Title	Authors	Key Findings	Relevant Quotes	Measures	Miscellaneous
Quality of Diabetes Care for Non-English-Speaking Patients: A Comparative Study	Thomas M. Tocher, MD, MPH, Eric Larson, MD, MPH (1998)	The quality of diabetes care for LEP patients was comparable to that of English-speaking patients (as measured by the ADA requirement of at least two standardized glycohemoglobin tests and at least two physician visits per year). Every LEP patient was matched with a medical interpreter.	"A major implication of this study is that with a commitment to make professional interpreters available to all patients, health care institutions can provide diabetes care, to non-English-speaking patients, that appears to be of comparable quality to that provided to English speakers."	Process measures included: number of glycohemoglobin tests per year (2 or more), clinic/ physician visits per year (2 or more), dietary consultations per year, urinalysis (1 or more), ophthalmologic exams (1 or more). More specifically, laboratory outcomes were standardized glycohemoglobin (primary), plasma glucose level, blood urea nitrogen level, and serum creatinine concentration. Attempted to measure the initial severity of diabetes by assessing baseline retinopathy status. Also looked at laboratory use and results, prescriptions filled, interpreter use and language type, complication rates, physician and hospital billing records (which included demographic information – age, sex, race, insurance status, source of routine diabetes care, new patient status, and hospital site –, clinic visits, diagnoses, admissions to the hospital, and charges).	LEP patients were a diverse group; the three most spoken languages are Russian, Cambodian and Spanish. Authors attributed their findings to the established patient base, which encountered fewer barriers than those unfamiliar or new to the system, and to the fact that physicians may have been less certain of the medical history and therefore scheduled more tests and visits.
Physician Performance and Racial Disparities in Diabetes Mellitus Care	Thomas D. Sequist, MD, MPH, Garrett M. Fitzmaurice, ScD, Richard Marshall, MD, Shimon Shaykevich, MS, Dana Gelb Safran, ScD, John Z. Ayanian, MD, MPP	Authors conducted a study to determine whether racial disparities in DM outcomes result from the "within physician effect" (where Black patients achieve lower control rates than white patients within the same physician's patient panel) or the "between-physician effect" (where there is a disproportionate number of Black patients receiving care from physicians who achieve lower control rates for DM	"We found that patients' sociodemographic characteristics explained a substantial proportion of racial disparities in DM outcomes, whereas patients' clinical characteristics did not play a major role. Most of the remaining racial disparities by far were attributable to within-physician effects instead of between-physician effects. Thus, racial differences in outcomes were not related to	Patient's age, sex, race, insurance type, zip code of residence. Estimated median household income. Glomerular filtration rate (GFR), body mass index (BMI), presence of cardiovascular disease. HbA1c, LDL-C, BP	NO mention of interpreters, but could prove useful in modeling the methods for our manuscript.

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		outcomes).	black patients differentially receiving care from physicians who provide a lower quality of care, but rather that black patients experienced less ideal or even adequate outcomes than white patients within the same physician panel."		
Impact of Interpretation Method on Clinic Visit Length	Mark J. Fagan, MD, Joseph A. Diaz, MD, Steven E. Reinert, MS, Christopher N. Sciamanna, MD, MPH, Dylan M. Fagan (2003)	Research found that telephone and patient-supplied interpreters were associated with longer visit times, but full-time hospital interpreters were not. Also, conjectured that if the cost of telephone interpreting was eliminated in this study's case, two full-time interpreters could be brought on, minimizing the amount of ad hoc interpreters as a result. MDs would also have more time to see more patients.	"In our setting, interpreters are trained to assist with achieving closure for patient encounters, and it is possible that the interpreters helped our providers become more efficient by assisting with this aspect of the visit, thereby reducing visit time." "The time efficiency that we observed in hospital interpreters adds to other potential benefits of hospital interpreters, such as confidentiality, familiarity with medical terminology, cultural sensitivity, and knowledge of the health care system."	Looked into patient age, gender, insurance status; patient length of visit; provider type and scheduled visit length with patient; interpreter type.	Shorter visit time is not always good, as it can lead to decreased patient and MD satisfaction and increased risk of malpractice claims. (But for point of CE, less time is better ?) Did not include info on diagnosis, which may have skewed data if one interpreting group (telephonic, hospital, or ad hoc) had more serious conditions. Nor did it consider satisfaction with interpreting used. Focused heavily on Spanish-speaking patients.

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Satisfaction with Methods of Spanish Interpretation in an Ambulatory Care Clinic	David Kuo, MD, Mark J. Fagan, MD (1999)	Author surveyed medical residents and Spanish-speaking patients to determine which method of interpretation (family members/friends, professional, telephone, ad hoc, bilingual physician) received the highest satisfaction level. **Both patients and residents had the highest level of satisfaction for professional interpreters.** In contrast, more patients than residents were significantly satisfied with family members or friends.	"Residents and patients reported equally high levels of satisfaction for professional interpretation…Neither group was very satisfied with the use of hospital employees who were not professional interpreters." "Of the patients, 16.2% (vs 62% of the medical residents) reported that they sometimes or frequently thought bad care was delivered because an interpreter was inadequate or unavailable." "Medical residents and patients agreed that the most important characteristics for interpreters were availability, accuracy, and confidentiality."	Patient's age, gender, origin, time in US, the resident doctor's bilingual level, English proficiency (Y/N). Survey asked how frequently the patients used various methods of interpretation, how satisfied they felt each method had been used, if they ever felt interpreters should have been used but were not, if they ever received bad care because of interpreter unavailability, comfort level in discussing sensitive issues using various interpretation methods, and what characteristics of interpreters they perceived to be important.	Only Spanish-speaking patients. Directed towards low-resource organizations. Surprisingly, they advise the use of ad hoc interpreting merely because of patient satisfaction with it, neglecting to see the problems with confidentiality and accuracy. Believes the cost of professional services is substantial (quotes the average salary of in-house interpreter is $25,000 and telephone averages $42,000/year).
Professional Interpreters and Bilingual Physicians in a Pediatric Emergency Department	Louis C. Hampers, MD, MBA, Jennifer E. McNulty, MD (2002)	Compared to English-speaking patients, LEP patients *with bilingual physicians* had similar rates of resource utilization. Those *with interpreters* showed no difference in test costs or IV hydration, were least likely to be tested, more likely to be admitted, and had longer lengths of visit. Those *without interpretation* services had a higher incidence and cost of testing and were most likely to be admitted and to receive IVs, but showed no difference in visit length.	"Decision making was most cautious and expensive when non-English –speaking cases were treated in the absence of a bilingual physician or professional interpreter." "When a professional interpreter was used, no difference in the incidence or cost of testing or use of intravenous hydration was detected (although admission rates remained slightly higher). Both bilingual physicians and interpreters appear to mitigate the barrier premium." "…Our findings have, at minimum, established an additional financial cost	Patient demographics – age, ethnicity; absence of chronic illness; general appearance; triage category; vital signs; length of ED visit; cost and frequency of lab and radiographic testing (CBC, blood culture, chest radiograph, serum electrolytes, urine testing); use of intravenous hydration; patient disposition (admitted or discharged); Physician determination of family's English proficiency; resident training level; attending physicians; patient care setting; hour of presentation; Interpreter type, training, cost to the hospital, and availability.	In the table "Comparison of ED Treatment of Pts Grouped by Lang. Concordance," it gives the average test cost per patient for each cohort. Due to ad hoc interpreters, a complete language barrier was rarely present.

