

*Features*

**MEDICAL INTERPRETATION FOR IMMIGRANT WORKERS**

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**ABSTRACT**

Foreign-born workers have high rates of occupational mortality and morbidity, despite downward trends for the U.S. workforce overall. They have limited access to health care services. Medical interpreters (MIs) facilitate care of acutely injured, low-English-proficiency (LEP) patients, including those sustaining occupational injuries. Our goal was to assess the potential for MIs to serve as advocates of LEP patients injured at work and to deliver preventive messages. We conducted interviews and a focus group of MIs regarding their attitudes toward foreign-born workers, knowledge of occupational health, and perceived roles. They were familiar with occupational injuries and sympathetic toward foreign-born workers, and they described their roles as conduits, cultural brokers, and advocates for hospitals, providers, and patients. More detailed and representative data would require a larger investigation. However, the time-sensitive nature of policy-making at this point mandates that occupational health stakeholders participate in the national dialogue on standards, training, and licensure for MIs to promote improved access and quality of health care for LEP patients who have been injured at work.

**Keywords:** medical interpreters, occupational injury, low English proficiency patients, work-related injury

Foreign-born workers in the United States have the highest, and increasing, rates of occupational mortality and morbidity, despite downward trends for the workforce overall, and for whites and African Americans specifically [1-4]. Low-English-proficiency (LEP) patients have demonstrably worse health care access and outcomes than English speakers [5-12]. Foreign-born patients who are acutely injured at work are at an even greater disadvantage because they lack knowledge of their rights after an occupational injury—specifically, workers' compensation and protections under the Occupational Safety and Health Act—and those who are not authorized to work in the United States may avoid seeking health care for fear of temporary income loss, job loss, or deportation [13]. Additionally, there is evidence that foreign nationals are less likely to return for medical follow-up after initial care [14].

As of 2007, there were approximately 39 million foreign-born people in the United States, with a rise of 22 percent between 2000 and 2007 [15]. Because of this change in demographics, hospitals and outpatient facilities have established interpreter and language-assistance programs to close communication gaps between LEP patients and health care providers. National standards, guidelines, and recommendations for culturally and linguistically appropriate services (CLAS) have been developed by the Department of Health and Human Services' Office of Minority Health [16] and the Agency for Healthcare Research and Quality [17].

At present, most medical interpreters (MIs) employed by health care organizations receive no formal training, meet no uniform standard, and are not licensed. Those formal training programs that exist range from a few hours in individual hospitals to 40 hours of classroom time at junior colleges, and the content varies considerably [18].

Our prior work in an urban trauma center, providing occupational medicine consultation services with the assistance of medical interpreters, led us to explore the possibility of utilizing their services to recognize and address issues that are particular to occupational injuries in foreign-born workers. The overall goal of this project was to assess the potential for MIs in trauma and emergency departments to facilitate communication between providers and patients regarding legal rights, to serve as advocates for these patients, and to deliver preventive messages. The specific aims were to evaluate: 1) MIs' experience, knowledge and attitudes about occupational injuries and foreign-born workers; 2) MIs' perceptions of their role in the encounter between providers and patients; and 3) the possibility of MIs serving as advocates to assist in primary, secondary, and tertiary prevention of workplace injuries.

## METHODS

A key informant MI in a large urban trauma center was interviewed regarding his experience with occupational injuries, his perception of the relevance and goals of this project, and his interest in participating and recruiting other MIs to

a focus group. Based on this interview and a review of the literature on medical interpretation in health care settings, a focus group survey guide was developed, piloted, refined, and then utilized for the study. We developed a flyer and script for recruitment, and other MIs were recruited using the snowball method, selected for this investigation because of its utility for rapidly assessing an emerging issue [19]. In the end, we recruited nine medical interpreters—seven Spanish and two Polish—from four major hospitals in a single urban area: one is a public hospital; one is a community hospital that serves low-socioeconomic-status (SES) patients; one is associated with a private medical school and serves largely upper-middle-class patients and tertiary referrals; and the fourth is located in the suburbs and serves middle-class patients. Only the public hospital has an occupational medicine consultation service. The first two have both emergency departments and trauma units; the latter two have only emergency departments. Participants had 4 to 12 years of experience in delivering formal interpreter services in a hospital setting. None had specific occupational health training.

