, services are primarily provided by one language agency. The state Agency for Health Services has a contract with the language agency to meet its interpretation needs and informs providers of this agency. However, providers must make their own arrangements with the agency. The agency also has a statewide telephonic interpretation contract to provide interpreters in rural areas but providers who use telephonic interpretation cannot currently submit for Medicaid reimbursement.

## **Virginia**

Virginia began a pilot project for reimbursement in 2006. Senate Joint Resolution 122 (2004) directed the Department of Medical Assistance Services (DMAS) to seek reimbursement for translation and interpreter services from the Centers for Medicare & Medicaid Services. The state will submit claims to CMS as part of its administrative expenses. The project began in Northern Virginia.<sup>17</sup> Other areas may join as the project proceeds and DMAS intends to eventually expand the program statewide.

The state has a contract with Virginia Commonwealth University (VCU) to facilitate DMAS payment for these services. VCU is the contracting entity for the Virginia statewide area health education centers program, one of which (Northern Virginia AHEC, hereinafter AHEC) is participating in the pilot project. In addition to AHEC, three health departments (Alexandria City, Arlington County, and Fairfax County) will provide language services. The three health departments currently offer language services through the use of salaried staff, contracted staff,

telephonic resources, and administration of services. AHEC will both provide language services and act as a broker to receive calls from recipients requesting language services; confirm that a covered medical service is involved; and schedule the language services. AHEC will aggregate the claims from itself and the health departments and submit them to DMAS through VCU. AHEC and the three health departments will contribute the state's share of costs and obtain 50% federal reimbursement. This agreement is similar to Washington state's Intergovernmental Transfer (see below).

DMAS requires the participating interpreters and translators to meet proficiency standards, including a minimum 40-hour training for interpreters. The state will reimburse for the reasonable costs incurred by the providers. It anticipates that each health department will have contracts to provide telephonic and/or in-person interpreters; since the health department contracts and language agencies will differ, the state chose not to set a reimbursement rate but rather to monitor spending and evaluate whether a state-wide reimbursement rate should be implemented at a later date. There is no formal budget for the pilot project.

In FY 2006, Virginia spent \$8546 for 507 hours of service.

Website: [http://leg2.state.va.us/dls/h&sdocs.nsf/By+Year/SD222004/\\$file/SD22.pdf](http://leg2.state.va.us/dls/h&sdocs.nsf/By+Year/SD222004/$file/SD22.pdf)

## Washington

**Providers that are not public entities.**<sup>18</sup> In 1998, the Department of Social and Health Services' (DSHS) Language Interpreter Services and Translation (LIST) program began contracting with language agencies through a competitive procurement process. Beginning in 2003, the state changed its system to contract with nine regional brokers for administrative scheduling of appointments. The brokers contract with language agencies. In FY 2004,<sup>19</sup> the Department provided interpreters for over 180,000 encounters. Interpreters are paid for a minimum of one hour; mileage is paid if an interpreter has to travel more than 10 miles.

Rather than require clients to schedule interpreters, providers – including fee-for-service providers, managed care organizations, and private hospitals – call a regional broker to arrange for an interpreter. The state requires providers to schedule interpreters to avoid interpreters independently soliciting work and/or acting as advocates rather than interpreters. Once services are provided, the language agency then bills the broker for the services rendered. For interpretation services provided in a health care setting, the claim form requires the name of the referring physician, as well as the diagnosis or nature of illness or injury.

The state pays the brokers an administrative fee; the brokers then pay the language agencies. For Medicaid and SCHIP enrollees, the state obtains federal reimbursement for these costs. Currently, payments to language agencies are \$33.00 per hour, increasing to \$34.00 per hour effective July 1, 2007. The state spends approximately \$1 million a month on all DSHS language services; from November 2005 to October 2006, Washington provided 217,865 encounters. The Medicaid spending during this time period was \$38,225.47.