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			associated with caring for pediatric patients with uncomplicated, acute conditions when a language barrier is present. Both professional interpreters and bilingual providers seem to reduce this cost."		
Does a Physician–Patient Language Difference Increase the Probability of Hospital Admission?	Edward D. Lee, MD, Carl R. Rosenberg, PhD, Diane M. Sixsmith, MD, MPH, Dorothy Pang, MD, Joseph Abularrage, MD, MPH (1998)	An observational, prospective study determined that a difference in the preferred language of communication between the patient and the emergency physician (EP) was associated with a greater probability of admission to the hospital. Of 653 adult study respondents, 96 were LEP, and of 79 pediatric patients, 10 were LEP.	"In this study it was clearly demonstrated that adult patients who did not speak the same preferred language as their primary EP had a greater chance (about 70% greater) of being admitted to the hospital than those patients who did." **"It is interesting to see this risk of admission to the hospital decreased in the presence of an interpreter."**	Patient age, sex, acuity level (high, moderate, or low), whether their preferred language was different from that of their primary physician, whether an interpreter was present, admission to the hospital (Y/N).	Doctors may hold LEP patients longer because they have fewer financial resources and less education, which makes home care difficult. Hospitalizations may result from higher incidence of tropical diseases amongst immigrants, which require more intensive care.
Trained Medical Interpreters in the Emergency Department: Effects on Services, Subsequent Charges, and Follow-up	Judith Bernstein, Edward Bernstein, Ami Dave, Eric Hardt, Thea James, Judith Linden, Patricia Mitchell, Tokiko Oishi, Clara Safi (2002)	This prospective cohort study found that "Noninterpreted patients (NIPs) who did not speak English had the shortest ED stay (LOS) and the fewest tests, IVs, and medications; English-speaking patients had the most ED services, LOS, and charges. Subsequent clinic utilization was lowest for NIPs. Among discharged patients, return ED visit and ED visit charges were lowest for interpreted patients (IPs). Use of trained interpreters was associated with increased intensity of ED services, reduced ED return rate, increased clinic utilization, and lower 30-day charges, without any simultaneous increase in	"The use of trained, professional interpreters seems to level the playing field and bring services for IPs closer to the level of ESPs. The distribution of postindex visit utilization was also favorable, with a small shift from use of the ED as a regular source of care to reliance instead on clinic visits to meet medical needs, a pattern that is often associated with improved medical health status and outcomes." "Budgeting for interpreter services may reduce long-term costs for medical care because timely access to needed medical services improves	Patient gender, age, race, ethnicity, chief complaint, acuity, triage diagnosis, language, regular doctor?; length of ED stay, tests and procedures, IV started, medications given, drug prescriptions; primary care appointment given, specialty care appointment given, ED return visits, clinic visits during subsequent 30 days, clinic visit charges, ED return visits during subsequent 30 days, ED return visit charges, total 30-day post-ED visit charges	Contradicts pediatric ED studies on LEP patient resource utilization; namely, that noninterpreted patients have longer LOS and use up more resources for unnecessary diagnostic tests. Attacks topic from a different approach; instead of NIPs being portrayed as more costly patients, with added diagnostic tests and increased admissions (justifying the use of interpreters to minimize the cost), authors maintain that due to LB they are not receiving care or services

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		LOS or cost of visit."	outcome, without placing an undue burden on ED length of stay or cost of visit."		that ESPs receive. Did not measure patient satisfaction or concerns.
Overcoming Language Barriers in Health Care: Costs and Benefits of Interpreter Services	Elizabeth A. Jacobs, MD, MPP, Donald S. Shepard, PhD, MPP, Jose A. Suaya, MD, MBA, Esta-Lee Stone, MS, OTR/L (2004)	Compared to English-speaking patients, LEP patients who used the interpreter services received significantly more preventive services, made more office visits, and had more prescriptions filled. Estimated cost of providing interpreter services per person per year was $279 (1997), quite low relative to most health care costs.	"The statistically significant increase in receipt of preventive services also suggests that improving language access for patients who have limited English proficiency may lower the cost of care in the long run."	Patient demographics, annual number of health center office visits and phone calls, urgent care visits and phone calls, prescriptions written and filled, direct costs (salaries, fringe benefits, overhead) of providing interpreter services and the cost of net changes in health care utilization after new services implemented (going by the Medicaid FFS for 1995-1997). "…Used the costs to the MA Division of Medical Assistance to provide…information about the impact of interpreter services on the cost of care for MA patients with LEP."	Their cost of interpreters was excessively high ($79 per interpretation, as opposed to the average $35). Interpreters also stayed with patients an average of 2.55 hours, whereas the norm is around 1 hour.

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Impact of Interpreter Services on Delivery of Health Care to Limited-English-proficient Patients	Elizabeth A. Jacobs, MD, MPP, Diane S. Lauderdale, PhD, David Meltzer, MD, PhD, Jeanette M. Shorey, MD, Wendy Levinson, MD, Ronald A. Thisted, PhD (2001)	Retrospective cohort study to determine whether professional language services increase the delivery of health care to LEP patients. "Patients who used the new interpreter services had a significantly greater increase in office visits, prescription writing, prescription filling, and rectal exams compared to a control group. Disparities in rates of fecal occult blood testing, rectal exams, and flu immunization between Portuguese- and Spanish-speaking patients and a comparison group were significantly reduced after the implementation of professional interpreter services."	"Increased trust has been correlated with both increased patient adherence and satisfaction, and communication is essential to the establishment of trust in the physician-patient relationship." "Visits may have increased in the Interpreter Service Group [ISG] because patients are more likely to make and keep an appointment when they are able to adequately communicate with clerical and clinical staff and they understand the importance of the visit. Prescription use may have increased as a result of an improvement in the physician's ability to take an adequate history and answer the patient's questions, increasing the physician's confidence in the diagnosis and the patient's understanding of the risks and benefits of a medication. Patients may have been more likely to fill and refill prescriptions because they understand their purpose and the instructions for taking the medication."	Patient age, gender, date of enrollment, median income for the ZIP code of residence, use of Spanish and Portuguese interpreter services, number of office visits, health center phone contacts, health center urgent care visits, health center urgent care phone calls, number of prescriptions written and number of prescriptions filled, mammogram completed for women age 50 or older, breast exams and pap smears in women 18 and older, fecal occult blood testing completed in patients age 50 or older, rectal exams in men age 40 or older, flu immunizations in patients age 64 or older.	Sufficient number of trained medical interpreters, who went through at least 50 hours of training and were present in each clinic. Interpreters were scheduled simultaneously with physician visits, and once a patient was "flagged" as needing an interpreter they were always provided with one in future visits.
Language Barriers and Resource Utilization in a Pediatric Emergency Department	Louis C. Hampers, MD, MBA, Susie Cha, BA, David J. Gutglass, MD, Helen J. Binns, MD, MPH, Steven E. Krug, MD (1999)	"In cases in which a LB [language barrier] existed, mean test charges were significantly higher: $145 versus $104, and ED stays were significantly longer: 165 minutes versus 137 minutes."	"Determination of the cost-effectiveness of professional medical interpreters will depend chiefly on three things: 1) the volume of LB patients for whose language the interpreter has been trained (this is of course institution-specific), 2) the precise size of the LB premium, 3) and the	Patient age, ethnicity, insurance status, absence of chronic illness, initial appearance, vital signs, triage category, use of intravenous hydration, patient disposition (admitted/ discharged), length of stay, test charges. Physician determination of family's English proficiency. Provider experience level (post-graduate year of	If family did not speak English, cases were classified as LB (language barrier), even if an interpreter was present. Justified this by stating that interpreters were not present for the entire visit, and were inconsistently available.