A 90-minute session was organized, with a facilitator posing questions and promoting discussion. The following broad questions corresponding to the study's specific aims were asked, with probes of responses to drill down to a level of greater detail:

- What are MIs' experience, knowledge and attitudes about occupational injuries and foreign-born workers?
- What are the MIs' perceptions of their role in the encounter between health care providers and patients?
- What is the possibility of serving as advocates to assist in preventing workplace injuries and ensuring access to workers' compensation?

Two of the investigators took notes. The session was taped and transcribed. Participant responses were grouped by the three broad questions (specific aims). Investigators agreed on the major points elucidated for each broad question and summarized them for this report. This protocol was approved by the UIC Institutional Review Board (#2008-0247).

## **RESULTS AND INTERPRETATION**

The MIs' responses to the questions of the facilitator serve as the results. These are ordered according to the specific aims and interpreted within the context of the published literature on medical interpretation and occupational health.

### **Experience**

The medical interpreters in this study all had considerable experience and contact with LEP patients who came to the hospital for traumatic injuries that

had occurred in the workplace. They described patterns of seeking health care among LEP patients in general, pointing out that these patients come into emergency rooms for a variety of reasons: because they do not have health insurance and they know they will not get turned away; because they do not understand how the health care system works and the ER is most familiar to them; and because members of their family or their community tell them to go there. They do not always come in on the day an injury occurred.

MI: “. . . they will try to keep on working even with the injury, and then you can tell they can't lift their elbow anymore, that they had to try to finally seek medical attention.”

In addition to the general factors that are important when non-English-speakers seek health care, the MIs cite issues that arise for LEP patients who have been injured in the workplace, namely a lack of knowledge about where to get treatment after a work-related injury:

MI: “I guess the main thing about working with [occupationally injured patients] is that they don't know where to go unless they're told to go. It's not like they get injured at work and they know where to go automatically.”

and concern about job stability:

MI: “The reason why they didn't go to the ER sooner is because they're afraid of getting fired or they don't have the day off and they wait until their day off to go to the hospital.”

and lack of knowledge about their rights vis-à-vis workplace health and safety and workers' compensation coverage:

MI: “One [reason they don't seek medical care after an injury] is the fear because of no benefits offered, they are not sure where they will go to get the medical attention without being billed for it . . . who's going to pay for that.”

The published literature describes problems with using informal interpreters, such as family members, hospital staff, or other patients [20]. These problems include lack of understanding of medical terminology, resulting in inaccurate transfer of information; breach of confidentiality; lack of impartiality or inability to dispassionately convey a message; imposition on patient autonomy; lack of cultural awareness or cultural competence; overstepping boundaries of role; and lack of professionalism [21]. The MIs in this study spoke about those same issues: in general, they feel that the patient gets less-than-optimal care without the services of formal interpretation. Further, they pointed out a particular problem related to informal interpretation for occupational injuries:

MI: “. . . regarding the Polish population. Most of the men are working on construction and because of the lack of language, usually the supervisor or the boss is going to bring the injured person to our hospital. With the first assessment, the boss, who knows some English, usually asks the patient not to tell that the injury occurred at the workplace. So later on, when the injury is more serious, the doctor calls for the interpreter and the patient is trying to say that was at the workplace, but sometimes it’s too late to change the document.”

MI: “I had an actual supervisor bring in his employee and the supervisor says chemicals did not go into his eye. When I went to interpret for that patient, he said, ‘the chemical went directly into my eye.’ And that’s what happens when the supervisor is the interpreter. When the boss is the interpreter, he knows the repercussions of that injury.”

If the injured worker-patient’s boss serves as the interpreter, there is a clear conflict of interest that could deprive these patients of workers’ compensation and avoid triggering an investigation by the Occupational Safety and Health Administration (OSHA) that might lead to remediation of the problem and improvement in workplace health and safety.

Lack of access to health care is seen as a major contributor to health disparities among subpopulations in the United States. “Access” is determined by geographic distance, inability to pay, lack of understanding of the health care system, lack of cultural competency on the part of providers, educational discrepancies between patient and provider, and lack of a common language. MIs in this study pointed out that “access” to health care after a work-related injury is limited by the complexity of paperwork to register the injury and obtain workers’ compensation coverage.