Washington has a comprehensive assessment program for interpreters. Now called the “Language Testing and Certification program”, the state requires medical interpreter certification for interpreters in the seven most prevalent foreign languages in Washington: Spanish, Vietnamese, Cambodian, Lao, Chinese (both Mandarin and Cantonese), Russian, and Korean. Interpreters for all other languages must be qualified rather than certified (because of limited resources available for full certification in all languages). The state has given tests for 88 languages plus major dialects and offers statewide testing at five sites, with four days of testing per month per site. Additional tests are available upon request. The state also offers emergency/provisional certification for those who have passed the written test but await oral testing, and in other limited situations.

Website: <http://www1.dshs.wa.gov/msa/LTC/index.html>

**Public hospitals and health departments.** Washington has a separate reimbursement program for interpreter services provided at government and public facilities, such as public hospitals or local health jurisdictions. These entities can receive federal reimbursement for expenses related to language services if they enter into a contract (e.g. interlocal or intergovernmental agreement) with the state and agree to:

- § provide local match funds (locally generated private funds);
- § ensure that the local match funds are not also used as matching funds for other federal programs;
- § ensure that the local match funds meet federal funding requirements;
- § ensure that the local match funds are within the facilities’ control;
- § use only certified interpreters (as certified by Washington’s LIST program);
- § coordinate and deliver the interpreter services as specified by the state;
- § collect, submit and retain client data as required; and
- § accept all disallowances that may occur.

These facilities receive reimbursement for both direct (e.g. interpreter services provided as part of the delivery of medical/covered services) and indirect (e.g. time spent coordinating or developing interpreter programs, billing, equipment purchasing) interpreter expenses. The facilities receive reimbursement for 50% of their costs – the federal administrative share. Because these entities act as the state for the purposes of reimbursement, the 50% state “match” is paid by the facility.

There are currently 20 public hospitals with interlocal agreements. Thus far, 12 have been reimbursed \$393,414.09 for the last calendar year (the remaining 8 are not current on their billing).

Website: <http://fortress.wa.gov/dshs/maa/InterpreterServices/FFP.htm>

## Wyoming

Beginning in July 2006, Wyoming began paying for language services for its Medicaid enrollees. The interpretation may be provided in-person or via telephone language line.

To access interpreter services, a provider must: 1. determine a need for interpreter services; 2. utilize an agency-approved interpretation provider; 3. provide a medical service for which the interpretation is used. Interpreter services are not provided for in- and out-patient hospital services; intermediate care facilities for persons with mental retardation (ICF-MR); nursing facilities; ambulance services by public providers; residential treatment facilities; comprehensive in- or out-patient rehabilitation facilities; and other agencies/organizations receiving direct federal funding. Further, the state will not pay for interpretation provided by family members, friends or by volunteers.

Interpreters must abide by the national standards developed by the National Council on Interpreting in Health Care ([www.ncihc.org](http://www.ncihc.org)). They can bill only for time spent with the client and are not reimbursed for travel.

Interpreters are paid in 15 minute increments (but interpreters can bill for the unit only after 10 minutes into the unit). Interpreters are reimbursed at \$11.25/15 min. and are limited to billing no more than six units per date of service for any individual Medicaid recipient.

## **STATES DEVELOPING REIMBURSEMENT**

### **California**

The Department of Health Services (DHS) has convened the Medi-Cal Language Access Taskforce. The Taskforce is charged with forming recommendations to DHS on “a model for the economical and effective delivery and reimbursement of language services in Medi-Cal.” The Taskforce includes 22 representatives from the following categories: Office of Multicultural Health Council, Government Agencies, Providers and Practitioners, and Consumers and Advocates.

Website:

[http://www.dhs.ca.gov/director/omh/html/MC\\_Language\\_Access\\_Services\\_Taskforce.htm](http://www.dhs.ca.gov/director/omh/html/MC_Language_Access_Services_Taskforce.htm)

### **Connecticut**

On June 19, 2007, Public Act No. 07-185 became law, requiring the Commissioner of Social Services to amend the Medicaid state plan to include foreign language interpreter services provided to any beneficiary with limited English proficiency as a covered service under the Medicaid program. This program has not yet been implemented.