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			extent to which the interpreter can reduce or eliminate that premium."	training). Setting (primary ED or urgent care unit).	
The Impact of an Enhanced Interpreter Service Intervention on Hospital Costs and Patient Satisfaction	Elizabeth A. Jacobs, MD, MPP, Laura S. Sadowski, MD, MPH, Paul J. Rathouz, PhD (2007)	"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," a small amount to ensure patient satisfaction and understanding.	"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."	Patient satisfaction (with nursing, physicians and hospital stay, measured using H-CAHPS), length of stay, number of inpatient consultations and radiology tests, adherence with follow-up appointments, use of ED services and hospitalizations in the 3 months post-discharge, costs associated with provision of the intervention and any resulting change in health care utilization. Attending/resident physicians' Spanish fluency. Patient age, gender, ethnicity, years in US, language, English language ability, education, marital status, income, insurance status, seen physician in past year, hospitalized in past year, fair/poor health status, Charlson comorbidity index.	Extremely detailed explanation of measurements, very clear lay-out of intervention. Yet somewhat inconclusive. Due to study limitations, was unable to find any impact of the enhanced interpreter service intervention.
What a Difference an Interpreter Can Make	Dennis Andrulis PhD, Nanette Goodman MA, Carol Pryor MPH (2002)	The Access Project surveyed 4,161 uninsured pts at 23 primarily safety net hospitals in 2000, finding that "Three of four (74%) respondents needing and getting an interpreter said that the facility they used was 'open and accepting,' compared to fewer than half (45%) of the respondents who needed and did not get an interpreter and 57% who did not need an interpreter." One disturbing key finding was that "among uninsured whose doctor prescribed medication, 27% of those who needed but did not get an interpreter said	"Having access to interpreter services may enhance access to care by lessening the likelihood that uninsured with limited English proficiency will avoid or delay needed health care or switch facilities frequently because of unpaid medical bills." "Improving LEP patients' access to financial assistance information may increase the likelihood that hospitals can obtain at least some payment for services provided, rather than none, when patients cannot afford to pay for care. Without an interpreter to	Distributed a survey to 4,161 uninsured patients that asked about: the facility's reputation for treating the uninsured; how medical and support staff treated them; ease of access to services; difficulty paying for prescription drugs and medical care; need for financial assistance to pay for medications and care; indebtedness to the facility and whether it would affect future use of the facility; interest in using the facility in the future if insurance paid for care; need for and access to interpretation services; availability of information for those with LEP. Patient's age, gender, English proficiency (no interpreter needed,	Chock full of statistics (%s) concerning LEP patients who did not get the services they needed and suffered as a result (regarding Rxs, insurance). Refer to reprint for more quotes.

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		they did not understand the instructions for taking their medications, compared to only 2% of those who either got an interpreter or did not need one."	facilitate communication between patient and billing staff or social workers, hospitals may also be missing opportunities to enroll eligible patients with LEP into public or private sector insurance or payment programs."	interpreter needed), interpreter availability, insurance status.	
Use and Effectiveness of Interpreters in an Emergency Department	David W. Baker, MD, MPH, Ruth M. Parker, MD, Mark V. Williams, MD, Wendy C. Coates, MD, Kathryn Pitkin, MPH (1996)	Authors conducted cross-sectional surveys of patients after they left the ED "to determine their perceptions of their ability to speak English and their examiner's ability to speak Spanish, how often interpreters were used and how often patients thought one should have been used, the relationship between patients' and clinicians' language abilities and use of interpreters, and how interpreter use affected accuracy of patients' understanding of their diagnosis and treatment plan."	"Our results show that interpreters are often not called, even when large language barriers are present between clinicians and patients. When both the clinician's Spanish and the patient's English were poor, an interpreter was not called one third of the time. Under these circumstances, 87% of patients thought an interpreter should have been called. At this time, for most institutions, requesting an interpreter is totally at the discretion of health care workers. Patients disagree with their clinicians' decisions a high proportion of the time." "Some patients may have had straightforward medical problems, such as a laceration or a sprained ankle, and in such situations clinicians may feel little or no need for an interpreter, even though these apparently simple medical problems may belie important underlying psychosocial problems such as domestic violence."	Patient's demographics, visual acuity, TOFHLA (health literacy) scores. Patients were asked to report: their ability to speak English, their examiner's ability to speak Spanish, whether an interpreter was used, whether they thought an interpreter should have been used, what they were told was wrong with them, what medications they were supposed to take, what dosing instructions and reasons for taking the medication they were given, and what follow-up appointments were recommended. They were also asked to rate how well they understood what was wrong with them (on a 5-point Likert scale) and what to do for treatment.	Article states interpreters performed suboptimally, this may be for several reasons: 1) Hospital employs ONE Spanish interpreter for 500-bed facility where 40% of patients speak Spanish as their native language. 2) Did not distinguish between paid interpreters or bilingual hospital staff. 3) Interpreters may just have been present for history and diagnosis, not discharge. 4) Health care workers may be unaware of how to use interpreters properly. 5) Interpreters may not have received formal training. Offers several suggestion for improving the cost-effectiveness of language services (but none of them include hiring more interpreters). Interesting article, full of figures (%).
The Effects of Ethnicity and	Eliseo J. Perez-Stable, MD, Anna	Both Latino and non-Latino white patients, Spanish and	"There were no significant differences by ethnicity in	The authors looked at the patient's: age; gender; education; household	Did not include interpreters in the study, as

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Language on Medical Outcomes of Patients with Hypertension or Diabetes	Napoles-Springer, MPH, Jose M. Miramontes, MD (1997)	non-Spanish-speaking, completed a questionnaire to compare the effect that "ethnicity and language concordance with their physicians may have as a determinant of patient well-being, functioning, use of services, and clinical outcomes." The authors found that "Latinos reported a healthier view of their future…on the health outlook scale, feeling less distressed about their health…and fewer days where pain interfered with daily activities. Non-Latino whites tended to utilize more clinical services than Latinos…"	number of primary care practice visits, emergency room visits, hospitalizations, days hospitalized, diagnostic tests ordered, or failed scheduled appointments in the preceding year. Among patients with diagnosed hypertension or diabetes, there were no significant differences in average systolic or diastolic blood pressures or glycosylated hemoglobin by ethnicity. A similar proportion of Latinos and non-Latino whites were noted in the medical record to have poor adherence with their medications." "Our observation that patients reported better well-being and functioning when their primary care physician spoke their native language seems simple and intuitive. Language concordance was associated with significant associations with 10 of 14 health status measures after adjusting for confounding variables."	income; insurance status; eligible diagnosis (hypertension or diabetes); health care provider (resident or faculty physician); active medication problems; medications prescribed; visits to the practice, specialty clinics, urgent care and emergency care; hospitalizations and days hospitalized; total lab tests ordered; average systolic and diastolic blood pressures; average weight; average glycosylated hemoglobin, and evidence for poor adherence with prescribed medication noted by doctor. The authors also looked at the physician's Spanish-speaking proficiency (Y/N, and if Y the number of times of Spanish-speaking interactions per week, in addition to a self-evaluation). The questionnaire asked patients about their physical functioning, psychological well-being (anxiety, depression, feelings of belonging, and positive affect), health perception (current health, health distress, health outlook), and pain overall (effects of pain, pain severity, and days pain interfered).	"it seems unlikely that even optimal use of interpreters would suffice" in effective patient-provider communication. Even though there was mention of a contingency of Spanish-speaking patients with non-Spanish-speaking physicians (labeled language discordant), there was no mention of what method they used to communicate. Confusing study. Authors should have been more clear on the different outcomes of English-speaking patients, non-English speaking patients with language concordant physicians, and non-English speaking patient with language discordant physicians.
Two Studies Focus on Interpreter Services	Raquel Cashman, MS (1992)	This article provides abstracts of two studies conducted at the Boston City Hospital (now BMC) in 1989 and 1991. The first study, conducted by two physicians, consisted of attaching a language information form on each patient's chart as he/she entered the clinic (for a total of 426 patients in the study). The second study, conducted	"On average, patients using a hospital interpreter spent less time in the clinic, between evaluation and discharge, than those who brought their own interpreter. The fact that patients supplying their own interpreters underwent more tests and procedures than other patients may partly explain the extra time spent in the clinic."	No measures were specifically stated, but it can be assumed that the first study at least looked at: English-speaking ability (Y/N, and if N then interpreter type), primary language of patient, number of tests conducted, time in clinic. Once again no measures were stated, but it can be assumed that the second study at least looked at English-speaking ability (Y/N), insurance status, primary language,	Bare-bones description of the studies, but interesting quotes. Studies conducted before the 2000 Title VI clarification.