MI: [once an injured worker gets to the hospital] “you have to say that it happened at the job. They are unaware of the tremendous paper work . . . and they have to keep the pink copy because if they give it to their work, to HR, then they won’t have proof. . . . A lot of details get missed, and if they’re not instructed—who’s going to pay for it and what kind of insurance and who’s your HR person that we have to talk to—. . . they get lost in the paperwork and the follow-up visit. . . . they have to be referred to a special doctor which is authorized by their company.”

Patients not only need to *know* about the workers’ compensation system, but they must also untangle a web of complex rules, filing appropriate documents in a timely fashion.

Aside from understanding the mechanics of filing for workers’ compensation, “access” is, in part, determined by knowledge of employment rights. Frequently LEP workers are hired informally (without requisite employment documents), but they may not be aware of this until an injury occurs.

MI: "You think you work for a subcontractor and he has all the licenses and everything and you are insured. And an accident happens, God forbid, and you have nothing. You are "illegal" [in this circumstance], even though you have social security and papers, but you were never hired legally."

There is evidence that Hispanic and other foreign-born patients are less likely to return for follow-up care after treatment of the acute phase of a severe injury [21], although rehabilitation services may be an integral part of recovery. The MI participants in this study cited a lack of sophistication about medical issues and rehabilitation, as well as language and literacy barriers, as reasons for injured LEP patients not following up.

MI: "It is complicated. One, not knowing the language; two, not knowing the structure of what happens once it's a work-related injury; and three, they're scared of losing their job because either their hand is injured or . . . their eye is being affected. They're not aware of the [health] consequences. So [rehabilitation and follow up] is a lot more involved than an ordinary ER visit."

The literature also describes differential treatment and referrals of LEP patients, compared to patients proficient in English, on the part of providers [22].

### **Knowledge**

In a discussion about how work-related injuries come about, the participants offered the following descriptors: regarding hazardous work settings, they named construction, roofing, machine work, and landscaping; for mechanisms of injury, they described falling, power tools, and machinery; further, they expressed the belief that workers are at greater risk in small versus large businesses. The reasons they cited for the injuries can be organized into categories that are very familiar to occupational health and safety professionals:

- protection: protective gear is not available; the expectation for safe behavior is low; workers bring chemicals home on their clothes and could harm their families;
- training: workers need training on how to work safely, including how to use safety equipment; they either are not offered training, or the language barrier makes current training modes inadequate;
- labels and warnings: workers cannot read these in English, and they contain too many words;
- work practices: work tasks are rushed, and workers do not have time to work safely;
- worker fatigue: immigrant workers may work two to three jobs per day, or have a second job at home (caring for children, selves, homes); and
- violation of rights: they noted the Family and Medical Leave Act and workers' compensation laws, specifically, as benefits to which they may be legally entitled but which they are unable to access.

Participants were asked about their familiarity with specific agencies and laws that safeguard workers' health. Two participants stated the full name of OSHA and said they have seen doctors contact OSHA in relation to cases for which they provided interpreter services. They stated that OSHA regulates safety issues in the workplace, the length of worker shifts and how often workers should get breaks, and that OSHA handles complaints. Five of the nine MIs contributed comments in this part of the focus group discussion. One MI instigated a call to OSHA by the medical provider after noting serial amputation cases that came from the same company.

Several interpreters knew of the requirement of Material Safety Data Sheets (MSDSs) and right-to-know laws, in part, from their own employment. However, it was noted that LEP patients who do manual labor frequently have low educational attainment and would not read a Material Safety Data Sheet for information about chemical hazards. It was also noted that reading materials may not be the best way to communicate workplace hazards for this segment of the workforce.

When asked what they would expect workers to be entitled to receive if they were injured on the job, the MIs listed payment for hospital care, full or partial payment for lost work time, and some benefit (settlement) after the injury improves. However, when asked if they were familiar with workers' compensation laws, most said they did not know the specifics of the laws and, therefore, would not be able to present the laws to providers or to patients.

### **Attitudes**

We sought to determine whether these MIs were aware of work-authorization status of injured worker-patients, and whether they were sympathetic or hostile toward LEP patients who work illegally in the United States. Several MIs stated that the status of work authorization is not generally asked about in acute settings, but rather, after the person's health status becomes stabilized. One pointed out that it is usually the social worker or the discharge planner that broaches the question. One MI said that patients are generally open about it right when they come in. They described guiding providers in asking about immigration and work authorization status in a sensitive manner and their disdain for health care providers who are disrespectful of LEP or illegally employed patients. There were many expressions of sympathy for LEP patients.