### **North Carolina**

In 2002, the federal Department of Health and Human Services' Office for Civil Rights entered into a Voluntary Compliance Agreement (VCA) with the North Carolina Department of Health and Human Services (DHHS) to identify and meet language needs at the state and county levels. In part because of the VCA and in part from suggestions from the DHHS Compliance Attorney and the Department's Title VI Advisory Committee<sup>20</sup>, North Carolina has embarked on plans to initiate reimbursement. The impetus for these discussions is to ensure competent interpreters are available to provide much-needed resources to healthcare providers.

The process is twofold – development of interpreter credentialing and establishment of reimbursement.

### ***Credentialing***

Two organizations have been training interpreters in North Carolina since the '90's. Originally, the NC Area Health Educational Center (AHEC) launched a Spanish language interpreter training project. Recognizing the additional needs for interpreter brought on by newly arrived refugees, the Center for New North Carolinians (CNNC) contracted with NCDHHS/DSS to train interpreters in languages other than Spanish. This contract lasted from the spring of 1999 through July of 2003. Following this contract, CNNC continued interpreter training on a fee for service basis. In 2004, AHEC partnered with CNNC statewide to provide interpreter training through the AHEC network. Last year, given CNNC's long history of providing interpreter training, DHHS requested CNNC develop an interpreter credentialing program for interpreters providing language services to DHHS and the healthcare providers it funds.<sup>21</sup>

The current CNNC training program, using a model developed by AHEC, has three levels: Level I is a two day introductory level; Level II is a one day practicum to reinforce the Level I; and Level III is an advanced two day training, currently focused on Spanish medical vocabulary. The new curriculum will continue to include levels I and II but will incorporate recently released National Standards of Practice and Code of Ethics from the National Council on Interpreting in Health Care. It will start with an assessment of an individual's language competency and require a demonstration of interpreter competency. A basic credentialing process will be developed first, followed by specialized credentialing (level III) in advanced areas such as social service, public health, and mental health, using the AHEC Level III construct. DHHS would only reimburse interpreters who are credentialed in the areas for which they interpret.

### ***Reimbursement***

After the certification curriculum is approved by the agency, DHHS expects to submit a State Plan Amendment to include language services as a "covered service" in Medicaid. It is expected that reimbursement will include an array of Medicaid services and support the adequate provision of medically necessary care. DHHS will establish procedure codes and anticipates providing reimbursement for both in-person and telephonic interpreters. If an agency providing telephonic interpretation is used, it will be the responsibility of the agency to assure that training is at least equivalent to the requirements of the DHHS approved curriculum.

It is expected that reimbursement will include all types of Medicaid services -- in- and out-patient as well as fee-for-service and managed care. Depending on the development, testing and implementation of certification, reimbursement may begin in early 2008.

### **Texas**

In 2005, Texas enacted legislation establishing a Medicaid pilot project for reimbursement for language services in five hospital districts.<sup>22</sup> The Health and Human Services Commission (HSSC) is tasked with developing the project. HSSC is working to identify the most appropriate model for the pilot. There has been some delay because the majority of

Medicaid enrollees in the designated hospital districts are in managed care. Since the managed care organizations' costs of language services are already included in their capitated rate, the pilot project does not cover them.

Thus, HSSC is working with the hospitals to identify the best methods to track language services provided to fee-for-service and emergency Medicaid recipients. Originally, HSSC offered two cost allocation methodologies – 1) a direct charge allocation method, meaning that the contractor must document that the entire cost is completely related to the performance of an allowable activity, or 2) a Medicaid Eligibility Ratio (MER) allocation method. Since the hospitals assert that both these approaches are administratively cumbersome, they requested consideration of a third approach – a documentation method called a random moment time study (RMTS) approach. HHSC is in the process of seeking approval for this approach with the federal Centers for Medicare and Medicaid Services (CMS).

HHSC is consulting CMS on the possibility of utilizing an RMTS for the pilot. Once CMS guidance is received, HHSC will proceed with the contract development process. The estimated date of program implementation is dependent on CMS direction and contract negotiation.

The state is using the administrative cost mechanism and thus will receive 50% reimbursement from CMS (since TX's covered service FMAP rate is also 50% for Medicaid, it would not gain financially from having language services added to its state plan). The pilot project will likely be financed through "fund certifications" from the participating hospital districts. A fund certification requires the hospital to certify that it has spent a certain amount on language services but, unlike intergovernmental transfers, does not involve the actual transfer of dollars. Because the hospital districts act as the state for the purposes of reimbursement, the 50% state "match" is paid by the facility that will receive reimbursement for 50% of its costs. The program expires on September 1, 2009, if no further action is taken.