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		by the Dept. of Interpreter Services, surveyed 220 non-English speaking patients who received interpreter services and asked them whether or not they were insured.	"It is interesting to note that 12 percent of patients triaged in Spanish (4 out of 33) left the clinic without being seen by a physician, while only 1 percent of patients triaged in English (4 out of 306) left the clinic without being evaluated." "It is estimated that [one-fifth] of patients did not speak English as a native language, but were interviewed in English because the resident physician felt that communication in English was adequate." "Not only did the survey results indicate that 35 percent of those patients were covered by insurance, but the results also suggest that the availability of professional interpreters is a factor when non-English – speaking patients choose their health care provider."	and whether or not the interpreter service program influenced that patient's choice to receive treatment at the Boston City Hospital.	

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Management decisions: do we really need interpreters?	Generosa Soler Rader, MPH, RN (1988)	The author (a nurse manager in a UCSD medical center) created a survey to justify the retention (and additional hiring) of medical interpreters. Found that "professional, clerical and other clinic staff members provided well over half of Spanish interpretations (61 percent), while staff interpreters provided 35 percent. Assuming that each interpretation averaged 30 minutes, about 162 hours (30 minutes x 323 interpretations), or the equivalent of 20 eight-hour days were spent by various clinic staff in interpreting."	"In heavily booked clinics, time spent by clinic staff acting as interpreters led to long waits by other patients and delays in performing certain examinations or procedures because bilingual nurses or physicians were busy translating. A general sense of frustration prevailed, and now we were faced with the real possibility of losing even the interpreters we had."	Measures percentage of patients who required an interpreter (and if so in what language), patients who brought their own interpreter (and if not who interpreted for him/her), and looked to see what time the interpreter was called, when he/she arrived, and when he/she left the clinic.	Calculates the opportunity cost (# of interpreting sessions x wage/hour) for nurses used as interpreters, but earnings are twenty years old ($10/hour?!?). Also, shouldn't opportunity cost be calculated by # of hours spent interpreting x wage/hour, if interpreting sessions run about a half hour?
Do Physicians Spend More Time with Non-English-Speaking Patients?	Thomas M. Tocher, MD, MPH, Eric B. Larson, MD, MPH (1999)	Non-English-speaking (NES) patients did not spend more time with physicians as compared to English-speaking patients. However, physicians did perceive the time spent with NES patients to be longer, needing more time to explain certain issues.	"The physicians in this study on average spent a total of 26.0 minutes per visit with NES patients and 25.8 minutes with English-speaking patients and, of that time, were in fact-to-face contact 21.6 minutes with NES patients and 20.4 minutes with English-speaking patients."	Total patient time in a clinic, wait for first nurse or physician contact, time in contact with nurse or physician, physician time spent on visit, physician perceptions of time use with non-English-speaking patients (through questionnaire). Patient demographics: age, gender, race, insurance status, number of visits, severity of disease (CCI).	Not representative of most LEP patient cases, as they were established patients in the adult clinic, with excellent interpreter system in place. Did not measure patient understanding or satisfaction post-appointment.
Comparing the Use of Physician Time and Health Care Resources Among Patients Speaking English, Spanish, and Russian	Richard L. Kravitz, MD, MSPH, L. Jay Helms, PhD, Rahman Azari, PhD, Deirdre Antonius, BA, Joy Melkinow, MD, MPH (2000)	Prospective, observational study surveyed 258 Medicaid patients speaking English, Spanish and Russian to estimate the effects of LEP on physician time and resource use. "Spanish-speaking patients averaged 9.1 more minutes of physician time than English-speaking patients, and Russian speakers averaged 5.6 more minutes…Compared with	"Within this heterogeneous sample, LEP patients consumed more physician time on average than their English-speaking counterparts. However, on closer inspection, significant differences were confined to patients using health system interpreters and those making follow-up visits with resident physicians…The accumulating evidence, including the present study, suggests that the effect	Patient demographics: age, gender, education, language, English proficiency, current health status, active medical conditions. Setting (one of three clinics), interpreter type (bilingual physician/nurse, medical interpreter, ad hoc), physician type (resident or faculty member), visit type (follow-up versus other). Visit time (previsit time, physician time, postvisit time), utilization of diagnostic tests (# of labs, # of imaging studies),	Careful with the additional physician times, as the authors offer three different figures depending on physician, interpreter, and visit type. Offers specific cost estimates for the additional physician times. Suggests that ad hoc interpreting sessions could

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		English-speaking patients, Spanish and Russian speakers who used health system interpreters averaged 12.2 and 7.1 additional minutes of physician time…There were no significant increases in physician time among non-English speakers who relied on personal interpreters…" Also, "Russian-speaking patients were nearly twice as likely as English-speaking patients to receive >= 1 specialty referrals", and "Spanish–speaking patients were significantly less likely than English speakers to obtain ordered laboratory tests."	of LEP on costs and quality may be very context specific, depending on such factors as patient acculturation, physician training, institutional experience, and organization of care." "If, as suggested by our data, LEP increases average physician time requirements by 15% to 25% and entails a direct cost of interpreting services estimated to be $9.98 to $11.27 per visit, total added costs could be substantial. In addition, there are likely to be some increases in overhead costs associated with the 17.4% to 22.4% increase in total patient time."	prescription medications, # of specialty referrals, adherence to follow-up appointments and tests.	have been shorter due to more "ruthless" editing or because patients were more reluctant to address clinical issues in front of family members.
Counting the cost of language services in psychiatry	Drennan G (1996)	Documented interpreter utilization over a two-month period in a South African psychiatric hospital. Found that, even with a medical interpreter on staff, professional nurses were responsible for 67% of interpreting. Other ad hocs included cleaning staff, family members, and other psychiatric patients (!), which clearly violate the confidential nature of such interviews. Emphasizes the opportunity cost of nurse interpreters: "Nurses often resent the imposition of an 'unofficial task' for which they are untrained, unappreciated, and unrewarded."	"The results of the study also indicate that clinicians resent wasted time tracking down a willing nurse or cleaner; they keep interviews as short as possible, often have to repeat interviews, and are uncomfortable with imposing upon nurse colleagues." "An even more compelling argument for employing interpreters is the implications of not providing adequate language services…Clinicians noted interviews that had to be repeated, important collateral information that could not be obtained, and diagnostic uncertainty on questions as fundamental as whether or not the patient was psychotic."	Number of patients requiring an interpreter, interpreting services provider, interpreter availability, and duration of interview. Patient's language, gender.	Estimates the opportunity cost to the hospital of staff interpreting, however it is in South African Rands, and 12 years of inflation would have to be taken into consideration.