### **Role**

Hsieh [23] describes four self-perceived roles for the medical interpreter. The goal of a *conduit* is to be "invisible," such that they effectively transfer complete information and promote the provider-patient relationship as primary. The *advocate* empowers the patient so that he/she can receive good and equitable health care services. A *manager* utilizes and manipulates a variety of resources

and methods, and may serve as a cultural broker, mediator, gatekeeper, or moderator. Finally, a *professional* is highly skilled and autonomous, not serving as either a patient advocate or a physician aide. The interpreters in this study articulated all four roles in the following dialogue:

MI: "But we're advocates for the provider as well. . . . We're advocates of the communication process. But when it comes to understanding a culture—that will fall right under cultural brokering. . . . It's a customer service role."

MI: "Us being there as interpreters automatically makes us advocates for the patient."

MI: "We're advocates to our cultures."

MI: "We're helpers."

MI: "And always, the interpreter is kind of the balance beam. I always tell the interpreters we have two customers, the provider and the patients. So we have to keep both of them happy."

Further, they noted that interpreters of different languages may have different roles because of their age, acculturation, and linguistic issues. For example, immigrants who speak languages that do not use the Latin alphabet need assistance with practical aspects of making appointments and finding clinics; elderly patients may require greater advocacy in order to gain access to health care and attain outcomes similar to non-LEP patients. They see these tasks as within the purview of the MI.

### **Advocacy and Prevention**

We sought to understand the practical aspects of encountering patients on the part of the MIs: Do they see the same patient more than once—during the hospitalization and on clinic follow up? The responses varied, from some being posted at one unit, to others interpreting all over the health care facility. This is a function of the size and structure of the employing organization. They noted that continuity of care—one interpreter following a patient through all clinical encounters in different departments—could improve comprehensive care, since they would be able to piece the patient's history together from medical histories taken by different practitioners. They also could remind the patient and health care practitioner of interventions already provided.

When asked what would help them address the needs of injured workers, the MIs responded with the following list:

- a checklist of things to tell the patient (for example, accessing workers' compensation, information about OSHA), translated into many languages;
- a protocol in the emergency room or trauma unit to guide personnel on how to counsel injured workers;
- liaisons or educators for workers' compensation and OSHA that are stationed in the hospital or clinic, or available to the patient by phone;



- an occupational medicine clinic or outpatient referral center that is quieter and more controlled so that the injured worker could learn about his/her rights; and
- a community outreach worker to inform the worker about the health care system and workers' compensation.

Beyond the roles described for interpreters in health care facilities, these MIs saw themselves as a potentially integral part of public health outreach. They talked about involvement in helping LEP immigrants to understand the U.S. health care system, though some argued about whether anyone would pay for such activities. This suggests a role for medical interpreters as community health workers [24]. We found only one published paper that explicitly evaluates a public health role for medical interpreters: Shiu-Thornton et al. [25] describe the need for medical interpreters to receive training that would allow them to participate in emergency response activities for LEP communities.

### **Research Limitations**

Because the snowball method is non-random and the sample size is small, the responses in this investigation cannot be generalized to all medical interpreters. The similarity of the responses regarding role perception to those in the published literature on this topic suggests that this is a representative group. However, MIs come from diverse backgrounds with different educational levels; qualifications for employment as well as training before or on the job vary widely. Furthermore, those that work in trauma centers and emergency departments may be unlike those employed in other health care settings. This work is an exploration of the possibility of training MIs on occupational health issues and taking advantage of their position in acute care settings to provide occupational health interventions for newly injured, at-risk, foreign-born workers, and should be seen as hypothesis-generating. It would need to be replicated on a larger scale to more carefully and broadly elucidate MIs' potential for impacting occupational health care and closing the gap in disparities between foreign-born and U.S.-born workers. However, due to the rapid emergence of the issue of medical interpretation and the fact that policy decisions will be made in the next few years, there is a need to understand and act on these issues without the benefit of a more comprehensive study.