Under Texas' two managed care models, the state pays for interpreter services. The state's contracted Medicaid and Children's Health Insurance Program (CHIP) HMOs, as well as the PCCM administrator, are contractually required to provide interpreter services. The state includes the costs of these services into rates paid by the state to these contractors.

A status report on the pilot project was submitted to the State Legislature in January 2007: *Medicaid Interpreter Services Pilot: Report on Program Effectiveness and Feasibility of Statewide Expansion* is available at <http://www.hhsc.state.tx.us/reports/PCMemo121906LangInterpretPilotRept.pdf>.

## **STATES PREVIOUSLY PROVIDING REIMBURSEMENT**

### **Massachusetts**

From FY 2002-2005, Massachusetts provided direct reimbursement for language services in Medicaid for hospital emergency rooms and in-patient psychiatric institutions. The legislature did not include an appropriation in FY 2006, possibly because the state raised general hospital payment rates. Massachusetts now bundles payment for interpreter services into its payment rates. Massachusetts does not make discrete provider payments for interpreter services because such costs are incorporated in the fee-for-service payment and the agency considers interpreter services to be part of the cost of doing business for hospitals as well as other providers. The

following describes the program as it had operated.

In April 2000, the legislature passed Chapter 66 of the Acts of 2000, “An Act Requiring Competent Interpreter Services in the Delivery of Certain Acute Health Care Services.” This law, effective July 2001, mandates that “every acute care hospital . . . shall provide competent interpreter services in connection with all emergency room services provided to every non-English-speaker who is a patient or who seeks appropriate emergency care or treatment.” The law also applies to hospitals providing acute psychiatric services. The state attorney general is authorized to enforce the law, and individuals who are denied emergency services because of the lack of interpreters are also given legal standing to enforce their rights.

In 2003, Massachusetts received approval of three State Plan Amendments (one each for psychiatric hospitals, and in-patient and out-patient acute-care hospital care) to obtain federal reimbursement. In FY2005, the last year the program operated, the state budget included an appropriation of \$1.1 million to reimburse hospitals and acute psychiatric facilities for the costs of language services. The state’s Medicaid agency made “supplemental payments” to “qualifying” hospitals for interpreter services provided at hospital emergency departments, acute psychiatric facilities located within acute hospitals, and private psychiatric hospitals. The distribution was based on an “equity formula” comparing expenses submitted by each qualifying hospital to the total expenses submitted by all qualifying hospitals.

In addition, the state’s Medicaid agency previously considered interpreter costs in its DSH (Disproportionate Share Hospital) distribution formula. Medical interpreter costs were identified by the hospitals on their cost reports, which were used to determine unreimbursed costs for DSH purposes. Distribution of DSH funds was then based on these unreimbursed costs.

As part of its comprehensive Health Care Reform plan, passed in April 2006 and approved by the federal government in July 2006, Massachusetts technically no longer has a DSH program. MA has transitioned its federal DSH dollars, as well as other federal 1115 waiver-related dollars, into a new pool of money called the Safety Net Care Pool. Safety Net Care Pool funds are used to provide subsidies to low-income individuals to purchase private coverage through the Commonwealth Care program (which was implemented on October 1, 2006) and to fund a residual uncompensated care pool. For purposes of its Uncompensated Care Pool (UCP), Massachusetts allows hospitals to include the costs of language services in the base costs used to develop Medicaid rates and the UCP cost-to-charge ratio.

## **CONCLUSION**

Given the requirements of Title VI of the Civil Rights Act of 1964 that health care providers who receive federal funds ensure access to services for people with limited English proficiency, more states should access available federal funds to ensure that their agencies – and the providers with whom they contract – have the means to hire competent medical interpreters. The use of competent interpreters can improve the quality of care, decrease health care costs by eliminating unnecessary diagnostic testing and medical errors, and enhance patients’ understanding of and compliance with treatments.