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Errors in Medical Interpretation and Their Potential Clinical Consequences in Pediatric Encounters	Glenn Flores, MD, M. Barton Laws, PhD, Sandra J. Mayo, EdM, Barry Zuckerman, MD, Milagros Abreu, MD, Leonardo Medina, MD, Eric J. Hardt, MD (2003)	In an outpatient pediatric facility, researchers found that while hospital interpreters made fewer errors with potential clinical consequences than ad-hoc interpreters (53% to 77%), errors were still alarmingly common, making the case for more stringent and widespread interpreter training.	"Errors made by ad hoc interpreters were significantly more likely to have potential clinical consequences than those made by hospital interpreters…" "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."	Measured the **number of errors in interpreting**, all of which have potential clinical consequences: omitting drug allergies, omitting instructions on the dose, frequency, and duration of antibiotics and rehydration fluids; adding that hydrocortisone cream must be applied to the entire body, instead of to a facial rash; instructing a mother not to answer personal questions; omitting that a child was already swabbed for a stool culture; instructing a mother to put amoxicillin in both ears for treatment of otitis media; explaining that antibiotic was being prescribed for the flu; etc..	Not a glowing report on hospital interpreters, which may be attributed to the fact that the group in the study had little to no training. Offers a comprehensive list of adverse effects that LEP can have on health and use of health Only interviewed Spanish-speaking patients.
The Impact of Language as a Barrier to Effective Health Care in an Underserved Urban Hispanic Community	Rand A. David, MD, Michelle Rhee, BA (1998)	According to survey responses, out of 68 cases (non-English speaking) and 193 controls (English-speaking), more cases responded that medication side effects were not explained (47% to 16%), and more controls reported satisfaction with medical care (93% to 84%). More controls said that their doctors understood how they were feeling (87% to 72%).	"Interestingly, cases reported a higher percentage of preventive testing…Perhaps referring patients for preventive testing served in part as a substitute for verbal communication in our practice. It seems plausible that test ordering is easier than dialogue." "Lack of explanation of side effects to medication appeared to correlate negatively with compliance with medication. The language barrier correlated negatively with patient satisfaction."	Patient age, gender, Spanish and English verbal skills, use of interpreter, whether and from whom they received information regarding prescriptions (MD, nurses, pharmacists, etc.), whether receiving this information influenced their compliance with therapy, if the patient had enough time with doctor, if the doctor understood how they were feeling, satisfaction with medical care (all yes or no questions). Female patients were asked if they had received a mammogram in the past two years and a PAP test in the past 3 years.	Medical office assistants served as interpreter, yet had no formal training. Uses "translator", not "interpreter." Only interviewed Hispanic patients – "cases" were those who had poor English skills and used an interpreter, "control" was reported having good English skills and did not use an interpreter.
Impact of Language Barriers on Patient Satisfaction in an	Olveen Carrasquillo, MD, MPH, E. John Orav, PhD, Troyen A. Brennan, MD,	Research conducted in five New England hospital EDs found that "only half of the non-English-speaking patients were satisfied with the care	"In light of the growing recognition that patient satisfaction is an important indication of quality of care, addressing the satisfaction of	Patient satisfaction (courtesy and respect, completeness of care, explanation of what was done, waiting time, discharge instructions), willingness to return	"Patients who reported problems with care were more likely to be Latino, younger, have a lower severity rating (less acute

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Emergency Department	JD, MPH, Helen R. Burstin, MD, MPH (1999)	they received in the ED. Furthermore…non-English speakers were…half as likely as English speakers to return to the same ED if they had another problem requiring emergency care." (And they are twice as likely to complain about the service and care as English speakers).	non-English-speaking patients becomes imperative. In fact, the National Committee on Quality Assurance in its most recent Health Employer Data and Information Set 3.0 has made it clear that addressing the language needs of its beneficiaries is just as important as other components of quality."	to the same ED if emergency care was needed, patient-reported problems with care (communication, follow-up, medication use, diagnostic testing). Patient's age, gender, ethnicity, race, education, income, insurance status, severity rating/urgency, chief complaint, admission status, hospital identity, routine source of care (Y/N).	problem) and have a college education." Lower severity rating = longer waiting time, if non-English speaking patients were by majority younger and healthier, their wait might not have much to do with the fact that they are LEP patients.
Patient Centeredness in Medical Encounters Requiring an Interpreter	Rocio Rivadeneyra, MA, Virginia Elderkin-Thompson, PhD, Roxane Cohen Silver, PhD, Howard Waitzkin, MD, PhD (2000)	Authors videotaped 19 Spanish-speaking and 19 English-speaking patients' encounters with physicians, and then tallied the # of offers (feelings, symptoms, thoughts, and expectations elicited by the patient) for each group. Attention was also given to physicians' responses to the offers, "coded as ignoring, closed, open, or facilitative of further discussion." Found that English-speaking patients made three times more offers than Spanish-speaking patients, and they were also more likely to receive answers from physicians.	"Spanish-speaking patients are at a double disadvantage in encounters with English-speaking physicians: these patients make fewer comments, and the ones they do make are more likely to be ignored. The communication difficulties may result in lower adherence rates and poorer medical outcomes among Spanish-speaking patients." "Non-English-speaking patients may prefer waiting until a problem becomes severe rather than trying to explain subtle physiological changes or symptoms to someone who speaks another language." "Clinicians may be concerned about an economic penalty if their cross-language encounters become too time consuming, yet non-English speakers' lack of understanding about their condition or medication instructions may lead to additional appointments to resolve consequences of noncompliance."	Patient age, gender, years in school, employment status, ethnicity, English proficiency (Y/N), # of offers (symptoms, expectations, thoughts, feelings, prompts, nonspecific cues), physician responses (from 0-3 using the Henbest and Stewart's Patient-Centeredness Scale).	More of a qualitative study, but an interesting one at that. Offers insight into the psychology of the LEP patient. Used bilingual nurses as interpreters. Interesting quote to pursue: "…physician recognition of a patient's educational level may have influenced the response to patient comments. Physicians give more information to highly educated patients, while they give more emotional support to patients with a lower level of education." Also, language based, not ethnicity based: "Physicians also demonstrated more patient centeredness toward the English-speaking Latinos than the Spanish-speaking Latinos."