### **CONCLUSION AND RECOMMENDATIONS**

Occupationally injured patients account for about 7 percent of all hospitalizations in trauma centers [4]. Medical interpreters may be the first hospital personnel to have contact with newly injured, LEP workers. In considering the role a medical interpreter might play in primary, secondary, and tertiary prevention of occupational injuries among foreign-born workers, and in public

health prevention for at-risk, working populations, it is important to understand their perception of their own role, their attitudes toward foreign-born workers, their knowledge of workers' rights and the barriers to accessing those rights, and their thoughts about ways to enhance public health intervention measures. The MIs in this study spoke about acting as representatives of both the patients and their hospital employers; many of them consider themselves members of the health care team. Several described a conflict in being seen by health care providers as conduits, while they felt responsibility to advocate for the patients. If advocacy could not be done directly because of professional constraints, they could do it indirectly: call the social worker, bring up a problem to an attending physician or hospital administrator, and invite him to come and speak with an upset patient while the MI interpreted for the interaction. This mixture of role perception is supported in the published medical literature, and probably reflects a combination of the differing expectations of the employers, the providers, the patients, and the families; the providers' facility with communication through an MI; MIs' background and training for their positions; the health care settings in which they work (clinics, emergency rooms, trauma units, etc.); and personal psychological factors. The lack of uniformity in training and employment expectations will serve to sustain this lack of clarity.

None of the participants expressed animosity toward injured foreign-born workers. To the contrary, they expressed a deep concern about these patients—how they are treated by health care providers and other hospital staff, and whether they receive the services and compensation to which they are entitled. They expressed indignation at poor treatment by health care providers, and described intervening in some of these encounters. In short, they were completely sympathetic to the physical, cultural, and psychosocial needs of the LEP patients for whom they provide interpretive services. In terms of work authorization, the MIs assume that many of the workers are “undocumented,” but they do not ask on their own and consider this irrelevant in the health care setting. Indeed, according to federal law, treatment of an individual in need of emergency care cannot be denied to anyone in an emergency room [26]. They pointed out that hospital administrators ask about work authorization in order to assure they get paid for health care services, and the MIs helped them obtain this information in a culturally and personally sensitive manner.

Remarkably, the MIs listed the most hazardous economic sectors and occupations for foreign born workers—construction, roofing, machine operating, and landscaping—as well as the most common mechanisms of injury that lead to trauma—falls and use of power tools [27]. This jibes with surveillance data on occupational fatalities and severe, non-fatal injuries—those that would be cared for in emergency rooms and trauma centers [28]. Several of the MIs were familiar with OSHA and Material Safety Data Sheets. They pointed out that MSDSs may not be the best way to communicate with Hispanic workers, an issue that has been debated not only for low-literacy, LEP patients, but for

workers in general [29]. Several made statements that demonstrated their understanding of workers' compensation as a right and the importance of injured workers accessing this source of payment (though they incorrectly believed that OSHA sets mandatory work hours and breaks). They understood that hospital social workers are generally the professionals who might ascertain this, but felt that they should facilitate collection of this information, since they have experience in occupational case-finding and social workers may not understand its importance. They expressed a need for outreach to communities, outreach from the workers' compensation system, and a hotline where injured workers could be referred.

Most MIs employed by health care organizations receive no formal training, meet no uniform standard, and do not get licensed. Formal training programs range from a few hours in individual hospitals to 40 hours of classroom time at junior colleges, and the content varies considerably [30]. The National Council on Interpreting in Health Care (NCIHC) has published a code of ethics [31] and practice standards [21] to provide the basis for a discussion on training, hiring, performance monitoring, and qualifications that should be required for certification. To date, NCIHC has convened four annual conferences to address the issues of ethics, practice standards, and licensure, and is now embarking on an effort to establish standards for medical interpreter training programs [21]. As sensitivity to the needs of LEP patients grows, federal funding will likely tighten the requirement for use of medical interpreters in health care settings. At the same time, professional organizations are pushing policy that drives standardization of training and formal certification of medical interpreters in the United States [32, 33]. There is a unique opportunity for insertion of curriculum content that addresses the needs of LEP, low-literacy, immigrant workers who are injured on the job. Occupational health and safety professionals, particularly those that have clinical training and work in health care settings, have the potential to develop training modules that address: mechanisms of occupational injury and illness; workers' compensation for injured workers and how to access it; requirements and mechanisms for reporting occupational injuries; the importance of interviewing these patients without their employers or supervisors in the room; the need for follow-up care after the acute phase of the injury; and how to sensitively and effectively address these issues with occupationally injured patients and providers during a hospital encounter. This focus group provides a basis for moving forward in collaboration with stakeholders—the Department of Health and Human Services, health care providers, occupational health and safety professionals, hospital administrators, the National Council on Interpreting in Health Care, the International Medical Interpreters Association, worker representatives, and at-risk LEP workers—in developing, testing, refining, and implementing an occupational safety and health module in formal training of medical interpreters to better serve the needs of LEP patients who have been injured in the workplace.