## ENDNOTES

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<sup>1</sup> This document outlines information gathered as of March 15, 2007.

<sup>2</sup> This document is available in the *Language Services Action Kit* from NHeLP and The Access Project at <http://www.healthlaw.org/library.cfm?fa=detail&id=71337&appView=folder>.

<sup>3</sup> States can draw down Medicaid/SCHIP funding in two ways – as a “covered service” (paying for the cost of a service, such as a doctor’s office visit or a hospital stay) or as an “administrative expense” (paying for the costs of administering the program). For information see *How Can States Get Federal Funds to Help Pay for Language Services for Medicaid and SCHIP Enrollees?* in NHeLP’s *Language Services Action Kit*, available at <http://www.healthlaw.org/langaccess/resources.html#nhelp>.

<sup>4</sup> For “covered services”, the federal reimbursement rate varies from 50-83%, based on the state’s per capita income. For “administrative” expenses, every state receives 50% of its costs from the federal government.

<sup>5</sup> “Fee-for-service” generally refers to services *not* provided through a managed care organization, community health center or in-patient hospital settings. Providers agree to accept a state-set “fee” for the specific “service” provided.

<sup>6</sup> Language agencies are organizations that contract with and schedule interpreters. They may also oversee assessment and/or training.

<sup>7</sup> Providers who have staff interpreters cannot submit for reimbursement.

<sup>8</sup> FY 2004 ran from July 1, 2003 through June 30, 2004.

<sup>9</sup> Language Access: Giving Immigrants a Hand in Navigating the Health Care System, NCSL’s *State Health Notes*, volume 23, number 381, October 7, 2002).

<sup>10</sup> FY 2005 ran from July 1, 2004 through June 30, 2005.

<sup>11</sup> Interpreter Services, Medicaid Services Bureau, 11/27/02, *available from* National Health Law Program.

<sup>12</sup> FY 2006 ran from July 1, 2005 through June 30, 2006.

<sup>13</sup> NH switched from a covered service to an administrative reimbursement due to a change in CMS policy; subsequently CMS clarified that states can get reimbursed at the covered service rate. Since New Hampshire’s FMAP for medical services, 50%, is the same as for administrative expenses, no practical difference exists in New Hampshire. For SCHIP, considering language services as a covered service would increase the federal share of costs.

<sup>14</sup> The state’s fiscal year runs from July 1 through June 30.

<sup>15</sup> For example, pharmacy, dental and chiropractic services.

<sup>16</sup> Bau I, Chen A. Improving access to health care for limited English proficient health care consumers: Options for federal funding for language assistance services. The California Endowment *Health in Brief* April 2003.

<sup>17</sup> The project will initially include Arlington County, Fairfax County, Falls Church and Alexandria City.

<sup>18</sup> Washington has two reimbursement mechanisms. The first is for non-public entities – this includes most fee-for-service providers, managed care providers, and non-public hospitals.

<sup>19</sup> The fiscal year runs from July 1, 2003 through June 30, 2004.

<sup>20</sup> The Title VI Advisory Committee composed of representatives from all divisions within the Department, including public health, social services, mental health, vocational rehabilitation, and Medicaid, and volunteers from the North Carolina Institute of Medicine, the Justice Center (legal aid) and several statewide advocacy groups. Its 25 members have a wide range of skills and hold various positions in and out of state government.

<sup>21</sup> In 1999, NCDHHS DSS contracted with CNNC to train health and human service interpreters in languages other than Spanish (the state contracted with NC Area Health Education Centers (AHEC) to train Spanish interpreters) and provide refugee interpreter services in the state. Beginning three years ago, AHEC began contracting with CNNC for the bulk of its interpreter training services. CNNC also maintains an interpreter bank from which health care providers can contract trained interpreters.

<sup>22</sup> S.B. No. 376 passed the Senate on March 17 and the House on May 9, 2005. A separate bill, H.B. No. 3235, was also enacted requiring provision of interpreter services to deaf and hard of hearing Medicaid patients subject to the availability of funds. The five hospital districts given preference are Harris County Hospital District; Bexar County Hospital District; El Paso County Hospital District; Tarrant County Hospital District; and Parkland Health and Hospital System.