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Effect of Spanish Interpretation Method on Patent Satisfaction in an Urban Walk-in Clinic	Linda J. Lee, MD, Holly A. Batal, MD, MBA, Judith H. Maselli, MSPH, Jean S. Kutner, MD, MSPH (2002)	Authors compared the satisfaction levels of 303 Spanish-speaking patients regarding telephone, family, and ad hoc interpretation. "Spanish-speaking patients using AT&T telephone interpretation are as satisfied with care as those seeing language-concordant providers [77%], while patients using family [54%] or ad hoc [49%] interpreters are less satisfied."	"Spanish-speaking patients not provided with an adequate means of communication with their health provider may be at particular risk. Our results indicate that language barriers can be overcome and patient satisfaction enhanced through the use of bilingual providers and adequate interpretation services."	Patient's age, gender, ethnicity, education, insurance status, having a routine source of medical care, baseline health (SF-12), concordance between patient and provider language, method interpretation, satisfaction with the provider's listening, answers, explanations, support, discussion of sensitive issues, skills and manner).	No cohort for professional medical interpreters. Only Spanish-speaking patients.
Effect of Language Barriers on Follow-up Appointments After an Emergency Department Visit	Joshua Sarver, BA, David W. Baker, MD, MPH (2000)	Cohort study to determine whether patients who encounter LBs during an ED visit were less likely to be referred for a follow-up appointment. "The proportion of patients who received a follow-up appointment was 83% for those without language barriers, 75% for those who communicated through an interpreter, and 76% for those who said an interpreter should have been used but was not."	"The lower referral rate for patients who experienced language barriers could also partly result from some physicians having the perception that Spanish-speaking patients will be less likely to successfully complete their follow-up appointment owing to poverty, low educational attainment, lack of a telephone in the home, or lack of health insurance….This study does not support such a belief. There was no difference in appointment compliance according to race or ethnicity, language, or interpreter use."	Patient age, gender, race, years of school, reading ability, car owner, insurance status, diagnosis type, regular health status (excellent, very good, good, fair, poor), whether or not an interpreter was used, if so what type (language concordant provider, interpreter). Instead of asking for income level (high refusal rate), they asked about car ownership, receipt of financial assistance to buy food (stamps), and telephone ownership. If patient completed a recommended follow-up appointment, data was taken on the referral appointment type (ED, specialty clinic, primary care clinic), self-reported understanding of diagnoses, and awareness of appointment at follow-up interview (Y/N).	Only 12% of patients with an interpreter had an actual medical interpreter, the rest were ad hoc. Only Spanish-speaking patients. The study was conducted a few months prior to California passing Proposition 187, which requires "publicly funded health care facilities to deny care to illegal immigrants and to report them to government officials." Author thinks doctors were overtly biased against Spanish-speaking patients.
Overcoming Language Barriers for Non-English-Speaking Patients	Margaret M. Duffy, EdD, RN, CNN; Amy Alexander, MHIA-MHS	Article calls for the development of multilingual services programs in healthcare centers across the nation. Briefly describes the need (with 1990 census statistics) before listing the various methods of interpretation and the pros and	"Disturbingly, in one study, only a small percentage of physicians interviewed considered that gaining informed consent was problematic. This suggests that concepts of consent for limited English-speaking patients may	No measures- this article gives a brief description of different interpreting methods and lists the pros and cons of each.	This article is more geared towards hospitals or health care centers that are just beginning to look into developing multilingual services programs in their institutions.

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		cons of each.	need to be examined. These issues imply that that the present structure for providing medical care for limited English-speaking patients without the services of interpreters may put the patients' health at risk, restrict treatment options, and offer potential for litigation."		
Pay Now or Pay Later: Providing Interpreter Services in Health Care	Leighton Ku, Glenn Flores (2005)	Argues for third-party reimbursement of interpreter services; specifically urges the government to take financial responsibility for its own Civil Rights Law that LEPs should have interpreter access. Under Medicaid and SCHIP, states must pay for interpreter services, however around 80% of LEPs earn above federal poverty level, which means it is also an issue for private insurers and Medicare. A 2002 OMB report estimated a cost of $268 mil to provide interpreter services in most clinical settings, which is far less than disparities in medical spending that exist between white and minority patients. If considered a "cost of doing business," it would prove to be a disincentive for providers who would avoid taking on LEP patients. Insurance reimbursement would remedy the disincentives.	"The federal government, which has emphasized reducing racial/ethnic disparities in health care, should assume leadership in promoting the availability of and payment for language services under the various federally funded health care programs." "We can either pay a small amount up front to ensure that all patients receive equitable, high-quality care, or pay a lot more later for unnecessary tests and procedures, preventable hospitalizations, medical errors and injuries, and expensive lawsuits."	No measures – summarizes previous studies concerning medical interpreting, and explores options for financing them.	Should come in helpful when writing policy paper, has lots of references arguing for insurance companies and the government to pick up the tab. Note the OMB $ estimate if interpretive services were to be implemented nationally, complete with breakdown.
Policy Brief: State	Ann Bagchi, Mara Youdelman (2007)	An overview of the thirteen states (and D.C.) receiving	"However, because there are no standards addressing how much	No measures – studies the differing approaches to reimbursing	Directed towards Connecticut lawmakers.

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Approaches to Covering Medical Interpreter Approaches in Medicaid and SCHIP programs		federal matching funds for interpreter services. Breaks it down into how providers are reimbursed (FFS, MCOs' fixed payments, etc.), the reimbursement rate, the entity receiving reimbursement (providers, interpreters, language agency, etc.), and the quality provisions to ensure effective interpreting.	MCOs or hospitals should apportion for interpreter services, states may choose to 'carve out' interpreter services from fixed payment rates – that is, reimburse these services on a FFS basis – or increase the capitation and payment rates for providers that serve a high percentage of LEP consumers."	interpreter services using federal funds.	
Assessment of Cost and Benefits Associated with the Implementation of EO 13166	Office of Management and Budget, Executive Office of the President	The OMB issued a request for information regarding LEP populations that could aid in the development of a CEA of the implementation of EO13166, which stipulates that LEPs must have adequate access to federally funded services. In the briefing, the Department of Justice (DOJ) established a framework for all federally funded parties to evaluate how well they are complying with the EO.	Stating that, "... [t]he importance of the recipient's program to beneficiaries will affect the determination of what reasonable steps are required," the guidance explains that, "[m]ore affirmative steps must be taken in programs where the denial or delay of access may have life or death implications than in programs that are not as crucial to one's day-to-day existence."	No measures – this addition is a governmental request for information regarding LEP populations.	May be helpful for background information/quotes concerning Title VI of the Civil Rights Law of 1964, and its subsequent 2000 clarification. Could use quote (at left) to reason that since hospitals are central in most life-and-death situations, and therefore must undertake more affirmative steps to pass muster, there arises a need for more funding to ensure that LEPs receive the distinctive care they need.
The Impact of Medical Interpreter Services on the Quality of Health Care: A Systematic Review	Glenn Flores (2005)	Peer review of 36 articles between the years of 1966 and 2003 on the effectiveness of medical interpreters in the areas of communication issues, patient satisfaction with care, and processes, outcomes, complications, and use of health services.	"…available evidence suggests that optimal communication, the highest patient satisfaction, the best outcomes, and the fewest errors of potential clinical consequence occur when LEP patients have access to trained professional interpreters or bilingual health care providers."	No measures, but the author specifically looks at previous articles' authors, sample sizes and principal findings, and then adds comments to each.	VERY COMPREHENSIVE review, comparable to Jacobs 2006, but the breakdowns are a bit more organized. Studies that focused on the same topic, but had mixed findings, usually neglected to differentiate between trained interpreters and hospital staff/ad hoc acting