Now is the time for public health and occupational health stakeholders to get involved in discussions on standards, training, and licensure for medical interpreters to ensure improved access and quality of health care for LEP patients in the United States. In addition, state workers' compensation systems and other legal and public health agencies should be encouraged to consider employing medical interpreters to conduct outreach to communities where LEP populations live and work.

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### NOTES

1. K. Loh and S. Richardson, "Foreign-born Workers: Trends in Fatal Occupational Injuries, 1996-2001," *Monthly Labor Review*, June 2004, <http://www.bls.gov/opub/mlr/2004/06/art3full.pdf> (accessed December 9, 2011).
2. S. Richardson, "Fatal Injuries among Foreign Born Hispanic Workers," *Monthly Labor Review*, October 2005, <http://www.bls.gov/opub/mlr/2005/10/ressum.pdf> (accessed December 9, 2011).
3. H. Cierpich et al., "Work Related Injury Deaths among Hispanics—United States, 1992-2006," *Morbidity Mortality Weekly Report* 57 (2008):597-600. <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5722a1.htm> (accessed December 9, 2011).
4. L. Friedman and L. Forst, "Occupational Injury Surveillance of Traumatic Injuries in Illinois Using the Illinois Trauma Registry, 1995-2003," *Journal of Occupational and Environmental Medicine* 49 (2007): 401-10, doi: 10.1097/JOM.0b013e3181617324.
5. G. Flores, "The Impact of Medical Interpreter Services on the Quality of Health Care: A Systematic Review," *Medical Care Research and Review* 65 (2005): 255-99, doi: 10.1177/1077558705275416.
6. J. C. Hornberger et al., "Eliminating Language Barriers for Non-English Speaking Patients," *Medical Care* 34 (1996): 845-56.
7. L. S. Karliner et al., "Do Professional Interpreters Improve Clinical Care for Patients with Limited English Proficiency? A Systematic Review of the Literature," *Health Research and Educational Trust* 42(2) (2007): 727-754, doi: 10.1111/j.1475-6773.2006.00629.x.
8. R. Kravitz et al., "Comparing the Use of Physician Time and Health Care Resources among Patients Speaking English, Spanish, and Russian," *Medical Care* 38 (2000): 728-38.
9. D. Kuo and M. J. Fagan, "Satisfaction with Methods of Spanish Interpretation in an Ambulatory Care Clinic," *Journal of General Internal Medicine* 14 (1999): 547-50, doi: 10.1046/j.1525-1497.1999.07258.x.
10. L. Lee et al., "Effect of Spanish Interpretation Method on Patient Satisfaction in an Urban Walk-in Clinic," *Journal of General Internal Medicine* 17 (2002): 641-6, doi: 10.1046/j.1525-1497.2002.10742.x.

11. Q. Ngo-Metzer et al., "Linguistic and Cultural Barriers to Care: Perspectives of Chinese and Vietnamese Immigrants," *Journal of General Internal Medicine* 18 (2003): 44-52, doi: 10.1046/j.1525-1497.2003.20205.x.
12. J. Bernstein et al., "Trained Medical Interpreters in the Emergency Department: Effects on Services, Subsequent Charges, and Follow-up," *Journal of Immigrant Health* 4 (2002): 171-6, doi:10.1023/A:1020125425820.
13. L. S. Friedman and L. Forst, "Ethnic Disparities in Traumatic Occupational Injury," *Journal of Occupational and Environmental Medicine* 50(3) (2008): 350-8, doi: 10.1097/JOM.0b013e3181617324.
14. A. Manson, "Language Concordance as a Determinant of Patient Compliance and Emergency Room Use in Patients with Asthma," *Medical Care* 26 (1988): 1119-1128.
15. Pew Hispanic Center, *Statistical Portrait of the Foreign-Born Population in the United States*, 2007, <http://www.pewhispanic.org/2008/01/23/statistical-portrait-of-hispanics-in-the-united-states-2006/2006-statistical-portrait-04/> (accessed December 9, 2011).
16. Department of Health and Human Services Office of Minority Health, *National Standards on Culturally and Linguistically Appropriate Services*, 2001, [www.omhrc.gov/asses/pdf/checked/finalreport.pdf](http://www.omhrc.gov/asses/pdf/checked/finalreport.pdf) (accessed June 3, 2011).
17. Agency for Healthcare Research Quality, "Planning Culturally and Linguistically Appropriate Services," <http://www.ahrq.gov/populations/planclas.htm> (accessed June 3, 2011).
18. Cross Cultural Health Care Program, "Introduction to Medical Interpreting," <http://www.xculture.org/BTGIntroMedInterp.php> (accessed December 9, 2011).
19. Michael Quinn Patton, *Qualitative Methods and Evaluation Procedures*, 3rd ed. (St. Paul: Sage Publications, Inc., 2002), p. 194.
20. D. Dysart-Gale, "Communication Models, Professionalization, and the Work of Medical Interpreters," *Health Communication* 17 (2008): 91-103, doi: 10.1207/s15327027hc1701\_6.
21. National Council on Interpreting in Health Care, National Standards of Practice of Interpreters in Health Care," <http://data.memberclicks.com/site/ncihc/NCIHC%20National%20Standards%20of%20Practice.pdf>, (accessed December 9, 2011).
22. D. Ramirez, K. G. Engel, and T. S. Tang, "Language Interpreter Utilization in the Emergency Department Setting: A Clinical Review," *Journal of Health Care for the Poor and Underserved* 19 (2008): 352-62, doi: 10.1353/hpu.0.0019.
23. E. Hsieh, "'I am not a Robot!' Interpreters' Views of their Roles in Health Care Settings," *Qualitative Health Research* 18 (2008): 1367-83, doi: 10.1177/1049732308323840.
24. Department of Health and Human Services—Health Resources and Services Administration, "Community Health Workers National Workforce Study," <http://bhpr.hrsa.gov/healthworkforce/reports/chwstudy2007.pdf> (accessed December 9, 2011).
25. Shiu-Thornton et al., "Disaster Preparedness for Limited English Proficient Communities: Medical Interpreters as Cultural Brokers and Gatekeepers," *Public Health Reports* 122 (2007): 466-71.
26. *Emergency Medical Treatment and Active Labor Act*, 42 U.S.C. §1395dd (1986).
27. National Institute for Occupational Safety and Health, "Worker Health Chartbook 2004/Chapter 4: High-Risk Industries and Occupations," <http://www.cdc.gov/niosh/docs/2004-146/ch4/ch4.asp.htm> (accessed June 3, 2011).

28. National Institute for Occupational Safety and Health, "Worker Health Chartbook 2004/Chapter 2: Fatal and Nonfatal Injuries, and Selected Illnesses and Conditions," [www.cdc.gov/niosh/docs/2004-146/ch2/ch2-1.asp.htm](http://www.cdc.gov/niosh/docs/2004-146/ch2/ch2-1.asp.htm) (accessed December 9, 2011).
29. A. M. Nicol et al., "Accuracy, Comprehensibility, and Use of Material Safety Data Sheets: A Review," *American Journal of Industrial Medicine* 51 (2008): 861-76, doi:10.1002/ajim.20613.
30. Linda Coronado (director of a community college medical interpretation program), personal communication, December 2009.
31. NCIHC, *A National Code of Ethics for Interpreters in Health Care*, 2004, [http://data.member.clicks.com/site/nchihc/NCIHC\\_National\\_Code\\_of\\_Ethics.pdf](http://data.member.clicks.com/site/nchihc/NCIHC_National_Code_of_Ethics.pdf) (accessed December 9, 2011).
32. International Medical Interpreters Association, <http://www.imiaweb.org/> (accessed December 12, 2011).
33. National Center for Interpreters in Health Care, <http://www.ncihc.org> (accessed December 12, 2011).

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