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					as interpreters. Refer to categorized findings for help with policy paper.
Do Professional Interpreters Improve Clinical Care for Patients with Limited English Proficiency? A Systematic Review of Literature	Leah S. Karliner, Elizabeth A. Jacobs, Alice Hm Chen, Sunita Mutha (2007)	Peer review of 28 articles between the years of 1966 and 2005 on the effectiveness of medical interpreters in the areas of communication (errors and comprehension), utilization, clinical outcomes and satisfaction. Finds that the use of professional interpreters is linked to an improved quality of health care for LEPs, and that the degree of positive impact is greater than that of ad hoc interpreters. Makes the point that many studies do not distinguish the level of English proficiency of LEP patients (some could not speak a word of English; others simply don't feel comfortable with what they know). Furthermore, studies that did not differentiate between ad hoc and trained interpreters frequently had mixed findings on the impact of interpreting conducted.	"The utilization studies, in particular, demonstrated that use of trained professional interpreters is associated with decreased disparities between patients with a language barrier as compared with patients receiving care from language concordant clinicians." "Professional interpreters, through their experience, training, and knowledge of both medical and lay terminology are better able to communicate patients' symptoms and questions to clinicians, and clinicians' rationale for treatment and explanations of proper use of therapy to patients. Lower interpretation error rates and improved patient comprehension likely lead to greater patient acceptance of tests, adherence to follow-up and treatments, and thus improved health outcomes."	Reviewed other studies' authors, date of publication, sample size, comparison groups, interpreter type (and training Y/N), control for confounders (Y/N) or qualitative methods, outcome related to interpreters, and results related to interpreters (statistical analysis/test).	Refer to their bibliography for comprehensive list of relevant articles that we could also use for policy paper. Also includes chart comparing interpreter types, comparison groups, confounding factors, outcomes, etc. of the 21 studies that assessed medical interpreters separately from ad-hoc. Includes steps for ensuring the collection of high caliber qualitative data. Lengthy paragraph expounding the need for more cost-effective analyses of medical interpreters, if we need a citation for the policy paper.
Language Interpreter Utilization in the Emergency Department Setting: A Clinical Review	Dorian Ramirez, MD; Kirsten G. Engel, MD; Tricia S. Tang, PhD (2008)	This article reviews 18 studies on interpreter use and utilization in EDs, with a focus on patient satisfaction, health care delivery, and current interpreter utilization practices. It also reviews several articles that deal with barriers to implementation and utilization, and suggests several strategies	From the conclusion, "Current research indicates a clear under-utilization of professional interpreter services in the ED setting. Patients with limited English proficiency who do not receive interpreter services express greater dissatisfaction with their medical encounters than ESPs	No measures – this article reviews 18 studies on interpreter use in the ED.	Relatively small number of articles reviewed, but useful resource for newer studies that have been recently published.

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		to increase implementation and utilization.	and experience measurable differences in care secondary to errors of communication, number of diagnostic tests ordered/conducted, and rates of side effect explanation and referral for follow-up appointments. Professional interpreters have been shown to improve patient satisfaction, decrease rates of miscommunication, and improve health care access for LEP patients."		
The Need for More Research on Language Barriers in Health Care: A Proposed Research Agenda	Elizabeth Jacobs, Alice Hm Chen, Leah S. Karliner, Niels Agger-Gupta, Sunita Mutha (2006)	Article asks for a CEA on interpreting for LEP patients, as it pertains to four invested parties: insurance purchasers, policymakers, insurers, and providers & clinicians.	"As health care costs continue to rise faster than inflation, health care purchasers, insurers, regulators, and providers ask how much it will cost to insure linguistic access and whether the benefits are worth the costs." "Insurers would benefit from data on the cost of unnecessary hospitalizations or aggressive diagnostic testing that arise from 'defensive medicine' when clinicians are unable to elicit a medical history."	Looks at other studies' LEP populations' languages, the country the study took place, the setting (primary care, ED, etc.), and methodology (quantitative v qualitative). They also divided the reviewed articles into the following categories, dealing with: access barrier, adherence, comprehension, cost, educational intervention, encounter duration, interpreter error, interpreter evaluation, interpreter practice, interpreter preference, interpreter role, need, measured outcomes, patient-reported outcomes, and satisfaction.	CEA on the effectiveness of hospital interpreters can be manipulated to satisfy concerns of all four groups.
Interpreting the Bottom Line: The Case for Language Services from the C-Suite	An Issue Brief from *Speaking Together* (2008)	Points to language services as "a valuable resource for improving operational efficiency, reducing treatment costs and improving the bottom line." Interviews several local hospital CEOs to get their take on the pressing need for a highly trained interpreter department.	"A hospital that takes steps to effectively communicate with all of its patients is probably more likely to reduce disparities in the quality of care they provide to patients of different races and ethnicities." – Pamela Dickson "We have found that good language services improve patient outcomes, patient satisfaction, staff productivity	No measures – this article is an issue brief from *Speaking Together* meant to increase awareness of the impact of high-quality language services.	Arguably the best source of quotes to support cost-effectiveness of medical interpreters, taken from the mouths of several hospital CEOs. Refer to reprint for many more usable quotes.

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			and the bottom line." – Brock Nelson		

Addendum: Patient Perspectives

The Interpreter as Cultural Educator of Residents	Ann Chen Wu, MD; John M. Leventhal, MD; Jacqueline Ortiz, MPhil; Ernesto E. Gonzalez, BS; Brian Forsyth, MBChB (2006)	This intervention study had a professional interpreter teach residents about Latino cultural values and home remedies, the correct use of interpreters, and introductory Spanish phrases to establish rapport, which resulted in a significant increase in parent satisfaction over both telephone interpretation and normal in-person interpretation in a pediatric practice.	"In our study, LEP, Spanish-speaking patients who experienced an in-person interpreter who educated residents were even more satisfied with the physician than Latino patients who experienced a standard in-person interpreter, likely because health care professionals were better able to understand the patient and to treat the specific problem by eliminating cultural misunderstanding." "Our results also suggest that patients are more satisfied with in-person interpretation compared to telephone interpretation."		
Providing High-Quality Care for Limited English Proficient Patients: The Importance of Language Concordance and Interpreter Use	Quyen Ngo-Metzger, MD, MPH: Dara H. Sorkin, PhD; Russell S. Phillips, MD; Sheldon Greenfield, MD; Michal P. Massagli, PhD; Brian Clarridge, PhD; Sherrie H. Kaplan, PhD (2007)	Cross-sectional survey of LEP Asian-American patients found that, "Patients with language-discordant providers reported receiving less health education… compared to those with language-concordant providers. This effect was mitigated with the use of a clinic interpreter. Patients with language-discordant providers also reported worse interpersonal care…and were	"When an interpreter was available, our results indicated that the degree of health education received was similar to language-concordant visits. In other words, having a clinic interpreter allowed health education to occur, whereas not having an interpreter limited the discussion of health promotion issues." "…whereas having an		Authors were unable to ascertain whether the interpreter was ad hoc staff or professionally trained, which may have had an impact of interpreter effectiveness.

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		more likely to give low ratings to their providers…Using a clinic interpreter did not mitigate these effects and in fact exacerbated disparities in patients' perceptions of their providers," proving that patient and provider language concordance is still the optimal choice.	interpreter present may facilitate the transmission of information, it may also negatively affect patients' opinions about the quality of their health care providers."		
The Misunderstood Spanish-Speaking Patient	Frank Kline, MD; Frank X. Acosta, PhD; William Austin, MD; Richard G. Johnson, Jr. (1980)	A Los-Angeles public psychiatric outpatient clinic surveyed its Spanish-surnamed clients (both LEP and EP) to determine their satisfaction with interpreted vs. non-interpreted visits, respectively. "Patients interviewed through interpreters said that they were generally better satisfied with the clinic service than were patients interviewed directly in English." Also, "The Latino patients interviewed without interpreters were noticeably less pleased than the Spanish-speaking patients seen with interpreters with the help of self-understanding…and, while not significantly so, were also much less pleased with the help provided by the doctor's specific advice."	"Nearly twice as many patients interviewed through interpreters as patients interviewed without them said they were helped by the doctor in the initial interview." "We also have data that indicate patients interviewed through interpreters are more appreciative and feel better understood than patients interviewed in English."		Interpreted patients' higher rate of satisfaction is partly attributed to the fact that they received the undivided attention of both the resident and the interpreter, whereas they may normally receive cursory attention of an uninterpreted doctor's visit. It also interviewed the 16 non-Spanish-speaking psychiatric residents to discover their opinion on whether the patients were satisfied. Interestingly enough, the psychiatric residents thought that patients interviewed in English "felt more appreciative, were more eager to return, and felt better understood," in direct contrast to what both LEP and bilingual clients reported. The residents also reported feeling less comfortable interviewing interpreted patients.
Interpreter Use and Satisfaction	David W. Baker, MD, MPH; Risa	A cross-sectional survey was conducted to determine	"Compared with patients who could communicate adequately	.	Only 12% of patients in the interpreted group had

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with Interpersonal Aspects of Care for Spanish-Speaking Patients	Hayes, BFA, Med, PhD; Julia Puebla Fortier, BA (1998)	Spanish-speaking patients' satisfaction with their providers' interpersonal aspects of care. Patients were divided into three groups: Group 1 consisted of patients who communicated directly with the provider in English; Group 2 consisted of patients who used an interpreter, and Group 3 consisted of patients who did not use and interpreter but thought one should have been used. The aspects of care that were surveyed were the provider's friendliness, respectfulness, concern , ability to make the patient comfortable, and time spent for the exam. Group 1 patients reported the highest overall satisfaction with their provider's interpersonal care, while Group 2 gave their providers a much lower rating and Group 3 considered their providers the least satisfactory.	with their examiner without the aid of an interpreter (group 1), patients who communicated with through an interpreter (group 2) perceived their examiner as less friendly, less respectful, and less concerned for their them as a person. Overall satisfaction scores for interpersonal aspects of care were also significantly lower. Patients who did not have an interpreter when they thought one was necessary (group 3), however, were even less satisfied with those who used an interpreter."		hospital interpreters; the remaining 88% of the interpreters were (untrained) ad-hoc staff or family members. Therefore, the results of this study cannot be generalized to interpreters with formal training. Focused on the need for national interpreter training standards
Giving a voice to the community: A qualitative study of consumer expectations for the emergency department	Peter John Stuart, MBBS, FACEM, MPH; Steven Parker, CertEd; Mark Rogers, RGN, BN (2003)	This Australian study used semi-structured focus-groups comprised of representatives of a wide range of minority and disadvantaged groups in the community to identify consumer expectation of the ED. In regards to the LEP population, focus group members spoke of the need for "staff education with respect to cross-cultural issues, availability and the appropriate utilization of interpreter services and the development of printed materials and posters	"Understanding and acting on patient expectations is a precondition for improving patient satisfaction in the ED." One participant in the Spanish-speaking focus group said that, "Because of the language barrier, children and teenagers are often called upon to act as interpreters for their parents and grandparent. This situation is awkward, especially on matters that may be sensitive or culturally inappropriate to discuss with them."		Although this article does not deal directly with patient satisfaction with interpreters, it takes an interesting approach in looking at LEP population as the consumer and reaching out in a proactive way to see how hospital services could be improved, instead of reacting by conducting post-visit questionnaires or the like. **The Methods section also**

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		to assist the non-English speaking community to understand the hospital system."			**gives a comprehensive description of how they conducted the qualitative analysis.**
Satisfaction with Telephonic Interpreters in Pediatric Care	Hetty Cunningham, MD; Linda F. Cushman, PhD; Cecilia Akuete-Penn, MD, MPH; Dodi D. Meyer, MD (2008)	Cohort study on the satisfaction of Spanish-speaking mothers who used telephonic interpretation (intervention) and ad-hoc interpretation (control). The cohort that used telephonic interpretation had an overwhelmingly positive clinical experience in comparison to the mothers who used ad hoc interpretation.	"The intervention cohort overwhelmingly rated telephonic interpretation as 'very helpful' (94%), indicating the visit would have been 'harder' without the service (98%). Significantly more intervention cohort mothers reported it was 'very easy' to communicate with the physician (83% vs. 22%, P<0.01), they understood 'all' that the physician told them (97% vs. 80%, P<0.05) and they were 'very satisfied' with the clinic overall (85% vs. 57%, P<0.05)."		Study did not include a professional interpreter cohort. Acknowledges the findings contrast with Kuo and Fagan, and suggests this is because the patients had the option of face-to-face professional interpreting and utilized it in the other study. The findings concur with those of Lee et all, another study in which in-person interpreting was unavailable. **This paper serves as a good resource for when we start the CEA manuscript in regards to study design (on questionnaires).**
Interpreter Services, Language Concordance, and Health Care Quality: Experiences of Asian-Americans with Limited English Proficiency	Alexander M. Green, MD, MPH; Quyen Ngo-Metzger, MD, MPH; Anna T.R. Legedza, ScD; Michael P. Massagli, PhD; Russell S. Phillips, MD; Lisa I. Iezzoni, MD, MSc (2005)	This cross-sectional survey asked two groups of LEP Asian American patients how satisfied they were with language-concordant clinicians and medical interpreters, respectively. "Patients who used interpreters were more likely than language-concordant patients to report having questions about their care…or about mental health…they wanted to ask but did not. They did not differ significantly in their response to 3 other communication	**"This important finding suggests that, from the perspective of LEP Asian Americans, the quality of care delivered through interpreters equals what they would receive from clinicians who speak their language."** "Our study indicates that high-quality interpreter services play a crucial role in LEP Asian American patients' perceptions of good communication and high-quality care."		Features a great flowchart on the classification of study groups.

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Title	Authors	Key Findings	Relevant Quotes	Measures	Miscellaneous
		measures or their likelihood of rating the health care received as 'excellent' or 'very good'". Also, "Patients who rated their interpreters highly ('excellent' or 'very good') were more likely to rate the health care they received highly…"			
Interpreter Services in Emergency Medicine	Yu-Feng Chan, MD; Kumar Alagappan, MD; Joseph Rella, MD; Suzanne Bentley, MD; Marie Soto-Greene, MD; Marcus Martin, MD (2008)	This article draws upon other LEP/ interpreter studies to summarize and give the pros and cons of each interpreting method (professional interpreters, telephonic interpretation, bilingual staff, and other ad hoc services). Concludes that professional medical interpreters should be the gold standard in EDs.	"Supporting data demonstrate that the utilization of professional medical translators is the superior and safest choice. Professional medical translation should be the standard service recognized, accepted, and implemented in all medical facilities."		Provides a couple of sentences on patient satisfaction with each option.
Physician Language Ability and Cultural Competence: An Exploratory Study of Communication with Spanish-speaking Patients	Alicia Fernandez, MD; Dean Schillinger, MD; Kevin Grumbach, MD; Anne Rosenthal, MD; Anita L. Stewart, PhD; Frances Wang, MS; Eliseo J. Pérez-Stable, MD (2004)	The study administered questionnaires to both Spanish-speaking diabetic patients, asking them about their satisfaction level with the physician's interpersonal processes of care, and to the physicians, regarding their language and cultural competence skills. Mentions that while patient satisfaction regarding interpersonal care rates low when interpreters are present, interpreters are still helpful when dealing with more technical aspects of care (i.e. explanation of processes of care, explanation of when to return to care).	This study shows that "Spanish-speaking diabetic patients at a public hospital outpatient department are more likely to report better interpersonal processes of care when their primary care physician has a higher self-rated language ability and cultural competence." "A recent study lends support to the idea that when discrete, problem-focused and technical information is exchanged, use of professional interpreters results in high-quality communication.	Patient age, gender, education level, income, insurance status, insulin use, years with physician, language concordance with physician. Then uses the Interpersonal Processes of Care (IPC) in diverse populations instrument, a 40-item questionnaire that has questions on the patient/physician relationship, specifically in regards to: communication, decision-making, and interpersonal style. Physician age, gender, profession, specialty, ethnicity, fluency in Spanish (5-point Likert), understand health related cultural beliefs (4-point Likert), effective caring for Latino patients (4-point Likert).	**This article is most useful for its manuscript structuring, which our study resembles in some parts.** The methods section nicely outlines the steps for recruiting patients and physician participants. May also prove useful in our manuscript if writing up the statistical analysis of skewed data, see example.

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